

# Artificial Intelligence Strategies: Republic of Moldova relative to European Union countries

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## Abstract

The paper examines the policies of European countries regarding the use and development of applications based on Artificial Intelligence. Along with the examination of the strategic documents of the European Commission, some of them are studied at national level. Also, the situation in this field in the Republic of Moldova is analyzed.

**Keywords:** Artificial intelligence, strategy, education, research and development.

## 1 Introduction

Artificial intelligence (AI) becomes the driving force of the digital age. AI-based applications are used more frequently, often without this fact being explicitly realized. Automatic translation, the quality of which is getting better, and also contextual advertising are just two of such examples that each of us knows. Among the objectives of the new Digital Europe 2021-2027 Program, there is the massive implementation of solutions based on artificial intelligence, especially in critical areas such as climate change or health.

In Section 2 of this article, we will examine the evolution of the definition of artificial intelligence, as well as the basics of the strategy adopted by the European Union. Community countries, in turn, have developed their own national strategies (or they are in the process of developing them). In Section 3 we will examine the specifics of the approaches in three countries: Estonia, Bulgaria, and Romania.

The topic of Section 4 is the situation in the Republic of Moldova examined from the point of view of human potential, infrastructure, existing developments that could be the subject of public and private sector implementations, as well as the reflection analysis of the usage aspects of solutions based on artificial intelligence in the government program, adopted in August 2021.

## 2 Some definitions of the term “Artificial Intelligence”

In our contemporary life, the term “Artificial Intelligence” (AI) is becoming common and more and more frequently used. Meaning of this term evolutionized since the time of its first mentioning. Depending on the area of its application, the definition of AI focuses on different subtleties, and also something is added over time and with the development of modern information technologies. For the first time it was used by John McCarthy, the American computer scientist, in 1956 at a summer seminar at Dartmouth College (Hanover, USA). He defined AI [1] as *“the science and engineering of making intelligent machines, especially intelligent computer programs. It is related to the similar task of using computers to understand human intelligence.”*

Definitions of the term “Artificial Intelligence” in different kinds of literature explain its essence depending on the goal for which this term is applied, but they are not contradictory.

The compilers of the explanatory dictionary on artificial intelligence tried to collect and systematize special terminology on artificial intelligence and intelligent systems [2]. So, they define AI in two parts:

*“1. A scientific direction, within the framework of which the problems of hardware or software modeling of those types of human activity that are traditionally considered to be intellectual are set and solved.*

*2. The property of intelligent systems to perform functions (creative), which are traditionally considered the prerogative of a person.”*

After Oxford English dictionary, Artificial Intelligence [3] is “*The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.*”

IBM Cloud, a company that offers the most open and secure public cloud for businesses, a next-generation hybrid multicloud platform, advanced data and AI capabilities, and extensive experience with large enterprises across 20 industries, gives the following definition for AI [4]: “*Artificial intelligence is the use of computers and systems for the simulation of the human mental process to solve problems and make decisions.*”

NetApp, Inc., an American company, one of the five world leaders in the market of disk storage systems and solutions for storing and managing information, in its article about AI, gives its definition and explains some scenarios of Artificial Intelligence Use Cases [5]: “*Artificial intelligence is the foundation for simulating human intelligence processes by creating and applying algorithms embedded in dynamic computing environments. Simply put, AI is trying to make computers think and act the way humans do. Achieving this goal requires three key components: Computing systems, Data and data management, Advanced AI algorithms (code). The closer the desired result is to humans, the more data and processing power is required.*”

The comprehensive definition is given by the independent High-Level Expert Group on Artificial Intelligence (AI HLEG) set up by the European Commission [6]:

*“Artificial intelligence (AI) systems are software (and possibly also hardware) systems designed by humans that, given a complex goal, act in the physical or digital dimension by perceiving their environment through data acquisition, interpreting the collected structured or unstructured data, reasoning on the knowledge, or processing the information, derived from this data and deciding the best action(s) to take to achieve the given goal. AI systems can either use symbolic rules or learn a numeric model, and they can also adapt their behaviour by analysing how the environment is affected by their previous actions.*”

*As a scientific discipline, AI includes several approaches and techniques, such as machine learning (of which deep learning and reinforcement learning are specific examples), machine reasoning (which includes planning, scheduling, knowledge representation and reasoning, search, and optimization), and robotics (which includes control, perception, sensors, and actuators, as well as the integration of all other techniques into cyber-physical systems)."*

The AI HLEG proposes to use this definition when projecting strategy for AI development.

The White Paper on AI created by the European Commission (EC) emphasizes the fast development of AI in modern society. AI penetrates our daily life and solves various problems: in the field of financial services (e.g., detecting fraud), interacting with customers online (e.g., online chatbots), speech recognition (e.g., in mobile devices), computer vision (e.g., face recognition in photos, analysis of medical X-rays), analysis of data on customer behavior to predict their further purchases, systems for mass consumption goods selection subject to the preferences of different consumer groups, smart home systems and household robot assistants, Internet search systems, maps and location determination, and much more.

Nevertheless, there are also serious risks to which AI usage can give rise. One of these risks is the issue of personal data protection. Another is that the reliability of the results is highly dependent on data that may be incomplete, biased, or of poor quality. The European Commission in its White Paper [7] notes the following risks: "... opaque decision-making, gender-based or other kinds of discrimination, intrusion in our private lives or being used for criminal purposes". So, the EC maintains regulatory measures and funding possibilities for a dual purpose: on the one hand, to promote the AI implementation; on the other hand, to pay attention to potential risks that this new technology may bring: "This White Paper presents policy options to enable a trustworthy and secure development of AI in Europe, in full respect of the values and rights of EU citizens."

Another regulatory document of the European Commission, Coordinated Plan on Artificial Intelligence, "puts forward a concrete set of

joint actions for the European Commission and Member States on how to create EU global leadership on trustworthy AI” [8]. First of all, in this document, there are indicated three main conditions to achieve the set goals: 1) appropriate governance and coordination framework; 2) data (large, high-quality, secure, and robust datasets); 3) computation infrastructure (necessary for storing, analyzing, and processing the increasingly large volumes of data).

### 3 Case study: approaches to the artificial intelligence use in different European countries

In this section, we will examine the examples of implementation of the Coordinated plan on artificial intelligence [8] (2021) in several EU countries. Multiple international reports [9-11] analyze state of the art in the field of national AI strategies in terms of the following policy areas:

- **Human capital.** This section includes policies aimed at educating the population of all ages in the field of using and developing AI-based solutions. They cover both the respective courses in the programs of educational institutions of all levels, as well as refresher trainings for employees of different specialties to cultivate their skills needed to operate with AI-based systems.
- **From the lab to the market** policies are inclined to support research and innovation in AI in order to assure business growth in the private sector and increase the efficiency of public services.
- **Networking** refers to collaborations in the field of AI promoted by the private and public sectors, including those at the international level.
- **Regulation** covers policies related to ethical issues, the regulatory framework, the adoption of international standards.

- **Infrastructure** refers both to the development aspects of digital and telecommunications infrastructure itself and to solving the problems of data collection, use, and sharing at the national and international level.

In our examples, we will refer mainly to the first two aspects.

**The first example is that of Estonia.** We chose this country for our case study for two reasons:

- its success in digital transformation is well-known;
- it is one of the former Soviet countries, so we could say that after the declaration of independence in August 1991, the Republic of Estonia and the Republic of Moldova were at the same starting point.

The Government of Estonia adopted its National Artificial Intelligence Strategy in July 2019. The document [12] envisaged the implementation of a series of actions divided into four compartments:

1. Advancing the uptake of AI in the public sector in Estonia;
2. Advancing the uptake of AI in the private sector in Estonia;
3. Developing AI R&D and education in Estonia;
4. Developing a legal environment for the uptake of AI.

Most actions (30 in number) are provided concerning the public sector. Along with those of information, involvement of public authorities, trainings, etc. we will also mention the specific presence in this compartment of the R&D projects related to the implementation of automatic AI-based decision-making support in Estonian state institutions. Within this project [13] several applications based on artificial intelligence approaches have been developed, including:

- A system to support NEET youth, which is made available to municipal workers in the field of social assistance, especially those dealing with child protection and youth problems, to identify and support young people aged 16-26 who are Not in Education, Employment, or Training.

- Prediction model for the healthcare needs of patients with chronic illnesses. The system, implemented in the pilot version and based on machine learning algorithms, is made available to family physicians by assisting in identifying patients on their list with multiple chronic illnesses who would benefit most from additional help with prevention, counseling, and follow-up care to improve their quality of life.
- Machine learning software to match job seekers with employers. Based on the European Skills, Competences, Qualifications, and Occupations (ESCO) classification system, developed by the European Commission, which defines skills needed in many areas of life, there was elaborated the machine learning algorithm which chooses candidates with skill categories suitable for the corresponding job profile. At the time of reporting (2020), the system operated with over 400,000 user profiles (remember that the population of Estonia is 1 million 325 thousand inhabitants) and a smaller number of workplace profiles, and the hiring process could be fully automated and did not take more than 5-10 days.
- Machine vision AI solution for better traffic management. The system is implemented in Tallinn and serves to monitor road traffic, especially public transport. Based on the information collected and processed within the system, it is possible, along with other aspects, to make decisions about parking problems or road construction.

We will also mention the special actions in the field of R&D, within which three relevant research groups are funded: AI and machine learning, data science and big data, robot-human cooperation. For the research and elaborations carried out by these groups, 1.5M EUR are allocated annually.

A series of activities are also envisaged in the field of education, the leader being the University of Tartu. An important role belongs to the IT Academy program (English brand name StudyITin.ee), which includes the collaboration of the state, educational institutions, and

ICT companies to ensure an advanced quality of studies and research in the field of ICT. It involves training about 50 master's students specializing in AI at the University of Tartu in the period 2020-2023, reviewing the curricula of courses in general schools with the inclusion of AI subjects.

Last but not least, we would like to point out that the AI Program in Estonia is called the "Kratt plan". Kratt is a character from local mythology, an artificial creature, who serves his master by performing various works, which the master orders him to do. The need to pay tribute to the devil for the creature to function also alludes to some ethical issues, which are intensely discussed concerning the vast application of AI in various fields.

From the above, we can conclude that this country has all the chances to achieve its ambitious goal formulated as follows: "Estonia could become the role model and testbed for the rest of the world as a place where Kratt, or AI, is put to work for the people's well-being in both the public and private sectors" [14].

**Another example, which we will examine, is that of Bulgaria.** We have selected this country thanks to several similarities, which we can observe, as we will see from the following, as compared with the situation in the Republic of Moldova. The country's strategic document is entitled "Artificial intelligence for intelligent growth and a prosperous democratic society", the project was developed by the Bulgarian Academy of Sciences and approved in December 2020. The concept envisages the realization of a series of actions over the next ten years, based on existing results in the field of artificial intelligence uptake and the development of AI-based applications [15].

Several sources (such as [16]) mention the existence of over 50 companies working with artificial intelligence applications, the most important areas in this regard being retail, finance, and media. The research and elaborations in the field of natural language processing also have international recognition. In [17] it is emphasized that the main areas of specialization in Bulgaria are big data, predictive analytics, data science, and chatbots. According to the same source, the share of the IT sector in GDP formation in Bulgaria is 3.4%, which is very close



to the figures in Moldova: according to data from 2015-2019, the IT industry has reached 3.1% of GDP [18].

The strategy document stipulates that a fundamental proposal for Bulgaria is “focusing on technological specialization in the field of data economy, as the country would have difficulty when realizing strong industrial specialization due to the lack of a critical mass of top industrial companies in the AI sector. Today, the trend is for data to come to the fore in AI and for the emphasis on automatic self-learning to shift from algorithms to data” [15].

The following domains and directions for AI development and implementation are established as the priority ones:

- Software industry;
- Creating AI applications for educational purposes;
- AI applications in public services;
- Intelligent agriculture;
- Applications of AI in healthcare and medicine;
- Applications of AI in ecology and environment.

Special attention in the strategic concept is paid to the education and research domains, namely here we find several features, specific to our country too. Whereas work in the IT sector is much better paid than research, most young people either do not want to start or begin and leave their careers in universities and research institutes, preferring to work in IT companies in the country or abroad.

The basic recommendation for Bulgaria is the need to overcome the fragmentation between small units that develop AI and creation of the conditions for building human potential in a connected national academic environment. Thus, it is proposed:

- Establishment of a Bulgarian center of excellence in AI, which will unite scientific organizations and universities with proven achievements in the field of AI research;
- Involvement of Bulgarian research teams in European artificial intelligence and digitization networks;

- Inclusion of Bulgarian research teams in European testing and experimentation centers related to healthcare, robotics, and agriculture.

**In the case of Romania**, it is also necessary to mention the initiative of the researchers from the Romanian Academy, who in October 2019 published a document entitled “Manifesto for adaptation to the digital age” [19]. The document specifies the favorable factors for Romania, namely:

- the weight of the ICT sector in GDP (according to the 2019 Country Report, published by the European Commission [20], it was 6-7%);
- Internet infrastructure with high traffic speeds;
- wide penetration of mobile devices among the population;
- the special receptivity of young people towards these technologies.

In the recommendations elaborated by the authors of the “Manifesto”, several directions of action are established, in which an important role belongs to research, education, public administration, media.

Although Romania does not yet have a finalized national strategy (in [10] it is mentioned that its elaboration is “in progress”), the Romanian Digitization Authority (RDA) considers that “Artificial Intelligence can revolutionize the activity of public administration”, thereby offering “better public services, safer transport systems, personalized products and services that are cheaper and more sustainable” [21].

## 4 Some aspects of promoting AI in the Republic of Moldova

The importance of information technologies has been realized in the Republic of Moldova since the 90s of the last century. Our country was among those that in 1990 included in the structure of its Government a Ministry of Informatics, Information, and Telecommunications. Subsequently, it underwent several changes in both name and duties, but

regardless of them, ICT development and implementation policies were constantly promoted, thanks to which it was possible to create a communication infrastructure based on optic fibers, which had good coverage in the country; there have been implemented services intended for citizens and economic agents, based on digital technologies; measures have been carried out to equip schools with computers and connect them to the Internet (Program SALT, adopted in 2004, assumed the maintenance of physical access to the Internet for all schools of the country [22]).

Today, according to the analysis of the ICT sector involvement in the economy of the Eastern Partnership countries, carried out by the German Economic Team [23], in the respective sectors of Armenia, Belarus, Georgia, and Ukraine, the ICT revenues in 2019 accounted for 7.1% of GDP. In Moldova, there is observed a share of 5% of GDP, and exports of ICT services represent more than 15% of services exports and about 6.5% of total exports, but only 2% of Moldova's GDP, while ICT infrastructure is very well developed and the number of users with broadband internet access has increased significantly.

The conditions for the IT sector development are good, because there is a developed infrastructure and the population uses ICT technologies extensively, and the companies' expenses are increasing according to the National Bureau of Statistics from 500 thousand lei in 2013 to 2500 thousand lei in 2019.

If in 2005 the index of internet penetration in Moldova was 7.4% compared to 35.5% in Europe, currently according to "The future of IT Landscape Report. The ultimate guide for IT buyers and investors looking to source in emerging Europe", developed by Emerging Europe in 2021 [24], the internet penetration rate in Moldova is already 76% with an increase of more than 10 times compared to 2005.

Thanks to higher salaries, the opportunities offered by ICT are attractive, and yet the share of the workforce in the ICT sector is relatively small.

Based on the data brought up, let's see how the field of AI in the Republic of Moldova is presented in the light of EU regulatory documents. We will mention that by June 2021, 20 EU Member States

and Norway had published their national AI strategies, while 7 Member States were in the final drafting phase.

On August 4, 2021, the Parliament of the Republic of Moldova approved the Government Activity Program “Moldova of Good Times” [25], which also contains a section dedicated to digital transformation. In this section as well as in the others, the notions of artificial intelligence, intelligent municipality, intelligent instruments, etc. are encountered. The Program stipulates that “The state must be able to capitalize on the opportunities offered by the digital revolution, but also to manage the risks generated by it”. However, the program does not explicitly state, as in other countries’ policy documents, that artificial intelligence will influence the increase of efficiency of services provided to citizens by state authorities, relaunch industry, streamline agriculture, mitigate climate change, and improve healthcare. The provisions of the program are limited to “Studying and exploitation of initiatives and programs of EU countries in the field of adopting artificial intelligence technologies, robotics, blockchain, smart contracts and other emerging technologies to modernize public and private digital infrastructures with the purpose to deliver better services, operational effectiveness, and strengthening of the country’s cybernetic capacity”.

Thus, the government intends to use modern working tools by intensifying the application of information technologies to exclude the flow of paper documents in administrative processes. On the other hand, the White Paper [7] rightly states: “Europe’s current and future sustainable economic growth and societal wellbeing increasingly draws on value created by data. AI is one of the most important applications of the data economy”. In this context, the digital inclusion of local authorities is envisaged by creating a digital platform with access to centralized information resources, and public services to be rethought and modernized with a focus on the citizen.

The continuation of the Government Services’ modernization, taking into account the Government’s vision expressed in the Program, based on the Action Plan concerning public service modernization reform, would capitalize on and continue the achievements reached in the framework of the ongoing e-Government Transformation Project. Also,

it would contribute to a) reorganizing public administrative services for the purpose to be provided implicitly and electronically as a priority, with the result of the service delivered in the form of an electronic document; b) increasing access, efficiency, and quality in the provision of government services. A key element of success is the evaluation of the quality and accessibility of services by beneficiaries – citizens, because a considerable part of them does not trust the quality and safety of electronic services. And another aspect is the use of the set of artificial intelligence technologies that combine data, algorithms, and ascending dynamics of internet penetration.

To have an overall view of national policy initiatives and national AI strategies, we will return to their examination in the light of the five policy domains, presented in the previous section:

- **Human capital.** There are currently five universities in the Republic of Moldova, where ICT specialists are being educated, but there is no master's program specifically aimed at AI.
- Ways and means of **passing from the laboratory to the market.** As it was mentioned earlier, this compartment includes policy initiatives to encourage research and innovation in AI for business growth in the private sector and public services' efficiency increase. Tools are also included to facilitate the experimentation of AI pilot products and newly developed services.

The propulsion of new AI products from the laboratory to the market can only succeed in an enterprise-based environment, with funding for research and innovation in AI, which would support the transformation of AI concepts into successful products and services. Mechanisms are needed for the adoption and use of AI in public administration. In this context, EU countries have taken measures to stimulate AI research and have developed or are in the process of setting up national centers of competence in AI research. Some centers are aimed at many domains of research, others are focused on autonomous systems, cyber security procedures for AI systems, machine learning, Data Science. The most frequently reported sectors in national strategies are agriculture, healthcare, transport, and power engineering.

We will make a brief overview of the Republic of Moldova's research related to AI. From the analysis of different countries' national strategies, we can see that several of them have given priority to AI language technologies for interactive dialogue systems and virtual assistants for personalizing public services. Denmark, Norway, Portugal, Slovakia, and Spain have included support policies for research in natural language processing. The research carried out in the Republic of Moldova in natural language processing is in line with EU visions, and the results obtained over the years are at the European level. In particular, we will emphasize the achievements in the recovery of the country's cultural heritage. The systems for digitizing old texts (starting with the 17th century), developed within the "Vladimir Andrunachievici Institute of Mathematics and Computer Science", allow the restoration of works of historical value in the wide circuit, offering specialists in various fields and the general public as well a tool for accessing these printings in a convenient, editable format, in an original or contemporary script.

The project "Intelligent information systems for solving ill-structured problems, processing knowledge and big data" is in the trend of EU-recommended research. Several national projects and those of the partnership with EU countries have aimed to develop medical information systems oriented to providing physicians with support in the diagnostic process, as well as modeling the course of patient treatment. The formation of a Network for informational methods in supporting persons predisposed to preventable strokes using common devices has been initiated. The international project "An Adaptive Decision Support Framework for the Management of Mass Casualty via an Artificial Intelligence Based Multilayered Approach integrating an Intelligent Reachback Information System" is underway, in which, together with the Republic of Moldova team, researchers from Germany, Croatia, Romania, USA participate. Researchers from our country have joined some COST Action projects, such as "European Network for Combining Language Learning with Crowdsourcing Technique", "A Network for Gravitational Waves, Geophysics and Machine Learning", etc.

The problem of AI is of importance that should not be neglected, a fact that requires the creation of a national center of competence in

AI research, because the number of researchers in research institutes and universities is far below the limit of necessities, being worthy of following the experience of several EU (but not only) countries, which directed AI research in national programs to the needs of countries, without forsaking the general perspective directions.

The innovation and usage of AI in public administration are stimulated, including AI programs for public services, e-government strategies to improve the digitization of public administration processes, public procurement, and exchange of good practices. The e-government center at the Government of the Republic of Moldova managed to offer the society a series of services, the last being MDelivery, which significantly changed the processes and time to obtain some documents for which citizens previously lost time and effort, but also, which is more important, have to some extent influenced the attitude of the population towards the government.

For the time being, a greater interest in the application of AI-based technologies in our country is attested in the finance & banking and insurance sectors. The National Bank of Moldova is among the institutions that, operating with such systems, will have the possibility of interconnected supervision of all banking operations, as it will function as a single point of access and visualization of information contained in numerous databases. The concept of operation is based on risk analysis, which will make it possible to detect suspicious activities and issue alerts, early identification of risks of money laundering and terrorist financing, and the detection of suspicious changes in the ownership structure of banks [26].

- **Networking** comprises the set of virtual means and AI collaboration initiatives in the private and public sector, including those with foreign people and companies. Networking includes dissemination policies, promotional campaigns, and mapping of AI applications. Many governments have put in place policies to build innovation communities by bringing together technology companies, research centers, and innovation actors. Many countries also set policies to attract skills and investment from AI abroad. In

this respect, some countries have dedicated strategies, such as the researcher mobility program in Cyprus and the future Spanish Talent Hub program. Other policies aim to improve working conditions for foreign talent by facilitating administrative procedures. The Czech Republic, Finland, Italy, Malta, Portugal, and Spain are implementing this through starting visas and fast services for valuable talent coming from abroad.

Our country has other problems, namely the loss of young specialists who either emigrate to countries that provide them with a well-paid and interesting job or work in foreign companies, which have other objectives than their home country.

Most countries exploit social channels to raise awareness in respect of AI and increase networking opportunities. Slovenia intends to launch a communication platform for the collection and dissemination of good practices and case studies on the use and implementation of AI in society. Hungary announces the annual award for innovations and AI application projects. Therefore, the Republic of Moldova can also take over a series of good practices in this area.

- **Regulations** provide policies that address issues that refer to human rights, confidentiality, fairness, algorithmic prejudice, transparency and explicability, security and responsibility, etc. To facilitate the development of ethical guidelines, many governments have formed AI ethics committees or councils. These bodies are tasked with developing recommendations on ethical problems and monitoring the use and development of AI technologies. Slovakia is preparing a new act in respect of data to better define data protection regulations, data access principles, and open data regulations. Finland and Portugal are developing national regulations for determining liability problems. The Moldovan Parliament has already adopted a package of laws: 1) Digitization of the economy, Package I, which will facilitate remote interaction in digital format between the Government, business and consumers; 2) Package II is in the process of being worked on; 3) A draft law



on public services is also in the process of being examined, which implies that public services will be provided in electronic form as a priority. However, according to [27], Moldova lacks specific regulations on new digital technologies, such as Artificial Intelligence or blockchain.

- **The infrastructure** focuses on the problems of digital and telecommunications infrastructure development and provides initiatives to encourage data collection, use, and sharing. Since AI algorithms imply large amounts of data, it is crucial to establish an environment conducive to infrastructure development to ensure reliable, high-quality data that can be shared with users in an accessible and robust way. As it was mentioned above, Moldova has a relatively good infrastructure, providing fast connectivity with country-wide coverage. However, there are still discrepancies between urban and rural areas and between population groups with different income levels.

Several EU Member States have drawn up national strategies to lay the foundations for the use and exchange of data that describe the actions needed for open data governance, the creation of data warehouses, the improvement of data interoperability, and the protection of individual and collective rights.

Open data platforms and portals have been developed in all EU Member States, Norway, and Switzerland. They usually aim to provide free access to public administration data.

In this direction, vigorous measures are required from the e-government service of the Government of the Republic of Moldova.

These policy areas are in line with the actions proposed in the Coordinated Plan on Artificial Intelligence [8] and with the policy recommendations addressed to governments, contained in the OECD Recommendation on AI [28].

## 5 Conclusion

The European Union, as the main goal, has proposed massive implementation of digital technologies in enterprises, putting them at the

service of citizens and public administrations. Analyzing the policy documents related to AI in different countries, we note that an important role is assigned to education and research & development. Less visible this aspect appears in the program documents of the Republic of Moldova. Along with the actions envisaged for study and exploitation of EU countries' initiatives and programs on artificial intelligence, as well as the interaction with the Ad hoc Committee on Artificial Intelligence of the Council of Europe, the study on national strategies in other countries indicates the need for active involvement of researchers, but also their support from the state for the achievement of a comprehensive and efficient digital transformation.

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