



## THE ROLE OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN DATA PROCESSING TO INCREASE EFFICIENCY MANAGEMENT IN STATE BODIES

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### Annotation

This article discusses the effectiveness of artificial intelligence technologies in improving the management of government bodies in data processing, the use of artificial intelligence technologies in the field of digitalization of the state mechanism, their capabilities in the field of digital security, the financial sector, and healthcare. and education, transport management are analyzed taking into account their specific features in the areas of transport and migration flows, the importance of artificial intelligence in the systematization and management of migration is discussed.

**Keywords:** artificial intelligence, public administration, digital economy, digital technologies, digital security, finance, healthcare, education, migration flow.

### INTRODUCTION

Problems are related to the field of Artificial Intelligence (AI) and its technological tool used in state management studied by many foreign researchers. It is appropriate to solve the problems in the field planning, development and implementation of Artificial Intelligence step by step and for evaluating the achievements of state bodies, it should be recognized that the maturity model of artificial intelligence and the technological advances of artificial intelligence, for the development of society it is important and necessary to develop the legal basis for regulating artificial intelligence in order to eliminate social instability that is high likely cause to current stage.





## RESEARCH METHODS

A number of researchers supported the using of artificial intelligence technologies more active in governmental activities, for example, Desuza K.C. [1] consider that it should be improved through public-private partnership, involvement and activation of academic community.

In this regard, foreign scholars Wang W and Siau K. [2], warn about the possible increase of unemployment in the state and business and further social instability due to the migration of many specialists in the public service. In this regard, foreign scholars Wang W. and Siau K. [2] warn about the possible increase in unemployment in the state and business and the further social instability associated with the migration of many specialties in the public service. In the corporate sector, virtual assistants and assistants, as well as the necessity of developing the legal basis of artificial intelligence, have mentioned the need to extensive social discussion for the freedom of artificial intelligence and the limits of implementation.

At the current stage, it is necessary to switch more advanced information processing devices that ensures the activities of public administration within the framework that ensuring the quality and quantity improvement of the information that can basis for the digitalization process of digitalization, collection and analyzing the public administration.

## RESULTS

In order to increase the efficiency of state bodies in data processing, it is extremely important to taking into account and analyzing the following in the wide use of artificial intelligence technologies:

- “Artificial cognitive systems implemented with the assistance of hardware and artificial self-developing and adaptive systems for analyzing the situation, developing and making practical decisions in real time mode;
- intelligent devices for managing complex processes and projects;
- complex and very complex multi-scenario algorithms to support public administration process;
- technologies for processing and intellectual analysis of large and extremely large data flows (to provide state administration with expert analytical and control accounting);
- complex and extremely complex predictive scenario modeling (scenario planning), modeling in significant uncertain conditions;
- operational monitoring, assessment and ranking of risks in public administration [3].





Summarizing the capabilities of existing artificial intelligence technologies into connection with the modern requirements of digitalization of public administration, it should be noted that the most relevant and popular direction of using artificial intelligence is the comprehensive meaning associated with the practice.

We have a lot of information, however human perception is incapable to analyzing it. That is why they are turning to artificial intelligence.

For example, taking public administration. The introduction of artificial intelligence in this sector will give a very good results. One of the good events organized in Uzbekistan is the reception of the President and Prime Minister. Through this, there is communication with people. A lot of information is coming from people as an appeal. However, to analyz it, human factor may be weak or take a long time.

If we use artificial intelligence in this process, it will be easy for us to know what kind a mood in which region. For instance, in which region there are many problems in the field of health care. Where there are deficiencies in education or agriculture. All this is determined without the human factor.

Based on this, the state conducts its policy more effectively. It should be used only in the right sense. That is, it is essential to quickly pay attention to the appeal and to identify the painful points of our people in the future and take measures to prevent them.

There is world experience in the wide use of artificial technologies to increase the efficiency of state bodies in data processing, and there are also problems that hinder its development in Uzbekistan, without solving this problems, it is difficult to reach positive results.

### **The dynamics of using artificial intelligence technologies to improve the efficiency of state bodies in data processing in some countries**

Countries	E-government rating 2020	E-government 2022	Changes in rating
Denmark	1	1	-
Finland	4	2	↑2
South Korea	2	3	↓1
New Zealand	8	4	↑4
Iceland	12	5	↑7
Russia	36	42	↓6
Belarus	40	58	↓18
Kazakhstan	29	28	↑1
Latvia	49	29	↑20
Georgia	65	60	↑5
Azerbaijan	70	83	↓13





<b>Uzbekistan</b>	<b>87</b>	<b>69</b>	<b>↑18</b>
Ukraine	69	46	↑23
Armenia	68	64	↑4
Kyrgyzstan	83	81	↑2
India	100	105	↓5
Tajikistan	133	129	↑4
Turkmenistan	158	137	↑21

It can be seen from the data of the table that in this rating, Uzbekistan rose 18 places in 2022 compared to 2020. In turn, it is appropriate to recognize this is a positive effect using of the artificial intelligence technologies, in particularly, the wide use of the electronic government system, to increase the efficiency of state bodies in data processing.

The experience of China taking as an example. They have artificial intelligence technologies that can identify individual's mood, health degree, even what kind a thought he has through the video or his photo when person coming to the airport. This device can be fast and necessary time analyzed the person's conditions.

This kind of technology, for instance, useful when tourists visited and served to them considering their moods. In addition, it has also huge benefits in order to security.

## DISCUSSION

It is too early for Uzbekistan to develop artificial intelligence, it can be said that we are going to be competitive, if we say that we will develop our specialization in this direction, then we should definitely pay attention to this field. Therefore, over the last two years analyzes were carried out and the main problems in this direction were studied.

The first major problem is specialists. Secondly, have hardly ever scientific researches in this field. Thirdly, the legal basis has not formed yet.

Therefore, in cooperation with industry experts, a working group has been formed and work has been carried out on the strategy of artificial intelligence development in Uzbekistan. That is, within the framework of this strategy, first of all, after solving the above-mentioned problems, it is being studied which sectors and areas can be applied through international cooperation.

For example, Russia had paid attention in 3 fields of artificial intelligence: judicial system, defense and health care.

Example, there are a lot of informations in judicial system. We know that detailed reports and documents are studied and analyzed in courts. Some mistakes may be made in it as a result of the human factor. Artificial intelligence prevents this and gives





a certain type of advices. We need to develop this area to avoid intellectual dependence.

Artificial intelligence means an intelligent artificial system that performs logical and creative human functions.

According to informations published by the World Intellectual Property Organization in 2019, from 1960 to 2018, 340,000 patents related to artificial intelligence were obtained and more than 1,5 scientific articles were published.

It is predicted that by 2030, artificial intelligence will add nearly 15 trillion dollars to the global economy's GDP [4].

Uzbekistan has also set a priority to become one of the leading countries with innovative development of information and digital economy.

It should be noted that in the "Year of Science, Enlightenment and Digital Economy Development" serious changes were made in the field of information technologies and digitalization, and a number of significant programs were adopted.

In particularly, the President of the Republic of Uzbekistan "On measures for the wide implementation of the digital economy and electronic government" and "Additional measures to automate the procedures for providing public social services and assistance to the population" and other regulatory documents are aimed at accelerating digitalization in our country and introducing modern technologies to social and economic spheres.

Moreover, significant works have been done in order to social protection of the population and implantation of ICT in the system in 2020. For instance, new system was introduced like "Temir daftar", "Ayollar daftari", "Yoshlar daftari", in order to support needy families, women and young people. Within the framework of national movement called "Generosity and support", gives financial support for more than 800,000 families over 1 trillion soums. Moreover, 500,000 soums for each children of the needy families in the "Temir daftar" and families receiving disability and survivor's pensions more than 845,000 children under 16 years of age, totally were paid 422 billion soums one-time assistance payments. The number of people who receiving social pension were doubled and reached to 1,2 million.

At the same time, in recent years, as a result of informatization and introducing new technologies in ICT and artificial intelligence has been distinctive feature created in Uzbekistan. In yhis regard, Ministry of Innovative Development and organizations within the ministry system, ICT scientific research centers, higher education institutions, their talented graduates and technology parks, a set of organizations in the private sector can be specially recognized. Furthermore, in the direction of artificial intelligence and modern information technologies, the "Smart School"







program was introduced in the schools of Fergana city, online platform for evaluating the condition of cultivated fields was introduced in Andijan region, “Smart City” was introduced in Nurafshon city in Tashkent region, it is planned to implement the “Safe City” and “Digital Tashkent”.

It is known that, modern artificial intelligence consist of algorithm designed to perform various actions and software systems, can be done a number of tasks based on informations on database which human’s mind can done. Also, artificial intelligence consist of programs which working with complex analysis and huge amount of informations, consider as a “smart” technology logically coherent thinking and also able to give an advice. Experts consider artificial intelligence as the basis for the fourth industrial revolution.

According to experts, the basis for social protection of the population, consist of social assistance, social insurance and employment programs.

In developed countries artificial intelligence and modern information technologies are widely used in social sector, especially, in the field of health care, education, employment, social protection and other sectors.

Here is an example projects which taken from foreign experience in the field of social protection of the population. For instance, in the Republic of South Africa implementated “Harrabee” project which helps to social youth employment, this program determining professional-qualification compability through artificial intelligence and creates database about job seekers and offers them appropriate vacancies based on various standarts. In a short time period, “Hambaree” provided employment to young people mainly in the private and informal sectors.

The program professional-qualification compability based on artificial intelligence in the conditions of Uzbekistan allows to ensure the employment to the job seekers in the informal sector, especially in one-time job markets and covers them with social protection. In the intial stage, artificial intelligence technologies offered with programs which can be used in mobile devices, and may attract them to daily and seasonal works from the informal sector and might be ensured their employment.

«GiveDirectly» program aimed to give financial funds directly to the needy families in the remote areas of countries in Asia and Africa. The program uses satellite data in addition to the main criterias to identify the needy poor families in remote areas. Programmed artificial intelligence analysis the materials of poor families’ home and evaluates the financial conditions. The images and navigation data collected by the satellite are included in the database of the social protection program and they are used, first os all, to ensure the operation of artificial intelligence and secondly, to define and determine the criteria for the social protection.





It is possible to recognize the number of programs based on artificial intelligence through integrating and expanding the database of existing programs and governmental agencies in the conditions of Uzbekistan.

For example, creating “online application” system for one-time financial aid or temporary financial assistance in the sector of social protection programs («Ijtimoiy reyestr» – «Temir daftar», «Ayollar daftari» va «Yoshlar daftari»). In this case, applicant can enter the relevant information into the system and quickly determine the compliance with the criteria. In the first stage, this process evaluated by specialist, by the development of the system this process done automatically without human factor. Similarly, experience of submitting an “online application” is used in the allocation of state subsidies for preferential mortgage loans and payments.



**Figure 1. Artificial intelligence databases from currently available data sources in Uzbekistan**

Recently, the information of the «Temir daftar» entered to the database through relevant authorities. Introduced artificial intelligence technologies in this process, evaluating the needy applicants in various criteries and requirements, can be extremely reduce the human factor and periodically autonomous updated the informations about the needy family or individual. To control by artificial intelligence of the enter and exit of the needy families to the «Temir daftar», the effectiveness and transparency of the program can be ensured.

It should be noted that, the database can be basis of artificial intelligence, their sources might be different. Regularly filling and expanding the database can improve analytical opportunities and effectiveness of the artificial intelligence.

Recently, in Uzbekistan, can be creating artificial intelligence database from existing data sources and can be effectively use them.



Moreover, in the world experience, in the formation of artificial intelligence database in programs oriented to the social sector, the data of national ID systems, population census and tax payer database, medicine, banking, insurance companies, store and market buyers, data of mobile communication operators and sources such as public utility payments and debt, credit history, activity in social networks are used within the law.

It should be noted that, introducing artificial intelligence to the social and other sectors, privacy of personal informations, to keep and regulate them is very essential. Because the ethical aspects of the use of artificial intelligence, especially the USA, Great Britain, European Union member states and leading international organizations, focusing the issue of human rights and personal data, as well as the danger of using artificial intelligence for political and destructive purposes are urgent. In some countries, in particular, China and Russia, there are accusations that artificial intelligence and ICT are being used to limit the personal rights and the freedom of citizens and for political purposes. Therefore, it is appropriate to pay special attention to these issues when creating the legal basis for the use of artificial intelligence.

Furthermore, implementation of artificial intelligence and ICT, personal informations and personal rights should be balanced to ensure national security.

## CONCLUSION

In our country, there are opportunities and the need to use artificial intelligence technologies in social protection programs, and it is appropriate to implement and use artificial intelligence technologies by involving leading local experts and foreign companies in relevant programming areas.

It should be considered that, to the implementation of artificial intelligence or various software and ICT, superficial approach cause, first of all, projects do not produce the expected results, secondly, ineffective spending of budget funds, thirdly, an outdated program and system will be the target of cyber criminals and might be compromise national security, and caused to leakage of private and closed informations. Therefore, these kind of government programs should be conducted by local and foreign specialists in this field.

The decision of the President of the Republic of Uzbekistan “On additional measures to automate the procedures for providing public social services and assistance to the population” aimed to the “Unified Register of social protection”, as modern technologies artificial intelligence should be effectively used. It is known that, now analyzing the applications about appointment of pensions and appointed them doing through “single registry”. As a component of “Electronic government” system, “Social







protection single registry” working as an interdepartmental platform, which can be running the database of relevant authorities through artificial intelligence technology. New technologies in Uzbekistan, for example, the widely implementation of artificial intelligence in social protection programs and other sectors, it is supported the use of informational technologies in state and private sectors, increasing digital economy and entering innovations in every field of country.

In public administration process implemented artificial intelligence technologies in most cases depend on overall vector of digitalization of governmental mechanism.

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