**APPROACHES TO IMPROVE THE EFFECTIVENESS OF STATE REGULATION OF E-COMMERCE IN UZBEKISTAN**

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**Abstract** This article explores the prospects of introducing artificial intelligence in the sphere of e-commerce in Uzbekistan in order to improve business management, develop new models and increase the effectiveness of government regulation. The study developed mathematical models aimed at predicting and creating alternative management decisions using a knowledge base and principles of product logic. The application of artificial intelligence in state regulation of e-commerce can improve market monitoring, detection and prevention of violations, and increase the efficiency of administrative procedures. The creation of a knowledge base and the use of the principles of product logic can automate decision-making processes and improve their quality. In conclusion, modern methods of e-commerce management are proposed, which can become the basis for improving governance, developing new strategies and increasing the effectiveness of regulation, which contributes to the development of the digital economy and improving conditions for businesses and consumers.

**Keywords:** Public administration, management, E-commerce, digital economy, Uzbekistan, artificial intelligence, mathematical rules, digital technologies, management methods.

1. **Introduction**

The global e-commerce industry, which is an integral part of the digital economy, is adopting new regulations and policies to regulate, improve infrastructure and ensure widespread access to the Internet. The sector is expected to generate revenue of $4198.5 trillion by 2025. China has taken the lead in the e-commerce market and will maintain its leadership until 2025. However, there are challenges such as data security, cybercrime, taxation, and consumer rights. Therefore, it is crucial to ensure flexibility in e-commerce management by adapting to changes in the technological and economic space.

Research is underway in the global academic environment to improve e-commerce governance, cybersecurity regulation, standards development, infrastructure and consumer behavior. These efforts are aimed at improving the e-commerce environment, including taxation, customs procedures, intellectual property protection and data security.

In recent years, Uzbekistan has implemented reforms aimed at enhancing e-commerce, digital economy, cybersecurity, and consumer data protection. The country's president has proposed expanding partnerships under the "Economic Cooperation Organization - 2025" program, emphasizing the importance of strengthening trade relations through the adoption of digital technologies and e-commerce. Thus, there is a need to adopt a systemic approach to e-commerce management, optimize solutions, develop effective strategies, and improve management mechanisms using digital technologies.

1. **Literature review**

Various aspects of the digital economy and its management are covered in the works of various authors, including Yuzhakova, Talapin, Dobrolyubova, Kamolov and Artyomov. Works by Kobelev, Pirogov, Bystrova and others consider certain aspects of e-commerce. Works by Dobrolyubova, Yuzhakova and Aleksandrov deal with issues of public administration [4, p.28-47]. Methods for assessing the effectiveness of digital technologies are presented in the works of Kuzovkova, Kuznetsova and Vorobyova. Studies of the development of international trade and economic relations are conducted by Islamov, Karimov and others. Examples of econometric analysis in the field of ICT are presented in the works of Chepelev, Bobokhuzhayev and others [5]. Mathematical modeling in public administration is covered in the works of Kabulov and other researchers.

1. **Methods and materials**

Scholars have done little research on the mechanisms of public administration in e-commerce in the transition to a digital economy. This includes the lack of management systems using digital technologies for strategic planning, control and adjustment, as well as methods for assessing the effectiveness of management decisions and information collection systems for monitoring the development of e-commerce. The lack of research served as the basis for choosing the research topic, defining the goals and objectives of the study.

In the period of digitalization of society, it is necessary to consider "state management of e-commerce" as a unified system of planning, coordination and control of activities in this sphere using digital technologies. World experience shows that the inclusion of standardization, licensing, certification, insurance and innovative management methods in the system of e-commerce regulation is important to create favorable conditions for all economic actors. Uzbekistan has its own peculiarities in the management system related to historical and cultural conditions, as well as the active use of ICT. The use of artificial intelligence technologies can improve regulatory mechanisms and facilitate the development of managerial decisions in the sphere of e-commerce.

It is proposed to introduce a set of artificial intelligence systems into the existing systems of e-government and e-commerce aimed at optimizing the management of business processes and the development of new organizational models, which will lead to better government regulation in the field of e-commerce. The use of artificial intelligence will allow to create effective mechanisms of management and generation of recommendations of management decisions, contributing to the development of e-commerce and improving the quality of state regulation [6].

Digitalization and implementation of artificial intelligence in the state management of e-commerce can accelerate the growth rate of commerce and GDP of the country. The use of a set of artificial intelligence systems for management and formation of data-based management tools reduces the cost of collecting and analyzing information, provides access to relevant data and promotes informed management decisions.

The conceptual scheme of using artificial intelligence to support managerial decisions in e-commerce is proposed. It consists of three blocks: criteria processing, decision making and decision support. The criteria processing block defines problems, identifies objectives and criteria, and creates lists of alternative criteria. In the decision-making block, a problem is developed, a solution method is selected, and alternative solutions are evaluated. If the result is positive, the solution is passed to the support unit where it is verified and accepted and executed. If the result is negative, the process moves to revise the problem and change the model. The entire process involves identifying implementers, setting deadlines and resources, evaluating intermediate results, and adjusting implementers, deadlines, and resources.

It is proposed to include decision adequacy checking at the stage of criteria processing and decision support, which helps to avoid incorrect decisions and optimize management decisions with the help of mathematical models.

In government structures, data are used for decision making, evaluating effects and identifying hidden relationships. Data analysis, including the use of neural networks, helps to formulate hypotheses and propose solutions for consideration by relevant officials.

1. **Discussion**

Mathematical models for forecasting and development of managerial decision-making options based on knowledge base and production logic are developed. Productive logic includes variables, factors and target values, where successfully tested mathematical models are used to solve problems.

An information system using artificial intelligence is able to use logical formulas from the knowledge base such as conjunction, disjunction, consequence, equivalence, depending on the tasks at hand. This allows it to select inference rules for different scenarios and build an optimal strategy aligned to the main objective. While executing the strategy, the system evaluates the results and corrects the actions to eliminate errors. The application of artificial intelligence helps to optimize the use of resources and time, which leads to an increase in the efficiency of problem solving [7].

The application of artificial intelligence at various levels of government contributes to better coordination and control in the sphere of e-commerce. The success of management decisions is assessed by the growth of key indicators of e-commerce, which reflects the effectiveness of government structures in achieving their goals.

In order to build an effective system of public administration of the e-commerce system in the Republic of Uzbekistan, modern management methods are proposed, including [8]:

1. Conducting a comprehensive analysis of existing management mechanisms, identification of key factors affecting the effectiveness of activities in this area.

2. Implementation of an adaptive management method that takes into account external and internal factors of impact on business processes in e-commerce.

3. Regulating the fulfillment of target indicators for flexibility in making management decisions.

4. Systematic accounting and analysis of changes in e-commerce.

5. Optimizing the coordination of business processes, taking into account innovative management methods and adaptation to changes.

6. Training of personnel in new methods of management and adaptability to changes.

7. Realization of feedback with the subjects of electronic commerce for efficiency and effectiveness of the made decisions.

8. Monitoring and evaluation of the effectiveness of changes, with subsequent operational correction.

The use of artificial intelligence in e-commerce management is of significant importance as it is capable of processing large amounts of data, forecasting changes in this sphere, proposing effective development strategies, monitoring the fulfillment of plans and ensuring security. This leads to the optimization of business processes and more efficient use of resources.

1. **Conclusion**

Thus, effective management of the e-commerce system in the Republic of Uzbekistan can be accomplished through regulation and legal support, provision of technical infrastructure, development of economic support and financing mechanisms, and data analysis and management. Artificial intelligence can help in each of these aspects, improving the evaluation and timeliness of processes.

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