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Improving E-Commerce Management Practices in Uzbekistan

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Abstract: The article discusses the use of artificial intelligence to optimize the management of e-commerce in the digitalization of the economy. AI-based management decision support methods and mathematical rules for knowledge base are proposed. Also considered is the evaluation of the effectiveness of managerial decisions and forecasts for increasing the government efficiency index, which requires improving the regulatory framework and cybersecurity.

Keywords: e-commerce, government management, artificial intelligence, digitalization, decision support, mathematical rules, knowledge base, performance evaluation, performance index.

Introduction

Globally, e-commerce is becoming an integral part of the digital economy, leading to the introduction of new laws and regulations to effectively regulate this dynamic sector. E-commerce revenue is predicted to reach 4198.5 trillion dollars by 2025, with China as the largest market remaining the leader. Despite the growth, challenges remain in this area, such as data security, cybercrime, taxation and consumer rights.

The answer to these challenges lies in research to improve global e-commerce governance. This includes developing mechanisms to regulate cybersecurity, establishing international cooperation on standardization, developing digital infrastructure, and coordinating consumer behavior. The goal of such research is to create strategies to increase accessibility and inclusion in e-commerce, develop a fair and transparent tax system, simplify customs procedures in international trade, and protect intellectual property rights and combat counterfeiting.

In the context of these efforts, Uzbekistan is also undertaking reforms to improve the conditions for e-commerce and the digital economy. The country's president has put forward proposals to strengthen trade and investment relations by adapting to digital technologies and e-commerce.

Thus, it is crucial to adopt a systematic approach to e-commerce management, develop effective strategies and improve digital governance mechanisms to ensure the stable and sustainable development of this sector.

Materials and Methods

Theoretical and practical aspects and problems related to the formation of digital economy in the world are devoted to books, individual articles and sections in collective monographs by Yuzhakova

V. N., Talapin E. V., Dobrolyubova E. I., Tikhomirov Y. A., Smotritskaya I. I.[1] and others. Special mention should be made of the works by Kamolov S. G. and Artyomov P. V., which have general theoretical and methodological significance in the study of challenges and risks of digital governance. In the issues of researching certain aspects of e-commerce, it is worth noting the works of Kobelev O.A., Pirogov S.V., Bystrova N.V., Maksimova K.A., Kiselev I.A., Iskajyan S.O., Melnikova Y.V. and others. The scientific works of E.I. Dobrolyubova, V.N. Yuzhakova and O.V. Alexandrov on the issues of public administration should be emphasized. Methodological approaches to assessing the effectiveness of digital technologies are widely presented in the works of Kuzovkova T.A.[2], Kuznetsova I.V., Vorobyova D.A.[3] and other authors.
Studies on structural transformations and development of the sphere of information and communication technologies in the conditions of digitalization in the Republic of Uzbekistan, as well as theoretical and practical recommendations for the development of the digital economy, are presented in the works of Aripov A.N., Shermatov Sh.H., Pekos O.A., Makhsudov J.T., Karimjonov R.O., Isaev R.I., Jurabaev A.A., Mukhitdinov H.A., Makhkamov B.S., and others.

The issues of development of international trade and international economic relations are widely covered in the scientific works of Islamov B.A., Karimov K.H., Karimov F.P., Abduraupov R.A., Muradova Kh, Khakimov N.S., Alimov B.U., Askarov Z.V., Alimukhamedova N.B., Mikhailov N.S., Ibragimov D.A., Ibragimov D.K., Khaldarov Z.A., Buzurukov B.I., Malvicini P.J., Kholmuminov S.S., Rashitova N.H.. Practical examples of econometric analysis in ICT sphere are studied and proposed in the works of Chepel S.V. and Shibarshova L.I., Bobokhuzhayev Sh.I., Otakuzieva Z.M., Hazratkulova L.M. and others. The issues of mathematical modelling in public administration are devoted to the works of Kabulov A.V. et al.

However, the mechanisms of state management of e-commerce in the conditions of transition to the digital economy have been insufficiently researched by domestic scientists. In particular, the lack of management mechanisms, using digital technologies, in the sphere of organization and implementation of strategic plans in the field of e-commerce; control over the implementation of adopted plans, as well as, if necessary, their adjustment; the lack of methods for calculating indicators of the effectiveness of management decision-making when using digital technologies; and the lack of a system for collecting and processing information necessary to form a sufficient set of target values of performance indicators of e-commerce development.

Research and Discussion

In the period of digitalization of society, effective public management of e-commerce requires the establishment of a unified system of planning, coordination and control using digital technologies. Global experience shows that the successful regulation of such a system requires unified methods, including standardization, licensing, certification and insurance, as well as innovative approaches that take into account country specifics. The use of artificial intelligence can significantly improve the efficiency of regulation and facilitate the development of effective management decisions.

[1] Методы принятия управленческих решений: краткий курс лекций для обучающихся направлений подготовки: 38.03.02 Менеджмент. / Сост.: Д.А. Воробьёва // ФГБОУ ВО «Саратовский ГАУ». – Саратов, 2017. – 64 с.
[2] Уточнено на основе предложенной методики Воробьёвой Д.А. Методы принятия управленческих решений: краткий курс лекций для обучающихся направлений подготовки: 38.03.02 Менеджмент / Сост.: Д.А. Воробьёва // ФГБОУ ВО «Саратовский ГАУ». – Саратов, 2017. – 64 с.
[3] Разработано автором на основе построенной многофакторной экономико-математической модели данных WGI.

A model of intelligent management decision support based on computers and artificial intelligence is proposed. It allows solving complex problems and improving human intelligence without building autonomous AI systems. The model focuses on modeling individual intelligent functions such as knowledge representation, planning, prediction, and human-computer communication. Practical verification and applied research ensure the adequacy, correctness and completeness of the models. In public administration, data are used to make decisions, assess their consequences and reveal hidden dependencies. Data analysis, including the use of neural networks, helps to formulate decisions and hypotheses for responsible officials[4].

Mathematical models for forecasting and management decision support based on knowledge base and production logic have been developed. The knowledge base contains rule bases formed from mathematical models tested for solving specific problems.

The AI-based information system can use logical formulas in the form of conjunction, disjunction, consequence, equivalence from the knowledge base depending on the problems to be solved. This allows selecting inference rules for different cases and correctly building an action strategy optimized for the main goal. In the process of strategy execution, the system evaluates the results and adjusts actions to eliminate possible shortcomings. The application of AI allows optimizing the use of resources and time, which, in turn, increases the efficiency of problem solving.

The use of artificial intelligence technologies at different levels of government helps to improve the efficiency of coordination and control in the field of e-commerce. An important indicator of the effectiveness of management decisions is the growth of key indicators of e-commerce, which reflects the success of the state apparatus in achieving the set goals.

A method based on outcomes and the proportion of managerial decisions was used to determine the economic efficiency of digital e-commerce management. The proportion of management decisions was determined and various factors were taken into account, including the tax rate on the use of digital technology and the risk of poor management decisions, which was expressed as the amount of insurance premium. This makes it possible to assess the real contribution of digital technology to the cost-effectiveness of e-commerce management and make informed management decisions based on this data.

$$E = \frac{\sum \boldsymbol{TR}}{\sum \boldsymbol{TC}} = \frac{\sum E*K}{\sum \boldsymbol{TC}} = \frac{\sum E*K}{(\boldsymbol{Q}*\boldsymbol{VC}+\boldsymbol{FC})+П*\boldsymbol{Tax}+\boldsymbol{A}+\boldsymbol{p}} \quad (1),$$

where TR - surplus product (profit) obtained due to the realization of a particular management decision. This can be expressed as an increase in income by e-commerce efficiency indicators, depending on what is the resulting indicator of the adopted management decisions; TC - total costs; E - economic effect of e-commerce (profit); K - the share of management decisions in the efficiency of e-commerce (K = 20-30%)[5]. Q - volume of rendered services (developed management decisions); VC - variable costs per unit of service; FC - annual volume of fixed costs without amortization; P - profit; Tax - tax rate on the use of digital technology, coefficient; A - depreciation of fixed and intangible assets; p - coefficient of the risk rate of inefficient management decisions or the amount of the insurance premium[6].

[4] https://hsbi.hse.ru/articles/ispolzovanie-tsifrovykh-tekhnologiy-v-gosudarstvennom-upravlenii/

[5] Методы принятия управленческих решений: краткий курс лекций для обучающихся направлений подготовки: 38.03.02 Менеджмент. / Сост.: Д.А. Воробьёва // ФГБОУ ВО «Саратовский ГАУ». – Саратов, 2017. – 64 с.

[6] Уточнено на основе предложенной методики Воробьёвой Д.А. Методы принятия управленческих решений: краткий курс лекций для обучающихся направлений подготовки: 38.03.02 Менеджмент / Сост.: Д.А. Воробьёва // ФГБОУ ВО «Саратовский ГАУ». – Саратов, 2017. – 64 с.

The presented methodology for assessing the economic efficiency of the use of digital technologies in public administration allows taking into account the share of management decisions, the rate and tax on digital technology, the risks of making ineffective management decisions, expressed in the amount of, insurance premium.

Studies have shown that effective management of the e-commerce system in the Republic of Uzbekistan can be carried out through regulation and legal support, providing technical infrastructure, developing mechanisms of economic support and financing, as well as analyzing and managing data. Artificial intelligence can help in each of these aspects, improving the evaluation and timeliness of processes.

The study of global and national experiences has identified key indicators that can quantify the government's performance in a country's e-commerce. On the basis of correlation analysis, the main factors affecting the level and dynamics of government performance in e-commerce were identified, through which interrelated equations for predicting government performance in e-commerce were constructed.

Despite the initial stage of e-commerce government management, the government is beginning to play a significant role in regulating business processes.

The resulting multifactor model (2) allows us to identify the factors that have a decisive impact on government performance:

$$\boldsymbol{Y = 0,29 + 0,08 \cdot x_1 + 0,04 \cdot x_2 + 0,02 \cdot x_3 + 0,06 \cdot x_4} \quad (2),$$

(t) (9,68) (3,23) (2,33) (0,01) (2,20)

Based on the theoretical provisions, international experience and peculiarities of the Uzbek economy, as the most important factors affecting the efficiency of the government are identified: the indicator of the regulatory framework in the digital economy (x1), the indicator of regulatory quality (x2), the index of e-government development (x3) and the global cybersecurity index (x4).

The econometric analysis conducted in the dissertation showed that the main factors affecting the efficiency of government are the indicator of the effectiveness of the regulatory framework in the digital economy and the global cybersecurity index. The model shows that a one percentage point increase in the efficiency of the regulatory framework in the digital economy leads to a 0.08 percentage point increase in government efficiency. This justifies the need, first of all, to take measures to improve the regulatory and legal framework, the rules for regulating business processes in the sphere of e-commerce. Another factor that improves government efficiency is the global cybersecurity index. An increase of one percentage point leads to an increase in government efficiency by 0.06 percentage points respectively. This indicates the possibility of improving government efficiency in this area by protecting personal data, reducing cybercrime and cyberattacks.

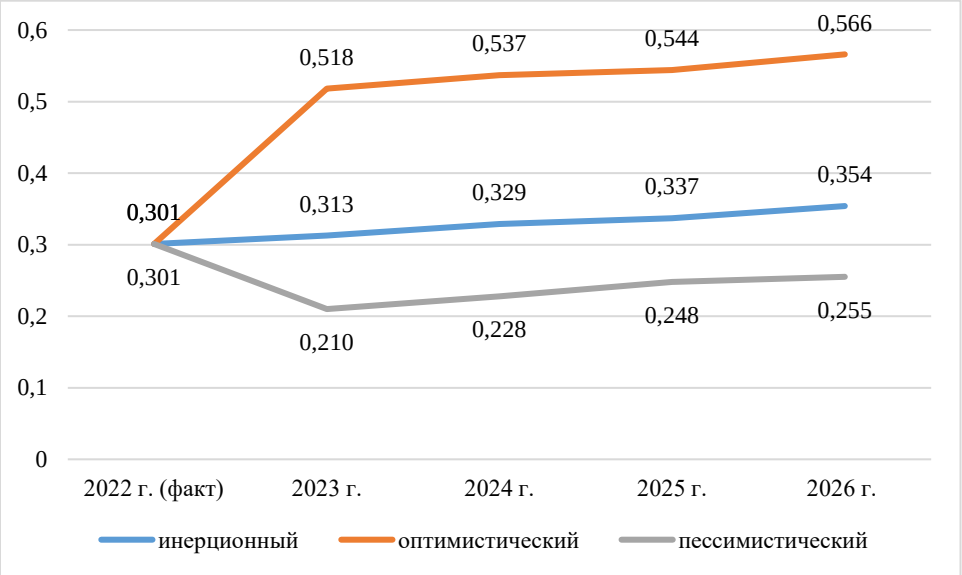

Figure 1. Projected values of Uzbekistan government performance index in 2023-2026.[7].

It was revealed that according to the model and inertial forecast, by 2026 the index of government efficiency in the Republic of Uzbekistan will grow insignificantly, which may mean that it is necessary to take effective measures to improve the efficiency of all influencing factors, including the regulatory framework in the digital economy, regulatory quality, the e-government development index, and the and the global cybersecurity index.

The study confirms the need to develop a state program to improve the quality of public administration in Uzbekistan, including regulatory measures, simplification of business processes, and innovation. Adoption of these strategic goals promises improved democratization, information accessibility and anti-corruption. Modern methods are proposed to improve e-commerce management, including adaptive management, regulation of targets and introduction of artificial intelligence. These measures aim to optimize business processes and improve resource efficiency in e-commerce.

The development of e-commerce in Uzbekistan requires a systematic approach to public management. Recommendations include defining specific goals, developing key performance indicators, introducing a monitoring and reporting system, incentivizing performance and continuously improving the strategy. This approach contributes to the effective development of the e-commerce sector, improving conditions for entrepreneurs and increasing the competitiveness of the national economy.

The implementation of the “new model of public administration” will make it possible to take into account changes in business processes, increase the share of results achieved within the declared timeframe at all levels, reduce expenditures not aimed at achieving the declared results, and ensure compliance with the declared results at various levels, flexibly responding to changes in business processes. The implementation of these measures helps to build a coherent government strategy that adapts to changes in the business environment, with a focus on achieving substantial benefits for citizens, businesses and the country as a whole.

Flexible management system, goal-setting and adaptation to changes are key requirements for effective governance in our country.

The following steps and measures should be taken into account in order to build an effective system of public administration of the e-commerce system in the Republic of Uzbekistan:

[7] Разработано автором на основе построенной многофакторной экономико-математической модели данных WGI.

Strategy and policy development: it is necessary to develop a medium-term strategy and policy in the field of e-commerce, identifying priority goals and objectives to be achieved. It is recommended to use the results-based principle, establishing clear performance indicators and mechanisms for assessing the achievement of goals.

Creating a regulatory framework: It is necessary to develop and improve legislative acts and regulations governing e-commerce in the country. These documents should be flexible and able to adapt to changes in e-commerce in order to comply with the principle of change.

Establishment of a regulatory body: a specialized body or agency responsible for monitoring and regulating e-commerce is needed. For example, a Trusted Third Party. This body should be competent and have the necessary resources to fulfill its responsibilities.

Transparency and stakeholder participation: e-commerce decision-making and policymaking processes need to be transparent. Entrepreneurs, consumers and other stakeholders should be consulted to incorporate their views and feedback.

Training and support: training and counseling should be provided to entrepreneurs and government officials to increase their competence in e-commerce.

Monitoring and evaluation: a monitoring and evaluation system should be established to track the development of e-commerce and measure the effectiveness of measures taken. Conduct periodic reviews and analyze the results to make the necessary adjustments and comply with the principle of change.

Innovation and development: innovation and development in e-commerce should be encouraged. Support start-ups and entrepreneurs who can bring innovative changes in the industry.

Communication and awareness: ensure effective communication between government agencies, the business community and society at large. Inform about changes in legislation and policy, as well as best practices in e-commerce.

It should be taken into account that the development and implementation of the e-commerce public administration system is a long-term process that requires the cooperation of various stakeholders and constant analysis and correction.

In general, the application of a new model of state management of e-commerce requires a systematic approach, consideration of stakeholders' opinions and continuous improvement, which contributes to the development of an effective and competitive e-commerce sphere in Uzbekistan. The complex mechanism of state management of the e-commerce system and its components can be described as follows:

- regulation and legal aspects: the application of adaptive management method allows to respond quickly to changes in the legal environment, maintaining transparency and stability. The implementation of analytics systems evaluates the results of the application of legal provisions for adjustments and improvements, allowing monitoring of the effectiveness of legal provisions;
- technical aspects: developing systems for online platforms that can dynamically respond to new threats and changes in the technology sector. An adaptive strategy rapidly modifies security standards to take into account the evolution of technology.
- economic aspects: the application of adaptive management in infrastructure projects will help to respond flexibly to changes in the economic environment and market requirements. Analytics systems allow the performance of financial mechanisms to be evaluated in order to adjust e-business support strategies.

- analysis and data management: use of adaptive data analysis algorithms to identify changing consumer needs and market trends. Creating systems that can dynamically respond to changes in data volumes and processing requirements.
- use of artificial intelligence: applying artificial intelligence to analyze and process data more efficiently, speeding up decision-making. Using machine learning algorithms to generate recommendations tailored to specific market conditions and requirements.

A common principle in these approaches is the continuous analysis of changes and results, which allows for a rapid response to dynamic conditions and effective management of the e-commerce system. Thus, effective management of the e-commerce system in the Republic of Uzbekistan can be achieved 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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