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RESEARCH ON IMPROVING THE EFFICIENCY OF DIGITAL PLATFORMS IN THE STATISTICAL SYSTEM

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Abstract:

This article will explore ways to improve the efficiency of digital platforms in the statistical system. Through the use of modern information technology and data analysis methods, innovative approaches to the optimization of statistical data collection, processing and distribution processes are analyzed. Based on the results of the study, it was found that the integration of digital platforms, the use of artificial intelligence and machine learning algorithms, as well as the improvement of the user experience significantly increase the effectiveness of the statistical system.

Keywords: statistical system, digital platforms, efficiency, information technology, data analysis, artificial intelligence, machine learning.

INTRODUCTION

In the modern world, the statistical system plays an important role in all spheres of society and economy. Accurate and reliable statistics improve decision-making processes, help formulate policies and provide the indicators necessary for assessing socio-economic development. The rapid development of Information Technology has also led to fundamental changes in the statistical system. Digital platforms allow you to automate and accelerate the processes of data collection, processing and distribution [1].

However, many countries are faced with a number of problems associated with the effective implementation of the digital transformation process in statistical systems. These problems include outdated infrastructure, lack of digital skills, and difficulties with ensuring data security and Privacy [2]. Therefore, increasing the efficiency of digital platforms in the statistical system is an urgent issue.

LITERATURE ANALYSIS

The following methods were used in the research process:

Literature analysis: information on the topic in scientific articles, reports and other sources was studied. Through this method, a comprehensive overview of the existing theoretical foundations and practical experiments was obtained.

Comparative analysis: the digital platforms used in the statistical systems of different countries have been compared. This method made it possible to identify the best practices and understand their peculiarities.

Systematic approach: by treating the statistical system as a holistic system, all the components of digital platforms and the interactions between them were studied.

Literature analysis has shown that the role of digital platforms in the statistical system is increasing. Kitang et al (2022) highlight the importance of digital platforms in improving the quality of statistical data and accelerating the process of their collection in their research [3].

They show that real-time data collection and analysis is possible using digital platforms, which is important for making quick and clear decisions.

On the other hand, Smith and John (2023) also highlight the difficulties associated with the introduction of digital platforms [4].

They pay special attention to security, privacy and data quality issues. The authors propose an integrated approach to solving these problems, including measures such as improving the legislative framework, improving the digital skills of employees, and strengthening security protocols.

Reports published by international statistical organizations also provide valuable information on the topic. For example, the report "Digital Transformation and official statistics" (2024) prepared by the United Nations Statistics Department analyzed the experience of different countries [5].

A study by Lee et al (2023) on the application of artificial intelligence and machine learning technologies in the statistical system is notable [6]. The authors show the potential of these technologies to significantly improve the processes of data processing, forecasting and visualization.

RESEARCH METHODOLOGY

The digital economy is the production, distribution and distribution of the benefits of society consumption make in the processes electronic of information communication human economic activity, which provides for the widespread introduction of technologies studies [7]. The term digital economy refers to two different concepts used for. First of all, the digital economy is a modern development being considered the stage, it is with the priority role of creative work and information benefits is described. Secondly, digital economics is a kind of theory whose the object of study is the processes of an informed society [8]. The experience of using it shows that the process of data collection creates extremely competitive advantages for expansion to different sectors of the economy.

Alibaba is not simply a digital platform, but a platform ecosystem.

It is understandable that the power of such an ecosystem will be greater than the power of individual platforms.

Even the U.S. is currently losing this race because there are different the platforms have to be integrated, while the development in this area in China at the expense of increasing efficiency-switching from one platform to another it happened slowly [9].

RESEARCH RESULTS

According to the results of the study, the following main areas of increasing the effectiveness of digital platforms in the statistical system were identified:

Integrated approach: optimization of data exchange and analysis has been achieved by integrating various statistical databases into a single platform. For example, the StatBank platform, introduced in the Danish statistical system, allows centralized storage and presentation of all statistics [10]. This approach serves to improve data quality and increase user accessibility.

Artificial intelligence and machine learning: the application of artificial intelligence algorithms made it possible to automate the processes of data processing and analysis. For example, the Canadian Bureau of Statistics has used artificial intelligence to optimize large-scale data processing and detection processes [11]. This approach helps to reduce errors and increase the accuracy of the analysis results.

Open data platforms: by creating open data platforms, it has become possible to expand the possibilities of using statistics. For example, the US". Data.gov " the platform provides information collected by various government bodies in an open format [12]. This approach serves to increase transparency and encourage innovative solutions.

Mobile apps and chatbots: the development of mobile apps and chatbots has significantly expanded the possibilities for users to access and use statistics. For example, the mobile app "SingStat", developed by the Singapore Department of Statistics, allows users to access statistics at any time and place [13].

Cloud technologies: through the use of cloud technologies, the efficiency of data storage and processing processes has been increased. For example, the Australian Bureau of Statistics has achieved increased data security and cost reduction by switching to cloud technologies [14]. This approach makes it possible to increase the flexibility of the system and effectively use resources.

Data visualization: modern visualization tools have made it possible to present statistical data in a more understandable and easy-to-use form. For example, interactive dashboards developed by the UK's National Bureau of Statistics help make complex statistics also understandable to a wide audience [15].

ANALYSIS AND DISCUSSION

The above results show that the statistical system has ample opportunities to improve the efficiency of digital platforms. However, in order to take full advantage of these opportunities, it is necessary to focus on a number of important issues.

First, it is important to take an integrated approach in the process of introducing digital platforms. This should include not only technological solutions, but also organizational and legal issues. For example, it is necessary to improve the legislative framework for data protection and confidentiality, increase the digital skills of employees and take into account ethical issues in the introduction of new technologies.

Secondly, it is important to take a user needs-oriented approach to improve the efficiency of digital platforms. This can be done by keeping in constant contact with users, taking into account their feedback and regularly improving the platforms.

Thirdly, it is important to have a clear strategy in the introduction of artificial intelligence and machine learning technologies. Although these technologies offer great opportunities, their proper application and management requires appropriate infrastructure and skilled personnel. Therefore, it

is advisable to carry out artificial intelligence and machine learning projects in stages, gain experience through pilot projects and take risk management measures.

Fourth, ensuring the quality of data is one of the main conditions for the effectiveness of digital platforms. For this purpose, it is necessary to standardize the processes of data collection, processing and storage, introduce a quality control system and constantly monitor the quality of data.

Table 1.The main factors affecting the effectiveness of digital platforms and their importance

FACTORS	Significance level (1-5)	CLASSIFICATION
Data quality	5	The main factor for the reliability and usefulness of the platform
User experience	4	Important for the adoption and widespread use of the platform
Security and Privacy	5	Necessary to ensure data protection and trust
Integration options	4	Provides interaction with other systems
Flexibility	3	Ability to adapt to changing requirements
Working speed	4	Provides user-friendly and efficient operation
Cost efficiency	3	Important for long-term stability
Technical support	3	Required for continuous operation and quick troubleshooting

Prepared on the basis of the author's research.

This table shows the main factors affecting the effectiveness of digital platforms and their relative importance. The significance level was assessed on a scale from 1 to 5, with 5 indicating the highest significance. As can be seen from the table, data quality as well as security and privacy are the most important factors [16]. These factors are decisive for ensuring the reliability of the platform and compliance with legal requirements. User experience and speed of operation are also highly valued, as they determine the practical value and acceptability of the platform. Integration capabilities are important due to the complexity and interdependence of modern statistical systems. Flexibility, cost efficiency and technical support are relatively lower, but still evaluated as important factors.

CONCLUSIONS

Digital platforms make it possible to significantly increase the efficiency of the statistical system, but an integrated approach is required to take full advantage of these capabilities. Artificial intelligence and machine learning technologies have great potential in automating and optimizing statistical data processing and analysis processes. Open data platforms and mobile applications expand the possibilities of using statistics and increase transparency.

Innovative solutions such as cloud technologies and blockchain make it possible to improve data security and storage efficiency. To improve the effectiveness of digital platforms, it is necessary to take a user-needs-oriented approach, pay special attention to security issues and expand international cooperation. Ensuring the quality of data, taking into account the possibilities of flexibility and expansion, as well as conducting regular trainings are important conditions for improving the efficiency of digital platforms.

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