

**METHODOLOGICAL FOUNDATION OF IMPROVING STATISTICAL  
PERFORMANCE OF THE REPUBLIC UZBEKISTAN UNDER  
CONDITIONS OF THE ECONOMY DIGITALIZATION**

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**Abstract:** This article reveals the issues of improving the methodology of statistical performance of the Republic of Uzbekistan in reliance upon the use of advanced information and communication technologies within the framework of the economy digitalization. The author proves that the formation of a digital economy requires development of new efficient methods using innovative technological mechanisms, tools for effective organization of an integral system for collecting, processing, analyzing, disseminating and storing official statistical data, as well as optimizing statistical performance by integrating departmental databases into unified data management system.

**Key words:** digital economy, methodological solutions, advanced information and communication technologies, optimization, efficiency, information processing tools, network data processing, digital methods and tools for processing statistical data.

**Introduction**

Formation of the digital economy on a global scale makes a great impact on the transformation of the activities of business entities and, accordingly, modifies the methodology for organizing information processes in industries and spheres of the economy. The President of the Republic of Uzbekistan Sh.M. Mirziyoyev, in his Message to the Oliy Majlis made on January 24, 2020 has noted that in order to achieve advanced results in the country’s economic development, it is required to master digital knowledge and information technologies, which will provide an opportunity to follow the shortest path to achieving progress. Proceeding from this fact, accelerating the transition to the digital economy will be our priority for the next five years.

In order to consistently continue and bring to a new, modern level the activities which we have commenced to develop the field of science and education, educate our young people with personalities with deep knowledge, high culture and spirituality, and form a competitive economy, the President proposed to declare 2020 in our country the Year of Science Development, education and digital economy.

Practice illustrates that currently statistical industry represents an important strategic area for the development of the country’s national economy. Effective functioning of this industry contributes not only to obtaining objective statistical data on the activities of all subjects of the national economy, but also to enhancing national competitiveness in the global economic space. It should be noted, that in this process it is crucially important to use advanced information and communication technologies (ICT), which enable to obtain high-quality scientific achievements in fundamental and applied sciences aimed at the development of industrial production, agriculture, education, health care, services, creating new jobs, protecting the environment. and improving the social sphere in the context of the formation of the digital economy.

Currently ongoing reforms and transformations implemented in the national economy of the Republic of Uzbekistan, the program of comprehensive measures to conduct a population census in 2022, which will provide accurate information on the population of the country, its age and gender structure, welfare, and other socio-demographic characteristics, impose new requirements on the methodology effective application of advanced ICT in the statistical industry.

Improvement of the methodological foundations of statistical activities contributes to the solution of the objectives determined in the Decrees of the President of the Republic of Uzbekistan PD- 4947 “On the Strategy of Actions for the Further Development of the Republic of Uzbekistan” dated February 7, 2017 [1], PD-5544 “On the Strategy of Innovative Development of the Republic of Uzbekistan in 2019-2021” dated September 21, 2018 [2], the Resolution of the President of the Republic of Uzbekistan “On measures to further improve and develop the national system of statistics of the Republic of Uzbekistan” dated August 3, 2020 [32], the Resolution of the President of the Republic of Uzbekistan PR-4273 “On additional measures to ensuring openness and transparency of public administration, as well as increasing the statistical potential of the country” dated April 9, 2019 [3], the Resolution of the Cabinet of Ministers No. 690 “On approval of the regulation on the State Committee of the Republic of Uzbekistan on Statistics” dated September 2, 2017 [4], the Resolution of the President of the Republic of Uzbekistan PR-3832 “On measures to develop the digital economy in the Republic of Uzbekistan” dated July 3, 2018 [5], the Resolution of the President of the Republic of Uzbekistan PR-4642 “On measures for the widespread introduction of digital technologies in the city of Tashkent” dated March 17, 2020 [6] and the Resolution of the President of the Republic of Uzbekistan PR-4699 “On measures for the widespread introduction of the digital economy and electronic government” dated April 28, 2020.

Taking into account fundamental objectives of the above documents, we believe that in the State Committee of the Republic of Uzbekistan on Statistics (Goskomstat) it is necessary to continue measures to improve the information systems of the industry based on the use of advanced technological solutions (Big Data, blockchain, wireless technology, virtual and augmented reality, distributed registry systems, robotics, sensorics, etc.), integrate all existing information systems

and software modules into a single interaction format in order to optimize information exchange procedures between systems and databases with minimal human intervention, ensure synchronization of the work of various ministries and departments in a single information space, to optimize management processes in order to solve problems that allow effectively implementing the “Digital Uzbekistan-2030” program. This justifies the relevance and urgency of the topic of this article.

### **Literature analysis on the topic**

A great deal of scientific works by foreign and domestic authors is devoted to the issues of improving the methodology for the efficient use of ICT in various industries and spheres of the national economy.

A great contribution to the development of the theory of effective application of ICT in management processes has been made by such foreign scientists as N. Winner, K.S. Loudon [8], O. Machlup, J. F. Neumann, M. Hammer, C. Shannon, W. Ashby. The scientific work of N. Couldry and A. Powell [9] has been devoted to a multifaceted analysis of the concept of “large databases”, as well as it presents historical chronology of the emergence of this concept in scientific research. Such scientists B. Hesse, R. Moser and W. Riley [10] consider the possibilities, threats and technologies of introducing big data into the modernization of social processes, J. Frith emphasizes that when using big data, it is essential to remember about their interpretation and communication for more optimal processing of information [11].

In addition, Russian scientists in their scientific researches refer to the study of the effective use of modern ICT in the activities of economic entities, as well as in the development of innovative methodological solutions and technological mechanisms based on the use of advanced ICT within the framework of the digital transformation of the global economic system. Among them there are such researchers as A. Aganbegyan [12], G.N. Andreeva, V.M. Bondarenko [13], A.M. Venderov [14], S.Yu. Glazyev, V.M. Glushkov, A.I. Doljenko [15], V.P. Kosarev [16], S.P. Kutsenko, L.V. Lapidus [17], B. Panshin [18], A.N. Romanov, Yu.F. Telnov [19], G.A. Titorenko, N.P. Tikhomirov, V.V. Trofimov, E.V. Shkarupeta, etc.

A whole range of scientific research by domestic specialists is devoted to solving the issues of the effective use of ICT in the sectors and spheres of the national economy of the Republic of Uzbekistan within the framework of the formation of the digital economy. These are, in particular, the scientific papers of such scientists as A. Abdugafarov, R.Kh. Alimov [20], R.Kh. Ayupov, B.A. Begalov [21, 22], T.F.

Bekmuratov, A.B. Bobojonov, S.S. Gulyamov, R.A. Dadabaeva, Sh.U. Djanadilov, A.I. Doljenko, V.K. Kabulov, A.T. Kenjabayev, T.S. Kuchkarov, A.A. Musaliev, Sh.G. Odilov, B.Yu. Khodiev, T.Sh. Shodiev [24], A.T. Shermukhamedov and others.

Herewith, despite the wide coverage of scientific research on informatization processes, the use of modern technological solutions in the activities of various industries and sectors of the economy, including the situation in Uzbekistan, many issues are still beyond the scope of study or have not been comprehensively developed. Thus, the issues of improving the methodology of using ICT in the statistical activities of the Republic of Uzbekistan within the framework of the formation of the digital economy still remain disputable. The relevance and insufficient elaboration of the problem has enabled to determine the topic of this article.

### **Analysis and results**

“Methodology is the logical organization of human activity constituting determining the goal and subject of research, approaches and guidelines in the way of its implementation, the choice of means and methods that provide the best result. Any human activity is characterized by methodology. However, in research activities methodology plays a decisive role in success”.

In reliance upon this statement we can formulate the following definition of the digital transformation methodology.

The digital transformation methodology is a system of theoretical knowledge, provisions, concepts and limitations that find their confirmation in a complex of contemporary methods, tools and techniques both within individual economic objects and industries and within the socio-economic system as a whole.

The goal of digital transformation is to create conditions for the systemic transformation of industries and spheres of the national economy based on the efficient use of digital technologies and innovative solutions to gain competitive advantages in the economic market and the entry of industries and spheres of the national economy into a single global information space. The main stages of digital transformation are illustrated in Figure one.

As evidenced by studies of contemporary scientists, at present, several main approaches to the digital transformation of socio-economic systems have been identified: process, sectoral, technological.

So, the process approach implies a change in the production process, in which each individual element of the production chain is digitized using special digital transformation tools.

The basis of the sectoral approach in the context of digital transformation is cross-sectoral ties, which enable implementation of advanced ICT in order to create a single digital space.

With a technological approach, the basis is a set of advanced technological solutions, which implementation in industries and spheres of the economy ensures their transition to the digital space.

Experience has shown that the demand for statistics is changing at different levels, while at the same time new opportunities for statistical processing and data analysis are emerging, based on the use of advanced ICTs. Herewith, there is a need for statistical measurement of the development of the digital economy.

Along with this, it should be noted that digitalization of the economy is possible only if the following conditions are met:

- creation of digital resources within an integrated information system;
- development of mechanisms for the implementation and functioning of digital platforms;
- creation of favorable conditions for the effective functioning and continuous development of digital platforms and services.

In this regard, the core business processes for collecting, processing and issuing statistical reports to end users at their requests have been reconsidered in the statistical industry of the Republic of Uzbekistan.

Currently, in the State Committee of the Republic of Uzbekistan on Statistics, a special section has been created with the address <https://lib.stat> to study and comply with the methodological principles necessary for the collection, processing, storage and dissemination of statistical information on the official portal - [www.stat.uz.uz/ru/](http://www.stat.uz.uz/ru/) - Electronic library of teaching materials “e-stat Library”.

All of its pages, including the Electronic Library of Methodological Materials, are of a dynamic character. Informing users on the pages is implemented on the basis of a database. However, direct access of users to this database is not provided, and all tables with indicators for various fields of activity are formed by specialists in advance and are laid out on the site in the form of files of various formats.

The electronic library of teaching materials has several sections:

- general materials, including 146 methodological units of information;
- active materials, their list includes 116 items;
- documents that have expired, and their number currently constitutes 30 units.

In addition, on this page there is “Contacts” section, which provides an opportunity at any time to contact the specialists of the State Committee of the Republic of Uzbekistan on Statistics and obtain comprehensive information on methodological issues of interest.

The methodological materials of the electronic library are presented in the form of various formats: Adobe Reader files, files in MS WORD format, files in MS Excel format, files in archive formats, for example, zip-archive or rar-archive, in the form of video clips, etc.



Nowadays a whole set of documents is used as methodological materials for the development of information systems and technologies in the State Committee of the Republic of Uzbekistan (Table 1).

**Table 1.**

**Basic methodological documents on the development of  
information systems and technologies  
in the State Committee of the Republic of Uzbekistan on Statistics**

<b>No</b>	<b>Title of the document</b>	<b>Aim of the document</b>
1	State standard Republic of Uzbekistan “Terms of reference for the creation of an information system”	This standard applies to the created and modernized information systems and establishes the composition, content and rules for drawing up technical specifications thereto.
2	State standard Of the Republic of Uzbekistan “Requirements for data centers. Infrastructure and provision of information Security”	This standard establishes requirements for the design and installation of data centers, including the layout of the premises and technological structure with the account of the requirements for ensuring information security
3	State standard Uzbekistan “Software Life Cycle Processes”	This standard establishes the general structure of software life cycle processes that can be guided in the software industry, determines the processes, activities and tasks that are used in the acquisition of a system and the provision of software services, as well as in the delivery, development, operation and maintenance of software products. In addition, this standard defines a process that can be used in defining, controlling and upgrading software lifecycle processes.
4	Technical requirements for buildings and structures for installation of computer equipment	This document regulates technical requirements for server rooms, buildings and structures for the installation of computer equipment and is intended to implement a unified approach to ensuring the required stability of the functioning of computer and telecommunication equipment
5	Methodology for conducting an external audit of information security	This methodology establishes requirements for the procedure for conducting information security and preparing a report on the results of an information security audit.

Source: Compiled by the author based on data from the State Committee of the Republic of Uzbekistan on Statistics

The state standards, methods and technical requirements indicated in this table constitute the methodological basis for the development, implementation, modernization of information systems and technologies in sectors and spheres of the national economy, including in the statistical sector of the Republic of Uzbekistan.

Web-technology tools help any user to study the methodological materials of the electronic library. Upon request this site resource enables to select one or another indicator and get its economic content and calculation methodology. In addition, the methodological materials show on the basis of what legal documents these methods are developed, who can be their user, and who is the direct executor.

For example, according to the statistics of telecommunications activity, it is possible to find out that the indicator “The number of subscribers with access to the Internet” in different sections (for fixed, broadband or wireless access) helps to assess the level of development and access to the World Wide Web, and the indicator “The number of subscribers mobile telecommunication networks per 100 people” shows the level of development of cellular mobile communications, etc. According to statistics of science and innovation, for example, you can get an exhaustive answer to the question about the level of innovative activity of organizations.

### **Conclusion and recommendations**

The study has shown that a scientifically developed methodological base is crucially important for the efficient development of the statistical industry. Currently, the State Committee on Statistics has a number of methodological materials of international statistical organizations, methods for calculating the main economic indicators, as well as one-time accounting methods. On the basis of these methodological methods and materials the issues of analyzing the economic potential and studying the living standards of the population are solved. Moreover, the study has revealed that in the State Committee of the Republic of Uzbekistan on Statistics, methodological materials are ordered by special sections and are located on the official website. Access to industry teaching materials is possible around the clock in the section “Electronic library of teaching materials” –“e-stat Library” on the official portal of the State Committee of the Republic of Uzbekistan on Statistics. The complex of methods is constantly being improved in compliance with relevant statutory acts and international statistical standards.

Improving the methodological base in reliance upon the use of advanced ICT and digital technologies will enable official statistics to promptly provide information on such topical issues as introduction and demand for digital technologies; dynamism of the development of the digital economy within the framework of industries and spheres of the national economy; demand and availability of products and services necessary for the comprehensive development of the digital economy; employment and labor productivity in terms of the use of modern ICT; assessment of budget expenditures for the implementation of state policy measures in the field of efficient formation of the digital economy; impact of the digitalization of society on social development; assessment of the advantages and constraints of the competitiveness of the national economy in the global digital world, a gradual transition to Big Data technologies.

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