

Sources of synergy in state budget digitalization of the Kyrgyz Republic

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Abstract. The course towards the “digitalization” of the state’s entire economy which implies a comprehensive coverage with penetration into economic activity and the digital technology system is currently the main course of the post-industrial society. The processes of digitalization and transparency of budgetary relations aim to address issues related to the efficiency of budget spending and the optimal functioning of the state apparatus. Transparency of the given processes helps to reduce transaction costs, tackle corrupt practices and contribute to saving budgetary and other resources. Thus, digitalization of the state budget significantly increases the economic effect as a result of the sharing of individual elements of the system. The expected positive results in the digitalization of budgetary processes in the Kyrgyz Republic are classified as follows: savings on material costs; ensuring a minimum space in the functioning of public finances; reduction of time losses in obtaining, processing, storing and transmitting the relevant data; increasing the adoption of high-quality management decisions; EDS owner identification, etc. Therefore, the action of all these positive elements will become a source of a synergy effect in the process of the state budget digitalization.

1 Introduction

It is worth mentioning that the process of digitalization has been globalized which makes it possible to fundamentally restructure the entire system of social reproduction, including all its phases, “productive forces” and the “production relations”. All this creates conditions for the development of a new form of social environment based on digital technologies.

Therefore, digital transformation is becoming a system process in terms of regulating interactions of social reproduction (phases of production, distribution, exchange and consumption) and the production factors. The patterns of digital transformation include the active involvement of production flows, processes of distribution, exchange and consumption. The dominant phase of the reproduction process in the entire economic history of development is the production of goods and services, aimed at maximizing the satisfaction of society’s needs. Thus, “production” is seen to be carried out for “consumption” and both phases are interconnected by feedback despite their functional

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inconsistency. This stimulates production and sets new directions for its development, determining the required volume of social product [1].

Since the financial system of the state covers all spheres of state activity and opportunities are provided by the formation of the country's budget, failures in it can lead to disruption of all areas of the reproduction process, even a change in the political situation in the country.

The distribution phase can be considered as peculiar forms inherent to a particular time of economic development of the main factors including form of ownership, social and state institutions. All these directly affect the productive forces of society and the production relations. Thus, in the conditions of commodity-money relations finance has a major influence on the reproduction process of society and the country as a whole [2].

One of the main roles of the state budget is aimed at the socio-economic development of the country and is manifested in the formation of funds that ensure the functioning of state bodies for the implementation of all its functions. The essence of the state budget as an economic category is manifested through the functions performed, which are implemented to a greater extent in the process of generating income and expenses based on the use of the budget process [3].

The budget process is implemented through the budget mechanism, which, being an integral part of the financial mechanism, is a set of types and forms of organization of budget relations, specific methods of mobilizing and spending budget funds, principles of planning and financing, conditions and methods for exercising financial control [3].

The budget mechanism ensures the full implementation of the budget process and has sufficient mobility for timely and adequate impact on the budget system, taking into account the current operating conditions. In addition, it closely depends on the specific socio-economic situation of the state.

The budget process can be briefly described as the process of formation, approval and execution of the budget. The participants in the budget process include:

- bodies of legislative and executive power;
- tax authorities and other organizations that collect and administer budget revenues;
- monetary authorities (NBKR and commercial banks);
- financial control bodies (Accounts Chamber of the Kyrgyz Republic);
- the principal managers and administrators of budgetary funds;
- a wide network of budgetary institutions and other enterprises – recipients of budgetary funds;
- other organizations carrying out operations with budgetary funds [4].

Thereby, the budget process consists of several stages including drafting budgets; approval of draft budgets; execution of budgets and control over the execution of budgets and a report on the execution of budgets.

2 Materials and methods

Large amounts of information are used in the process of formation and execution of the budget. With traditional technology, they are processed with a significant involvement of manual labor and require a huge army of accounting workers both in government bodies and in organizations using budgetary funds [5].

To overcome the above difficulties, which may be characterized by large current expenditures for the “maintenance” of the state budget, the creation of an automated information system for managing public finances, which constitute the material basis of the budget was suggested. The process of creating an automated information management of public finances can be divided into two stages. The first stage is related to automation of public finances and its territorial financial departments, in which the treasury departments

have been created. The second stage affects the principal managers, administrators and recipients of state budget funds.

Treasury bodies participate at the stage of budget execution, performing cash services for public expenditures. In order to optimize all budgetary processes in the country there is a need to transfer the implementation of the financial activities of the state from the traditional form to its digitalization [6].

Digitalization of the state budget results in:

- making the implementation of budget stages more flexible and, therefore, less costly in terms of time and material costs;

- ensuring the efficiency of obtaining information about the state of the government's budget in real time or making decisions at all its stages [7].

Considering the present level of development of the Kyrgyz Republic, the end-to-end process of data transfer between the main information systems, uniform standards of work, unified accounting and control as a result of the introduction of such tools as the "Unified Budget Application" and "Unique Identifier" will increase the speed of current operations, preparation and decision-making [8].

Thus, it should be noted that the main trend towards the transition to digitalization was determined by mobile technologies, cloud computing, business intelligence and social networks. However, these technologies are no the complete list that determines the process of the economy digitalization.

According to contemporary experts and scientists, the main components that determine the transition to digitalization also include: e-commerce, Big Data technology, artificial intelligence and digital currency. Combined, these technologies are leading the world economy to a new industrial transformation, which is called Industry 4.0 [9].

The technologies of cyber-physical systems (GPS) and the Internet of Things (IoT) contribute greatly to economy digitalization. The technologies mentioned above and their transformation in this area has led to new high-quality opportunities for automating all production processes at minimal cost while increasing their efficiency and the quality of decisions made which leads to a synergy effect.

The technologies that have contributed to digital transformation include:

- Artificial intelligence (AI);
- "Big data" (Big data);
- E-commerce;
- Cloud technologies;
- Internet of things (IoT) and things for industrial use (IIoT);
- Blockchain;
- Robotics;
- 5G;
- Goal setting technologies (SMART);
- Technology of augmented and virtual reality [10].

According to Davenport Ronanka, artificial intelligence affects a number of industries, such as healthcare, financial services and education and makes them less costly for the society, while improving their quality and work efficiency, by introducing automation into their operating processes and cognitive technologies [11].

3 Results and discussion

According to the results of the analysis the main components of the digital economy for Kyrgyzstan today are consumption/electronic commerce, investment in development, public administration, and export-import activities.

The largest share in the total volume of the digital economy is consumption as a form of virtual commerce. UNCTAD estimates that the global value of e-commerce reached \$29 trillion in 2017, equivalent to 36% of GDP [12]. This corresponds to a 13 percent increase over the previous year. Virtual commerce is most widespread in the segments of household appliances and electronics, clothing and footwear, furniture and household goods. These categories account for 80% of the e-commerce market.

Until 2026 Kyrgyzstan will have implemented some new projects which include:

- 1) launch of the national educational program “Systematic improvement of digital competencies of civil servants to support digital public administration”;
- 2) launch of the project “National digital ecosystem through integrated smart platforms / information systems”;
- 3) full functioning of the unified State portal of electronic services;
- 4) launch of the “Smart City” phase as a continuation of the “Safe City” project;
- 5) implementation of the system of digital interaction “State Citizen”;
- 6) completion of the process of automating business processes in state bodies and local governments;
- 7) launch of the Open Data portal;
- 8) deployment of G-cloud;
- 9) launch of the project “Artificial Intelligence as a Big Data Base”;
- 10) adoption and implementation of the concept “Digital Economy of the Kyrgyz Republic” [13].

The full-scale use of all the possibilities of digital technologies in the implementation of budget processes will result in:

- reduction of expenses for material carriers of information (paper document);
- reduction of space for the implementation of the budget process (all information on expenditures and revenues of the state is stored not on paper, but on servers);
- saving the time spent on receiving, processing, storing and transmitting relevant information;
- increasing the reliability of information, reducing errors in planning – i.e. accompanied by processes of automation and assignment of the “human factor” to decision-making;
- computerization made it possible to process a huge amount of data when comparing planned and actual indicators and simultaneously exercising control over them;
- increasing the speed of coordination and approval of budget targets;
- reduction of the risk of losing critical documents;
- improving the quality and efficiency of managerial decision-making;
- generating reliable information about the execution of the budget;
- allowing the financial system to be transparent with five incentives to reduce the indicators of the cost part of the budget;
- transition to a legally significant document flow, when through an electronic digital signature (EDS) a personal responsibility is formed for its owner [14].

Thus, all of the above positive results lead to a personnel problem. Specialists who previously provided the collection of information should move on to its analysis, identify patterns, risks, and be able to turn information into knowledge [15].

Based on the presented material, we propose our own definition of the digital economy which describes “Digital economy” as the introduction of digital technologies into social reproduction, which qualitatively changes and increases the possibilities of the productive forces and production relations of society. Thus, digital technologies positively affect not only the productive forces, but also production relations so that the interaction of these components of social reproduction serves as the source of synergy in the economy.

4 Conclusion

This study discusses the sources of synergy in the process of state budget digitalization and the synergy effect resulting from the use of digital technologies in the Kyrgyz Republic.

Electronic governance of the Kyrgyz Republic should be implemented not only by state or municipal authorities. It is necessary to systematically carry out the transition of business structures to the e-government system of the state so that commercial organizations are also interested in promoting digital Kyrgyzstan.

Automated systems will enable electronic traceability of goods and services including electronic document management system. Innovative solutions (financial technologies) will be introduced to provide traditional financial services. Measures to modernize state information resources and technical infrastructure, the state portal of electronic services, the unified identification system, the state system of electronic messages, the state system of electronic payments must be completed.

It is necessary to maximize the introduction of banking technologies and the full automation of procedures for planning and executing the state budget. The transition to modern technologies will eliminate many functions within the government.

The processes of digitalization and transparency of budgetary relations aim to address issues related to the efficiency of budget spending and the optimal functioning of the state apparatus. Transparency of the given processes helps to reduce transaction costs, tackle corrupt practices and contribute to saving budgetary and other resources. Thus, digitalization of the state budget significantly increases the economic effect as a result of the sharing of individual elements of the system.

In addition, the digital transformation and automation of many of the processes described helps citizens to focus on high-level tasks related to creativity, scientific activity and self-development, and to solve routine and repetitive tasks in the most effective way. As a result, the country must enter a new course of interaction in the production of goods and services in terms of economic, cultural, technological and social relationships. This will also contribute to the development of creative industries that include national heritage, fine and theatrical arts, new audiovisual media and functional design, and an expansion of other creative services.

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