DIGITAL TECHNOLOGIES IN ACCOUNTING AND TAXATION: SOME ISSUES FROM RUSSIAN LITERATURE AND EXPERIENCE

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Abstract

The article examines the prospects for the use of modern digital technologies, such as blockchain, in accounting, auditing and taxation. Also, the practice of applying digital technologies by Russian tax authorities analysed in the article as a possible basis for the introduction of blockchain in tax administration.

Keywords: audit, digital economy, taxation, trust digital technologies, blockchain.

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Introduction

The digital economy is a collective image of major innovations, the invasion of digital technology into production and social life. The largest innovations in the digital economy are: the formation of artificial intelligence and robotics, crypto-currencies, "smart factory", "smart city", "smart things", blockchain etc.

There is the question of the reaction of the accounting sphere to the global digitalization of the client base, the economic activity and the foundations of life.

Positive elements of the development of digital technologies for the accounting environment are the following: increasing of transparency's level of information; the accuracy of its tracking; permanent registry; reduction of processing costs of mega data; increasing of the public confidence level in the results of the audit. As negative and weakly predicted moments, we can note: a complex digitalization technology; unpredictable regulatory and social consequences; the need to develop new standards; the formation of new forms of trust and control on a reciprocal basis.

The effect of blockchain on accounting practices

One of the promising areas of application of digital technologies in accounting is the idea of blockchain. Beginning in 2009, the blockchain principle is seen as a potentially new information-transforming technology, which may prove to be as revolutionary as the Internet. Originally developed as a methodology for recording crypto-currency transactions, blockchain becomes the basis for a large number of applications, in such areas as banking, financial markets, insurance, voting systems, leasing contracts, etc. However, at the present time, the widespread use of blockchain in accounting and auditing does not yet exist, in addition, even there is not much discussion on this direction in order to determine the limits and problems of using the new technology.

Structuring the development of blockchain looks like this:

1. blockchain 1.0 is the currency. Crypto currency is used in various applications related to money, for example, the system of transfers and digital payments.

2. blockchain 2.0 is a smart contract. Entire classes of economic, market and financial applications, based on blockchain, work with various types of financial instruments - with shares, bonds, futures, mortgages, titles, smart assets and smart contracts.

3. blockchain 3.0 is a smart company. Applications, the scope of which goes beyond monetary calculations, finance and markets. They extend to the spheres of public administration, health, science, education, culture and art.

There are different opinions about the advantages of using the ideas of blockchain in accounting and auditing.

Firstly, the idea of blockchain is considered as a blocking fraud system that can form a real, proven and transparent accounting ecosystem. In addition, it is believed that blockchain has the potential to transform the current practice of auditing, as it provides an accurate, timely and automatic system of assurance (Dai, 2017).

Blockchain makes it possible to significantly optimize the processes of not only accounting, but also audit, while ensuring higher yields.

Using modern cryptographic methods for implementing distributed systems, allows you to quickly process transactions in the face of potential lack of trust between the parties. The idea of blockchain is that it is a public register that uses a peer-to-peer approach to create a chronological database of transactions using the "append" approach, which allows you to preserve the persistence of distributed information.

The characteristics of blockchain are: a distributed database, which forms a single common mapping of transactions; cryptographic protection functions; Strengthening trust through transaction confirmation by all process participants in real time; "Smart contracts", which are based on the complex business logic of creating common agreements. These characteristics of blockchain can be used to collect and process transactions in accounting and auditing for the formation and tracking of the supply chain and other types of transaction information. Despite the fact that the focus is on peer-to-peer and public versions of blockchain, some authors are already paying considerable attention to cloud and private configuration versions and are exploring the possibility of using them (O'Leary, 2017).

In the economic literature, the development of the digitalization of the economy is associated with the analytical and temporary expansion of reporting formats (integrated reporting, sustainability reporting and social responsibility, etc.) causing continuous audit.

"Moving corporate reporting to the Internet will inevitably lead to an increase in the speed of publication of reporting data and the frequency of their updating. Continuous reporting will require continuous real-time audits.

Continuous audit is not simply increasing the duration of the work and its pace in order to confirm the reliability of an endless flow of heterogeneous data after they appear. It is rather the audit of systems and processes for generating information.

Guarantees will apply to how information is generated. At the same time, continuous audit will serve both internal and external purposes." (Bulyga, 2011) In this regard, it is very important to understand what the role is played by blockchain in the system of continuous accounting and auditing.

Creating a new form of continuous audit instead of discrete, the main focus should be on the following tasks: improving the quality of the audit; innovations in the audit, changing the methods of selective research based on digitization processing the entire information array of the

client; training of auditors, combining testing and consulting technologies; strengthening the actualization of the work of the auditor, shifting the emphasis from retrospective to promising information.

As a result, a modern audit based on: past time, financial investigations, retrospectivity, sample analysis, hypotheticality and subjectivity of results on the totality of collected evidence will pass to a new ecosystem. In the realities of the digital economy, continuous auditing will become possible, which will use: real-time mode, inalienability, efficiency and forecasting, the totality of information, the formation of trends at the macro level, the objective results on the totality of the collected evidence (PricewaterhouseCoopers, 2017).

Technological development of the application of control, analytical and detailed testing within the preconditions of reliability requires serious methodological developments in this field on the basis of digitalization and artificial intelligence. We can assume that the development of control testing, consisting of two typological tests: tests for the presence of control and tests for the effectiveness of control, will go in the direction of evaluating prospective and diverse information about the activities of the client. Particular importance will be given to technologies for risk assessment and formation of control matrices. Analytical testing, as a form of comparison of aggregative indicators, is likely to be affected by artificial intelligence in the formation of test legends. The blockchain technology should be used in carrying out detailed testing. This is the most time consuming direction. It is here that the transition from selective observation of specific accounting operations to the verification of the entire array should take place without loss of quality and with a minimal risk of significant distortion.

The application of such an audit approach should be the result of a change in the organization of accounting for companies. The use of block-chains should be naturally applied in the accounting practice of companies. Due to the ease of information transfer and automatic tracking of each transaction, the block-chain can simplify and partially automate the accounting elements and simplify the work with new global clients. Due to this, the block-chain can change the nature of the audit, reducing the role of the auditor in verifying and confirming the account transactions and instead moving them further the value chains. Changing approaches in the most time-consuming spheres of audit audit will allow auditors to focus on manual elements of audit (Boillet, 2017).

The practice of applying digital technologies in tax administration

How the application of technologies has an impact on the architecture of accounting practices and how to verify the information reflected in it can be traced back to the results of the application of digital technologies in the tax sphere. In recent years, Russian tax authorities have begun to actively introduce digital technologies into the practice of day-to-day tax administration: huge centers for the accumulation and processing of information are being created, and the introduction of digital technologies is realized through the creation of specialized online services that allow for the account of economic operations carried out by the entity with direct control of tax authorities . The first step was to build technological capabilities and obtain information in the amounts needed to use large data technologies. In total, in the information system of the Federal Tax Service of Russia, at present, four petabytes of data are stored and processed. Two data centers have been built to store and process this data. According to representatives of tax authorities, the use of Big Data technology conceptually changed the approach to conducting control checks, minimizing the impact of the human factor.

Widespread introduction of computer technologies allowed the tax authority to significantly increase the collection of tax revenues in the budget system of the Russian Federation. As can be seen from the data presented in Table 1, during the crisis of 2008, revenues to the budget system

of the Russian Federation showed a significant reduction. At the same time, the crisis phenomena of 2014-16 are not accompanied by a decrease in revenues to the budget system. We see the opposite trend - the amount of tax revenue continues to increase.

Table 1. The receipt of taxes and fees in the budgetary system of the Russian Federation by main types of economic activity.

2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
5 441	6 967	7 967	6 307	7 687	9 733	10 952	11 322	12 606	13 707	14 387

Source: https://fedstat.ru/indicator/42547

The practice of applying digital technologies to the tax authorities includes the use of the automated system "ASK VAT-2", which automatically compares counterparty data and performs control functions based on a risk-oriented approach, marking goods, primarily fur products, and introducing online cash registers (The Federal Tax Service, 2018).

Thus, it can be seen that the first experience of introduction of digital technologies in the tax sphere allows to increase the collection of taxes. Further examples of the implementation of digital technologies in determining tax bases can be proposed in the construction of VAT chains, tax-free, etc.

The use of computer technology has made it possible to significantly expand the composition of tax reporting, primarily relating to such a tax as a value-added tax. Thus, the tax authorities now have access to the taxpayer's internal information on the composition of business transactions, which allows further comparison of the information obtained from one taxpayer with similar information existing with other economic entities. The development of digital technologies makes it possible to change the relationship between the taxpayer and the tax authorities. In the Russian Federation, where the problems of the existence of a significant informal sector of the economy have not been solved, the use of new technologies is a particularly urgent task.

In this case, the question arises as to how these innovations will affect the business environment. To do this, it is necessary to evaluate the impact that digital innovations will have on the existing model of tax administration.

Finding the optimal model of tax administration is an object of study both of theory and practice of tax business. In the 21st century there is a change in the general concept of tax administration - increasing attention is paid to the behavioral aspects and psychology of the taxpayer. The main task is determining the taxpayer's voluntary willingness to pay taxes, as opposed to the previously prevailing concept of a coercive system (Whait, 2014).

Many studies have established a huge impact of the taxpayer's trust in the tax administration on his behavior and his loyalty to the current legislation (Walsh, 2013).

Positive impact and establishment of trust between the taxpayer and the tax authority is considered one of the most effective directions of the organization of the tax service. The goal of implementing this concept in practice is to find a balance between the impact that the tax service exerts on the taxpayer in the framework of building trust relationships and administrative pressure measures that the tax authorities are able to apply (Keen, 2018).

In this context, the impact of digital technologies on the fairness of the tax administration system, it is interesting to consider how the current changes in the Russian tax administration model are perceived by the taxpayer. In the event that the introduction of digital technologies is accompanied solely by an increase in the tax burden, it is logical to expect a negative attitude of economic entities to the tax administration system. In addition, we can expect in this case to build up these negative assessments. If the taxpayer perceives the changing rules of the game as fair, then in this case the majority of taxpayers should positively perceive changing circumstances, since

the use of digital technologies primarily affects those entrepreneurs who previously could avoid paying taxes on their economic operations. In this case, we can expect positive reactions of market participants.

To check how taxpayers react to the introduction of technologies, one can consider such an indicator as the proportion of taxpayers positively assessing the quality of the work of tax authorities. This indicator has been calculated since 2012, but this is enough for our studies, since this period of time there is a rapid increase in the use of digital technologies in the practice of Russian tax administration. The proportion of taxpayers positively assessing the work of tax authorities is growing in the period under study. Recall that this is accompanied by an increase in tax payments to the budget system of the Russian Federation. According to the tax authorities, the proportion of taxpayers that satisfactorily assess the quality of the work of tax authorities from 2012 to 2016, the period of active introduction of digital technologies, increased by eight percent from 75.6% to 83.9%. And this is against the background of crisis phenomena in the economy (EMISS, 2018).

The tax department sees the use of digital technologies in tax administration as a further direction in the use of blockchain. This technology can be an optimal tool for implementing a new practice of tax declaration, primarily VAT. This decision will allow the tax authority to verify the correctness of the transaction at the stage of its implementation and subsequent implementation. Therefore, blockchain can be used to verify controlled transactions. However, the application of these technologies has a downside, because there are huge problems with the confidentiality of information. Since all information in this situation is fully available for online verification.

Concluding remarks

The blockchain technology is undoubtedly a breakthrough in improving the payment system and, in general, the business organization. The blockchain system able not only to improve an economic environment, but also radically change accounting and fiscal tools, since the cipher into which the transaction message is transformed is almost impossible to fake.

From the point of view of the impact on the methodology of accounting, auditing and taxation, the blockchain is unique since it is an exhaustive and fully available to check log of operations. The operations carried out in a blockchain journal are strictly recorded in the blockchain technology. And, therefore, they cannot be hidden from the bodies of state supervision and audit. Blockchain allows to fully explore the path of certain transactions.

References

Boillet J. Are auditors ready for blockchain? The audit profession is eyeing blockchain // Accounting Today. 2017. Vol. 31, No. 9. P. 34-34.

Bulyga R.P. Business audit: issues of theory and methodology / / Innovative development of the economy. 2011. № 3.

Dai J., Vasarhelyi M.A. Toward Blockchain-Based Accounting and Assurance // Journal of Information Systems. 2017. Vol. 31, No. 3. P. 5-21.

EMISS. The proportion of taxpayers that satisfactorily assess the quality of the work of tax authorities. - 2018. - URL: https://www.fedstat.ru/indicator/43464.

Keen M., Fund I. M., Slemrod J., Economics, jslemrod@umich.edu. Optimal tax administration // Journal of Public Economics. 2018. Vol. 152. P. 133-142.

Mishestin M. The Federal Tax Service of Russia uses breakthrough technologies to meet the new requirements for the tax system / FNS / 77 city of Moscow. 2018. URL: https://www.nalog.ru/rn77/news/activities_fts/6973314/.

O'Leary D. E. Configuring blockchain architectures for transaction information in blockchain consortiums: The case of accounting and supply chain systems. Intelligent Systems in Accounting Finance & Management. 2017. Issue 24, No. 4. P. 138-147.

PricewaterhouseCoopers. Audit of blocking decisions // 2018. URL: https://www.pwc.ru/en/publications/blockchain-assurance.html.

The Federal Tax Service. Mikhail Mishustin spoke about the latest digital technologies in tax administration at the joint international seminar OECD and IOTA / FNS / 77 in Moscow. 2018. URL: https://www.nalog.ru/rn77/news/activities_fts/6967758/.

Walsh K. Understanding Taxpayer Behavior - New Opportunities for Tax Administration // The Economic and Social Review; Vol. 43, No 3, Autumn (2012). 2013.

Whait R. B., Exploring innovations in tax administration: A Foucauldian perspective on the history of the Australian Taxation Office's compliance model. - 2014. P. 130-161.