AUTOMATION OF TAX ADMINISTRATION WITH THE HELP OF THE INTERNET OF THINGS: PROS AND CONS FROM THE POSITIONS OF ECONOMIC EFFECTIVENESS

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Abstract.

The Internet of Things (IoT) offers unprecedented opportunities in the field of automation of tax administration, thanks to which the technical devices of users (individuals and organizations) will independently transfer information to the tax authorities and receive from them relevant information - while the person (both as a user and as an organizer -controller) will be completely eliminated from the tax administration process. However, this raises the problem of ensuring the economic efficiency of automation of tax administration by using the Internet of things. This work is devoted to a thorough study and search for a solution to this problem. The paper carries out qualitative research on the basis of the method of logical analysis (analysis of cause-effect relationships) and the method of modeling socio-economic processes and systems. As a result, the example of modern Russia shows that automation of tax administration on the basis of the Internet of things is a contradictory measure of economic reform leading to various consequences for stakeholders. The state will take advantage of their growth in federal budget revenues at low costs of creating artificial intelligence and its subsequent use (these costs will be comparable to current costs for tax administration). However, entrepreneurial structures and consumers will incur additional costs. This is likely to lead to a decrease in the volume of solvent demand in the economy and a decline in business activity. To avoid this, risk management of the automation of tax administration based on the Internet of things is recommended.

Keywords: automation, tax administration, Internet of things (IoT), economic efficiency.

INTRODUCTION

The Internet of Things opens unprecedented opportunities in the spheres of automation of tax administration, due to which technical devices of users (individuals and companies) will independently pass information to tax bodies and receive current information from them – at that, human (as user and as organizer and manager) will be eliminated from the process of tax administration. However, there will arise the problem of provision of economic effectiveness of authomatization of tax administration with the help of the Internet of Things. This work is devoted to comprehensive study of this problem and search for its solution, as well as determination of expedience of authomatization of tax administration with the help of the Internet of Things from the positions of economic effectiveness.

MATERIALS AND METHODS

The essence of the process and necessity for tax administration are emphasized in multiple works of modern scholars, which include (Dale, 2018) and (Olivares, 2018). Opportunities and perspectives of application of the Internet of Things for optimization of economic activities, including state regulation of socio-economic systems, are discussed in (Bures et al., 2019), (Lopez-Castaño et al., 2019), (Kuila et al., 2019), and (Guidi and Ricci, 2019).

The performed content analysis of the existing works showed that the topic of authomatization of tax administration with

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the help of the Internet of Things has been studied fragmentarily. In previous studies, we determined wide perspectives for optimization of tax administration on the basis of new information and communication technologies (Gashenko et al., 2018) and (Gashenko and Zima, 2017).

However, the Internet of Things is a specific technology that goes beyond the limits of evolutional digitization, as it envisages usage of artificial intelligence. That's why we deem it necessary to study the problem of authomatization of tax administration with the help of the Internet of Things. Because of the absence of statistical data due to the Internet of Things being in the process of development, we perform qualitative research on the basis of the method of logical analysis (analysis of causal connections) and the method of modeling of socio-economic processes and systems.

RESULTS

As a result of studying the process of tax administration on the basis of the Internet of Things, we compiled the following conceptual model (Figure 1).

Figure 1 shows that artificial intelligences will be able to fully replace human as a subject of tax administration in the long term. At that, information goes to the data base of the federal tax service automatically.

By the example of industrial goods, this process has the following form. Manufacturer of industrial goods sells the goods to another company that is at the next stage of added value chain and performs this economic operation via online register, which, without human participation, transfers information into the data base of the federal tax service via the Internet of Thins on sales in the form B2B.

After that, the seller of industrial goods, when selling the goods to consumers, performs this economic operation via the online register, which, without human participation, transfers information into the data base of the federal tax service via the Internet of Things on sales in the form B2C. Then consumers use the goods that are equipped with the Internet and these goods pass information automatically into the data base of the federal tax service via the Internet of Things on purchase and usages of goods and their sale in the form C2C.
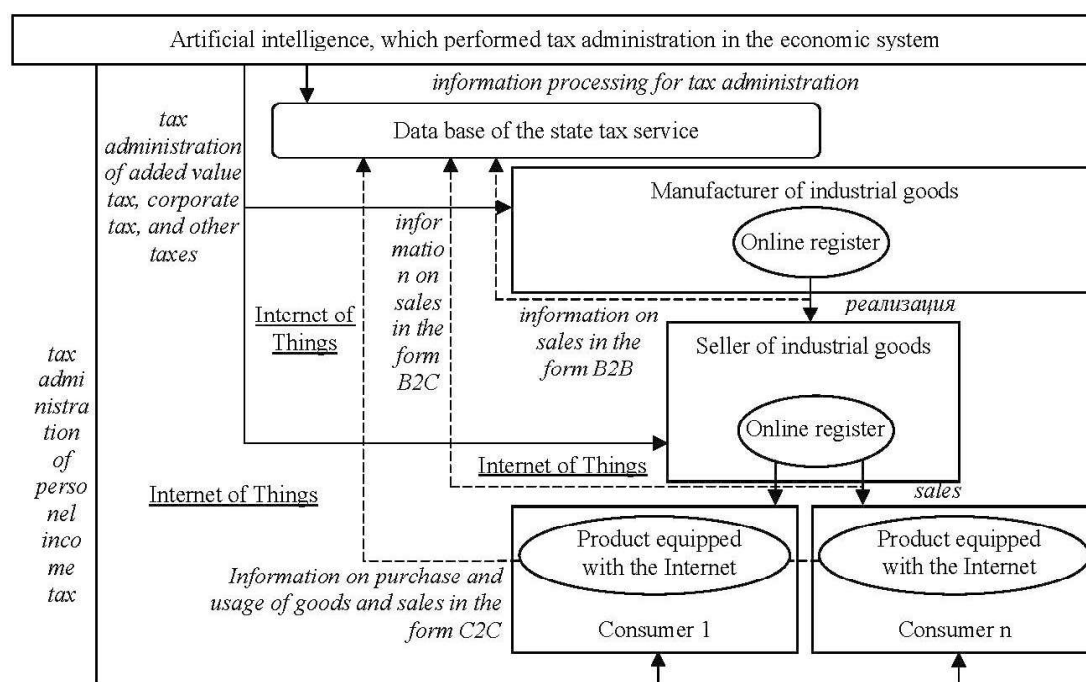

Fig. 1 The model of automatized tax administration on the basis of the Internet of Things
So urce: compiled by the authors

Artificial intelligence, which performs tax administration in the economic system, automatically processes information from the data base of the federal tax service and conducts tax administration of added value tax, corporate tax, and other corporate taxes, as well as tax administration of personal income tax. Due to this, reduction of the volume of shadow economy by 30%, as compared to the 2018 level, will be achieved.

In view of the fact that at present (2018), according to the estimates of specialists of the International Monetary Fund, the volume of shadow economy in Russia constitutes 38.42% of GDP (Medina and Schneider, 2018), positive result from authomatization of tax administration on the basis of the Internet of Things, related to de-shadowization of Russia's economy, will constitute RUB 37.73 trillion (98.2*0.3842). Development of the Internet of Things is conducted in modern Russia as a technology within the Program "Digital economy of the Russian Federation". The volume of financing of this program during the period of its implementation is set at the level of RUB 3.6 trillion (Tadviser, 2018).

Comparison of results and expenditures showed high effectiveness of authomatization of tax administration on the basis of the Internet of Things in modern Russia: 37.73/3.6= 10.48. Therefore, this process is expedient from the positions of economic effectiveness for the state. However, for economic subjects authomatization of tax administration on the basis of the Internet of Things will be related to growth of expenditures. Thus, entrepreneurial structures will bear additional expenditures due to purchase and usage of online registers that are equipped with the Internet of Things, and consumers – due to forced purchase of more expensive industrial goods that have to be equipped with the Internet of Things.

CONCLUSIONS

Thus, it is shown by the example of modern Russia that authomatization of tax administration on the basis of the Internet of Things is a contradictory measure of reformation of economy, which leads to various consequences for interested parties. The state will gain advantages from growth of revenues of the federal budget with low expenditures for creation of artificial intelligence and its further usage (these expenditures will be compatible to the current expenditures for tax administration).

However, entrepreneurial structures and consumers will bear additional expenditures. This could probably lead to reduction of effective demand in economy and decrease of business activity. To avoid this, it is necessary to develop and implement the strategy of risk management of the process of authomatization of tax administration on the basis of the Internet of Things. This strategy should be developed in further studies.

REFERENCES

1. *Bures, M., Cerny, T., Ahmed, B.S.* (2019). Internet of things: Current challenges in the quality assurance and testing methods. Lecture Notes in Electrical Engineering, 514, p. 625-634.

2. *Dale, S.* (2018). The digitalisation of the global economy—some thoughts on the consequences for tax systems and their administration | [La numérisation de l'économie – quelques réflexions sur les conséquences pour les régimes de taxation et leur administration]. ERA Forum, 19(2), p. 237-256.

3. *Gashenko, I.V., Zima, Y.S.* (2017). Perspectives of development of small business within modernization of tax and cluster policy. Contributions to Economics, (9783319454610), p. 529-536.

4. *Gashenko, I.V., Zima, Y.S., Stroiteleva, V.A., Shiryaeva, N.M.* (2018). The mechanism of optimization of the tax administration system with the help of the new information and communication technologies. Advances in Intelligent Systems and Computing, 622, p. 291-297.

5. *Guidi, B., Ricci, L.* (2019). Aggregation techniques for the internet of things: An overview. Internet of Things, Part F2, p. 151-176.

6. *Kuila, S., Dhanda, N., Joardar, S., Neogy, S.* (2019). Analytical survey on standards of internet of things framework and platforms. Advances in Intelligent Systems and Computing, 814, p. 33-44.

7. *Lopez-Castaño, C., Ferrin-Bolaños, C., Castillo-Ossa, L.* (2019). Computer vision and the internet of things ecosystem in the connected home. Advances in Intelligent Systems and Computing, 800, p. 213-220.

8. *Medina, L,.Schneider, F.* (2018). Shadow Economies Around the World: What Did We Learn Over the Last 20 Years? URL: https://www.imf.org/en/publications/wp/issues/2018/01/25/shadow-economies-around-the-world-what-did-we-learn-over-the-last-20-years-45583 (data accessed: 29.09.2018).

9. *Olivares, B.D.* (2018). Technological innovation within the Spanish tax administration and data subjects' right to access: An opportunity knocks Computer Law and Security Review, 34(3), p. 628-639.

10. *Tadviser* (2018). Financing of the program "Digital Economy" in Russia. URL: http://www.tadviser.ru/index.php/Статья:Финансирование_программы_Цифровая_экономика (data accessed: 29.09.2018).

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