ATLANTIS PRESS
Advances in Economics, Business and Management Research, volume 81
1st International Scientific Conference "Modern Management Trends and the Digital Economy: from Regional Development to Global Economic Growth" (MTDE 2019)

Approaches to the Regulation of the Development of Digitalization of Finance in the Regional Economy

Dolganova Yu.S.
Ural State University of Economics
Ekaterinburg, Russia
u.dolganova@mail.ru

Istomina N.A.
Ural State University of Economics
Ekaterinburg, Russia
n_istomina_usue@mail.ru

Terentieva M.N.
Ural State University of Economics
Ekaterinburg, Russia
marina.lacrima@gmail.com

***Abstract* – The article presents the results of a study on the need for the development of integrated state regulation of digitalization processes. The authors explore actual trends of digitalization of economic processes in the context of economic branches; systematizing scientific statements about the benefits of digital technology; summarize the existing practices of digital processes regulation in Russian Federation at the state level; reveal the specifics of the development of digitalization in the region of the Federation in terms of legal regulation, financing methods and tools to stimulate the development of digitalization. On the basis of the conducted research, there were identified shortcomings in the legal framework for digitalization at the federal and regional levels, to eliminate which the authors justify the need to form financial instruments to stimulate the development of the subsidiary responsibility of the Federation and regions; development of public-private partnerships to stimulate the necessary processes at small and medium enterprises; improving regulations and implementation practices of participatory budgeting to ensure citizen participation in the implementation of the budget process through the use of digital technologies.**

Keywords – digitalization of finance, digitalization of insurance, public finance, participatory budgeting.

I. INTRODUCTION

In the wake of the adoption of the Information Society Development Strategy in the Russian Federation, and after the approval of the Digital Economy of the Russian Federation program in 2017, a lot of research on this topic appeared in the scientific literature, numerous discussions of Russia's readiness for the so-called fourth industrial revolution and its possible consequences are held. But in this February the program was abolished by the adoption of a national program - a national project under the same name. Thus the task of comprehensive digital transformation of the economy and social sphere of the country has been transferred to the rank of national priority. The total amount of funding for the period 2019-2024. will be 1.8 trillion rubles. [1], including: the federal budget 60%, extra-budgetary sources - 29%, additional financing over the limit - 9%, the provision of universal communication services - 2%. Funding from the consolidated budgets of the subjects of the Russian Federation is not provided. Nevertheless, many subjects of the Russian Federation implement regional programs of a similar theme. So in the Sverdlovsk region from 2018 the state program “Information Society of the Sverdlovsk Region until 2024”[2] is being implemented with a total amount of seven years' worth of 11.5 billion rubles. Funding from the federal budget, although it was planned in the original version of the program, is not provided for in the current version. There is a parallel, non-interconnected regulation of the development of the national digital economy and the regional one.

The relevance of the research of the study of the need to develop a comprehensive state regulation of the processes of digitalization of finance is due to the formation in Russia of the information space, taking into account the needs of citizens and society in obtaining high-quality and reliable information.

The study aims to identify areas of state regulation of the development of digitalization in Russia at the present stage.

II. RESEARCH METHODOLOGY

The research methodology includes the following steps.

First, using the method of critical analysis of the scientific literature, current trends in the digitalization of economic processes are investigated, including the study of the development and application of digital technologies in the context of economic sectors. Based on the systematization of points of view of various researchers, whose publications are placed on the Web of Science platform, the evolution of research into the introduction of digital technologies in computer science, international trade, banking, insurance, state and municipal governance, public finance is determined.

Secondly, on the basis of the scientific generalization method, scientific statements about advantages of using digital technologies are systematized. Special attention is paid to such positive effects as accelerating the pace of development and expansion of activities, reducing the cost of the product for the consumer, the possibility of creating virtual financial products, accelerating the exchange of information, improving the efficiency of decision-making.

Thirdly, using the method of historical development of the legal framework for digitalization, the existing practices of regulating digital processes in Russian Federation at the state level are summarized. The informational basis of the research is materials dedicated to the state integrated information system "Electronic Budget", the federal target program "Electronic Russia", the state program "Information Society", the national program "Digital Economy".

Fourthly, by analyzing statistical data, the specifics of the development of digitalization in the region of the Federation from the point of view of legal regulation, methods of financing and tools to stimulate its development are revealed. The information program is the state program of the Sverdlovsk region "Information Society of the Sverdlovsk region until 2024", incomes of the region budget and expenditures of the federal budget.

III. Results of the Study

The emergence of the worldwide Internet in 1982 led to a new way of life for people – based on almost instantaneous exchange of information. In the late 1980s the concept of digitalization arose in connection with the development of telecommunication services (see, the works of M. Marti, K. Siuda [3], BS. Goldshteyn [4]). By the beginning of the 2000s it is firmly included in the research of computer science [5]. And only in the last five years have researchers started talking about the digitalization of economic and managerial processes.

First of all, digitalization has come to international trade, because the development of Internet technologies allows not to become attached to regional and even national markets: "It is in this context that we see a re-scaling of what are the strategic territories that articulate the new system"[6], - S. Sassen notes in this regard. The territorial coverage obtained through digitalization, as well as the simplification of relations with the state [7] through the development of control and supervisory tools can be assessed as an advantage for producers; K. Pousttchi and M. Dehnert talk about the convenience of new technologies for the consumer: "These new media often bypass traditional forms of searching, such as branch visits, that left consumers often unsatisfied"[8]. Most researchers emphasize the advantages for consumers: lack of need for waiting, lower cost of goods / services and their "inexhaustibility" [9], the ability to meet any needs of each consumer regardless of gender and age [10], the ability to use free digital products, increasing participation in political and public life [11] and others. Informatization allows trade flows, investments, even labor resources to move freely in the global world.

As an analogue of trade flows M. Bussiere, Ju. Schmidt and N. Valla review financial flows, which are a key factor affecting global financial stability [12].

Of all the areas of financial activity researchers are paying the closest attention to the banking sector. Of course, long before the advent of the Internet, computer technology penetrated the banking sector (see Carles Maixe-Altes [13]). The geography of research in this area is very wide: Europe as a whole (F-A. Duna, R-L. Ilioiu [14]), Germany (J. Rajub, C. Rautenstrauch, JM. Gomez [15]), Finland (O. Uusitalo [16]), Nigeria (O.S. Fadoju, G. Evbuomwan, F. Olokoyo [17]), Indonesia (T.P. Usanti, F.S.R. Roro [18]), Russia (E.R. Bezsmertnaya, S.V. Plyasova, N.V. Mirzoyan [19], N.N. Matnenko [20] and others). Mostly innovative financial technologies in Russian research are associated with blockchain and cryptocurrency.

In addition to banks, the topic of digitalization is also relevant for insurance companies. Moreover, the focus is on the effectiveness of digital technologies used for promoting the insurance product and miscalculation of risks. So E. Stoeckli, C. Dremel, F. Uebernickel introduce the special term "InsurTech" and explains how InsurTech affects the firm-level value creation [21]. The dynamics of the insurance value under the influence of various factors is also researched by M. Eling and M. Lehmann [22]. Research in this industry is both intra-firm and external. So, a lot of research is devoted to the protection of data of insurance companies [23] simultaneously with the provision of open sites. In general, summarize M. Warg, P. Weiss, R. Engel, activities in the part of insurance digitalization should be aimed at forming a clear digital strategy - "Service Dominated Architecture", which allows resources necessary for service-dominated, customer-centric solutions [24].

The most important advantage of digitalization in public finance, as noted by X. Guo and Q. Yang, is the ability to "to provide real time information and enhance decision making" [25]. Moreover, information is exchanged not only between citizens, business agents, but also with the government, which acquires new regulatory tools. The world community is most interested in digitalizing tax data, which, firstly, allows "to exchange of taxpayer information", secondly, "to provide policymakers with more domestic tax policy options and recommendations on how tax systems can be better designed to achieve inclusive growth"[26], third, reduce the number of tax offenses [27]. In the field of digitalization of public finance in Russia, it is necessary to note the work of the State Integrated Information System for public finance management "Electronic Budget".

Thus, the emergence of new activities is evident due to the development of digital technologies and the creation of new products in traditional industries. The result of these processes, according to M. Polozhina, is the formation of the digital economy [28]. The author of the concept "digital economy" is considered N. Negroponte, who defined it as "the transition from the movement of atoms to the movements of bits"[29]. This term is currently used throughout the world, although the process of defining a concept isn't yet complete, and it remains vague.

Taking into account the Russian legislation, the state regulation of the development of the digital economy began quite recently - with the adoption in 2017 of the Program for the Development of the Digital Economy. But, if we take into account the broader concept of digitalization, the history of the legal regulation of this process begins in 2002 with the adoption of the Federal Target Program "Electronic Russia" for 2002–2010. The program was aimed at improving the activities of state government through the formation of an electronic government information system. By 2008 the possibilities of using information and communication technologies had expanded, and it was decided to develop the entire Russian economy based on their use in accordance with the Strategy for the Development of the Information Society in the Russian Federation [30] (valid until 2015). It marked the beginning of the intensive use of information and

communication technologies by the state and municipal government, business and citizens. To implement the Strategy, the state program "Information Society (2011–2020)" [31] was developed, but rapid technological changes required adjustments to the approved provisions. In 2017 a new Information Society Development Strategy for 2017–2030 [32] was adopted, whose goal is to build a knowledge society and the digital economy in Russia as part of it. In accordance with this Strategy, the program "Digital Economy of the Russian Federation" has been developed [33]. The tasks for the period up to 2024 were formulated in five main areas of development, but at the end of 2018 changes were made again – the task of introducing information technologies into all spheres of human activity was brought to the national level – the National Project "Digital Economy of the Russian Federation". The activities of this Project imply a broad understanding of the digital economy - like the emergence of a new technological order - Industry 4.0. As a result, information and communication technologies have become part of modern management systems in all sectors of the economy, government, national defense, state security and law and order.

In parallel, since 2014, development of digitalization tools at the regional level has been regulated by adopting and implementing the Concept of regional informatization [34]. But its tasks cover a limited list of objects - regional and local governments and organizations that perform a state or municipal order.

Like many other subjects of the Russian Federation, the Sverdlovsk region adopted in 2018 and implements a regional program on the digitalization of various activities. But within the program budget, the share of this program is less than 1%. Besides regional funding, the region receives federal subsidies, the lion's share of which is for the creation of a unified state health information system (Fig. 1). The share of such subsidies in the total amount of subsidies received by the Sverdlovsk region from the federal budget ranges from 3% in 2019 to 18% according to the plan for 2020.

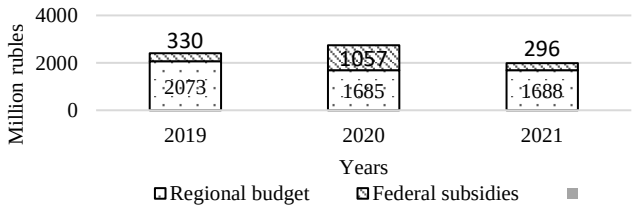

Fig. 1. The amount of funding for digitalization activities of the Sverdlovsk region for 2019-2021 [35]

The main burden of financing regional events falls on the regional budget. The share of federal participation will be 23% on average over next three years in the total expenditure on the digitalization.

The regional program of the Sverdlovsk region includes only such targets that characterize the number and availability of state (municipal) services. All of them aren't related to indicators of economic development, such as, the share of gross regional product created using information and communication technologies; the level of workplace computerization; the share of electronic commerce in turnover, etc. A similar situation is observed in the National Program - O.A. Trukhina and I.V. Smirnova note that "it is aimed at the development of basic services to promote the economy - regulation, public services, IT-infrastructure"[36]. That is, at present, the state doesn't regulate and doesn't try to adapt to the actual processes of digitalization of the real sector of the economy, but solves its tasks in isolation. If in the banking sector, insurance digital technologies develop independently, most often based on foreign experience (cryptocurrency, blockchain, etc.), then the government needs to stimulate the development of these processes in the real Russian production. If we compare the share of spending on the national economy in the federal budget and in the budgets of donor subjects, it becomes clear that the task of stimulation falls on the regional budgets. In this regard, regional programs of the development of informatization must necessarily include tasks for the development of public-private partnerships and the costs of their implementation. And the Federation should facilitate the inclusion of such tasks through the provision of subsidies as part of the implementation of the National Program.

IV. Discussion of the Results

The subject of digitalization in the sphere of state and municipal finance is very narrowly considered in the scientific literature: attention is paid to the tax sphere, the activities of state extrabudgetary funds, the system of state and municipal procurement. For example, E. Fomina, Y. Khodkovskaya, R. Tamarova believe that in the conditions of the digital economy "audit of the effectiveness of the state budget expenditures… is most important"[37]. That is, we are talking about the openness of budget data - their accessibility to citizens for review. But such a policy will not make citizens active participants in the implementation of fiscal policy and loyal to the government. We believe that it is necessary to develop digital technologies that ensure the availability of citizen participation in the direction of financial flows for the realization of common civil interests.

Such processes in the world practice are called "participatory budgeting", in Russia - "initiative budgeting". The practice of initiative budgeting is understood as a set of actions for the implementation of the mechanism and procedures for citizen participation in budget decisions. Analysis of the legal framework for initiative budgeting at the federal level and the Sverdlovsk region [38] showed that there are no requirements for maintaining the procedures of submitting, selecting applications and monitoring their execution in digital form. We believe that in this way it is impossible to turn initiative budgeting into a real financial instrument, because without digital technology in the modern world it's not possible to achieve a large coverage of participants. N.P. Molchanova shares the same opinion: "... the work of special Internet services allows visitors to leave their comments and recommendations regarding the disposal of available budgetary resources. This gives grounds for state and municipal government to pursue a fiscal policy, taking into account the views of the general population"[39].

The analysis of research topics showed that despite the great interest shown recently in digital financial technologies, in most cases we are talking about new forms of bringing to the consumer the previously existing banking and insurance products. This conclusion confirms E.R. Bezsmertnaya, saying that "the most popular among users are such options as money transfers and payments online". Or we are talking about the development of technology "blockchain", "big date",

cryptocurrency. In some cases, researchers rush to another extreme and declare that "by and large, all commercial companies, all actions in computer virtual reality can be attributed to the digital economy"[40] (Y.P. Silin and E.G. Animtsa) and "a modern company is called digital if it seeks to transfer its business processes on-line" [41] (N.S. Bezuglaya, V.G. Kostyukevich). We believe that an overly narrow understanding or, on the contrary, an overly broad interpretation of digitalization will not result in the increase in the country's competitiveness, which is desirable for Russia. For this, firstly, we need coordinated work at all levels - from federal to municipal - to work on legal regulation of the use of digital technologies in all spheres of economic activity, and not only in state (municipal) governance; secondly, it is necessary to stimulate the introduction of digital technologies in the real economy through the development of public-private partnership, especially in the sphere of material production. The same idea is promoted by I.A. Pryadko, O.V. Bryukhovetskaya, I.A. Danilin, A.V. Melkonyan [42]. In this direction it is necessary to pay attention not to large corporations, which even without state stimulation allocate sufficient funds for the digitalization, but to small and medium-sized enterprises, as, according to R.D. Stanciu, "small and medium-sized enterprises represent a source of entrepreneurial skills, innovation, and new jobs creation"[43]. That is they must form the basis for comprehensive dissemination of innovative digital technologies, but their own resources don't always allow it. As a result, the task of digitalization should be not just acceleration of information exchange processes, but ensuring the growth of economic indicators based on the use of digital technologies.

V. Conclusions

Today we can say with confidence that the world is changing rapidly under the influence of digital technologies; all of their accelerating distribution in the global economy is obvious. The use of Internet technologies expands business opportunities, and today we see how the Internet is developing economic space, digitalization affects all spheres of life, especially in finance. The development of the digital economy as the basis for the formation of a new lifestyle is a factor in improving the country's competitiveness on the world market and is considered as one of the top-priority government tasks for which Russia develops and implements strategies, a national project and state programs.

But the existing legal framework has several disadvantages:

- national and regional programs are not related;

- the programs are not connected with the actual processes of digitalization of the real sector of the economy, don't include indicators of economic development as targets;

- the share of regional digitalization programs is minimal in the expenditures of the regional budgets, and federal support is narrowly focused and non-permanent.

Development of regional digital economies within the framework of national priorities is possible only on the basis of creating financial interest in them by expanding the list and amounts of federal subsidies for the implementation of national program activities in the regions.

The state should be interested not only in the development of digital technologies used by economic entities through public-private partnership, but also include the public in these processes. To do this, it is necessary to consolidate initiative budgeting through digital technologies in the legislation, which will make the movement of public finances more open and understandable for citizens and will contribute to the development of trust in government.

References

[1] "Digital Economy of the Russian Federation": the passport of the national program, approved by protocol No. 16 of 24.12.2018.

[2] "On approval of the state program of the Sverdlovsk region "Information Society of the Sverdlovsk region until 2024": Decree of the Government of the Sverdlovsk region No. 1050-GD of 29.12.2017.

[3] M. Marti, K. Siuda, "The digitalization of the public telecommunications networks", Hasler Review, vol. 19, pp. 4-12, 1986.

[4] Bs. Goldshteyn, "Stored program control in a unified digital call distribution stage for the information-services of a telephone network", Telecommunications and Radio Engineering, vol. 45, pp. 21-26, 1990.

[5] J. Reina-Tosina, L. Roa, T. Gomez-Cia, "Designing the transition to a fully digital burns unit", Proceedings of the 22nd Annual international conference of the IEEE engineering in medicine and biology society, vol. 22, pp. 2617-2620, 2000; D. McQuail, "Digitalization and the future of communication", Digital libraries: interdisciplinary concepts, challenges and opportunities, pp. 255-268, 1999; D. Nazarov, "Model of reflexive selection of implicit indicators of management activities of an organization", Vestnik Sankt-Peterburgskogo Universiteta – Ekonomika, vol. 33, pp. 498-518, 2017.

[6] S. Sassen, "Impacts of digitalization on leading economic sectors", World Engineers Convention, vol. 120, pp. 147-165, 2000.

[7] A.A. Petrov, "Is Russia managing to decline the calls of a digital economy", Actual Problems and Prospects of Economic Development: Russian and Foreign Experience, No. 12, pp. 5-10, 2017.

[8] K. Pousttchi, M. Dehner, "Exploring consumer banking retail", Electronic Markets, vol. 28, pp. 265-286, 2018.

[9] N.M. Bukaev, I.S. Cherepova, M.G. Cheprasov, "Peculiarities of functioning of the digital economy in modern conditions", Bulletin of the Kaliningrad Filial Agency of the St. Petersburg University of the Ministry of Internal Affairs of Russia, No. 3 (53), pp. 171-175, 2018.

[10] E.V. Maymina, T.A. Puzyna, "Features and trends of the development of the digital economy", Bulletin of the Belgorod University of Cooperation, Economics and Law, No. 6 (67), pp. 37-45, 2017.

[11] E.R. Bezsmertnaya, "Digitalization of the financial sector of the economy: who will receive digital dividends?", Economics and Management, No. 2, pp. 75-83, 2018.

[12] M. Bussiere, J. Schmidt, N. Valla, "International financial flows in the new normal: key patterns (and why we should care)", International macroeconomics in the wake of the global financial crisis, "Financial and monetary policy studies", vol. 46, pp. 249-269, 2018.

[13] J. Carles Maixe-Altes, "The digitalization of banking: a new perspective from the European savings banks industry before the Internet", Enterprise & Society, vol. 20, pp. 159-198, 2019.

[14] F-A. Duna, R-L. Ilioiu, "Insights on the European banking system of today and tomorrow", Innovation management and education excellence through vision 2020, vol. I–XI, pp. 1825-1831, 2018.

[15] J. Rajub, C. Rautenstrauch, JM. Gomez, "Tasks of the information management at a German major bank", Information technology and organizations: trends, issues, challenges and solutions, vol. 1-2, pp. 343-345, 2003.

[16] O. Uusitalo, "Social innovations facilitating the quick adoption of e-banking in Finland", Proceedings of the 5th European conference on entrepreneurship and innovation, pp. 651-662, 2010.

[17] O.S. Fadoju, G. Evbuomwan, F. Olokoyo, "Dataset for electronic payment performance in Nigerian banking system: a trend analysis from 2012 to 2017", Data in Brief, vol. 20, pp. 85-89, 2018.

[18] T.P. Usanti, F.S.R. Roro, "Legal protection of the contracting parties in the peer to peer lending based on financial technology (P2P lending fintech) in Indonesia", Advances in Social Science Education, vol. 131, pp. 282-295, 2017.

[19] S.V. Plyasova, N.V. Mirzoyan, "Fintech and the second payment directive as a factor of development of competition in the banking sector of the European union", Modern Competition, vol. 12, No. 6 (72), pp. 105-116, 2018.

[20] N.N. Matnenko, "Background and key tendencies of digital transformation of banking activities", Economic Systems, vol. 11, No. 3 (42), pp. 80-88, 2018.

[21] E. Stoeckli, C. Dremel, F. Uebernickel, "Exploring characteristics and transformational capabilities of InsurTech innovations to understand insurance value creation in a digital world", Electronic Markets, vol. 28, pp. 287-305, 2018.

[22] M. Eling, M. Lehmann, "The Impact of Digitalization on the Insurance", Geneva Papers on Risk and Insurance – Issues and Practice, vol. 43, pp. 359-396, 2018.

[23] S. Goldes, R. Schneider, C. Schweda, "Building a Viable Information Security Management System", IEEE International conference on cybernetics, pp. 73-78, 2017.

[24] D. Porrini, "The effects of innovation on market competition: the case of the insurance comparison websites", Marketing and Innovation Management, is. 3, pp. 324-332, 2018.

[25] X. Guo, Q. Yang, "On the integration of IT system with the budgetary control system: insights from the case of Wanhua chemical", Wireless Personal Communications, vol. 102, pp. 3687-3697, 018.

[26] D. Bradbury, P. O'Reilly, "Inclusive fiscal reform: ensuring fairness and transparency in the international tax system", 73nd Annual congress of International Institute of Public Finance "International tax and public finance", vol. 25, pp. 1434-1448, 2017.

[27] T.V. Zvereva, "Reduction of the state tax risks in the conditions of the digital economy", GosReg: state regulation of public relations, vol. 24, No. 2 (24), pp. 195-199, 2018.

[28] M.A. Polozhikhina, "State regulation of digitalization of the economy: European and Russian experience", Russia and the Modern World, No. 4 (101), pp. 64-81, 2018.

[29] N. Negroponte, "Being Digital", NY: Knopf, 1995.

[30] "Information Society Development Strategy in the Russian Federation": approved by President of the Russian Federation V. Putin, No. Pr-212 of 7.02.2008.

[31] "On approval of the state program of the Russian Federation "Information Society (2011–2020)": Resolution of the Government of the Russian Federation No. 313 of 15.04.2014 (as amended on 02.02.2019).

[32] "On the Strategy for the development of the information society in the Russian Federation for 2017-2030": Presidential Decree No. 203 of 09.05.2017.

[33] "On the approval of the program "Digital economy of the Russian Federation": Order of the Government of the Russian Federation No. 1632-o of 28.07.2017 (invalidated on 12.02.2019).

[34] "On approval of the Concept of regional informatization": Order of the Government of the Russian Federation No. 2769-o of 29.12.2014.

[35] "Aboyt the regional budget for 2019 and the planned period of 2020 and 2021": Law of the Sverdlovsk region No. 144-RL of 6.12.2018.

[36] O.A. Trukhina, I.V. Smirnova, "Forming a digital economy in Russia: essence, features, problems of development", Innovative Development of the Economy, No. 4 (46), pp. 117-124, 2018.

[37] E.A. Fomina, Yu.V. Khodkovskaya, R.R. Tamarova, "State financial control in the conditions of the digital economy", Economics and Management: a Scientific Journal, No. 5 (143), pp. 73-75, 2018.

[38] Yu.S. Dolganova, "Citizen participation in the implementation of the financial policy of the region", Problems of sustainable development at the macro, meso and micro levels, pp. 165-170, 2018.; Yu.S. Dolganova, "Innovations in the budget process of the Sverdlovsk region", Ural – XXI century: the macro-region of neo-industrial and innovative development, vol. 2, pp. 140-146, 2018.

[39] N. Molchanova, "Transformation of financial relations in the conditions of formation of the digital economy", Scientific Studies of the Faculty of Economics, Electronic Journal, vol. 9, No. 3 (25), pp. 7-16, 2017.

[40] Y.P. Silin, E.G. Animitsa, "Contours of formation of digital economy in Russia", Proceedings of the Ural State Economic University, vol. 19, No. 3, pp. 18-25, 2018.

[41] N.S. Bezuglaya, V.G. Kostyukevich, "Digitalization of the economy of the region as a basis for transition to an innovative way of development", Natural Humanitarian Studies, No. 22, pp. 21-27, 2018.

[42] I.A. Prjadko, O.V. Bryukhovetskaya, I.A. Danilin, A.V. Melkonyan, "Problems of private investment attachment to the development of the digital economy of the Russian Federation", Management Of Economic Systems: Electronic Scientific Journal, No. 10 (116), p. 34, 2018.

[43] R.D. Stanciu, "Do Romanian small and medium-sized enterprises use performance management? An empirical study", 12th International symposium in management "Challenges and innovations in management and leadership", vol. 124. pp. 255-262, 2013.