

World Trend Digitalization–Directions and Opportunities

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ABSTRACT

The research findings on formation of innovation economics of a new type resulting from the scientific development of the society are presented in the paper. New (digital) economy is a phenomenon of formation of a system that collects, processes, and synthesizes digital data on socio-economical development of a system of a certain type. The research is relevant because the information space in the Russian Federation needs to be developed as a result of the macroeconomic development trend in this country until 2030. The new (digital) economy leads to quality improvement in economic and financial activity of modern economic agents of different organizational and legal forms of management. All that provides the competitive development. The growing interest in the new (digital) economy is due to the exploring and development of innovative conceptual bases for strategic development of professional fields of scientific knowledge, as well as to the development of a management system with analytical accounting. The deeper knowledge on the theory, concepts, and methodology of the management system with analytical accounting can activate the development and implementation of digital innovations in the analytical accounting process. The authors consider that the digital innovations implementation in the economic activities should be assessed and suggest a framework for the assessment that helps to discover competitive advantages and the penetration rate of a global trend to a sector. The research findings may be further implemented to the economic retail practice as the research assemble a range of the international practical achievements. The retail trade occupies a central position in the system of livelihood in the Russian Federation.

Keywords: *digital economy, digitalization, accounting and analytical management system, business process, accounting, analysis, planning, retail trade, economic agent*

1. INTRODUCTION

Such problems as the level of development of different economic sectors and the place and the role of the digitalization in Russia are extensively discussed. It stems from the scientific and technological progress in all levels of the financial, macro- and microeconomic activities.

The digitalization relevance results from the globalization of the economic space, industry 4.0, increasing social and corporate responsibility of managers and leading experts. The Russian government approved the program “Digital economy of the Russian Federation” in the 28th of July 2017 № 1632-p. The cooperation of the government, business, science, and society will make the implementation of the program possible.

The new (digital) economy is a result of the innovation development emerging from financial and economic processes which accounting and analytical professionals take part in. The factors of no-return in modern practice is the usage of mobile phones, cloud storage services, computer technologies, the internet etc.

Digitalization of economy is implemented through an economic agent such as an enterprise, an organization.

Therefore, it is necessary to reassess the concept of accounting and analytical management system. It stems from the contemporary business and the need for digitalization of accounting data in order to design strategic directions of development and to conduct feasibility study for the decisions to be taken. Actual production must conform to the standards of technological progress and high technological effectiveness, as well as promote the growth of GDP and global social and economic development in Russia to a new level.

2. NEW ORIENTATION OF THE ACCOUNTING AND ANALYTICAL MANAGEMENT SYSTEM – DIGITALIZATION

Digitalization generally comprises a large-scale introduction of innovations, modernization of production and technological infrastructure in different sectors of economy. The digitalization in its broad sense is a transfer

of functions and actions of business processes previously performed by people to the digital sphere [1]. The digitalization – is a result of the innovation development of a phenomenon called digital economy which is based on end-to-end technologies such as neurotechnology, artificial intelligence, technologies ensuring uninterrupted communication, new production technologies, technologies of virtual and augmented reality etc. [2,3]. At the same time the digital economy is considered differently from different perspectives. From 2013 the OECD consider that the digital economy makes the trade of goods and services on the Internet possible. In 2015 the European Parliament agreed on the relevance of the digital economy and platforms allowing the usage of a large number of ways to accomplish objectives of a user. The importance of digital knowledge application for modern drivers production was recognized in the frameworks of the G20 program in 2016. The digital economy was defined by the Russian government in 2017 as an economic activity the key element of which is digital data used to increase product efficiency [4].

Having analyzed recently published scientific researches, we can conclude that digital systems that may be used in different levels of administration are of great interest for the scientific society. There exist four main approaches to the notion of digitalization:

- 1) The resource-based approach that is founded on the technological aspect of the digital economy.
- 2) For the procedural approach it is important to implement digital technologies and to have the Internet available.
- 3) The structural approach is based on emergence and implementation of data elements.
- 4) The business-model is a symbiosis of the foregoing approaches that is grounded in emergence and implementation of digital innovations.

The system of accounting and analytical management may be treated as one of the digital systems that accumulates all accounting information in digital databases characterizing business processes with the help of economic parameters. Moreover, it is of interest to a large number of users. It should be remembered that the base of the accounting and analytical management system is a real production making the necessary public welfare.

Therefore, the modern state of economic development demands the establishment of terms for development and implementation of the innovative approach depending on the conditions of the digital economy. It gives rise to a new perspective on the accounting and analytical management system.

The system is geared towards the high-quality information and analytical management of the current activities on accumulation, registration, synthesis, and transfer of information [5]. A new perspective on the management system as a part of digital economy and digitalization broadens opportunities, improves the methodology and the technology of accounting, analysis, budgeting, and control [6, 7].

The modern accounting and analytical management system need an innovative approach to the strategic accounting, continuous analysis, planning, and control provided by digital data, according to A.Kh. Ibragimov [8]. Different digital data of the management system can be subdivided into two components or subsystems.

The first one ensures accumulation, registration, and synthesis of the data for different types of accounting (business, tax, management, actuarial, statistical ones etc.). The second one is a set of instruments allowing to improve the analyticity and the scientific credibility of decisions with help of methods of analysis, budgeting, and control [9, 10].

Thus, the modern accounting and analytical management system is a complex innovative mechanism combining processes of different types of accounting and instruments. It is aimed at competitive and strategic advantage. The digitalization in this case is a trend ensuring the development of end-to-end technologies of accounting, analysis, planning/ budgeting, and control.

3. POTENTIAL OF DIGITAL TRANSFORMATION OF ACCOUNT DATA

Introduction of modern technologies in financial and economic activities of an economic agent is called digital transformation. Such an approach not only comprises installation of modern equipment (hardware and personal computers) or a software, but also demands fundamental changes in development of accounting and analytical management system for technological and business processes [11]. Most of the modern economic agents of financial and economic activities use different kinds of software products – economic programs, helping to solve problems of business process automatization, that include business and management systems, business analyses, information and legal complexes, document management systems, and others [12]. As a result, the account data is collected, synthesized, and converted into reported data which make it possible to professionally evaluate the performance in general and performance of business processes in particular. The key element that quite quickly generates, accumulates, structures, and analyses a vast amount of information entering the accounting and analytical management system is called data in the digital economy.

Digitalization is an innovation in development of the accounting and analytical management system. First of all, it is a phenomenon of procedural nature, a trend of development of innovative technologies and digital equipment [13]. Nowadays this notion comprises approaches to management decision-making, as well as the fullest possible introduction of digital innovations into all business. It is not enough for the digitalization of the accounting and analytical management system to have technologies in disposal – it is necessary to articulate business tasks and desirable fundamentals. Digitalization

may help to optimize business operations, cut expenses of the economic agent, and to accelerate the process of decision-making at the beginning. The process of digital technologies implementation in the accounting and analytical management system is composed of several stages (fig.1). The digitalization of business processes is an inevitable part of the innovative development that will influence all the economic spheres in Russia over time. Economic agents of the “consumer business” such as media, retail trade, telecommunication, insurance, banking sector and others are the leaders in introduction of innovations.

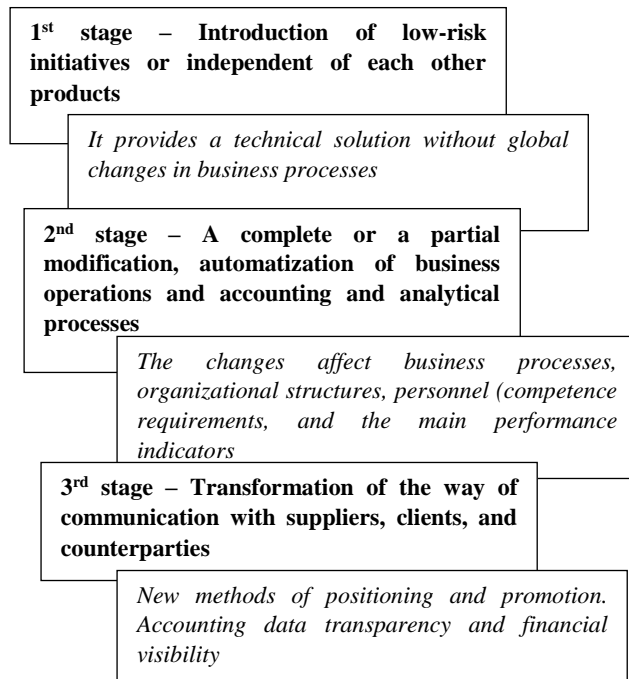


Figure 1. Implementation of digital technologies in the accounting and analytical management system

Therefore, digitalization of business and the accounting and analytical management system presupposes introduction of an innovative software that would organize the operations with help of automatization and present them in the form of digital figures. The digitalization would improve performance, reduce labor intensity of accounting and analytical work, as well as of other work performed by managers and specialists of structural units. Automatic system of the Customer Relationship Management (CRM) and technologies that automatize a range of business processes (BPM – Business Process Management) is a most popular instrument for such tasks now as it includes management practice as well. Thus, the digital platform that helps to implement unique competences and business innovations occupies the central position in the system of economic agent management. It also gives an opportunity to see diverse characteristics of the financial and economic activity performance according to the analyticity and the integration indicators at any stage of introduction and functioning.

4. DIGITAL CAPACITIES OF RETAIL

There is a need for marketability of retail trade to develop through management decisions aimed at minimization of product losses, at increase in retail sales volume and incomes, and at reduction of expenses. Standardization and automatization of business processes, as well as new digital technologies make it possible to reach the goal. A most sought-after standard IT-product in retail trade is the CRM system, that enables businesses to make a customer base, segment clients, receive their letters and estimate their needs, offer customized loyalty [14, 15].

So, the CRM system helps to manage loyalty programs and business relations with suppliers, to account the stock in the warehouses, to control execution of a contract (of both creditors and debtors). All the data stored in the CRM system is further integrated with State information systems to exchange information and form an analytical basis of demands, market competitiveness assessment, and sales.

An important factor for economic agents of retail trade is an optimal workload distribution. The IT-solution programs can estimate the necessary number of staff depending on the level of workload and make work schedules taking into consideration days of vacation, legal restrictions of the Russian Federation, and competences for a profession. An analytical module of the IT-solution allows businesses to assess technical and economic performance indicators, financial state, as well as to estimate future revenues and expenses.

Nowadays there is a trend position in the retail which is data personalization of consumer preferences. It is a unique system of complex management of personal sale. Retail customers can easily interact with a retail.

The RFID-tag is largely applied in business of Russian retail trade as it is cost-effective and practical. Firstly, it makes the labor productivity increase to 30% in average. Secondly, it leads to reduction of accounting and analytical employees. Thirdly, it renders the automatic stock control and immediate management of shipping possible.

Thus, the key tendencies of the Russian retail digitalization relate to active application of modern technologies in order to analyze consumer audience. Digital systems enable retailers to collect information about consumers, monitor the purchase history, analyze demands and stay sought-after. The digital products used by Russians retailers are:

- Smart Shopping Cart with a bar-code scanner and a minicomputer;
- Electronic Shelf Labeling;
- self-service checkout providing full automatization of payment with help of the RFID;
- online-trade that increases the sales volume. It is of great importance because of the epidemiological situation in Russia and the world in general;
- interactive kiosk which is the best innovation automatically providing support information.

5. RESEARCH FINDINGS. CONCLUSION. DIRECTIONS FOR FURTHER RESEARCHES

Digitalization becomes a generally accepted trend of the modern development of innovations in the Russian Federation. It influences the business, scientific, social and economic spheres, as well as home economics. According to S.V. Chemezov, CIO of the State Corporation Rostec, "... "global digitalization" will lead to complete changes in many economic sectors. In fact, digitalization is affecting everything – technological processes, production chains, demands and manufacturing ...". That is why the modern state of digitalization must be assessed.

In world practice and in practice of some countries of the EU, the DESI (Digital Economy and Society Index) is used to characterize the level of digitalization development of a macroeconomic system (table 1).

Table 1 Indicators of digitalization level

Indicators	Parameters
Connectivity	Access to communication systems of the digital platform (the Internet)
Human Capital	Skills needed for citizens to work on the Internet digital platforms. It demands a set of competences from a specialist.
Use of Internet Services by citizens	Use of the Internet for a variety of activities, such as the consumption of online content (videos, music, games, etc.), the online transactions (internet shops, services of banks)
Business digitization	Digitalization of business processes and performance, eCommerce.
Digital Public Services	EGovernment and infrastructure

The index I-DESI (International Digital Economy and Society) is used to assess the digitalization level in the EU countries. It considers the same criteria as the DESI index. We assume that the degree of digitalization as a world trend in Russian economy may be assessed by the following criteria:

- 1) Use of digital technologies in order to optimize costs of an economic agent/ sector.
- 2) Implementation of digitalization in a business model of an economic agent/ sector.
- 3) Development of statistic databases of an economic agent/sector in order to estimate finances, financial resources and performance.

The general state of the digitalization of the Russian economy, its different sectors, and society in general needs complex assessment. To do so the level of digitalization of

home economics, economic agents, its sectors, and the state in general must be investigated.

Thus, the further investigations are aimed at the issues that would allow us to assess the level of digitalization of the three following aspects in the Russian Federation. Firstly, a complex research on digitalization of the Russian home economics (the Internet availability, possibility to use it, the level of competence) must be conducted. Secondly, the digitalization of businesses (use of the IT technologies products, competence of the personnel) must be assessed. And thirdly, a comprehensive assessment of the digitalization of the territory must be done.

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