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# DIGITAL TRANSFORMATION OF THE BANKING SYSTEM: DIGITAL TECHNOLOGIES AND DIGITAL BANKING MODELS

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## Abstract

This article notes the need for the transition of the banking system to a digital platform in the context of the development of the digital economy. The relevance of the research topic is that in today's conditions of transition to the digital economy, digital banking is the main element of ensuring the economic security of the financial sector. This study uses an analysis method that allows, based on a systematic interpretation of the key concepts of «disruptive technologies in the financial sector» and «digitalization of the economy», to draw conclusions about the main directions of development of digital banking. The main results of the study can be formulated in the form of the following theses: The leading place in the structure of digitalization is occupied by financial technologies, which are the vehicles of innovation in the economy and social sphere. Fintech includes the development and practical application of innovative technologies in the banking sector and other segments of the financial sector. The use of Open API technologies, blockchain, big data analysis, artificial intelligence make the Russian financial industry one of the innovative sectors of the economy. The results of the study can be applied in theoretical studies devoted to the analysis of the concept of «digitalization of the banking sector», as well as in the activities of banks building all their product offerings on digital technologies, where customers focus on interaction through digital communication channels.



*Keywords:* Digitalization, Industry 4: 0, Society 5: 0, fintech, blockchain, digital bank model

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# 1. Introduction

## 1.1. Formulation of the problem

The research is an analysis of the digital transformation of the financial industry through the introduction of disruptive technologies in the financial sector as a driver of the digitalization of the economy. A study of the security problems of Internet-oriented payment systems is covered in the writings of V.A. Bykov, I.M. Goldovsky. The Internet, as a marketing tool, is considered by I.V. Uspensky, V. Holmogorov, T. Bokarev, U. Hanson.

## 1.2. Analysis of recent research and publications

Analytical conclusions and forecasts of the development of the Russian and world e-commerce markets contain the works of A.N. Sokolov, N.I. Gerashchenko, R. G. Rusakovsky. The work of O.A. Kobelev, A.V. Lukatsky, A.A. Tedeev and others is devoted to the need to develop the regulatory framework for e-commerce systems. In the works of Dumna N.N. the problems of the influence of information technology on the content, form, structure of a business and the formation of a global electronic environment for economic activity are investigated.

The penetration of digitalization into the spheres of human economic activity today is an axiom.

# 2. Statement of the main material

Thanks to disruptive technologies, all conditions are created for the transition to digital ecosystems, new management and accounting systems (Magomaeva, 2019).

This stage of development leads us to the fourth industrial revolution (Industry 4: 0, Society 5: 0) - this is the digital era in the development of mankind, which is characterized by blurring the boundaries between physical, virtual and biological technologies.

Digitalization is determined by qualitatively new vectors of the global economy, which are at the formation stage and, if there are favorable conditions, will determine its development (Oreshin & Kuvshinova, 2014).

The transformation of organizations under the influence of digitalization has not bypassed the banking sector. Commercial banks as the main financial institutions directly affect macroeconomic processes in the country (Kazarenkova & Kolmykova, 2016).

To date, banks are the leading providers of a wide range of financial services, among which the main place is given to lending to the real sector (Tashtamirov & Usmanova, 2019) of the economy. Banks are the largest operators in the domestic foreign exchange market (more than 90%), in the repo market (about 85%) and in the bond market (more than 65%) (Sklyarova et al., 2019).

The banking sector ensures the uninterrupted operation of the national payment system in real time.

According to the Global Institute, McKincey is forecasting automation of up to 50% of the world's operations in the next 20 years.

Leading place in the structure of digitalization is occupied by financial technologies, which are the vehicles of innovation in the economy and social sphere.

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Fintech includes the development and practical application of innovative technologies in the banking sector and other segments of the financial sector (Kazarenkova et al., 2015).

The use of OpenAPI technologies, blockchain, big data analysis, artificial intelligence make the Russian financial industry one of the innovative sectors of the economy (Kesyan et al., 2018).

To date, 74% of Russian financial service providers plan to switch to a partnership in the field of fintech in the coming years.

A World Bank report dated 09.2018, "Competition in the Digital Age: Strategic Challenges for the Russian Federation," noted (Kazarenkova et al., 2019) that the financial industry is moving rapidly towards digital transformation. Setting an example for other sectors.

The financial industry, under the influence of fintech, not only changes its landscape, but also plays the role of a digitalization driver for the entire economy and social sphere.

With the development of mobile and digital banking, traditional forms of banking services have ceased to satisfy the needs of customers. In the modern era, completeness, security and speed of operations in the 24/7 mode are important to the client.

The mainstream of bank marketing strategies is mass customization of services based on BigData analysis and the use of Artificial intelligence (Koshcheev & Tsvetkov, 2018).

Between traditional and digital banking, there are many transitional models of financial services. In its report, Designing a Sustainable Digital Bank, IBM proposed a classification of digital bank models. (Table 1).

**Table 1.** Classification of digital bank models

| Model classification | Model name | Explanation |
|---|---|---|
| Model A | Digital banking brand | Classic banks with a large number of business processes that use attempts to transfer to an advanced consumer by introducing new brands with unique offers and products. |
| Model B | Bank with digital channels | Banks that aim to improve user experience using the back office and licenses of existing banks by reselling their products through a more user-friendly interface. |
| Model C | Digital branch of a bank | Banks creating a separate organization with a more flexible and modular software and hardware part of the service due to the fact that their systems are too inert to start a digital bank. |

ModelD - Fully Digital Bank- Banks that build all their product offerings on digital technologies, where customers focus on interaction through digital communication channels.

The transition to digital forms of organizing the banking system is determined not only by the need to improve operational efficiency. competitive pressure also plays an equally important role in this (Ablyazov & Asaul, 2018), which the fintech companies exert on banks; starting from fintech dwarfs, ending with fintech giants taking on part of banking operations: making payments, partial lending and investment advice (Obuhova et al., 2019).

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## 3. Conclusion

Modern conditions of digitalization pose problems for banks (Shukla, 2016), the main of which is not only bridging the Digital Divide, but even ahead of digital development. The solutions to these problems are the choice of business models, the willingness to establish and develop partnerships with fintech companies.

The application of new banking competencies contains risks, but at the same time it allows to increase non-interest income by obtaining a share of the partners profit.

The transformation of the familiar (traditional) banking system into digital banking will go through a certain historical period and the duration of this period will determine the needs of society and their digital literacy (Kazarenkova et al., 2014).

It is likely that in the near future the concept of "bank" can be replaced by "financial ecosystem" or "Platform". However, banking (Basnukaev et al., 2018) will always be, as it is "eternal matter" due to the fact that the requirements for capital adequacy and other prudential standards will remain (Tavbulatova et al., 2019).

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