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DIGITAL TRANSFORMATION OF FINANCIAL AND CREDIT SUPPORT FOR SMALL AND MEDIUM-SIZED BUSINESSES

Senior Lecturer: **Orif Shakirovich Maksudov**
SamIES.
Tokhirov Rasulbek Tolibjon ug'li
Student at the Samarkand Institute of Economics and Service
Faculty of Banking and Auditing Group BI-S-221.

Abstract: This article examines in detail the evolution of digital transformation in the area of financial and credit support for small and medium-sized businesses. The author analyzes the impact of the integration of modern financial technologies, artificial intelligence systems, big data, and distributed ledger technologies on the overall effectiveness of small business lending by commercial banks.

Keywords: digital transformation, small and medium businesses, commercial banks, financial technologies, lending, credit scoring, big data, artificial intelligence.

Introduction. Small and medium-sized businesses play a fundamental role in ensuring sustainable macroeconomic growth, fostering a healthy competitive environment, creating new jobs, and generally improving the well-being of the population in any country. However, despite the high socioeconomic significance of this sector, small businesses traditionally and universally face a serious systemic problem, which is limited access to external sources of financing.

High credit risks, a lack of sufficient and liquid collateral, opaque financial reporting, and excessively high transaction costs often make traditional bank lending virtually inaccessible to most small businesses.

In the context of the Fourth Industrial Revolution, a profound digital transformation of the financial sector is becoming a key driver for overcoming these long-standing institutional barriers. The digitalization of commercial banks and international financial institutions is fundamentally changing the overall architecture of interactions between financial institutions and the real sector of the economy.

The methodological basis of this research is based on the fundamental works of leading Russian and international scholars in the fields of banking, digital economics, corporate finance, and financial management. During the research process, methods of systemic, structural, and comparative analysis, logical modeling, statistical methods for studying economic processes, as well as conceptual approaches from classical and modern economic theory in the field of credit relations and the theory of information asymmetry, were actively used.

The traditional model of bank lending to small and medium-sized businesses has historically been characterized by an extremely high degree of information asymmetry. As Nobel Prize laureates in economics Joseph Stiglitz and Andrew Weiss noted in their classic works, commercial banks are often forced to deliberately limit lending volumes due to the inability to accurately and objectively assess the risk profile of potential borrowers. In the traditional banking system, document verification procedures took weeks, required the entrepreneur's personal presence, and the provision of a huge number of paper documents, making the process inefficient for both the bank itself and the small business, where speed of decision-making is crucial. Digital transformation addresses this fundamental problem through the widespread implementation of big data technologies and artificial intelligence

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systems. Modern commercial banks are rapidly moving from analyzing only standard and often outdated balance sheets to analyzing multidimensional alternative data in real time.

This data includes ongoing transaction activity on current accounts, information from fiscal and tax authorities, electronic invoices, online cash register data, the history of interactions with suppliers and customers on specialized trading platforms, as well as the company's digital footprint on the internet and social media. The use of complex machine learning algorithms makes it possible to build predictive digital scoring models that assess the likelihood of a borrower's default within minutes, completely minimizing subjective human error and reducing the likelihood of operational errors.

One of the main trends in the current digital transformation is the transition of financial institutions from the old product model to a modern ecosystem concept. A modern commercial bank is no longer simply an isolated institution issuing interest-bearing loans. It is being transformed into an open digital platform offering a range of non-financial and financial services for small businesses, including online accounting, legal support, and market analytics. Within these digital ecosystems, credit products are taking on fundamentally new forms. Online overdrafts and express working capital loans are approved automatically based on daily cash flow analysis.

The use of smart contracts based on distributed ledger technologies allows for fully automated monitoring of loan performance and collateral without the need for additional intermediaries. Digitalization has also paved the way for alternative platforms such as crowdfunding and digital factoring, where commercial banks can act as co-investors alongside private lenders, ensuring rapid financing of accounts receivable. According to international financial institutions, the use of digital channels reduces the processing time for small business loan applications from several weeks to a few minutes, which is critical for entrepreneurs who regularly experience cash flow shortages.

It is important to note that international

Global financial and credit institutions such as the World Bank, the Asian Development Bank, and the European Bank for Reconstruction and Development are actively promoting the digital modernization of small business support. In the current context, their support extends not only through standardized targeted credit lines to commercial banks but also through direct financing of the creation of national digital infrastructure.

International institutions are actively supporting the creation of cross-border digital platforms, which enable the standardization of remote client identification procedures and the fight against money laundering at the international level through digital registries. Furthermore, green digital lending tools are actively developing, where business compliance with environmental standards is verified by automated IoT sensors and satellite monitoring, minimizing bureaucratic barriers to obtaining preferential financing.

Conclusion. The digital transformation of financial and credit support for small and medium-sized businesses represents the only viable vector for the development of the modern global financial system. The integration of advanced technologies allows commercial banks to dramatically reduce their operating costs, improve risk management, and make credit accessible even to businesses previously considered insolvent due to a lack of collateral or credit history. To maximize the positive impact of digital transformation, a range of measures must be implemented. First, deep integration of government and banking databases is required to create a seamless, end-to-end borrower profile without the need to collect certificates.

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