

## Automation in Financial Systems: Limited Reporting Technologies for Banking and Servicing

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**Abstract.** The article focuses on the development of the banking sector in a digital economy, the transformation of traditional banking products and services, as well as the assessment of the weak and strong positions of banks in their competitive strategies in the market in relation to other financial intermediaries.

The article notes that the development of fintech intermediaries leads banks to the need to constantly improve their infrastructure and risk management systems, adapt to rapid changes in the technology of traditional operations, change their market behavior strategies and approaches to assessing their competitive capabilities.

The author presents an overview of the main trends in the impact of innovative technologies on the main blocks of the banking business. The most devastating consequences for banks in the digital economy are the introduction of blockchain technology and the use of private digital currencies-steeblecons in settlements. The article analyzes the possible consequences for the banking system in the case of the widespread use of private cryptocurrencies and the introduction of the digital ruble.

The development of innovations will not only change the competitive capabilities of banks, but also transform their business models, facilitate the transition of banks to platform business technologies.

The article discusses the conditions for maintaining the competitiveness of banks, identifies the need not only to develop new digital products and services, but also formulates proposals for the development of systems for collecting, accumulating and managing customer information.

Risk management and compliance in the digital economy are closely linked to reputational losses, customer loyalty risks and shrinking customer base, which can not only reduce the competitive position of banks, but also remove a significant number of commercial banks from the market.

**Keywords:** competition; banks; fintech; platforms; big data; blockchain; smart contracts; customer loyalty; process automation.

The transformation of financial services associated with the development of innovative technologies is fundamentally changing the nature of banking. Innovations have affected almost all traditional areas of the banking business: settlements, lending, attracting deposits, assessing the creditworthiness of borrowers, etc. In the new digital environment, a significant number of companies are emerging that are not directly related to the financial sector, but can provide banking services to customers and make a profit by managing large amounts of information.

The banking sector was one of the first to start introducing innovative technologies. Currently, the share of bank spending on IT is ahead of many sectors of the national economy. The driving forces of innovative development are both bank customers, who form the demand for new investments, and new technologies and changes in legislation, which form the proposal for innovation in the economy. Domestic and foreign economists distinguish different directions for the development of fintech: customer behavior trends, changes in the regulatory framework in the digital economy, modernization of the banking business both in terms of individual products and services, and in the areas of their provision to customers.

The Bank of Russia defines competition as “rivalry between providers of financial services for the consumer”.<sup>1</sup> Foreign analysts also note that

“competition is the process by which firms compete against each other in the marketplace to best meet consumer expectations.” The specifics of competition are explained by the peculiarities of the structure and the degree of development of the national financial market.

Currently, banks have a high competitive position in almost all market segments in relation to other intermediaries, but the role of banks is gradually decreasing as a result of innovations. The Basel Committee sees fintech as a technological innovation in financial services that will transform the financial sector and the economy as a whole, affecting all aspects of banking, from payments to monetary policy and financial regulation.”

Modern banks perform several key functions in the economy.

1. Based on the accumulation of information about borrowers, they exercise control over lending processes, which allows them to provide the necessary liquidity

to their clients, build long-term relationships with businesses, and also receive stable income from intermediary activities.

2. Banks have the ability to transform maturities when they issue long-term loans and accept short-term deposits. This intermediary activity allows banks to intelligently allocate and reduce the various types of risks arising in the economy, associated with both the attraction and distribution of resources.

3. Banks dominate the payment services market as a result of the centralized system of bank accounts that has developed over the years. The obvious advantage of banks in currently is also a system of refinancing them by the central bank. It allows you to support banks in times of crisis and obtain the necessary liquidity.

Trends in the decline in the profitability of the banking business and the growing digitalization of the economy are pushing banks in developed and developing countries to look for new areas of activity and rebuild traditional relationships with their customers. Maturity transformation, capital flow regulation, loan monitoring and servicing, customer insolvency monitoring and bad debt management, payment transaction services - these areas of banking are based on the processing of information that can be verified and codified, as well as information that is obtained based on the establishment of trust relationships between banks and their customers, and therefore such information is difficult to classify and process.

The starting points of the study are the consideration of the consequences of the digital transformation of the traditional banking business and the assessment of its competitive advantages in relation to new non-banking intermediaries in the digital economy. The literature review, among other things, touches upon the problems associated with the transformation of traditional banking products and services into an online form, the introduction of digital technologies, including blockchain and private digital cryptocurrencies, and their impact on the business strategies of commercial banks.

The purpose of the study is to study the evolution of traditional banking, its competitive opportunities in the new conditions of the platform business, as well as an assessment of the likely consequences for the Russian financial market.

Peer-to-peer (P2P) lending is gradually spreading to various sectors of the economy, going beyond retail banking, including small business lending and mortgage processing. The technologies of traditional bank lending have been developed for a long time and have not fundamentally changed over the years. Banks accept deposits and provide loans to customers, transforming liquidity risks and

assuming credit risk on transactions. Fintech companies that provide peer-to-peer lending services match investors to borrowers based on appropriate risk profiles, using digitized datasets from a client's login to a loan. This helps to reduce the costs associated with assessing the creditworthiness of customers, replacing manual processing of information and paperwork. In the US, fintech-led mortgage lending was 20% faster than traditional intermediaries. Lower lead generation costs and faster application processing allow for easier liquidity management, making platform-based lending more accessible to customers and could further lower rates in this market. The development of process automation and the skillful combination of underwriting in end-to-end procedures will help reduce the riskiness of this type of lending for potential platform investors.

According to expert estimates, the level of automation of operations in the 50 largest Russian banks is currently characterized by the following indicators.

Automation of lending processes poses potential threats to banks, as fintech companies have more ability to assess the creditworthiness of their customers, unlike banks with their traditional assessment models. Modern analysis of borrowers' creditworthiness includes procedures for quantitative and qualitative assessment of a potential borrower. Banks use traditional structured data methods such as expenses, income, cash flows and other financial information received from customers. On the basis of linear and statistical models, evaluation scores are compiled, which also take into account the weights of risks by indicators. Credit ratings are characterized by a limited set of information about the client, therefore, they can give errors and lead to false results in the analysis of client capabilities. Neural network models are just beginning to be introduced into the banking business, but are already widely used by fintech companies. They allow the use of artificial intelligence and big data methods in the assessment of the customer base. Credit risk is assessed by fintech companies also on the basis of quantitative methods based on collected external customer data. Tech companies have a huge amount of information about customers, obtained from social networks or through customer digital footprints. This makes it possible to better manage credit risks and form more accurate loan rates, exclude commissions and cashbacks, supplement credit products with wallets and a fast payment system. Going forward, we should expect that the retail and small business lending market will be dominated by non-bank lenders and fintech platforms. Banks will have to develop partnerships with fintech companies in these areas or create subsidiaries within their own business.

Digitalization is changing the structure of bank management, jeopardizing the existence of a cumbersome branch network of banks. In the near future, all national banking systems will face the need to restructure and upgrade them. Innovative technologies reduce the cost of intermediary operations in the segments of lending, payment services, consulting, insurance, investment activities, which will cause price discrimination for those participants who do not have access to new technologies. Demand and supply factors for the use of innovative technologies by banks and fintech platforms are considered.

Innovative technologies are able to easily identify potential customers using statistical divisions and mathematical methods for processing available information, they overcome information asymmetry more easily and can refuse collateral, replacing it with full-fledged information. These factors reduce the need for staff and a wide branch network, open up access to financial services for the poor, who are currently not serviced by banks. Technology platforms and fintech companies do not carry the burden of outdated legacy technologies and have higher investment potential compared to small and medium-sized banks. However, innovative business is still weakly tied to corporate lending, where banks continue to dominate. In addition, a significant number of modern innovative companies enter into partnership agreements with existing banks, as they have problems entering the market, accessing infrastructure, increasing the number of customers as a result of a lack of a customer base, marketing their products and services, limiting information about potential customers and their creditworthiness, lack of brand or brand recognition.

Financial services only complement the business of technology platforms, so their activities are much wider than traditional banking. However, large technology companies do not yet have significant experience in regulating and managing risks, are not included in the system of refinancing and liquidity management within the economy, they do not have standards for maintaining information about their customers and do not guarantee the confidentiality of transactions, so large banks still have more advantageous positions in struggle to serve large corporate clients. Further development of technology may reduce these advantages of banks, customers will learn and get used to new types of services, and technologies will be improved to meet the needs of customers.

As another promising area of the banking business that can support the competitive capabilities of banks, it is worth highlighting artificial intelligence-

based consulting, which includes services from online bots to automated tellers and robo-advisers. All these services improve the quality of customer service, assess the goals of customers, their needs and financial capabilities, the degree of risk and possible investment options. Robo-adviser platforms offer a number of advantages over traditional bank financial advice, including greater accessibility at a lower cost, openness and transparency to the client, ongoing portfolio management, and portfolio diversification based on defined financial goals and risk appetite. Robo-advisers protect investors from making negative behavioral decisions, restrain the rush and speculative inclinations of clients. However, robo-advisers also have certain disadvantages, which are determined by low adaptability to changes in market volatility. In addition, robo-advisers may pose a threat to bank staff in the future, as technology advances, they can replace specialists who work in the field of banking consulting and asset management. Online applications are now used not only by banks, but also by other market participants providing brokerage services, so banks will have to take into account investment advisory trends in the digital economy.

The digitization of banking operations leads to the accumulation of significant amounts of information, an increase in the speed of data transfer, ways to manage and analyze valuable information to reduce costs and optimize operations. Banking has always been distinguished by its needs for information resources. Information is now becoming a strategic asset for banks. The introduction of artificial intelligence and Big Data technologies (big data) allow banks to accumulate and manage information while remaining competitive in the market. Almost all major banks currently have data centers (Data-Office) or data processing and storage centers (DPC / DPC) for managing information resources. Currently, such centers allow optimizing operations, managing risks, and detecting fraud. Large banking structures have significant financial resources, so they can quickly introduce technological innovations, small and medium-sized banks lose out in this competition and are forced to connect to other people's information systems.

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