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THE EVOLUTION OF SME AND CORPORATE BANKING SERVICES: THE INFLUENCE OF MODERN DIGITAL TECHNOLOGIES

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Abstract
The article highlights the key areas of application of digital technologies to improve the level of service in the corporate banking segment for high-income customers. The study revealed how modern technologies — artificial intelligence, machine learning, blockchain, and cloud platforms — can improve service quality, accelerating the introduction of innovative products. Special attention is paid to their impact on customers' perception of services and the effectiveness of banks' internal processes, which is of current interest in the context of global changes and increasing competition in the banking sector.
The methodology includes comparative analysis and systematization of digital solutions for interaction in corporate banking. The emphasis is on a personalized approach to products developed based on data analysis using machine learning algorithms that allow segmentation of the customer base. The difficulties faced by banks in implementing modern technologies, such as compliance with regulatory requirements, cybersecurity issues, and the need to adapt IT infrastructure to new conditions, were also covered.
As a result, it was found that personalization improves the accuracy of recommendations, and automation of processes helps to reduce costs and accelerate service. The final part of the article describes the benefits for banks interested in implementing digital solutions to improve the efficiency of interaction with corporate customers. The research materials can be useful for customer service specialists, banking analysts, and managers responsible for transformational processes.

Keywords Digitalization, corporate banking services, personalization, high-yield customers, sales of services, artificial intelligence, machine learning, blockchain, cybersecurity.

INTRODUCTION

In recent years, the financial sector has undergone significant transformations driven by digitalization. The digitalization of banking services has introduced new approaches that are gradually reshaping traditional interactions with corporate customers. The automation of business processes has brought an increased focus on the implementation of intelligent technologies, particularly in corporate banking. Growing competition in the financial services market has made this topic increasingly relevant. The rise of digital banks, the emergence of fintech companies, and heightened expectations from the corporate sector have intensified the demand for prompt and secure financial services. Companies increasingly expect banking partners to provide more tailored solutions that efficiently optimize financial operations and mitigate risks. Modern digital technologies, including artificial intelligence and machine learning, enable banks to analyze large

datasets, uncover hidden customers' needs, and develop proactive solutions. These advancements significantly enhance service quality and strengthen customer loyalty.

Despite the growing interest, the integration of digital solutions in corporate banking remains underexplored in academic literature. Existing studies often focus on the technical aspects of digitalization and security concerns, while the impact of personalized approaches on sales volume and customer experience requires further analysis. This topic holds practical significance as it contributes to improving banks' operational efficiency and fostering sustainable customer relationships.

This research aims to study the application of digital solutions in corporate banking and to analyze their impact on banking activities.

METHODS

The research employed comparative analysis methods and a systematization of academic literature addressing digital transformation in corporate banking. Content analysis covered current data and banking reports on the implementation of digital solutions, as well as materials on the application of artificial intelligence, machine learning, and blockchain in the banking environment. Analyzing examples of successful technology integration provided insights into the impact of personalized approaches on servicing high-income customers and the sales of financial services. Expert interviews with industry representatives revealed practical aspects and challenges encountered during the adoption of digital solutions in corporate banking, adding validity to the study's conclusions.

The article offers a comprehensive review of key digital technologies, examines barriers and opportunities for corporate banks, and provides recommendations for successfully integrating digital solutions under conditions of intense competition and technological risks. The study by Rubanov, P. M. [1] highlights the interactions between traditional banks, fintech companies, and digital platforms, emphasizing the open-X banking concept. This model involves data sharing to enhance user experience and the creation of hybrid service formats combining banking and technological solutions. Shukhratovna, R. O., and Narmuradovich, R. S. [2] emphasize that adopting digital technologies such as blockchain and artificial intelligence facilitates efficient marketing processes and customer acquisition, enhancing engagement and the importance of innovative channels.

Marius, D. [3] examines the role of digital banking in strengthening customer loyalty, noting that technology implementation accelerates service delivery, simplifies user interactions with banks, and increases satisfaction, thereby providing competitive advantages. Indriasari, E. et al. [4] explore the architecture of digital platforms based on artificial intelligence and cloud computing, which adapt flexibly to customer needs and enhance banks' analytical capabilities. These platforms enable the creation of intelligent services, optimize workflows, and reduce costs.

In the study by Rysin, V. et al. [5], models of bank product personalization tailored to customers' needs are presented. The authors emphasize that digitalization technologies enable the creation of individualized offers, allowing banks to attract target audiences and strengthen customer relationships. Siek, M., and Rukma, L. Y. P. [6] examine the impact of digital banking applications on traditional institutions, noting that users actively employing modern automated solutions exhibit high satisfaction and preference for new platforms. The article by Kurbanova, D. B. K. [7] explores the influence of digitalization on the

banking sector. It analyzes key aspects of digital transformation, and its effects on financial institutions and customers, and discusses the challenges and opportunities faced by banks in this context.

Practical examples demonstrating the impact of digital solutions in corporate banking services include the experiences of major banks. Information from sources [8, 12], available on the official website, describes the upgrade of the SberBusiness application, highlighting its positive aspects. Source [9], published on finance.rambler.ru, outlines VTB Bank's experience in digitalization, presenting statistical data illustrating the migration of customers to digital platforms. The implementation of digital solutions in corporate banking services by T-Bank is detailed on the company's website [10]. Additionally, JPMorgan's experience with digital solutions is discussed in an article [11] on the Securitylab website, describing the bank's AI product and its benefits.

Thus, the analysis of the literature indicates that digitalization is reshaping corporate banking strategies by introducing innovative approaches and enabling personalized services. This transformation allows banks to adapt to new conditions and enhance their competitiveness.

RESULTS AND DISCUSSION

Corporate banking encompasses the provision of financial solutions for enterprises, organizations, and government institutions. Key areas within corporate banking include:

Comprehensive financial solutions. Banking institutions offer services such as transaction management, credit provision, liquidity management, investment product implementation, and support for international economic activities. Engaging specialists from diverse fields facilitates the development of integrated financial instruments.

Personalized offerings. Financial products are tailored to the specific needs and activities of organizations, including customized credit programs and automated transaction systems.

Risk management. Corporate client operations involve significant transaction volumes, necessitating thorough analysis. Stress testing, monitoring, and creditworthiness assessments are utilized to mitigate risks.

Investment planning. Infrastructure, industrial development, and innovative technology projects require extended timeframes for execution.

Corporate banking provides enterprises with resources essential for implementing strategies, projects, and plans. Bank specialists analyze market processes and develop customized solutions to help clients achieve their objectives [3,5].

SME banking refers to financial services that support the financial management of small and medium-sized businesses. It focuses on creating tools tailored to this segment's needs, fostering entrepreneurial activities and shaping the economic environment. Key features of SME banking services include:

Variety of financial products. Packages include loans, cash management services, leasing, and factoring.

Customized lending. Banking institutions adopt approaches that consider cash flows, guarantees from government programs, and simplified collateral requirements.

Process digitalization. Platforms are developed to automate payment processing, account management, and loan applications.

Support during growth phases. Companies facing challenges in scaling receive access to educational programs, consulting services, and government

initiatives such as subsidies and grants.

Adaptation to client needs. Financial institutions design products that account for industry-specific requirements and seasonal factors.

Providing services to SMEs promotes job creation, stimulates local economic development, and facilitates the introduction of innovative solutions. Strengthening this sector through financial access encourages entrepreneurial activity and fosters a favorable business environment [5].

The digitalization of corporate banking necessitates a reassessment of not only banks' operational activities but also their strategic approach to serving corporate customers. On one hand, new technologies present significant opportunities to enhance automation, improve analytical capabilities, and elevate the customer experience. On the other hand, this restructuring represents a complex process involving a profound transformation of organizational structure and operational models. Comprehensive integration of digital solutions requires not only technical expertise but also a deep understanding of business processes within the corporate sector, especially given the rapidly changing economic conditions and stringent data security requirements [1].

Digital transformation extends beyond surface-level changes; it impacts the architecture of services, data analysis tools, the optimization of transactional processes, and their automation. In this context, the implementation of advanced digital solutions aims not merely at improving traditional services but at creating new approaches to corporate banking characterized by greater flexibility and adaptability to business needs and regulatory requirements [3]. Figure 1 illustrates the key directions in the digitalization of corporate banking.

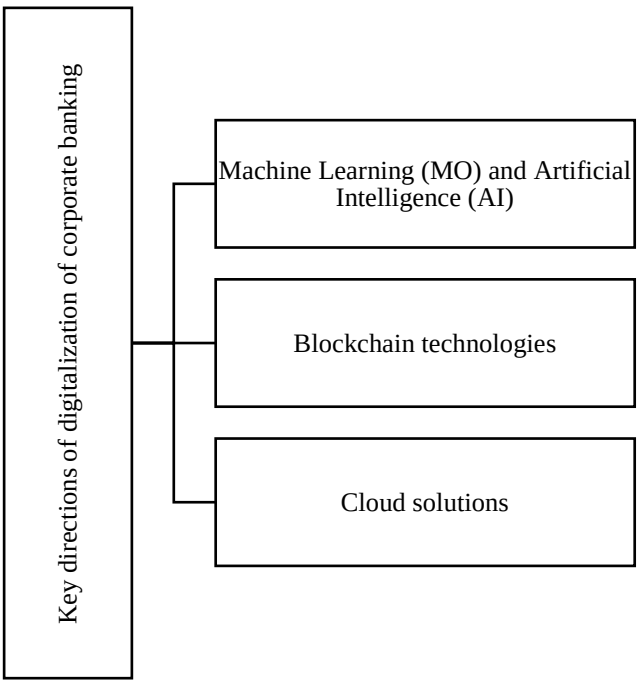

Fig.1. Key directions of digitalization of corporate banking [7].

Machine learning (ML) and artificial intelligence (AI) play pivotal roles in optimizing big data analysis in corporate banking. These technologies enable banks to leverage vast data sets for modeling, risk prediction with high accuracy, and identifying patterns previously inaccessible with traditional analytical tools. Predictive analytics and deep learning algorithms allow banks to automate credit risk scoring processes, which is especially critical for large corporate customers with complex asset and liability structures.

AI is also widely utilized in enhancing personalized service tools. The creation of bots capable of handling real-time requests improves customer interactions by offering a variety of services. Additionally, through the use of neural network technologies and natural language processing, banks can respond more swiftly to specific corporate customers' inquiries, providing relevant information on account statuses, transactions, and financial forecasts [2].

Blockchain technology is transforming financial operations, offering new levels of security and transparency in corporate banking services. Within the framework of global banking, this technology enables near-instant transactions, eliminates the need for intermediary oversight, and reduces reliance on traditional payment systems. It particularly impacts cross-border payments by optimizing supply chains and making the process more predictable.

Smart contracts based on blockchain automate the fulfillment of contractual obligations, which is especially relevant for financial instruments and transactions requiring strict adherence to terms. Unlike traditional contracts, they ensure execution through automated condition management, minimizing human error and reducing negotiation time. The application of blockchain in this context creates opportunities for a flexible corporate financing system, accelerating processes and enhancing the reliability of financial transactions.

Cloud solutions enhance banking operations by improving flexibility, scalability, and data accessibility. These platforms provide real-time access to information, enabling customers to manage financial processes promptly, including cash flow monitoring, liquidity management, and automated reporting. For large corporations operating on a global scale, the ability to coordinate financial operations in real time becomes critical [4].

Additionally, cloud solutions facilitate data unification and centralization, significantly simplifying work with analytical tools required for forecasting and analysis. They also reduce IT infrastructure costs by eliminating the need for on-premises installation of servers and software for implementing complex digital solutions. As a result, cloud solutions help minimize expenses and increase the accessibility of innovative banking products tailored to the needs of the corporate sector.

Table 1. Advantages and challenges of implementing digital solutions in corporate banking [7].

Advantages	Challenges
Optimization of operational costs and increased productivity. The digitalization of banking processes, based on automation and reducing	Cybersecurity risks. The integration of digital technologies into corporate processes increases the risk of cyberattacks and data breaches.

human error, contributes to cost reduction and enhances the accuracy of operations. Automated systems for transaction and risk management expedite routine tasks, allowing employees to focus on complex issues.	Implementing advanced security systems requires additional financial investments and continuous monitoring, which poses a challenge to digitalization, especially during the initial stages.
Advanced data analysis and improved risk management. The use of AI and Big Data technologies enables banks to develop accurate forecasting models tailored to customers' financial needs. This capability enhances risk management, predicts financial crises, and improves resilience to economic fluctuations.	Regulatory restrictions and compliance challenges. Implementing digital solutions often encounters incompatibility with existing regulatory frameworks, requiring the corporate sector to adapt to new requirements and standards at both national and international levels.
Personalization and adaptation of banking services. Digital solutions enable the creation of unique offers for corporate customers, taking into account their financial specifics and individual needs. This approach fosters customer loyalty and enhances service quality.	Technological barriers and the need to modernize IT infrastructure. Legacy systems often fail to meet the requirements of new technologies, complicating their implementation. Infrastructure upgrades demand significant investments and can cause temporary disruptions in servicing corporate customers.

At the same time, for greater clarity, the key directions of digitalization in corporate banking services are illustrated in Figure 2.

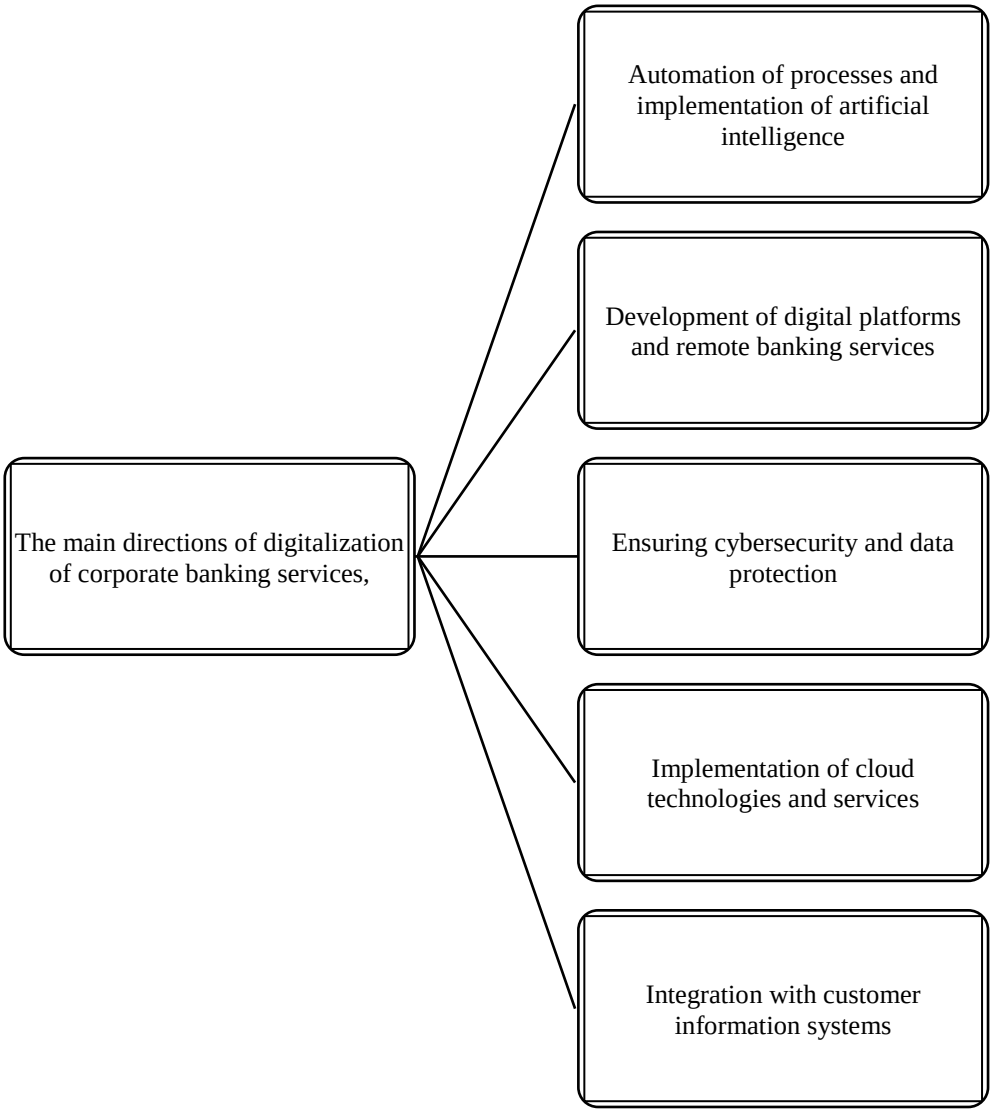

Fig. 2. The main directions of digitalization of corporate banking services [6-7].

The directions of digitalization illustrated in Figure 2 are detailed as follows:

1. Automation of processes and the implementation of artificial intelligence (AI): Banks are utilizing AI and machine learning to automate routine operations, analyze data, and improve the quality of customer service. For example, the introduction of chatbots and virtual assistants enables prompt handling of customer inquiries and the provision of personalized recommendations.

2. Development of digital platforms and remote banking services (RBS): The creation of user-friendly and functional online platforms for corporate customers facilitates financial transactions, account management, and access to analytical data without the need to visit bank branches. This enhances the efficiency and accessibility of banking services [6].

3. Integration with customers' information systems: Banks are increasingly integrating their systems with corporate ERP and CRM systems,

enabling automated data exchange and faster transaction processing. Such integration reduces operational risks and enhances the transparency of financial operations.

4. Implementation of cloud technologies and services: The use of cloud solutions provides flexibility and scalability for banking services, allowing adaptation to the changing needs of customers and the market. Cloud technologies also help reduce infrastructure costs and accelerate the deployment of new services.

5. Ensuring cybersecurity and data protection: With the growth of digitalization, there is an increasing need to strengthen information security measures. Banks are investing in advanced cybersecurity systems to ensure reliability [7].

The following are practical applications of digital technologies in corporate banking services:

1. Sberbank continues to enhance its digital services for corporate customers. In 2023, the bank launched an updated platform, "SberBusiness," enabling companies to manage accounts, make payments, and access reports online. Users can receive information on upcoming events, create payment orders for tax obligations, and gain access to the "Accounting for Sole Proprietors" product at no additional cost. In the following year, Sberbank plans to extend these innovations to customers in the "microbusiness" and "small business" categories [8]. This initiative contributed to a record net profit for the Group of 1,508.6 billion rubles, achieving a return on equity of 25.3%. The number of active customers reached 108.5 million individuals and 3.2 million companies [12].

2. VTB Bank implemented a remote banking service system for customers, allowing them to manage finances through a mobile application. In 2023, the share of customers using digital channels reached 77%, a 10% increase compared to 2022 [9].

3. T-Bank, known for its digital innovations, offers fully online services for corporate customers. In 2023, the bank introduced an updated business platform featuring tools for financial management, analytics, and CRM integration. The system optimizes the process of generating financial reports on company expenses. Reimbursement amounts match business card transactions automatically uploaded to the 1C accounting software via OpenAPI. Accountants only need to match electronic receipts to specific transactions to generate reports. A significant advantage of this system is the automatic upload of receipts from the Federal Tax Service for 35% of card transactions. For other transactions, a receipt scanning feature is added, allowing QR codes to be scanned using a camera or uploaded from the gallery in the T-Business app [10].

4. In May 2023, JPMorgan Chase announced the development of an artificial intelligence-based tool for investment advisors called IndexGPT. The company's application mentions that the technology will be used for "financial investments in securities" as well as "fund investments." Additionally, it may potentially be applied to various areas, including "advertising" and "marketing services" as well as clerical and administrative tasks [11]. This technology aims to renew investor interest in thematic investments, which have declined in popularity due to rising interest rates and low returns in recent years.

Thus, the integration of technologies in banking services is not merely a relevant trend but a necessary measure for maintaining competitiveness and enhancing efficiency. Transitioning to digital platforms allows banks to reduce costs while improving flexibility and adaptability in a volatile economic landscape. The implementation of AI, blockchain, and cloud technologies not only elevates service quality but

fundamentally transforms the organizational structure of corporate banking, establishing a new standard for customer interaction.

CONCLUSION

In conclusion, the implementation of digital technologies in banking services impacts both the quality of customer service and the volume of banking product sales. The use of modern technologies enables banks to tailor their offerings to meet individual customer needs, fostering lasting customer loyalty. By leveraging advanced technologies, banks can provide solutions that align with the specific interests of their customers. Adopting personalized approaches enhances the bank's competitive advantages, distinguishing it in the market through improved customer experience and increased operational efficiency. The findings indicate that the digitalization of corporate banking services, with a focus on individual customer needs, strengthens the bank's market position and establishes a foundation for sustained growth.

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