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ANALYSIS OF INNOVATION ACTIVITIES OF BANKS IN KAZAKHSTAN

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**Abstract.** The article analyses the innovation activities of banks in Kazakhstan. Presents innovative projects of Kazakhstan's National Bank (hereinafter the National Bank) and Agency for Regulation and Development of the Financial Market (hereinafter the Agency), as well as leading commercial banks of the second tier.

The National Bank in cooperation with the Agency carried out an expert appraisal of the asset quality of the banking sector and produced materials and models for the prudential stress testing of banks in the second tier. A pilot project to introduce a national digital currency - the digital tenge - was developed by the NBK with a launch of a new global industry platform to identify and implement open innovation in leading banks in Kazakhstan. In support of the implementation of innovative practices in the financial sector in Kazakhstan, the top fin-tech start-ups in Kazakhstan and CIS countries were involved.

In the article, innovative banking products and solutions are presented in a cross-section of the country's leading commercial banks.

Kazakhstan's financial market is in the process of digital transformation, with a focus on establishing a core IT architecture as a foundation for implementing emerging financial technologies.

To stimulate innovation in the financial technology market, working groups under the National Bank, which rapidly receive feedback and make decisions jointly with market participants, will be strengthened.

The paper reveals measures on the development of the innovative activity of commercial banks.

**Key words:** innovative activity, digital tenge, fintech accelerator, innovative corporations, innovative services, innovative platform, mobile application

The following main trends characterize the growth of the financial services sector in the light of increasing competitive pressure and the crisis in the global financial market: growth of the role of innovative technologies, growth in the volume and types of retail banking services, growth in the volume of innovative technologies, formation of new segments of the market for citizen services.

In the course of improving economic conditions, Kazakhstan's banking system needs to introduce modern management methods and models, as well as innovative technologies aimed at increasing its competitiveness. The efficiency of Kazakhstan's banks is one of the key conditions for the country's further economic development. It determines the growth dynamics of the economy as a whole.

**Methods.** The main provisions of the study are based on the regulatory innovation activities of the NBK, the Agency influencing the formation of a sustainable and effective innovation environment in the banking sector, highlighting the features of innovative products in the operations of some commercial banks in the country and the development of practical recommendations for strengthening the innovative capacity of the banking system.

The research and findings of theoretical and applied research of domestic scientists formed the conceptual foundation of the research conducted in the sphere of innovation activity of banks.

The practical part of the research is based on statistical material and an analytical review of the banking sector. The paper uses the following methods: comparative analysis, statistical and economic, and monographic.

**Results.** In Kazakhstan, the Bank Service Bureau of the National Bank of Kazakhstan (hereinafter referred to as BSB) was established as a republican state-owned enterprise on the right of economic management. The mission of the BSB is to create a center of competence and innovation in the field of digital technologies within the NBK system.

The activities of the BSB include a wide range of services from expert analysis in the IT sector to the development, implementation, and maintenance of automated information systems, providing IT infrastructure support services, and maintenance of information corporate networks.

The Engineering Competence Centre, concentrated in BSB, supports various equipment, NBRK systems: from server stations to automated workstations, providing software product support, and performing all types of work on preparation, installation, integration, maintenance, and start-up of systems and equipment. Close cooperation with the world's major companies that produce IT solutions allows us to be at the center of current technologically advanced solutions.[1]

The National Bank in cooperation with the Agency completed an unbiased evaluation of the asset quality of the banking sector (Asset Quality Review / AQR), which significantly improved the quality of analytical information on the state of member banks and the banking sector as a whole. [2, 105-106]

In 2021, the Agency developed all the necessary documentation and models of supervisory stress testing (SST) of second-tier banks.

The SST concept, reveals the main principles and approaches: a methodological guide governing the detailed requirements for banks' settlements; a baseline and stress scenarios for SST,

providing sufficient "hardness" to assess potential risks; an SST template with detailed instructions for reflecting banks' settlements; and Agency verification models for assessing the quality of banks' settlements.

The NBK is actively managing a program to develop the digital infrastructure of the financial sector and to introduce financial innovations. A key initiative is a pilot project to introduce a national digital currency, which is the digital Tenge (hereinafter DT). In 2021, the focus of the NBK's research was the retail digital currency aspects of the Central Bank. [3]

The digital tenge can be used for retail and wholesale payments. In 2021, a tokenized form of digital tenge was tested as part of a project to be used in retail settlements. [4]

MFCA's Tech Hub with the Fund for Development of Internet Initiatives, with the sponsorship of Mastercard international payment service, started the first fintech accelerator for commercial banks in the country in July 2021. Altyn Bank, Freedom Bank, and Eurasian Bank became participants in the program in 2021. The first fintech accelerator is a global industry platform for sourcing and implementing open innovation in Kazakhstan's leading banks. The program aims to meet the growing demand for innovative financial products and services, develop infrastructure to support start-ups, and increase the number of global opportunities for Kazakhstan's fintech market. [5]

In January 2022, following the completion of the Tech Hub program, MFCA, together with its partners, presented the results of the accelerator to the market. The purpose of the program is to search for and attract the fintech start-ups of Kazakhstan and the other CIS countries to support technological leadership and implement innovative practices in the financial sector in Kazakhstan.

Based on the results of an innovation audit and analysis of 75 banks' business cases, the search for startup solutions was announced in eleven areas - business process automation, digital products, services for corporate clients, SMEs, retail, solutions for marketing, sales, HR, GovTech, information security.

In the course of the accelerator marketing campaign, the search for fintech solutions organized training events for innovative groups of banks and held an international conference and a workshop for foreign startups on the opportunities of Kazakhstan's banking and fintech sectors.

The outcome was the receipt of over 300 applications (including 272 relevant applications) from start-ups in 11 countries.

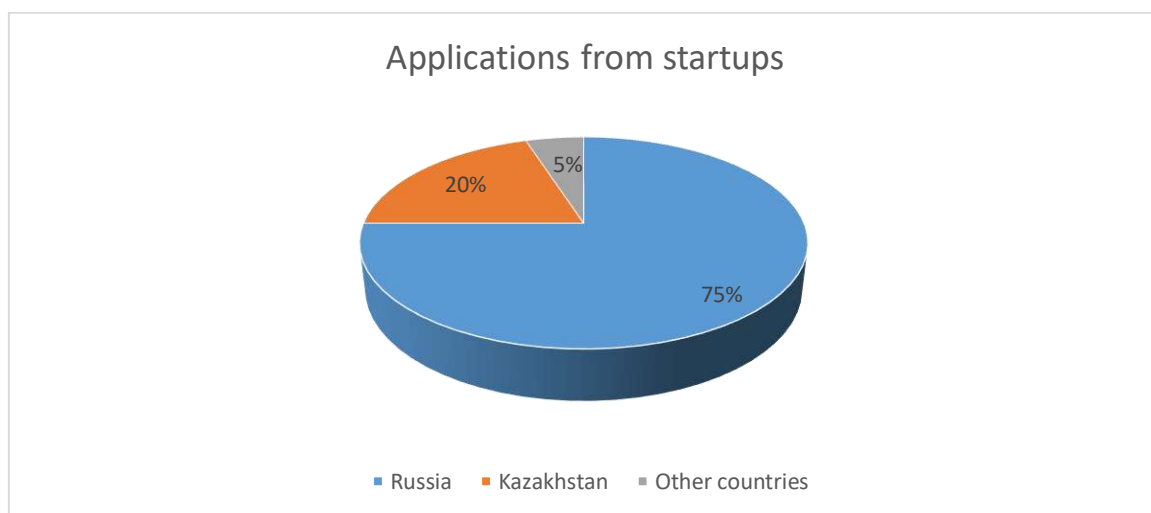


Figure 1: Distribution of requests by country

Other countries are the USA, Ukraine, Belarus, Vietnam, Singapore, Tajikistan, Kyrgyzstan, Estonia, and Poland.

More than 70% of start-ups have already had piloting experience with large corporations. [6]

As part of the study, an online survey of the startup community was conducted with over 70 respondents operating in Kazakhstan. The purpose of the survey was to identify a list of leading corporations in the topic of corporate innovation development and cooperation with startups, as well as to identify the main difficulties faced by a startup during cooperation with a corporation.

Among the country's other most innovative corporations, start-ups noted companies in the financial sector (ForteBank, Sberbank Kazakhstan, Centras Group, First Credit Bureau), mining and energy sector (NCOC, KazMunaiGaz, Samruk-Energo, Kaztransgaz, Tengizchevroil), telecom (Kazakhtelecom, Kcell), retail (Technodom, Europharma), quasi-state/infrastructure companies (Kazpost, the airline Air Astana), Information technology companies (Alseco, Kazdream, Open Technologies Group). [7]

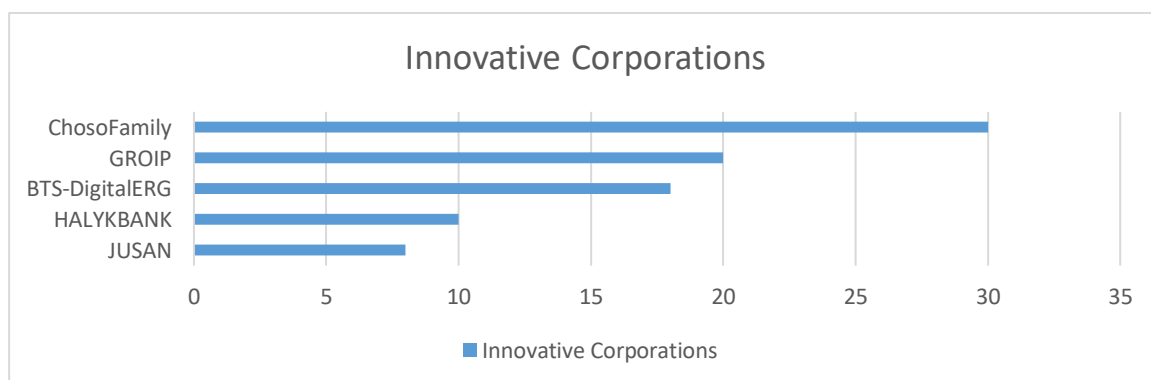


Figure 2: Top 10 innovative corporations in Kazakhstan

Among the country's other most innovative corporations, start-ups noted companies in the financial sector (ForteBank, Sberbank Kazakhstan, Centras Group, First Credit Bureau), mining and

energy sector (NCOС, KazMunaiGaz, Samruk-Energo, Kaztransgaz, Tengizchevroil), telecom (Kazakhtelecom, Kcell), retail (Technodom, Europharma), quasi-state/infrastructure companies (Kazpost, airline Air Astana), IT companies (Alseco, Kazdream, Open Technologies Group). [7]

Kaspi.kz is a company that is unique and built in Kazakhstan. Its mission is the creation of innovative services that have a positive impact on the lives of its customers.

The Kaspi.kz application is currently in use by 11 million citizens of Kazakhstan. Of these, 6 million customers log in to the application on a daily basis. In terms of user numbers, only China's WeChat can challenge Kaspi.kz.

Kazakh citizens can pay for over 5,000 various services and money transfers at Kaspi.kz with no fees. More than 1.2 million goods are available for purchase on the marketplace. They are delivered free of charge, in instalments, on credit, at bargain prices and with discounts. There are more than 80,000 partners on Kaspi.kz. Most of them are SMEs that Kaspi.kz assists in selling online and in traditional shops. Kaspi.kz also started to develop financial technologies for businesses, specifically the granting of loans for business development.

In collaboration with state authorities, Kaspi.kz has launched a range of high-tech services. Kaspi.kz has created a number of smart tech devices - Smart POS, Mobile POS and QR displays – all free of charge for entrepreneurs. Last year, the use of such devices increased from 22,000 to 215,000. [8]

In addition to the central focus on digitalisation, service improvement and availability of high-tech financial services to customers, Halyk Bank regularly updates its agenda and portfolio of relevant innovations to reflect the impact of the external environment.

Halyk Bank uses several corporate innovation tools. Internal start-ups: the Bank has set up dedicated platforms where employees can submit their own ideas, receive human resources and a budget to implement them.

Halyk Bank uses VeriDoc for document recognition. The new product increases the speed at which user personal data is entered into the system by a factor of 20.

Nurbank operates a new mobile application for individuals, speeding up the process of opening deposits, payment cards online. A new mobile application for legal entities is planned to be launched in 2023. In 2022, online lending products, credit card, installment card are offered to retail customers.

Nurbank switched to a new IT system in 2020 that automates a number of core business processes of customer service, reducing customer time.

Nurbank is the first bank to connect to the innovative platform, launching a service that allows money transfers by mobile phone number between cards of the bank, other domestic banks, to receive transfers by phone number from cardholders of other banks.

Home Credit Bank created a service for remote interaction with partners based on the cloud-based IT platform SAP Business Technology Platform. As a result, the time for confirming and signing the statement was reduced from two weeks to 3 days using a simple electronic signature, and the amount of overdue accounts receivable was halved. In the future it is planned to introduce alternative methods of debt payment, to expand the service to other areas of partner activity, as well as to the bank's administrative and economic activity.

Home Credit Bank became a partner of the Visa Everywhere Initiative, a global program to promote innovation. HCU IT Hub, a tailor-made training and internship program for young IT and digital professionals, was launched.

In July 2021, the prestigious World Finance Banking Awards went to Jusan Bank, which won in 2 categories: "Most Innovative New Corporate Internet Banking - Kazakhstan 2021", "Best New Mobile Banking Application - Kazakhstan 2021". [9]

ForteBank's mobile app incorporates augmented reality (AR) technology. Using AR, users can go through the nearest ATM, branch, check out interesting offers from the bank's stakeholders and view their own income and expenses.

ForteBank is the first bank to implement augmented reality technology in the application. Added Talk in to the mobile app - a virtual assistant answering questions about banking products. Users will be able to chat with relatives, friends in the country or abroad when they have a zero balance or no internet traffic. Online lending service is available for ForteBank customers. Earlier the user had to sign certain forms, now he can find out the approved amount in five minutes, getting a credit the same day, without going to the bank. The credit will be delivered to his home.

ForteStart - a package offer for business start-ups with a special rate, including internet banking, bank card, POS terminal, operational short-term loans.

ForteBank launched a new product for entrepreneurs - "ForteKassa". "ForteKassa" automates the point of sale, enables management of sales, employees, accounting in the warehouse. Composition of the technological solution: for merchants - application, for the business owner - personal account. [10]

Altyn-i, a brand created by Altyn Bank JSC, is a fully-functional digital bank for personal banking. Key benefits include 24/7 access to services, flexible terms and innovative digital capabilities.

There are no formal, bricks & mortar branches of Altyn-i. From opening an account and issuing a debit card to transferring an international foreign currency transaction or obtaining an uncollateralized loan, all operations and services are conducted online.

Altyn Bank has commercially launched Robotic Process Automation (RPA) using artificial intelligence technology. A large amount of manual work is now automated. [11,392-393]

**Discussion** The financial sector in Kazakhstan is in the process of digital restructuring, focusing on establishing a core IT architecture as the baseline for deployment of new fintech.

In order to stimulate innovation in the financial technology market, working groups under the National Bank, which receive prompt feedback and make decisions together with market participants, will be strengthened.

In 2021, a gradual formation of the architectural and methodological basis for the development of SupTech, RegTech technologies (electronic document management, Open API, granular data collection) was conducted.

In 2022 a collaborative cross-industry body for implementation of Open API in the Republic of Kazakhstan will be established, as well as common elements of Open Banking infrastructure for market participants to reduce the costs of the industry.

In 2023, the plan is to complete the creation of a common Open Banking infrastructure for the financial market and ensure growth of banking revenues through new opportunities provided by open API services. Thus, the widespread use of Open APIs among Kazakhstan's top-15 banks is expected.

As part of developing digital infrastructure, it is planned to reduce at least 70% of mandatory matrix (aggregated) reporting indicators of financial market entities in 2024-2025 through the collection of detailed transactional data in an automated format. [12]

In February 2023, the Agency published a Concept of Development of Open API and Open Banking in Kazakhstan for 2023-2025. The Concept stipulates:

- implementation of a control and incentive approach in the implementation and development of Open API and Open Banking;
- developing of a comprehensive infrastructure in the form of an Open API technology platform for financial market participants with centralized accreditation of participants, technology sandbox, digital consent service and identity verification;
- forming common requirements for Open API ecosystem participants and approving common standards for data exchange.[13]

**Conclusion** Based on the above, for the development of innovation activities of commercial banks, the adoption of the following measures is recommended:

- Implementation of high-tech modern technologies in the activities of banks.
- Expanding cooperation between commercial banks and research institutes.
- Creation of the infrastructure of a national innovation banking system in the country (innovation and technology centers, research institutes, techno parks, primary financing funds, venture capital funds, technology incubators).
- Creation of a financial technology center and defining its activities.

- Internet banking systems such as: (internet-banking, online-banking), bank-client systems (PC-banking, home-banking, telephone-banking), mobile banking systems (SMS-banking<sup>8</sup>, advance SMS-banking, STK-banking<sup>9</sup>, JAVA banking<sup>10</sup>, WAP-banking) should be developed in order to attract the population's and economic entities' free funds to the financial sector and to increase the banks' profits and the types of services they provide

- Complete modernization of bank websites and regular advertising of new banking innovations on bank websites contributes to profitability.

- In higher education institutions, a new training direction "financier-engineer" should be opened in order to develop the innovative banking system more effectively and faster, because the effective commercialization of a newly developed financial product by a financial engineer in banks increases their efficiency and competitiveness.

Considering the rapid development of digital banking services and products advances in mobile and online banking, and customer demands to manage their data, the development and implementation of open banking in Kazakhstan is a natural initiative to create a sustainable and efficient innovation environment in the financial sector.

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## ҚАЗАҚСТАН БАНКТЕРІНІҢ ИННОВАЦИЯЛЫҚ ҚЫЗМЕТІН ТАЛДАУ

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**Аңдатпа.** Мақалада Қазақстандағы банктердің инновациялық белсенділігі талданады. ҚР Ұлттық Банкінің, ҚР Қаржы нарығын реттеу, дамыту агенттігінің, жетекші екінші деңгейдегі коммерциялық банктердің инновациялық жобалары таныстырылды.

ҚРҰБ, ҚР Қаржы нарығын реттеу, дамыту агенттігімен бірлесіп, банк секторы активтерінің сапасына тәуелсіз бағалау жүргізді, екінші реттік бақылау стресс-тестілеуінің құжаттамалары мен үлгілерін әзірледі. деңгейлі банктер. ҚҰБ ұлттық цифрлық валюта – цифрлық теңгені енгізу бойынша пилоттық жобаны әзірледі.

Қазақстанның жетекші банктерінде ашық инновацияларды іздеу және енгізу үшін жаһандық салалық платформа іске қосылды. Қазақстанның қаржы секторында инновациялық тәжірибені енгізуді қолдау үшін Қазақстандағы және ТМД елдеріндегі стартаптардың үздік финтех шешімдері тартылады.

Инновациялық банктік өнімдер мен шешімдер елдің жетекші коммерциялық банктері контекстінде ұсынылған.

Қазақстанның қаржы нарығы жаңа қаржылық технологияларды енгізудің базалық деңгейі ретінде негізгі IT архитектурасын құруға назар аударып отырып, цифрлық трансформация процесінде.

Қаржылық технологиялар нарығында инновацияларды ынталандыру үшін Ұлттық Банк жанындағы жұмыс топтарының қызметі күшейтілетін болады, олар жедел кері байланыс алып, нарық субъектілерімен бірлесіп шешім қабылдайды.

Коммерциялық банктердің инновациялық қызметін дамыту шаралары белгіленді.

**Түйін сөздер:** инновациялық қызмет, цифрлық теңге, финтех акселераторы, инновациялық корпорациялар, инновациялық қызметтер, инновациялық платформа, мобильді қосымша.

## АНАЛИЗ ИННОВАЦИОННОЙ ДЕЯТЕЛЬНОСТИ БАНКОВ КАЗАХСТАНА

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**Аннотация.** В статье проведён анализ инновационной деятельности банков Казахстана. Представлены инновационные проекты Национального банка РК, Агентство РК по регулированию, развитию финрынка, ведущих коммерческих банков.

Национальным Банком РК совместно с Агентством РК по регулированию, развитию финрынка проведена независимая оценка качеству активов банковской сферы, разработаны модели, документация надзорного стресс-тестирования коммерческих банков.

НБРК разработал впервые проект по внедрению цифровой национальной валюты - цифровой тенге. Запущена глобальная платформа по отрасли в целях поиска, внедрения открытых новшеств в казахстанских банках. Привлекаются лучшие финтех-решений стартапов не только Казахстана, но и стран СНГ в целях помощи внедрения практик в новшеств в финансовой отрасли Казахстана.

Инновационные банковские продукты и решения представлены в разрезе ведущих коммерческих банков страны.

Казахстанский финсектор находится в ходе цифровой трансформации, строя ключевую IT-архитектуру в целях фундаментального уровня для применения новейших технологий в сфере финансов.

В целях стимулирования инноваций в секторе финтехнологий будет усиливаться работа рабочих групп НБРК, оперативно получающие обратную связь, принимающие решения в согласии с участниками рынка.

Выявлены меры по совершенствованию инновационной деятельности коммерциализованных банков.

**Ключевые слова:** инновационная деятельность, цифровой тенге, финтех-акселератор, инновационные корпорации, инновационные сервисы, инновационная платформа, мобильное приложение.