

DIGITAL TRANSFORMATION

In 2019, the importance of digitalisation and the introduction of new technologies were highlighted at the national level, with the Government of Russia creating several national projects aimed at introducing state-of-the-art technologies to encourage economic growth and development. The increasing number of citizens who have begun using remote services were the driving force behind this decision. At 78 %, Russia has a high degree of Internet penetration – some 95.8 million Russians are using internet on regular basis. For the banking business, this is resulting in the dynamic development of digital services.

The *Bank of Russia* continues to be an active driver in the development of digital technologies. In addition to launching its *National Payment Card System*, Russia's banking regulator invested heavily in the development of a unified biometric system and the *Faster Payments System* in 2019.

All the above-mentioned factors are reflected in the results of VTB's work in the areas of digitalisation and technological development. The total number of changes in VTB's banking information systems increased by 31 % in 2019 year-on-year. Most of the changes (more than 9.3 thousand) were made to retail systems.

NUMBER OF CHANGES IN IT SYSTEMS BY GLOBAL BUSINESS LINES



KEY HIGHLIGHTS AND IT ACHIEVEMENTS

Highlights	Results
Successfully handled the high season (October 2019–January 2020), ensuring that IT systems provided an acceptable degree of stability and reliability	Demands on IT systems increased by 50 % during the high season, with zero downtime
Advancing IT competencies and creating new ones	Number of developers increased by 131 %
Focus on reliability issues	The reliability indicator as of the end of 4Q 2019 was 99.98 %, excluding maintenance windows, while the target is 99.99 % by 2022
All key decisions related to IT architecture were adopted	100 % future-oriented technologies; zero obsolete solutions in the Bank's IT architecture
Launched and began replicating a new business process; all IT resources have been combined in teams	277 Agile / Scrum teams formed (cross-functional teams)

RETAIL BUSINESS

In 2019, a number of key digital projects were launched as part of the strategic focus on the digitalisation of the *Retail Business*:

- **Connection to the *Faster Payments System for individual transfers*** using a phone number as the identifier;
- **Launch of a biometric platform** that makes it possible to identify the Bank customers by their face and voice;
- **Implementation of the *Digital mortgage project***: customers no longer need to visit a Bank branch to apply for a mortgage; they can submit an application, provide all the necessary documentation and get a decision remotely through the VTB mobile application;
- **Car marketplace launched**: customers can choose a new car right on the Bank's website, where they can also receive a car loan;
- **Introduction of chatbots** for automated processing of customer requests;
- **Launch of a robot collector**: reducing personnel costs for initial calls to debtors. The robot is constantly learning; its work is reviewed just like the work of human operators, which enables us to make ongoing changes to scripts.

To improve the stability and reliability of retail systems, a set of measures was developed that is aimed at upgrading server hardware, improving the stability and reliability of systems in the event of a catastrophic incident, and improving the quality of software programming and testing. As a result of these efforts, VTB successfully made it through the high season, the period from October to November, which is traditionally marked by increased customer activity. Despite a significant increase in demand on key systems (considerably greater than expected in some cases), we handled the season successfully.

CORPORATE-INVESTMENT BUSINESS

In 2019, a number of key digital projects were launched in our corporate business:

- **Development of digital channels for investments** VTB Capital Investments and the *RBC media holding* launched an investment site at <https://quote.rbc.ru/>. The project enables customers to open investment accounts and conclude transactions on the *Moscow and St. Petersburg Exchanges*. The acquiring service is backed by VTB Bank together with its technology partner, *Paymo*. The platform is based on an *Open API* (application programming interface) technology. Using this concept, the VTB platform will be able to create a variety of channels offering broader opportunities to an unlimited number of partners. VTB became the first bank in Russia to use this technology to develop investment products.
- **The Transport Processing system** (used in the *Moscow Metro*), with its integrated payment aggregation mechanism, made it easier and faster to connect with new carriers. The average number of metro journeys using bank cards increased from 1.7 thousand per day in 2018 to 231 thousand per day in 2019.
- **The introduction of contactless payment for travel using bank cards** on all *Mosgortrans* routes led to a rapid increase in the average number of ground transport journeys using bank cards from 1.2 thousand per day at the beginning of the year to 47.4 thousand per day at the end of 2019.
- **Digital tariff management** The process of managing the Bank's tariff policy has been completely digitised: revenue from the acceleration of processes and the flexibility of the tariff policy for customers of the *Corporate-Investment Business and Medium and Small Business* global business lines is expected to amount to RUB 300 million through 2022; automation will optimise the labour costs of operational support units for servicing tariff decisions.
- **Remote banking** VTB continued to develop the functionality of remote banking services for legal entities as part of the *RBS 2.0* project. The number of functionalities implemented during the year as part of *RBS 2.0* increased from 13 % to 60 %. The total number of customers reached 78 thousand, while the average time for processing accounts decreased by 72 %. With the introduction of new functionalities, measures to ensure the reliability of the system were improved; as a result, the number of incidents decreased by 60 %.

- **VTB Business QR** VTB launched a pilot *VTB Business QR* mobile application for individual entrepreneurs, which enables them to receive C2B payments using a QR code through the *Faster Payments System*. The application provides functionality that enables individual entrepreneurs registered as self-employed and applying the *Professional Income Tax* scheme to make payments and issuing checks.

DEVELOPMENT OF IT INFRASTRUCTURE

One of the major focal points for IT departments in 2019 was developing infrastructure and supplying all key systems with the necessary resources for uninterrupted uptime during periods of peak demand. This included the following:

- Three projects were launched to improve the reliability of the Bank's IT infrastructure;
- A private cloud was created, and 236 information systems of the Bank were transferred into it. The private cloud is a single platform that allows flexible management of the Bank's IT infrastructure. It enables us to optimise the cost of IT resources and accelerate the process of providing them to the Bank's internal customers. During the implementation of the project, a catalogue of cloud services was created and automated. The catalogue made it possible to improve the productivity and fault tolerance of the Bank's IT systems and to introduce a cost management mechanism for internal customers. One of the key results is an improvement in the performance of information systems and in the fault tolerance of the infrastructure after its migration to the new private cloud platform. As a result of the project, the total savings for the operational activities of VTB's IT systems amounted to RUB 920 million. The cost of ownership was reduced by lowering the cost of maintaining and upgrading old equipment;
- A single dedicated e-mail system using *Exchange 2016* was put into commercial operation, and 22 thousand VTB employees were migrated to this new system;
- A pilot was carried out with *Technoserv* to create a hybrid cloud¹.

DEVELOPMENT AND INTRODUCTION OF INNOVATIONS

In 2019, intensive work continued on the testing and implementation of innovative technologies and products in the framework of priority development projects (foresight projects):

- A patent was obtained for a blockchain technology to create multi-issue settlement and payment systems (*Digital Settlement Service*), and pilots were carried out for a system of cross-border transfers, multiple-currency settlements and instant payments. This was the first time the Bank has patented intellectual property developed in house. The technology will enable VTB to create digital products, services and payment instruments that provide a solution for the problem of accounting for reciprocal payments between an almost unlimited number of participants. These services include *Faster Payments System*, cross-border settlements, loyalty programmes, etc. Potential users include both individuals and legal entities, including other banks. A multi-issuer system has the potential to reduce costs and increase the efficiency of business processes for all participants.
- A prototype of the Bank's mobile application was created for the *Russian SailFish OS RUS* mobile operating system. The application enables users of devices based on *SailFish OS RUS* to access all of VTB's main banking services.
- A *Digital User Profile* project and a module for integrating big data into user profiles were implemented.
- A pilot was launched to expand the customer base of the *VTB My Investments* service, and the first mortgage loan was issued using virtual reality (VR) technology.
- Integration tools were implemented with external partners via *Open API* interfaces, including the launch of the *RBC Quote* project in tandem with the *RBC media holding*.

VTB corporate accelerator underwent intense development. The project was launched in 2018 as a tool for quickly piloting innovations within the Bank. The goal of the accelerator is to select projects that have promise for VTB's business and to develop them to a level that would make it easy to integrate their innovative ideas into the Bank's business.



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¹ A hybrid cloud is a combination of a public (external to the Bank) cloud with a private cloud owned by the Bank.

As of the end of 2019, the accelerator portfolio included 29 pilot projects involving technological startups in the following areas:

- Voice assistants to reduce call centre costs;
- Tools to personalise client communications;
- Voice analytics to improve the quality of service at bank offices;
- Geomarketing tools for branch network optimisation;
- Design management tools to reduce document preparation time;
- Data analysis and management platforms;
- Service assistants for employees;
- Behavioural data assessment services for borrowers;
- Tools for assessing the quality of customer service by determining emotions;
- HR solutions for personnel recruitment and evaluations, etc.

HOW THE STARTUP ACCELERATOR WORKS AT VTB BANK:

1 A search is conducted for ready-made, innovative startup solutions that can reduce the Bank's costs or generate additional profit by creating new products and services

2 Quick (up to three months) and low-cost (up to RUB 1.5 million) pilot projects are carried out at the request of functional and business units to assess their potential business impact and technological feasibility

3 Innovative solutions are quickly integrated into the Bank's existing products and services