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INFORMATION TECHNOLOGIES AND THEIR USE IN FINANCIAL AND CREDIT MARKETS

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Abstract: Nowadays, important changes are observed in all spheres of human activity. These changes relate to the widespread adoption of technologies that fit into a completely new concept of digitalization. Most countries of the world and areas of activity, including economy, are involved in the digitalization processes. In the process of digitalization of the economy, banking organizations play significant role, and, in the face of increased competition in the market, they are forced to constantly improve their activities and introduce the most advanced technologies for implementing business processes and working with clients. One of the most modern technologies is Big Data, which is a combination of technologies aimed at processing huge amounts of data, the ability to process quickly incoming data in large volumes and structuring this data according to various aspects and attributes. Every day, large number of customers make

thousands of transactions in banking organizations, which creates large amounts of data for analysis. Based on these data, banks can take management decisions that can fundamentally change the effectiveness of the bank in the market. That is why the study of key success factors in the development of technologies for working with big data in banking organizations is especially topical today.

Keywords: digital financial services, digital banking services, Internet resources, digital banking, e-wallet, mobile banking, Internet banking, neobank, remote servicing.

INTRODUCTION

Large-scale globalization and the digital revolution have led to the need for digital transformation of all financial institutions, including the financial and credit market. Customer behavior changes every year, and previous models and business processes become obsolete. They are being replaced by an updated customer service process and new communications. There is a global transformation of all business processes in the lending sphere nowadays. Digital transformation is a process of introducing new information technologies into all aspects of credit and financial institution. They include the technology of implementing new informational products, plastic cards, clients service, after sale service and many others (https://www.hpe.com). Complete transformation of all areas of activity in a financial organization and the rejection of established models of business behavior are critical for the introduction of information technologies in business processes. In addition, information technologies are continuously updated. Therefore, it is not enough just to introduce IT technology in customer service. It is necessary to update the database regularly, to respond quickly to the latest innovations in the field of IT support. The introduction of information technologies is a forced reaction to changes in consumer behavior of customers. The whole procedure for changing a financial institution is determined by the needs of its customers (1; 13).

METHODOLOGY

The methodology of the study is based on the application of classical scientific methods and techniques, namely: systematic consideration of the object and subject of the study, dialectical logic, analysis and synthesis, methods of grouping, comparison, generalization, which allows to speak about the complexity, integrity and reliability of the results of the study.

MAIN PART

The introduction of information technologies significantly optimizes and improves the efficiency of financial and credit services provided to customers. The main advantages of IT support are presented in Fig. 1. The introduction of information technologies leads to the transformation of the entire activity of financial and credit institutions. Now this process is subject not only to large financial institutions and international banks, but also to small financial and credit organizations. An example of the complete digital transformation of a business and the active introduction of

information technologies is Tinkoff Bank, which does not have a single office or representative offices. Its entire business is based on digital transformation and is carried out electronically via remote communication channels (Digital transformation of the banking sector).

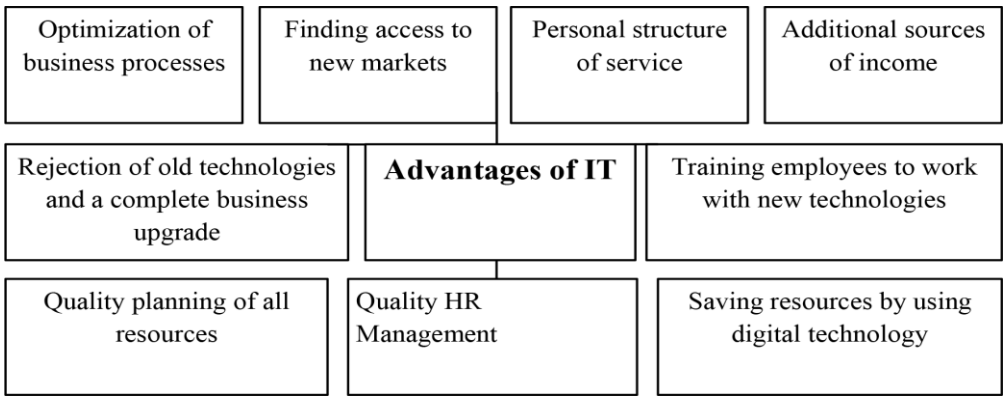

Fig. 1. Advantages of introducing IT-technologies in the field of financial institution.

The introduction of information technology is carried out sequentially in all processes and areas. Its basics are presented in table 1 (Tsarev & Kantarovich, 2017).

Table 1. The benefits of implementing information technologies

№	**Name of the process**	**Process characteristics**
1.	Working with clients	Studying behavioral characteristics, creating a system of consumer communications with each other and with the provider, creating customer experience bases, customer feedback, after-sales service, online support.
2.	Sales conversion	Transition to e-commerce, electronic presentations of goods and services, interaction via digital channels, personalized service based on accumulated information about customer purchases, geolocation, etc.
3.	Digitalization process	Automation of business processes, the transition to digital technologies, the introduction of databases and software in enterprises, the creation of electronic document repositories.
4.	Working with partners	Flexible integration when working with suppliers and contractors, partner companies and other contractors. Digital partnerships irrespective of geographic boundaries.
5.	HR strategy	Realization of the individual capabilities of the employee, no attachment to a physical workplace (remote work), real-time collaboration. Staff development.
6.	Management	The transition to transactional operations and systems contributing to the quality management of the organization and the prompt adoption of the necessary management decisions.
7.	Automation	Implementation of digital products and devices in enterprises, in the field of security, workstation, including devices given to employees for work.

The priority areas for the implementation and use of IT technologies in the banking sector are the following: 1. Creation of corporate computer networks -

electronic document management, electronic document storage, settlement and clearing systems, inter-branch communications, etc; 2. Sale of banking and related services on the Internet (Internet banking, Internet client, home bank, telebank, mobile bank, Internet trading, e-commerce); 3. Automation of internal bank management systems - CRM customer service technology and ERM resource planning technology.

The CRM system allows one to automate the work of employees of financial institutions. So, one manager can effectively serve many bank customers at the same time, which allows optimizing labor resources and the cost of maintaining a large headcount. This system optimizes and improves the sales of banking services, pre-sale and after-sales services for bank customers and the marketing system of financial organizations (Galkin). Financial and credit organizations are the main users of this system (more than 30% of all users are banks). The main criteria for the effectiveness of the implementation of information technology in the field of financial and credit services include: analysis of the effectiveness of various entries to the server; attendance of server web pages; effectiveness of banner advertising of banking services; efficiency of converting server visitors into banking service buyers; number of repeated visits to web pages.

The priority area for the introduction of information technologies in the field of financial and credit services is the transition to cashless payments. At the same time, the entire payment system is under transformation. First, the following changes occur in financial and credit organizations: introduction of modern technologies and methods of transferring payment information; ensuring the security of all participants in the payment process; real-time settlements; possibility of settlements in foreign currency. Now all financial and credit organizations are equipped with modern banking terminals, which allow customers to carry out independently many different operations without separation from the bank managers. In addition, the mobile banking system develops actively. Customers make the same operations without leaving their home using digital devices and mobile applications. Each bank has its own mobile application; by installing it the customer can get the opportunity to make payments and transfers, open deposits in the bank, take loans, purchase currency and execute many other operations (Mirgaziyanovna Yusupova et al., 2019; Yusupova et al., 2018).

The priority area for the information technology implementation is issuing and maintaining plastic bank cards (MasterCard, VISA, Maestro and others) and the use of digital money (electronic wallets). An electronic wallet is a system that allows one to store funds in electronic form and carry out any payment operations using such wallet. Now, there are such electronic wallets as Webmoney, Yandex Money, Visa, Qiwi, PayPal, Liqpay, Rapida Online and others. Many financial and credit organizations not only issue their own plastic cards, but also deposit funds to these wallets. In addition, customers can pay for the services of financial institutions using these information systems.

Significant advantages are gained by information technologies of remote customer service. Bank services are remotely offered to the client, their acquisition, support, and after-sales service are carried out remotely as well. Large financial institutions have a feedback system functioning through the Internet. Clients of a financial institution can ask a specialist all their questions in real time mode. In addition, large financial institutions have web-sites where customers can not only purchase banking products and consulting, but also leave their feedback on the activities on the organization and the service quality.

Nowadays all large credit organizations offer service on the Internet in addition

to the usual service in the branches. This trend has specific reasons, every year the popularity of online shopping and other transactions through the Internet is growing, banking is being globalized. Currently, innovations conjugated with digital technologies are safely used and formed in almost any bank (9). More than fifty percent of all residents use Internet banking in Europe and America. Recently, banks have been developing intensively due to the focus of digital banking. The banking sector is formed in completely different ways in different countries. Nevertheless, we can see a single focus characteristic of the banking sector of all countries.

Most of the traditional banks currently offer online services, banks designed only for digital technology are created entirely in electronic form. Banks that work only with digital technologies do not rely on financial support and customer support from an established physical location - instead, they use digital platforms. The main decisive conditions for the effective formation of digital banking services that characterize trends abroad were: an increase in the number of Internet users, the development and cheapening of technologies based on electronic services, an increase in the e-commerce market and other conditions (10).

Banks that work only with digital technologies, also known as “neobanks”, can go beyond the traditional banking service due to its ability to satisfy requests of technically savvy customers. An example is a German neobank, the number of customers has increased by 3,5 times, Fig.2. Working in digital banking does not require additional software on a computer, which can also be noted among the advantages, unlike the Bank-Client system, which requires the installation of additional programs. To exchange documents between the bank and the client, one does not need a physical presence at the bank’s office, but one can send these documents electronically, especially since a document that is signed with an electronic signature has legal force. Today, there is no clear and unambiguous definition of the concept of "digital banking." In essence, digital banking is a new paradigm of interaction between the bank and its customers, a direction that covers innovations in the field of financial services for consumers and commercial clients in the field of digital, information and technological strategies.

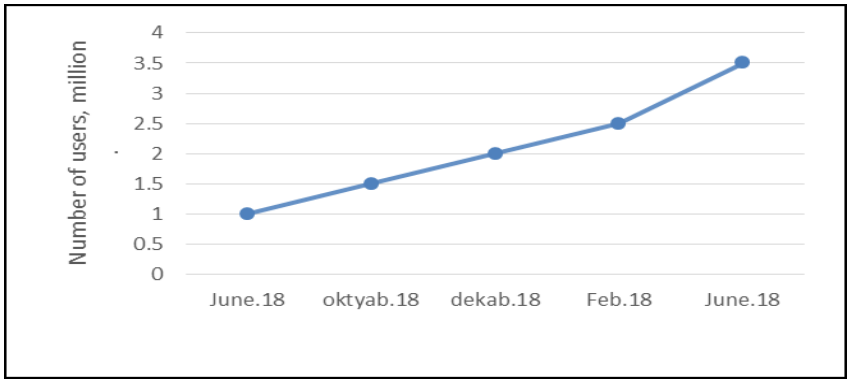

Fig. 2. User growth of the German neobank.

This concept was first discussed in the USA in the distant 1994 after the implementation of Internet banking technology built into Microsoft Money. Today, according to a study conducted as part of the Digital Bank Report, more than 70% of financial institutions around the world consider digital banking as one of their three strategic priorities in the coming years. Analyzing modern developments in the field of digital banking, we can outline the following technologies which are applied today:

technologies of digital processes for the maximum automatization and effectiveness of the money transaction processes; technologies of the remote identifications; technologies of machine learning; technologies of Big Data. Undoubtedly, today banking service present almost in all the spheres of digital life of a human: mobile devices, social networks, electronic payments and transfers, Internet things, money deposits, etc. Mechanisms of interaction between the banks and its clients take a completely new form - interactive, and the digital thinking has also been developed. According to the foregoing, the following definition of the digital banking can be given. Digital banking is a combination of software that provides convenient interface for users, the presence of all banking products online. There is a successful experience of realization of the digital banking concept in Russia (19; 11).

One of the main functions of online banking is a function of unloading and redirecting the customer's flow from the stationary branches to the digital remote bank offices. Thus, operational costs are decreasing as well. IBM Global Services conducted an investigation which has shown that in America the cost of making one online operation is almost 8 times lower rather than making it in the bank branch and is about 0.2 dollars. Financial analysts from all over the world say different numbers regarding the decrease of costs after transferring banks to the Internet network - it is about 3-17 times. To obtain good results after launching the remote service, banks need to create an equivalent replacement for office services in the digital banking system. Here we would like to draw attention to the experience of Russian Federation in the sphere of implementation of digital technologies into banking to provide the digital service of financial banking. According to the Rosstat data, Internet covers almost the entire territory of Russia. In such conditions, banks use the opportunities and the availability of the Internet and offer dozens of different banking products and services. According to the Q1 of 2018 results, the share of the Russians who were connected to online banking is 31%, 66% of them use this service only to view data of their bank accounts, and only 14% constantly use online banking.

Analytics say one of the reasons of underdeveloped digital banking in Russia is the quality of Internet connection. Almost 38% of the territory of Russian Federation has a rather poorly developed infrastructure of mobile Internet. This limits the access to banking services. The credit card market is formed in 20 large banks, and it is currently enhancing. The share of six largest banks in the credit cards issuing market has increased to 72%. The growth was shown by Sberbank, Tinkoff, VTB24. In fact, it is obvious that the share of the population, that uses online-bank, is growing fast. In recent years, the number of transactions in Russia has been growing faster than the turnover of money on the card.

SUMMARY

The introduction of information technology leads to the transformation of the entire activity of financial and credit institutions. This process affects not only large financial institutions and international banks, but also small financial and credit organizations. The priority area for the introduction of information technology in the field of financial and credit services is the transition to cashless payments. First, the following changes are taking place in financial and credit organizations: the introduction of modern technologies and methods for transmitting payment information and real-time settlements.

CONCLUSION

Financial organizations are fighting for the clients' base by increasing the quality of client service, by optimizing the price policy, as well as introducing new and more convenient digital technologies. Therefore, introducing IT-technologies is positive not only for financial organizations, but primarily for their clients. Constant information technologies update contributes to the financial sphere innovation in general and has a positive impact on the country's economy.

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