



## Digital Technologies for Assessing the Credit Capacity of the Bank's Clients

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### **Abstract**

In modern conditions of global competition and the rapid development of digital technologies, there is a need for new tools for assessing the solvency of bank customers and reducing credit risks, reducing costs and increasing the profitability of the bank. The features and prospects of using big data and predictive analytics are analyzed, theoretical aspects of using Artificial intelligence (AI) technologies are considered and their advantages for banks are analyzed. The goal is to reduce the share of problem loans and quickly determine the solvency of clients.

**Keywords:** *Bank Clients; Loans; Digital Technologies; Big Data; Digital Economy; Mobile Banking; Risks*

### **Introduction**

The coronavirus pandemic has accelerated the digitalization of the economy and society as a whole. K. Schwab notes that the modern world that surrounds us is complex, adaptive, dynamic and ambiguous, and the reasons for this: interdependence, speed and complexity (Klaus Schwab, Thierry Muller, 2020). In the VUCA world (an acronym for the words: volatile, uncertain, complex and ambiguous), different approaches of management are required with the using of new innovative digital technologies that provide new ways to increase the efficiency of banks and companies. The logic of assessing the creditworthiness of clients based on the extrapolation of past experience becomes ineffective, since in the new volatile economic environment there are already many cases when enterprises fail to adapt to the ongoing changes and they have to stop their activities.

The transition from the logic of extrapolating past experience to the logic of assessing innovative potential is promising (Abramov V.I., 2012), since flexibility and adaptability to new conditions are important in new conditions, because the ongoing changes bring with them not only threats, but also new opportunities. In determining the solvency of customers, credit institutions are gradually moving to a system using a variety of new methods focused on assessing the flexibility and resilience of customers. At the same time, today the focus has shifted to technologies that ensure, among other things, health safety: contactless technologies, mobile applications and remote services. The paper examines the problems (Niyazbekova Sh.U., 2020) that have arisen among financial sector enterprises in the context of the

COVID-2019 coronavirus pandemic. Examples of the actions of the management of the largest banks in Italy, Brazil, South Korea, China, Portugal, Singapore, the USA, the Philippines and Russia are given. The World Health Organization advised the population to use contactless payments and to minimize the turnover of banknotes.

The presence of the coronavirus increases the desire of customers to use digital services and makes it an urgent need. In fact, the pandemic has meant that bank customers, increasingly fearful of spending time in public places, must be able to conduct banking transactions without physically interacting with bank offices. The mode and form of work of people and companies are also changing. Digital platforms and ecosystems are actively developing. It should be noted that in the conditions of development of network interaction, the principles of management change, new aspects appear: expansion of the range of connections, technologization of management, delocalization of hierarchical interaction (Abramova D.V., 2014).

### ***The Main Part***

At the current stage, as a rule, when determining the solvency, internal and external sources are used to verify the information provided by the client. Internal resources are the client's credit history, the turnover of account numbers, the provided business plan and incorporation documents. External sources usually are information from the credit bureau, tax service, the base of penalties, information about partners, their reputation in society. However, in the digital world, there are many more external sources. Today the digital transformation of industry, retail, the public sector and other spheres of the economy is changing the life of every person and every company. Information is a key resource in the modern world. Every second, humanity generates huge amounts of digital data, the processing and use of which helps companies to increase business efficiency. Thanks to advanced technologies such as big data and data centers, it is possible to create digital business models focused on processing information flows, on the basis of which it is possible to make optimal decisions, to adapt offers for specific customers (Abramova V.I., 2021).

Today, in social networks and in various applications that are used in numerous portable devices both in the household and for personal purposes, various data are generated at high speed (Taori P., 2019). These huge amounts of data are referred to as big data. The beginning of the era of analytics based on big data comes at a time when banks were able to make decisions about solvency online, and the analysis carried out began to give a clear idea of the financial condition of the client and the degree of business development. As you know, an incorrect analysis leads to an increasing the share of problem loans in credit institutions. Excessive debt load is also harmful to enterprises, since it leads to the fact that all income goes to payments on loans and a decrease in working capital.

Big data is a term used in relation to a variety of large data volumes requiring high processing speed (Yastrebenkiy M.A., 2019). Operation with big data includes data collection, transmission, storage, processing (transformation, calculation, analysis), visualization and use of the new information thus obtained in various areas of human activity. Big data can be defined as a technology for managing large amounts of heterogeneous data at a speed sufficient to analyze such data in real time and respond in a timely manner. Every second more and more information comes from various sources, which is used by BigData technology (Medvedeva V.M., 2019).

A data center or a data processing center (DPC) performs the functions of processing, storing and distributing information, and provides information services on this basis. The most significant indicators when assessing the work of a data center are reliability and safety. Data center functions are: storage and processing of information; communication of equipment included in the data center with each other; data transfer within the data center and ensuring the correct functioning of the data center.

Predictive analysis is everything that allows you to identify and interpret patterns found in a huge amount of historical and current data. Predictive analytics helps to anticipate the context of customer needs and desires and determine the best way to deliver information through physical and digital touchpoints, while building a unique personalized approach (Abramov V.I., Akulova N.L., 2020).

Now every bank needs to know not only the client, but also his experience. At the same time, for corporate clients, the role of the management team is important, since the innovative potential of an enterprise is determined by its subjective affiliation (Abramov V.I., 2012). Customer experience (CX), defined as a customer's response to interactions with an organization before, during, or after a purchase, or consumption across multiple channels and over time, has become a sustainable source of competitive differentiation (Kranzbühler A., et al., 2018).

Organizations try to describe and manage CX throughout the customer journey, including many touchpoints, each representing a direct or indirect interaction with the customer. At each discrete point of contact, clients have cognitive, behavioral, social, and other interactions. In recent years, organizations have shifted their focus from managing individual touchpoints on the customer journey to managing the entire customer service (Homburg C., et al., 2017). To effectively manage CX, organizations need to manage multiple touchpoints simultaneously and thereby identify and manage “moments of truth”. In particular, the elements that influence CX go well beyond the customer journey, there is also an understanding of how customers feel about the organization and the ecosystem that surrounds it.

Therefore, banks are required to leverage data from not only their own touchpoints, but also from partnerships, customers and external touchpoints in the digital, physical and social realms. Interactions between customers and organizations in various fields generate CX data, ranging from highly structured to unstructured (Zaki M., 2019). While some data can be numeric (such as sales data, geographic coordinates, or customer satisfaction survey scores), other data is usually in hard-to-quantify multimedia formats such as text, sound, images, and video. In addition, touch point interaction can be evaluated using requested or unsolicited data. Collecting data involves actively seeking feedback on behalf of the organization or its partners. Unsolicited data is mostly the result of customer initiative. For example, customers can provide feedback through comments on social media.

The availability of information about the client allows us to assess his preferences, consumer needs and opportunities. The use of artificial intelligence for assessing the creditworthiness of borrowers allows you to analyze many additional criteria, revealing the individual preferences of each client, financial situation, social circle, consumer needs (Shmelova A. G., et al., 2020). All this allows you to build a complete picture of the client and take into account all the risks for the lender, and this has the following advantages for the bank (Shmelova A. G., et al., 2020):

1. reducing the staff number of the department for checking and considering loan applications, and, consequently, the costs of these departments;
2. reducing the time for consideration of an application for a loan product;
3. the employee does not make a direct decision, when analyzing and making a decision on the client's request and this avoids the influence of the human factor.

Methods of video-computer psychodiagnostics (VCP) in assessing creditworthiness are also promising (Anuashvili A.N., 2019). It is shown that this can significantly reduce the admission of unreliable customers and increase the issuance of loans to reliable customers. It is also shown that with the help of the VCP method, it is possible to determine various long-term inherent properties of a given person, and not just a momentary mood, for example, the property of deceit, therefore, it is possible to foresee a person's behavior over a long period.

## Conclusion

Summing up, we can say with confidence that modern digital technologies allow banks to build relationships with customers at a qualitatively new level, while reducing the risks of insolvency, the cost of transactions and significantly improving the quality of customer service.

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