

# The Risk-management in artificial intelligence

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**Abstract**— This paper indicates the main distinguishing features of artificial intelligence as a tool for gaining competitive advantages in the field of governmental and international banking. The main techniques for teaching AI and subsequent application in banking are analyzed. The key challenges for specialists in the field of information technology and service are highlighted.

**Keywords**— *risk management, artificial intelligence, banking, ethics, future. economic sphere, learning progress, economics of Russia*

## I. INTRODUCTION (HEADING 1)

When we read texts, our organs collect information and interact with neural connections. Neural connections, in turn, are based on the results of evaluating a multi-level dataset that contains the experience of our past interactions with fiction and scientific literature. The average reader literally skips most of the text from word to word, because our brains have the ability to make predictions and make relevant guesses. This is one of the features of our incredibly complex thought system. By "average reader" I mean intelligent people who are the carriers of primordial intelligence.

The need to call our intelligence primordial appeared not so long ago - in the 70s of the last century, when a working prototype of AI (artificial intelligence) first appeared on the world stage. At the turn of the 50s of the last century, during the Dartmouth Conference, two decades before the actual creation of the first version, the term "Artificial Intelligence" was used for the first time. Of course, later this technological novelty will be released to ordinary people. Humanity was seriously perplexed by the urgent problem of creating a certain set of practices and techniques that would dispel the fog of uncertainty in the field of rational decision-making. In this article we will look at the use of AI in the banking sector, namely, we would highlight the use of AI in the risk management of a particular banking system. Indeed, artificial intelligence is firmly entrenched in our daily life and has overcome the threshold of performing extremely simple and trivial operations. At the dawn of the formation of the fin-tech industry in Russia and in the world, special attention is paid to the development of high technologies, which can bring the operational and strategic activities of these social institutions to a qualitatively new level of development.

## II. MAIN PART

### A. *Selecting a Template (Heading 2)*

According to current research by WCIOM, 70% of Russian population does not understand the meaning of the term "Artificial Intelligence". From the data, published by Oracle, it is evident that artificial intelligence is "a system or machine that can imitate human behavior in order to perform tasks and gradually learn from the information it collects." As a result, humanity already has a tool that, contrary to the widespread beliefs about job cuts and the enslavement of civilization, is designed to seriously expand the horizons of human capabilities and become a driver in the process of achieving ambitious goals for an advanced society. This technology has been at the service of the practical interests of modern business for many years. It should be emphasized that this developing and modernizing tool is simultaneously becoming one of the priority tasks for advanced R&D centers and AI itself is being built into the arsenal of modern business. Let's move on to considering the problematics of the key task, namely the readiness of AI as a tool for making informed risk decisions in banking.

Currently, the popular expression "information is the new oil" has become widespread. Indeed, the reader can easily draw parallels in the context of the increasing value of data. However, there is many reservations about this thesis. In particular, the number of collected information and the growth of various sensors and sensors indicate the inexhaustibility of the mentioned resource. Nevertheless, the mere fact of possession of information does not mean that the owner will certainly have material well-being. The key caveat is that it is critical to leverage billions of petabytes of personalized information. The main generator of innovations in this area is one of the distinctive features of the modern market economy. At a time when homogeneous products flood the market, leading brands are striving to create a personalized experience for their consumers. Enterprises that specialize in mass production also do not stand aside. Among others, the world-renowned German automobile concern BMW, at the dawn of the 2000s, introduced the possibility of considering individual options when choosing a vehicle on the corporate website of the same name on the Internet. The work of artificial intelligence is built on the same basis. In the process of learning, the machine analyzes huge amounts of collected information to identify patterns and learn how to make rational decisions.

As a rule, the process of teaching artificial intelligence begins with the formulation of a specific task. Overall, we need to develop computer vision - an outstandingly useful tool in the composite concept of AI. So, experts, among other things, are confounded by doubt of the technological results' success in distinguishing a correctly completed loan application form from an incorrect one. The process begins with the transmission of the plurality of examples to the system. Then, gradually, the presence of a person in the process is leveled by the increasing level of AI competence. Moving on to specialized terms, it can be characterized as "supervised learning" in the process of deep one. This method is one of the most common and it is part of ML (machine learning). Thus, step by step, the elements of the computer's motherboard are getting ready to squeeze out the order managers in one of the central branches of the capital's major banks. As an already existing example, I can cite the fact of the existence and successful functioning of the voice assistant Alice from the domestic fin-tech giant Yandex. It reflects the effectiveness and versatility of the above teaching method. AI in banking is becoming more mature, unlocking the potential for sophisticated solutions that deliver positive ROI across all business segments. The adoption of AI in banking has become more widespread, with most financial services companies claiming to have adopted AI in business areas such as risk management (56%) and generating revenue through new products and processes (52%).

According to a survey of financial services professionals OpenText, most banks (80%) are well aware of the potential benefits of AI and machine learning. Based on the above statistics, it can be assumed that many banks are planning to deploy AI-based solutions. 75% of respondents at banks with over \$ 100 billion say they are currently pursuing AI strategies, compared with 46% at banks with assets under \$ 100 billion. Certain use cases for AI are already widespread in banking, the most mature of which are chatbots for individuals and countering payment fraud. AI in banking applications is not limited to retail banking. Investment banking and other financial services can also be optimized using AI.

The three main channels through which banks can use artificial intelligence to save costs are conversational banking are the fraud detection, risk management, and back-office.

Banks use algorithms in the front-end to simplify customer identification and authentication, simulate live employees with chatbots and voice assistants, deepen customer relationships, and provide personalized insights and recommendations.

AI is also being deployed by banks as part of a framework to assess risk, detect and prevent payment fraud, improve anti-money laundering processes, and perform know-your-customer regulatory audits.

At this point, a sufficient amount of data has been provided to the beginning of a serious discussion of the work of AI as a risk manager in a bank. Undoubtedly, some further empirical data of the current market situation will appear before us. But nowadays it seems logical to independently raise this topical issue. To begin with, the fact that the risk management of the bank is designed to improve the quality and stability of the transactions that this financial institution performs. It is difficult to overestimate the importance of the work of specialists who ensure the sustainable development

of their employers. But is AI capable of replacing professionals who can provide a client with several hundred financial and social indicators while deciding whether to satisfy a request. It is important to bear in mind that the financial market is almost at the epicenter of globalization. Many years ago, banks that worked exclusively in their local region lost their positions. Digitalization has erased all physical boundaries and made international financing and other compound deals possible. Consequently, it caused growth of the performed operations exponentially. This means that when using artificial intelligence, you can expect a significant return on investment at the expense of scale. Returning to our question, the shortest answer is: "Yes, AI can potentially cope with this task" and it is doing it right now. In this situation, the banking industry as a whole tends to adhere to the position of Sberbank, which carries out comprehensive work on the development and implementation of high technologies. On December 3, 2020, the head of Sberbank, German Gref, announced the imminent opening of the first Institute of Artificial Intelligence in our country. The strategic investment plans of the said bank include investments in AI in the amount of 150 billion rubles. In addition to the internal transformations of the company and the already mentioned investments in R&D, Sberbank is actively introducing high technologies, from decoding the surviving manuscripts of Peter I and assessing the prospects for the work of young employees, to the risk management that interests us.

"100% of decisions on granting loans to the population in Sberbank will be made by artificial intelligence", - this is how the company's ambitious goal sounds, according to the deputy chairman of the bank's board, Alexander Vedyakhin. Without a doubt, this is impressive enough. However, a few additions are worth making. First, the prospect of digital risk management is in many ways similar to the previously mentioned training of artificial intelligence to work with credit forms. Learning from the examples of decisions already made, having all the necessary information at its disposal, the machine is capable of taking a position that is advantageous for the bank. The second important observation is the ethical side of the issue. For example, Sberbank is the largest bank in our country; it is on it that obligations are historically entrusted to the often low-income strata of the population of our state. Ethics, in turn, according to the director for the dissemination of digital technologies at Yandex Grigory Bakunov, "... is not algorithmized. The moment we can translate ethics into understandable logical forms, ethics as such will cease to exist in our country. It will just be the law. " Indeed, it is difficult to disagree with this statement. Concepts of morality and ethics densely envelop modern banks, which play a socially significant role in an era of widespread publicity and transparency of business. I propose to consider the second in turn, but far from in importance, part of the ambiguous question of the AI's introduction into the risk management of banking.

It is important to take into account the architecture of decision-making about opening a credit line in our time. Of course, a calculator can cope with such categories as risk appetite and financial indicators of a client. However, socially and environmentally significant indicators also come into play. So, in particular, Raiffeisenbank is very suspicious of

applications from brands that specialize in "dirty" production. These brands may include manufacturing enterprises that are involved in the extraction and processing of coal. In the process of deciding on the issuance of funds, the well-known ESG approach for assessing risks can be useful. When applying this methodology, indicators such as environmental, social, and governance are taken into account. Certainly, some of the meanings can be categorized and rationalized. Nevertheless, the question posed again returns the discussion to the area of ethics and "ideological" correspondence between the policies of the potential client and the bank.

Having progressively considered the phenomenon of AI development and the current needs of banking in increasing the stability and quality of the investment portfolio, you should proceed to form your assessment of what is happening. Undoubtedly, artificial intelligence appears to be a promising technology for developing the competencies of the risk management division in banks. Our society can confidently anticipate when this technology will simply become a necessary competitive advantage in the era of an aggressive digital economy. IT specialists together with UX (user experience) employees and other stakeholders, tend to provide an adequate response to the AI challenges discussed earlier.

### III. CONCLUSION

In the course of the work, the specificity of the development of artificial intelligence was considered. Emphasis was placed on the current methods of teaching AI, the prospective improvement of the quality of solutions, and application practice. Based on the conclusions of

authoritative experts, the result of the work is a formed understanding of the application of these technologies in the risk management of leading banks. In recent years, the intricate abbreviation of fin-tech has become increasingly common. The term known among the broad masses fully reflects the position of modern banks. More specifically, it is these business units that are at the forefront of the modern technologies' development. The desire to invest in promising tools of the digital age is becoming permanently necessary.

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