THE USE OF ARTIFICIAL INTELLIGENCE IN AUDITING MONEY LAUNDERING OPERATIONS

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Abstract. *In the modern economy, focused on digital technologies, when many transactions are performed in electronic form, there is an urgent need to analyze transactions for money laundering operations. In this regard, when auditing money laundering operations, the auditor should check huge amounts of data for a short period of time, assess risks, and analyze the possibility of a client's enterprise in the future. In this regard, artificial intelligence applications can provide significant assistance. This article discusses the applications of artificial intelligence in auditing money laundering transactions.*

Keywords: audit, money laundering operations, artificial intelligence

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Introduction

In the modern economy, focused on digital technologies, when many transactions are performed in electronic form, there is an urgent need to analyze each of the transactions for money laundering operations. This applies primarily to the financial sector, however, such a need arises when working with clients in various sectors of the economy. In this case, machine learning and artificial intelligence make a significant contribution in this area due to the ability to quickly process huge amounts of data and detect transactions with abnormal characteristics in them, which could signal a potential fraud.

Currently, Kreller Group, specializing in conducting due diligence procedures in international groups of companies S&P 100 and 500, presented the results of a study of the possibilities of using automated systems that operate on artificial intelligence to prevent money laundering and anti-corruption [3]. This study notes positive points regarding the capabilities of artificial intelligence, but there are significant limitations to machine learning, including the possibility of false positive results, and errors due to poorly designed algorithms, or the use of AI in violation of ethical standards.

The authors of the study argue that even the most advanced deep learning technologies and neural networks are not able to make decisions in new situations that they have not yet been taught, and this is a significant limitation for the use of AI in corporate due diligence checks. At the same time, human intelligence is still indispensable in many situations, because it has tools that can solve the problems and limitations created by AI.

Turning to American anti-money laundering practices, it should be noted that the Federal reserve Bank, the Federal Deposit insurance Corporation, and the Department of the Ministry of Finance for the Investigation of Financial Crimes (FinCEN) issued a joint statement calling on financial institutions to test innovative methods to ensure compliance with anti-money laundering legislation and the banking secrecy Act of 1970. In order to stimulate banks, they were given a great opportunity to introduce pilot projects and, above all, artificial intelligence. This led to certain results.

So in his report "Artificial intelligence in Finance" Bonnie Buchanan, professor of corporate finance and head of the department of finance and accounting at the University of Surrey, notes a wave of innovations using AI in the financial industry in recent years [1]. Bonnie Buchanan in his publication concludes that artificial intelligence and its components (machine learning and deep learning) are suitable for information processing in the financial services industry.

Machine learning is the ability of artificial intelligence to take data and algorithms and apply them in new scenarios without the need for direct programming. At the same time, a number of examples of AI-based applications should be noted: algorithmic trading, theft detection, portfolio optimization, robot consultants.

Machine learning and the ability of artificial intelligence applications to process huge amounts of data, identifying unusual transactions in them that could potentially signal money laundering and payment fraud are an effective preventive measure. Machine learning technologies (especially competently combining elements of controlled and uncontrolled learning) have proven to be more effective in the analysis of such schemes as payment redirection than the countermeasure tools traditionally used until then.

The ability of artificial intelligence to process large amounts of data and quickly carry out routine tasks proved to be useful not only in preventing fraud when transferring funds, but also with credit cards and using the Know-your-customer (KYC) banking protocol. It should be noted that the use of artificial intelligence was the first area of its application by the Department of the Ministry of Finance for the Investigation of Financial Crimes (FinCEN) back in 1993. In the first two years, FinCEN Artificial Intelligence Systems (FAIS) were able to detect approximately 400 potential laundering incidents totaling about $ 1 billion.

It must be emphasized that various artificial intelligence applications are currently being developed that can scan client registration documents in various languages of the world in search of signs of laundering even during registration. For example: Fair Isaac Corp. (FICO) has developed two AI solutions that ensure the “Know Your Client” protocol is implemented without the need for personal identification: the first uses face recognition to correlate the “selfie” of the client with his identification photo, the second checks the “digital identity” of the client through behavioral biometric data (typing speed or mobile device usage frequency).

At the same time, existing banking systems for preventing money laundering analyze data, mainly using detection methods that are focused on the nature of operations: such as too fast redirection of money from one account to another, abnormally high account balances, complex structured transactions). After connecting artificial intelligence to them, it was possible to make detection more effective, but even with artificial intelligence, detection systems based on decisions made by customers still have too many shortcomings.

Money laundering schemes developed today by international criminal groups are becoming more complex, and different groups use different methods, taking into account sources of illegally obtained funds, methods of converting “dirty” money into legal accounts. Detection methods based on behavioral analysis focus on external attributes related to banking transactions. At the same time, it should be noted that machine learning is developed by technical specialists who may not have deep knowledge in the field of financial regulation, which means they have no idea about current trends and risks in the field of money laundering.

Another area of effective use of artificial intelligence is the assessment of a potential borrower of funds from the Bank. In her article "Superhuman abilities: how AI changes the financial industry", Vera Starodubtseva notes that in Sberbank, when issuing loans to individuals, in 98% of cases, the decision is made by an algorithm implemented by artificial intelligence. For legal entities, this figure reaches 30%.[4].

It should also be noted that robots-collectors, which work mainly with Bank customers who have a small debt, are also artificial intelligence. Robots can also form a client's investment portfolio, taking into account their wishes and finances.

One of the most important points in the use of artificial intelligence is the fact that it can be used in those areas where it is necessary to monitor the strict implementation of current legislation.

All these features of artificial intelligence applications to prevent money laundering can be used by the auditor when conducting an audit of money laundering operations.

In connection with the above, I would like to note the following: currently, various it companies are developing artificial intelligence applications for auditing financial reports. The management of the big four is working on the implementation of various applications for the use of artificial intelligence in the audit of financial reports. However, to date there is no comprehensive applications in the field of artificial intelligence to the effective conduct of the audit. There are various announcements about this.
For example: John Colthart, General Manager of audit and assurance at MindBridge Ai. claims that MindBridge Ai is the manufacturer of the only AI-based audit solution in the world at the moment that uses machine learning and AI technologies to complement human capabilities.[2].
Analyzing the world literature on artificial intelligence and the possibility of its use in audit, including money laundering, it should be noted the following advantages:
1) artificial intelligence Applications can analyze the client's economic operations and check their reputation by accepting and analyzing information distributed on the Internet before accepting an offer to work with a client,
2) when conducting an audit, artificial intelligence applications, processing huge amounts of customer data, can use a given algorithm to identify risk areas and suspicious transactions or operations that should be checked for the possibility of money laundering,
3) when checking the client's business operations, artificial intelligence applications can provide information to the auditor in terms of determining the level of materiality, then to certain account balances,
4) by analyzing the client's database, artificial intelligence applications can form an audit strategy and plan for more effective conducting the audit,
5) artificial intelligence applications can check whether the client's compliance with regulations and legislation is correct.
The use of artificial intelligence applications when conducting audits in banks and financial institutions will allow auditors to remotely connect to Bank servers and check the correctness of banks ' economic transactions.

Conclusions

In conclusion, it should be noted that the use of artificial intelligence applications in the audit of financial reports, including the verification of money laundering operations, is a costly project. First of all, because of the cost of developing these applications. In this regard, each audit firm must determine its financial capabilities: the volume of orders, the specifics of its clients 'activities, and the nature of the clients' economic operations.
Well-designed artificial intelligence applications can help auditors with:

- ✓ *determining the risks associated with the client's activities,*
- ✓ *testing the client's internal control systems,*
- ✓ *processing an array of data (documents, transactions, etc.),*
- ✓ *the analysis of suspicious transaction,*
- ✓ *audit planning,*
- ✓ *carrying out the final audit work to issue an audit report.*

It should be noted that the digital economy strongly offers various tools for effective audit, one of these tools is the application of artificial intelligence. In the near future, artificial intelligence applications will definitely be widely used in conducting audits, especially in the audit of money laundering.

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