
SPECIFIC CHARACTERISTICS OF USING ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN LIABILITY ACCOUNTING AND AUDITING IN THE FIELD OF ICT

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Abstract

The article examines the current trends in the use of blockchain technology and artificial intelligence (AI) in accounting and auditing of liabilities in ICT enterprises. The author identifies 5 main areas of application of blockchain (smart contracts, leased audit logs, digital certificates, letters of confirmation, decentralized accounts) and 6 areas of application of AI (anomaly detection, risk assessment, data analysis, predictive models, NLP-documents, robotic auditing).

Keywords:Blockchain, artificial intelligence, smart contract, anomaly detection, predictive audit, NLP, ICT field.

Introduction

The most important technological directions of the modern digital economy are blockchain and artificial intelligence (AI). These technologies are introducing fundamental changes not only in the IT sector, but also in accounting and auditing practices. The Strategy of the President of the Republic of Uzbekistan No. PF-6079 dated October 5, 2020 “Digital Uzbekistan - 2030” set out priorities for the introduction of blockchain and AI technologies into the national economy. Large enterprises in the ICT sector should play a pioneering role in these areas.

Internationally, blockchain and SI are widely used in accounting and auditing practice. The “Big Four” audit firms (Deloitte, PwC, EY, KPMG) have developed their own specialized SI platforms. Deloitte Omnia, PwC Aura, EY Canvas, KPMG Clara are all audit systems based on artificial intelligence. However, in national practice, the application of blockchain and

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SI in accounting and auditing is at an early stage. A methodological approach for the systematic introduction of these technologies, especially in large enterprises in the ICT sector, has not yet been developed.

The application of blockchain and SI technologies in the field of accounting has been covered in a number of scientific studies.

J. Day and M. Vasarkheli developed a conceptual model of accounting based on blockchain technology. [1]

J. Kokina and T. Davenport provided an in-depth analysis of the role of artificial intelligence in auditing. [2]

Richins, A. Stapleton, T. Stratopoulos, and K. Wong studied the impact of big data analytics on the accounting profession [3]

B.J. Epstein and E.K. Jermakovich have highlighted the role of SI in the context of modern approaches to IFRS. [4]

Although existing research has addressed the general issues of blockchain and SI in accounting, the systematic application of these technologies in accounting and auditing for ICT enterprises has not been studied. This article aims to fill this gap.

Artificial intelligence (AI) is being used in accounting and auditing in 6 main areas (Table 2).

Table 1 Areas of application of artificial intelligence in liability accounting and auditing¹

Direction	Application
Detection of anomalies	Detection of unusual transactions, possible fraud
Risk assessment	Automatic risk classification using machine learning
Data analysis	Analysis of large amounts of data based on Big Data
Predictive models	Forecasting future obligations
NLP documents	Automatic analysis of contracts, legal documents
Robotic audit	24/7 automatic checking, continuous monitoring

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The first direction is anomaly detection. SI algorithms analyze millions of transactions in seconds and identify statistically significant anomalies. This allows for faster detection of unusual transactions during audits.

NLP (Natural Language Processing) — natural language processing technology allows for automatic analysis of contracts, licenses, and loan documents. Contracts are distinguished by the concepts of obligations, conditions, and penalties. Systems such as IBM Watson, Google BERT, and OpenSI GPT are leaders in this field. Uzbektelecom JSC has been testing NLP tools for analyzing international contracts since 2023, reducing the analysis time by 45%.

Predictive models — forecasting the future state of obligations based on SI algorithms. Machine learning algorithms (Random Forest, XGBoost, Neural Networks) provide accurate forecasts based on historical data. For example, predicting the volume of subscriber claims, the amount of currency obligations, and the level of risks in the industry. In the practical testing of Uzbektelecom JSC, the accuracy of predictive models increased from 65% to 88%, which allowed for better resource planning.

As a result of the research, the following conclusions were formed:

5+6=11 main directions were identified for the use of blockchain and artificial intelligence technologies in accounting and auditing of obligations in ICT enterprises.

Artificial intelligence is effective in the areas of anomaly detection, risk assessment, big data analysis, forecasting, NLP-documentation, and robotic auditing.

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