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DIGITAL ECONOMY: THE ROLE OF ARTIFICIAL INTELLIGENCE IN ECONOMIC DECISION-MAKING

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ABSTRACT

As artificial intelligence (AI) penetrates various industries, its impact on the financial sector has also increased significantly. This article describes the impact of artificial intelligence on economic decisions determined as a result of processes occurring in the financial sector. As the field of economics continues to develop, along with it, developing AI technologies serve as a basis for decision-making for financial institutions. The purpose of the article is to study the different aspects of the role of AI in making various financial decisions, the benefits that can be expected and the difficulties and problems that may arise.

KEYWORDS: *artificial intelligence, digital economy, financial planning, economic decisions, financial decisions, digital technologies*.

INTRODUCTION

The rapid technological advancements of the 21st century have opened up vast opportunities for various research and methodologies in the financial sector. At the forefront of this revolution is the technological powerhouse of artificial intelligence (AI), capable of making any financial decision. In an era of abundant data flow, financial institutions will inevitably need to adapt to and implement AI in their operations at some point.

In November 2022, after OpenAI LP, an artificial intelligence research organization based in San Francisco, USA, introduced its product, ChatGPT (Chat Generative Pre-trained Transformer—an AI chatbot developed by OpenAI), it caused a significant stir. Just two months later, the platform reached 100 million active users per month, and within a year, this number grew to 1.5 billion. These figures placed ChatGPT among the top 20 most visited websites, making it the fastest-growing online application in history.[1] This demonstrates the high level of interest in AI among the public, who are actively using it. Given the rapid pace of AI development, it is being applied across all sectors on a global scale. Therefore, the implementation of AI in our country will also bring numerous benefits to the public, particularly in financial investment decisions and planning.

From the impact and results that AI has demonstrated so far, it can be concluded that AI is already prepared to enter the financial sector and has the potential to significantly streamline financial processes. We will explore the advantages and challenges that may arise during the integration of AI with the traditional financial system.

Currently, AI offers the following capabilities that can aid us in making financial decisions:

- In modern markets, relationships and interactions have become digitized and are grounded in complex mathematical algorithms. Tasks that would take significant time for humans or simple programs can be completed in seconds by AI algorithms. AI's ability to easily analyze large volumes of data plays a crucial role in optimizing trading strategies, analyzing markets, and making decisions that maximize profits. Furthermore, AI continuously refines its future decisions by learning from the data it has analyzed, making its analyses increasingly accurate and adaptable.
- AI is also capable of performing essential functions in risk management for financial institutions and businesses. By analyzing a wide range of data, AI algorithms provide approaches that mitigate risks.[2] Through error detection systems, AI can quickly identify suspicious transactions and financial activities, taking necessary actions to address them. AI’s ongoing adaptability and ability to correct deficiencies make it a reliable tool against emerging financial threats and risks.
- When integrated with the traditional credit system, AI automatically evaluates the creditworthiness of businesses or individuals by analyzing alternative sources like income and expenditure patterns. AI not only

assesses creditworthiness but also plays a vital role in making more accurate decisions in future credit interactions.

- Thanks to AI's algorithms for independent risk analysis and asset allocation, we can say that it has revolutionized portfolio management. AI determines and analyzes portfolio performance by considering historical and current market data, economic indicators, and geopolitical factors. These algorithms provide portfolio managers with significant relief and enable them to make informed decisions. Such approaches are designed to maximize returns and minimize risks in the increasingly complex field of investment.
- Customer Service in Financial Institutions, Chatbots: Nowadays, nearly all service companies and organizations are transitioning their customer support services from human agents to robots or chatbots. These intelligent virtual assistants consistently perform their tasks, maintain smooth communication with customers, and, after thoroughly analyzing the company's status, can offer financial advice to clients. Additionally, AI's ability to provide real-time service in multiple languages allows it to assist several customers simultaneously in different languages. With chatbots operating 24/7 and their exceptional capabilities, customers are assured of seamless assistance at any time.

These applications demonstrate how AI plays various roles in optimizing strategies, reducing risks, improving customer relations, and shaping decision-making processes in financial institutions. As technology continues to advance, AI's role in financial institutions will only strengthen.

In particular, our country is increasingly focusing on this area. For example, following the Presidential Decree No. PQ-4996, dated February 17, 2021, "On Measures to Create Conditions for the Rapid Implementation of Artificial Intelligence Technologies"[3], financial institutions in Uzbekistan are developing suitable technological conditions and ecosystems based on AI. Additionally, in accordance with the Presidential Decree No. PF-6079, dated October 5, 2020, the "Digital Uzbekistan – 2030" strategy was developed.[4] This strategy aims to automate production processes in enterprises and organizations across Uzbekistan, gradually implement artificial intelligence technologies, and improve service quality and profitability.

METHODOLOGY

The ideas on the application of AI technologies in the finance sector were initially proposed by Miller and Blair (2012). They focused on performing analyses for decisions that could be made during trade processes[5]. These ideas were further developed by Siegel (2013) in his work *Predictive Analytics*[6].

We know that risk management plays a crucial role in the financial sector. Research in this area has been conducted by organizations such as McKinsey & Company (2020) and Deloitte (2021). As Fintech services continue to evolve, these studies have contributed to identifying, predicting, and mitigating risks through AI. Deloitte, in particular, noted that "there is no need for a complete overhaul to implement AI technologies in the financial sector; success can be achieved by addressing existing gaps in the field" [7].

Financial institutions, especially banks, often face significant challenges in maintaining credit ratings and making lending decisions for clients. As a solution to these issues, Deloitte leveraged AI's machine learning algorithms to reduce credit risks and enhance the accuracy of decisions [8].

In this article, statistical data was used to conduct conclusions and analyses on the integration of artificial intelligence with the financial sectors. Additionally, international statistics were reviewed and incorporated into the conclusions. These statistical analyses allow us to assess the effectiveness of strategic decisions achieved through the optimization of decision-making processes by AI. Furthermore, based on the research findings, general conclusions have been drawn for our country.

RESULTS AND ANALYSIS.

The implementation of artificial intelligence technologies in the financial sector occurs through several stages. It is essential to consider various factors and potential threats that may arise from economic evolution when applying AI technologies to the economic sphere.

Such analyses have been conducted by specialized groups formed by AI experts from the Organisation for Economic Co-operation and Development (OECD) [9]. These groups develop models and make forecasts based on factors that impact both real and virtual technological environments across different sectors.

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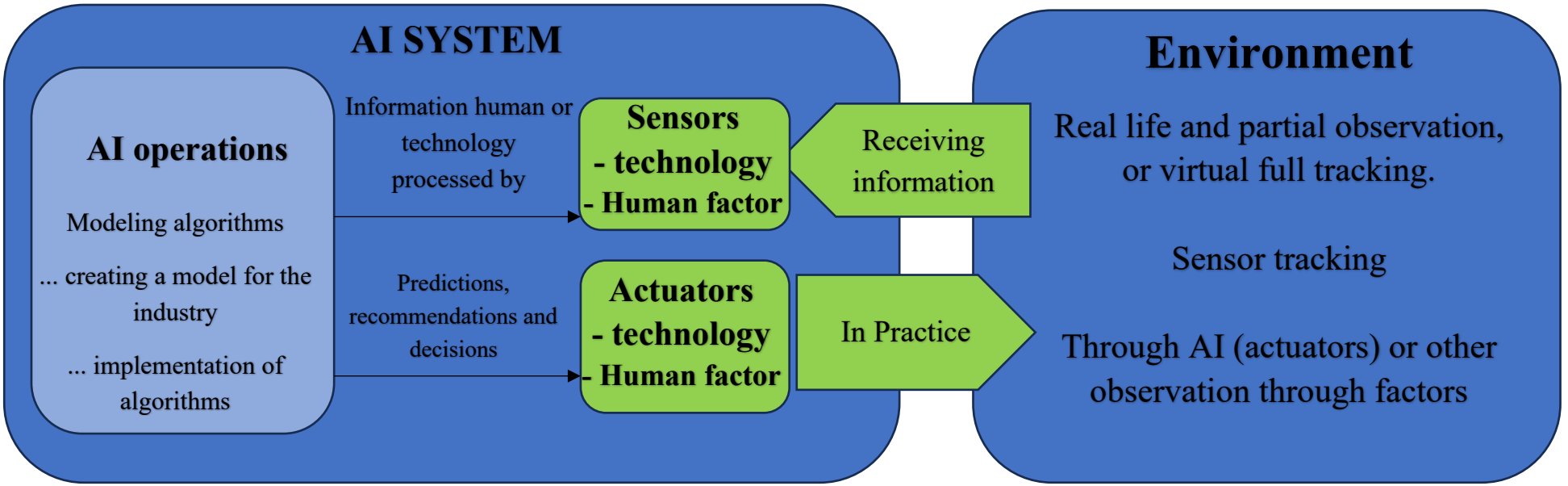


Figure 1. AI system. (OECD AI experts, Aigo, approved in February 2019) [9]

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The stages of AI system implementation include: (i) planning and design, data collection and processing, and drawing conclusions; (ii) verification and validation; (iii) deployment; and (iv) operation and monitoring (OECD, 2019). AI research focuses on its data collection methods (e.g., through neural networks), learning techniques (e.g., language learning processes), optimization (e.g., one-shot learning), and consideration of the research's social environment (e.g., transparency).

AI software conducts relevant data processing and analysis without requiring specific programming processes to be carried out by humans. In this process, AI utilizes methods like "self-improvement" or "self-learning" based on the available data. However, AI employs three different methods to enhance itself:

- **Supervised Learning:** This is managed by expert programmers, where data is categorized in a highly refined manner.
- **Unsupervised Learning:** Here, AI deeply analyzes incoming data provided by users, such as in customer service sectors.
- **Deep and Fundamental Learning:** Based on neural networks, this method is primarily designed for working with media, sounds, and images.

In the process of integrating AI with the economic sector, it is essential to consider several factors, particularly in areas where critical financial decisions are made. As AI's role in financial decision-making and outcomes continues to grow, ensuring its security becomes a top priority. Although AI can independently perform a wide range of tasks, its complex security structure, architecture, and the potential for uncertain decisions must not be overlooked. Measures should be taken to address these challenges proactively. In this context, we must consider the following potential issues that AI might encounter:

- High-quality data is crucial for AI algorithms. If the data input into AI is poorly detailed, incomplete, biased, or of low quality, it can significantly impact the decisions AI makes, leading to uncertain outcomes. To prevent this, previously input data in the relevant category should be reviewed, incorrect data should be corrected, and a special algorithmic design should be created. As a result, this contributes to increasing the likelihood of AI making fact-based, accurate decisions.
- As the financial systems become more digitized and AI is widely implemented, there is a concurrent rise in cyber threats to this data. Traditionally, these threats were carried out through various viruses or malicious software designed for harmful purposes. However, considering that AI algorithms continuously incorporate new data into their memory, the threats they face become more complex. Criminals could manipulate AI's analytical process with deceptive data, significantly influencing the final outcomes or causing the unauthorized release of critical information. Given these threats, it is essential to focus on security by implementing robust software with enhanced protective measures.
- AI relies on complex neural algorithms, which can result in decisions and outcomes that appear unclear to humans. Furthermore, AI may not be able to explain the factors and reasons behind these outcomes. This increases the likelihood that AI might include data in its analysis that contradicts government or corporate regulations.

Currently, AI is contributing significantly to generating high revenues across various sectors, benefiting not only individual companies or organizations but also leading to substantial economic growth on a global scale. Developed countries worldwide are increasingly leveraging AI to boost profits. As an example, we can consider macro-level analyses conducted across different regions of the world. Using data from the Global Trade Analysis Project (GTAP) database, which includes real GDP figures from 140 countries in 2016, we can project the potential revenue AI might generate globally by 2030. The following table illustrates these estimates across different regions.

Table 1.
The income that regions receive with the help of Artificial Intelligence and their share in GDP

Regions	Revenues from AI. (trln USD)	Share in GDP
North America	3.7	14.50%
South America	0.5	5.40%
Northern Europe	1.8	9.90%
Southern Europe	0.7	11.50%
China	7.0	26.10%
South-east Asia	0.9	10.40%
Africa and Oceania	1.2	5.60%

Source: the table is formulated by the author using a reference in the International Trade Analysis organization (GTAP) database.

Based on the table provided, it is evident that China is expected to generate a remarkably high revenue of $7 trillion through AI, making it the largest contributor globally. This figure represents 26.1% of China's GDP share, positioning it as the leading country in terms of AI-driven economic impact.

Despite having only half of China's projected figures, North America is expected to achieve a substantial revenue of $3.7 trillion, surpassing other regions by a significant margin. Following North America, Northern ($1.8 trillion) and Southern Europe ($0.7 trillion) are next in line, followed by Southeast Asia (including Indonesia, Singapore, Malaysia, Thailand, Laos), Africa, and Oceania with $1.2 trillion collectively. South America ranks last with an estimated revenue of $0.5 trillion.

This distribution highlights the varying degrees of AI adoption and economic impact across different regions, with China and North America leading the way in leveraging AI for economic growth .

Indeed, it's important to emphasize that these figures are merely projections and can be influenced by various factors such as political shifts, socio-economic conditions, and the pace of technological advancements. As AI represents a revolutionary development in global digital technology, its application across the world economy has only begun to take shape in recent years. Consequently, the estimates provided in the table are based on short-term analyses and growth trends, leading to conclusions about the potential outcomes by 2030.

Therefore, these results should be viewed as "potentially expected future statistical data," acknowledging that actual outcomes may vary significantly depending on how these influencing factors evolve over time. This cautious approach underscores the need for continuous monitoring and reassessment of AI's economic impact as global circumstances change.

CONCLUSION

The article explores the integration of artificial intelligence (AI) with the financial sector in today's rapidly evolving environment. It discusses the reasons for AI's integration into financial decision-making processes within organizations and the benefits that result from its implementation. Alongside highlighting the advantages of AI in financial operations, the article also addresses potential challenges that may arise during the integration process and emphasizes the need for appropriate measures to address these challenges.

Additionally, the article analyzes the anticipated global growth trends of AI and provides a foundation for its application in our country. As time progresses, AI, with its self-improving algorithms, is expected to drive more effective innovations and advancements across all sectors, including the economic sector.

REFERENCES

1. *Krsytal Hu. "ChatGpt sets record for the fastest growing user base – analyst note.Reuters. Retrieved from: https://www.reuters.com/technology/chatgpt-sets-record-fastest-growing-user-base-analyst-note-2023-02-01/*
2. *OECD (2021). Artificial Intelligence, Machine Learning and Big Data in Finance: Opportunities, Challenges, and Implications for Policy Makers (p. 22).*
3. *Resolution of the President of the Republic of Uzbekistan. (2021, February 17). On measures to create conditions for the accelerated implementation of artificial intelligence technologies [Decree No. PQ-4996]. https://lex.uz/docs/-5297046*
4. *Resolution of the President of the Republic of Uzbekistan. (2020, October 5). On approval of the "Digital Uzbekistan – 2030" strategy and measures for its effective implementation [Decree No. PF-6079]. https://lex.uz/docs/5030957*
5. *Miller, R. E., & Blair, P. D. (2012). Input-Output Analysis, Foundations and Extensions. Cambridge University Press. https://www.cambridge.org/core/books/inputoutput-analysis/69827DA658E766CD1E17B1A47BA2B9C3*
6. *Siegel, E. (2013). Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die. Wiley.*
7. *Deloitte LLP (2018). AI and Risk Management: Innovating with Confidence.*
8. *Deloitte SAS (2020, April). Artificial Intelligence for Credit Risk Management.*
9. *OECD. (2019). Scoping the OECD AI Principles: Deliberations of the Expert Group on Artificial Intelligence at the OECD (AIGO).*https://doi.org/10.1787/d62f618a-en
10. PricewaterhouseCoopers (2018, February). Macroeconomic Impact of Artificial Intelligence. https://www.pwc.co.uk/economic-services/assets/macroeconomic-impact-of-ai-technical-report-feb-18.pdf