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AI TOKENS IN THE CRYPTO ECOSYSTEM

The development of artificial intelligence contributes to its integration into the crypto ecosystem. This creates opportunities for improving automation projects in various fields using artificial intelligence algorithms and models based on their decentralization. The study hypothesized that artificial intelligence tokens are a significant component of the crypto ecosystem, which contributes, on the one hand, to expanding the circle of its participants and areas of coverage, and on the other hand, to transforming the spheres of human activity where they are used. To test the hypothesis, the stages of AI token evolution and factors influencing the development of AI tokens were systematized, the elements of the crypto ecosystem were clarified, the possibilities for using AI tokens in various fields were systematized, threats and opportunities for the development of AI tokens were identified, the prospects for the development of AI tokens, and the concept of AI tokens was clarified. To test hypothesis the following methods were used: historical, systemic, graphic, swot-analiz. Statistical data from CoinMarketCap, Statista and Kraken were used. Functional, design, and technological approaches to understanding artificial intelligence tokens have been clarified. The

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ТОКЕНИ ШТУЧНОГО ІНТЕЛЕКТУ В КРИПТОЕКОСИСТЕМІ

Розвиток штучного інтелекту сприяє його інтеграції в криптоекосистему. Це створює можливості для вдосконалення проєктів автоматизації різноманітних сфер через алгоритми та моделі штучного інтелекту на основі їх децентралізації. Висунуто гіпотезу, що токени штучного інтелекту (ТШІ) є вагомою складовою криптоекосистеми, що сприяє, з одного боку, розширенню кола її учасників та сфер охоплення, а з іншого – трансформації самих сфер діяльності людини, де вони використовуються. Для її перевірки здійснено систематизацію етапів еволюції ТШІ, чинників впливу на їхній розвиток, уточнено елементи криптоекосистеми, систематизовано можливості використання ТШІ у різних сферах, виявлено перспективи, загрози та можливості розвитку, уточнено визначення токенів ШІ. Для перевірки гіпотези використано історичний та графічний методи, системний підхід, свот-аналіз. Інформаційною базою стали статистичні дані CoinMarketCap, Statista та Kraken. Ідентифіковано такі етапи еволюції ШІ: зародження, вдосконалення та бум. Чинники

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following stages of the evolution of artificial intelligence tokens have been identified: emergence, improvement, and boom. Technological, economic, legal, and energy factors influencing the development of artificial intelligence tokens have been identified. The possibilities of using artificial intelligence tokens in various areas were identified.

The strengths and weaknesses of artificial intelligence tokens, threats and opportunities for their development have been identified. The educational, communication, operational, management, and stimulating functions of artificial intelligence tokens were first identified in the scientific literature. The scientific novelty is formulated definition of artificial intelligence tokens as an element of the crypto ecosystem that ensures the functioning of decentralized artificial intelligence platforms and provides users with the ability to automate their operational activities, facilitate transactions, and stimulate and manage the development of artificial intelligence.

Keywords: artificial intelligence tokens, cryptoecosystem, blockchain, autonomous finance.

впливу на розвиток ТШІ згруповано за технологічними, економічними, юридичними та енергетичними ознаками, а також визначено можливості застосування токенів штучного інтелекту в різних сферах.

У ході дослідження обґрунтовано навчальну, комунікаційну, операційну, управлінську, стимулюючу функції ТШІ. Наукова новизна полягає у розробці авторського визначення токенів штучного інтелекту як елемента криптоекосистеми, що забезпечує функціонування децентралізованих платформ штучного інтелекту та надає користувачам можливості автоматизації їх операційної діяльності, полегшення транзакцій, стимулювання та управління розвитком штучного інтелекту.

Ключові слова: токени штучного інтелекту, агенти штучного інтелекту, криптоекосистема, блокчейн, автономні фінанси.

Jel Classification: G19, O16.

Introduction

Artificial intelligence (AI), which is becoming the most important technology of the 21st century, is characterized by significant centralization and concentration, which may lead to problems of bias and unjustified censorship (Robertson, 2024, February 22). The convergence of AI and blockchain technology in the virtual asset market contributes to reducing bias and the concentration of ownership rights within the AI system, which is important given its widespread application in virtually all areas of human activity. This has led to the emergence of a type of virtual asset known as AI-based tokens. Their functioning creates the basis for increasing global network participants' access to artificial intelligence by reducing the fees for using its services and expanding the range of participants who can determine the directions of AI project development. While traditional cryptocurrencies generally serve as a means of payment and a store of value, artificial intelligence tokens (AITs) are intended for data analysis, trade automation, market forecasting based on continuous learning, and improving the efficiency of trading and service-provision environments. The integration of AI and virtual assets creates opportunities for developing projects that automate various fields based on AI algorithms and models.

Many academic studies have addressed the application of AI in the financial sector. Dziura et al. (2025) examined ways of adapting AI in the financial sector from the perspective of Industry 4.0 development. Akour et al. (2024) identified opportunities for using AI in financial decision-

making. However, this concerns only the investment sector. Wang et al. (2024) examined the possibilities of applying AI to monitor financial risks in asset management. This study focuses on the activities of enterprises. Azeema et al. (2023) emphasize that AI has a dual impact on financial markets, creating both new opportunities and certain challenges for market participants. This applies to the financial market as a whole; however, the virtual asset market remained outside the authors' focus.

Specific aspects of AIT functioning have been addressed in academic studies, most of which focus on technical aspects. Research into the economic nature of artificial intelligence tokens only began to emerge in 2024–2025. Most of these studies have been conducted by consulting and research centers, which can be explained by the recent emergence of AITs on the market. Various terms are used in this context. For example, AITs are also referred to as AI crypto tokens (Ko & Chen, 2025), AI cryptocurrencies (Ganapathy et al., 2020), and AI coins (Kraken, 2024, November 21). However, in our view, the term "artificial intelligence tokens" (AI tokens, AITs) is the most appropriate and most widely used.

The results of the analysis of scholars' and practitioners' approaches made it possible to systematize the understanding of the nature of AITs within the functional, technological, and project-based dimensions. From the perspective of the functional approach (Anglen, 2024), AI tokens are digital assets that use artificial intelligence technologies to improve their functionality and utility. However, the functions of AITs are not specified.

Representatives of the technological approach, Ko and Chen (2025), emphasize that AITs belong to the category of cryptocurrencies that integrate artificial intelligence technologies into their operations. Mafrur (2025) considers AITs to be cryptographic assets designed to support decentralized artificial intelligence platforms and services. However, the ways in which AI tokens support these platforms and services remain unspecified. According to the project-based approach, Coingecko (2026) defines AI tokens as cryptocurrency assets that support artificial intelligence-related projects, such as AI-based portfolio management, image generation, and pathfinding. However, this approach somewhat narrows the range of projects that can actually use AI tokens.

In the academic literature, researchers focus on the relationship between AITs and specific components of the financial market. For example, Yousaf et al. (2024b) identified a relationship between AI tokens and traditional asset classes, while Jareño and Yousaf (2023) examined their relationship with other AI-based assets. Yousaf et al. (2024a) investigated volatility spillovers between AITs, AI stocks, and fossil fuel markets. To date, research on AITs has largely focused on their role in investment portfolios. In particular, Ko and Chen (2025) point to a high probability of substantial losses during periods of market instability, indicating the limited diversification potential of AI assets within non-diversified portfolios.

Artificial intelligence tokens should be distinguished from AI tokenization, which involves converting large volumes of information (textual, visual, or audio data) into specific units (tokens) organized into structured units, thereby enabling artificial intelligence to process them and generate certain information. Despite significant progress in AIT research, gaps remain in the systematization of factors influencing their development, the identification of their functions, the systematization of opportunities for their use in various fields, and the identification of their development prospects within the crypto ecosystem. Given the diversity of existing approaches, the concept of AI tokens itself requires further clarification.

The purpose of the article is to determine the role of artificial intelligence tokens as a component of the crypto ecosystem, identify their potential applications, and substantiate their development prospects.

In the course of the study, the hypothesis was put forward that artificial intelligence tokens constitute a significant component of the crypto ecosystem, contributing, on the one hand, to expanding the range of its participants and areas of coverage and, on the other hand, to transforming the very areas of human activity in which they are used. To test this hypothesis, the stages of AIT evolution and the factors influencing their emergence and development were systematized; the elements of the crypto ecosystem were clarified; the possibilities for using AI tokens in various fields were systematized; and the threats and opportunities associated with the development of AITs as a component of the crypto ecosystem were identified. Based on the findings of the study, the prospects for the development of AI tokens as a component of the crypto ecosystem were outlined, and their definition was refined.

To achieve this objective, a set of scientific methods was employed. In particular, the historical method was used to identify the stages of AI token evolution. The analysis of statistical data from CoinMarketCap, Statista, and Kraken helped identify trends in global investment in artificial intelligence and the market capitalization of AITs. The systems approach provided the basis for identifying the factors influencing the development of AI tokens. The assessment of the strengths and weaknesses of AITs was based on an analysis of their characteristics, while the analysis of threats and opportunities was based on the specific features of AI tokens' functioning within the crypto ecosystem. Subsequently, the results of the SWOT analysis served as the basis for forecasting the prospects for the further development of artificial intelligence tokens.

The main body of the article consists of three sections: the first is devoted to describing the stages of AIT evolution; the second focuses on analyzing the investment component of their development; and the third addresses the position of AI tokens within the crypto ecosystem and identifies their development prospects.

1. Evolution of artificial intelligence tokens

Mishchenko et al. (2024) propose viewing artificial intelligence as a comprehensive systemic set of technical and technological solutions developed on the basis of relevant logical algorithms, formed by identifying patterns in the functioning of individual processes or phenomena. These solutions make it possible to imitate the human ability to think logically and, on this basis, produce certain generalizations, decisions, or recommendations. Artificial intelligence tokens have a relatively short history. However, due to their potential to transform various industries, AITs are becoming increasingly important in the financial technology ecosystem. They are associated with the functioning of decentralized platforms that provide certain benefits to users.

The evolution of AITs has gone through several stages. The *first stage* – their emergence – lasted approximately from 2017 to early 2021. The emergence of AI tokens in the virtual asset market is generally associated with 2017, when interest developed in the possibilities of integrating blockchain technology with artificial intelligence. However, the first projects that attempted to address issues related to data exchange, machine learning algorithms, and the allocation of computing resources did not develop further due to low levels of trust and the insufficient technological efficiency available to users at that time. The cryptocurrency boom of 2017–2019 laid the foundation for the formation of a decentralized artificial intelligence market, within which opportunities for exchanging and trading AI models were created. During this period, attention focused on identifying ways to reduce computing resource costs and maintain data confidentiality.

The *second stage* in the evolution of AI tokens (2020–2023) was associated with their improvement. On the one hand, new technologies began to be applied, including iris scanning (*Worldcoin*); on the other hand, AI technologies began to be used in new fields, particularly to identify consumer behavior patterns and conduct analyses in the field of cryptocurrency transactions (Arkham). This enabled AITs to become an integral component of the crypto ecosystem.

The *third stage* in the evolution of AI tokens began in 2024 and is characterized by the growing popularity of artificial intelligence agents, which has taken place against the backdrop of the AIT boom.

The purpose of creating and subsequently using artificial intelligence-based tokens is to:

- automate processes in various fields;
- improve the security of transactions;
- enhance the personalization of services provided to users.

The characteristic features of AITs are that they:

- are digital assets;
- provide for community ownership rather than company ownership (Izockey, 2025, April 14);

- are utility tokens;
- have a limited supply set by platforms that seek to control inflationary processes and ensure fair use;
- require payment for tasks performed by artificial intelligence;
- are intended not for storage but for carrying out specific operations;
- are generally compatible with various platforms, as they typically operate on major blockchains, including Ethereum and Cosmos.

Artificial intelligence tokens perform the following functions:

- educational, which provides users with access to such tools as machine learning models, predictive analytics, and automated decision-making systems;
- communication, which enables interaction between artificial intelligence users and AI platforms;
- operational, which enables language processing and image recognition, as well as the buying, selling, and exchange of data used for AI development;
- governance, which enables token holders to participate in decision-making regarding the operation of an AI platform;
- incentive, which provides participants with rewards.

In our view, the primary function of AI tokens is the operational function, which facilitates users' access to artificial intelligence capabilities and enables them to carry out transactions within decentralized platforms.

2. Development of artificial intelligence tokens

The advantages of using AI in various fields have stimulated the interest of potential investors. Global private investment in AI increased over the period 2015–2024 (*Figure 1*). At the same time, the growing potential of AI tokens to decentralize the AI market creates the conditions for the growth of this segment.

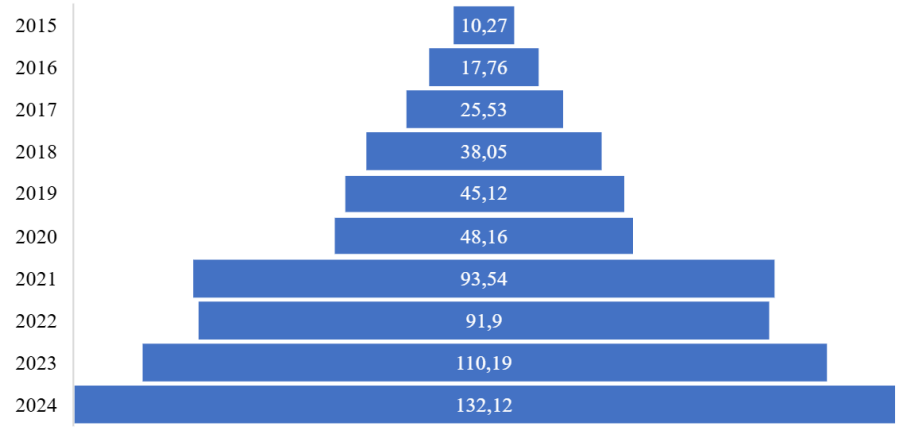


Figure 1. Global Private Investment in Artificial Intelligence, 2015–2024

Source: compiled by the authors based on (Thormundsson 2024, December 11).

As shown in *Figure 2*, the artificial intelligence and big data token sector has experienced a boom in the global virtual asset market since 2024. Subsequently, the market capitalization of AI and big data tokens declined somewhat; however, compared with previous periods, it remains significantly higher.

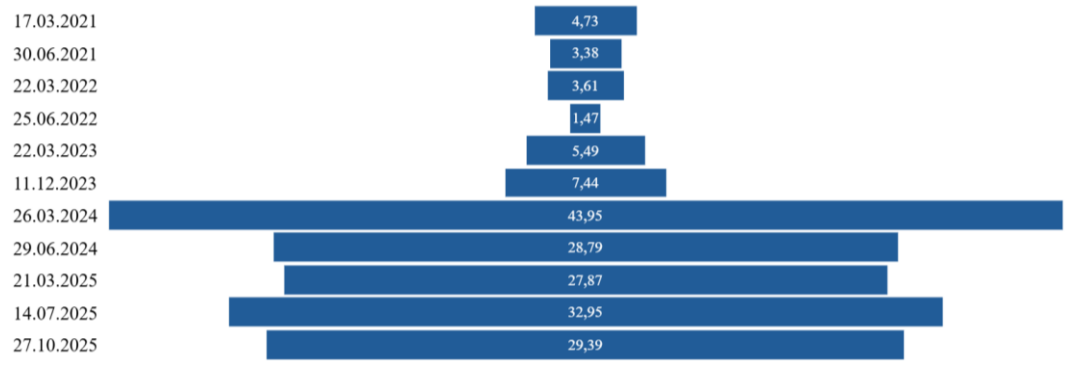


Figure 2. Market capitalization of AI and Big Data tokens from 17 March 2021 to 27 October 2025, USD billion

Source: compiled by the authors based on (CoinMarketCap 2026).

In 2024, global corporate investment in artificial intelligence amounted to USD 252.3 billion, while global private investment reached USD 33.94 billion, following a tenfold increase over the previous decade (Kariuki, 2025). At the same time, the results of a survey of cryptocurrency holders in the United States indicate that 48% of respondents are optimistic about the long-term potential of AI tokens, while 24% of respondents stated that they were already investing in AI tokens and 27% expressed a desire to invest in them in the future (Kraken, 2025, April 7).

Currently, 109 artificial intelligence tokens are available on the market (Forbes, 2026). *Table 1* provides an overview of the top 5 tokens by market capitalization.

Table 1

Overview of the top 5 artificial intelligence tokens by market capitalization (as of 5 January 2026)

Name	Year founded	Blockchain	AI token categories	Application areas	Market capitalization, USD billion	Price, USD
Chainlink	2017	Ethereum	AI agents	Finance, gaming. This token is used by Swift, JP Morgan, Mastercard, Euroclear, Fidelity International, UBS, ANZ, Aave, GMX, and Lido	9.6	13.5

End of Table 1

Name	Year founded	Blockchain	AI token categories	Application areas	Market capitalization, USD billion	Price, USD
Bittensor	2019	Subtensor	Generative AI	Cryptocurrency trading, autonomous driving, photography. Developers are rewarded for their contributions to a shared AI model	2.8	265
Near Protocol	2017	Ethereum	AI agents	Payment of transaction fees and provision of collateral for data storage on the blockchain	2.2	1.75
Internet Computer	2016	Ethereum	AI agents	Enables AI to create applications, websites, and enterprise systems for mass-market users through instructions provided via chat, offering a serverless environment. It allows smart contracts to interact directly with real-world data and services, while ensuring censorship resistance and cryptographic security. For example, applications such as OpenChat (a decentralized social platform) operate entirely on ICP without centralized hosting	1.7	3.24
Render	2009	Ethereum, from 2.11.2023 – Solana	Generative AI	Art, gaming, fashion, and the film industry through the use of 3D images, special effects, animation, and graphics software by artists, engineers, designers, developers, and film directors	1.0	2.1

Source: compiled by the authors based on (Kraken, 2024, November 21; Izockey, 2025, April 14; Bank for International Settlements, 2023, July 11).

The factors influencing the development of AI tokens can be divided into technological, economic, legal, and energy-related factors. *Technological factors* include:

- the availability of modern graphics processing units (GPUs) and high-speed memory, which makes it possible to reduce information processing time;
- increases in the processing power of next-generation GPUs;
- the transition from GPUs to specialized application-specific integrated circuits (ASICs) for training;
- the availability of specialized infrastructure.

Among the *economic factors*, the following should be highlighted:

- price volatility of AI tokens;
- reductions in computing costs;
- growing user demand for AI systems;
- intensifying competition in the AI market.

Energy-related factors influencing the development of AI tokens include the increase in electricity consumption required to operate artificial intelligence systems. In 2024, US data centers consumed approximately 200 terawatt-hours of electricity, of which AI servers accounted for 53–76 terawatt-hours, an amount sufficient to supply electricity to more than 7.2 million American households for a year. According to *Poshenergy* (2025, June 11), AI-related electricity consumption is expected to more than double by 2030. This will undoubtedly also affect the operation of AI tokens.

Legal factors involve the impact of the regulatory environment on the functioning of the AI token sector. Recently, national and global regulators have shown increasing support for the development of the AI token sector, which has had a positive effect on this segment of the virtual asset market.

3. Artificial intelligence tokens: their place in the crypto ecosystem and development prospects

The scientific literature does not provide a definition of the crypto ecosystem or specify the composition of its elements. Only the Bank for International Settlements (Bank for International Settlements, 2023) identifies the following elements of the crypto ecosystem: cryptoassets, stablecoins, smart contracts, and decentralized finance. Although this approach was proposed recently, it has already become somewhat outdated, as it reflects only certain elements of the crypto ecosystem, namely, types of virtual assets (cryptoassets and stablecoins), a financial technology instrument (smart contracts), and a component of the financial system (decentralized finance). However, the range of virtual assets and instruments within the crypto ecosystem is considerably broader.

At the same time, participants are an important component of any ecosystem, including the crypto ecosystem. The emergence of tokens has contributed to the entry of new participants into the crypto ecosystem, including entities operating in logistics, the fashion industry, and the energy sector, as well as gambling businesses and artists. Furthermore, the scope of the crypto ecosystem is currently expanding through the introduction of new

types of virtual assets, including AI tokens, and the enhancement of their functionality. In view of this, when defining the elements of the crypto ecosystem, we propose expanding the range of virtual assets and their areas of application, particularly AI tokens, and incorporating the participants of the crypto ecosystem as an additional element. To gain a deeper understanding of the place of AI tokens within the crypto ecosystem, the element "AI token application opportunities" is introduced. *Figure 3* illustrates the place of AI tokens within the crypto ecosystem.

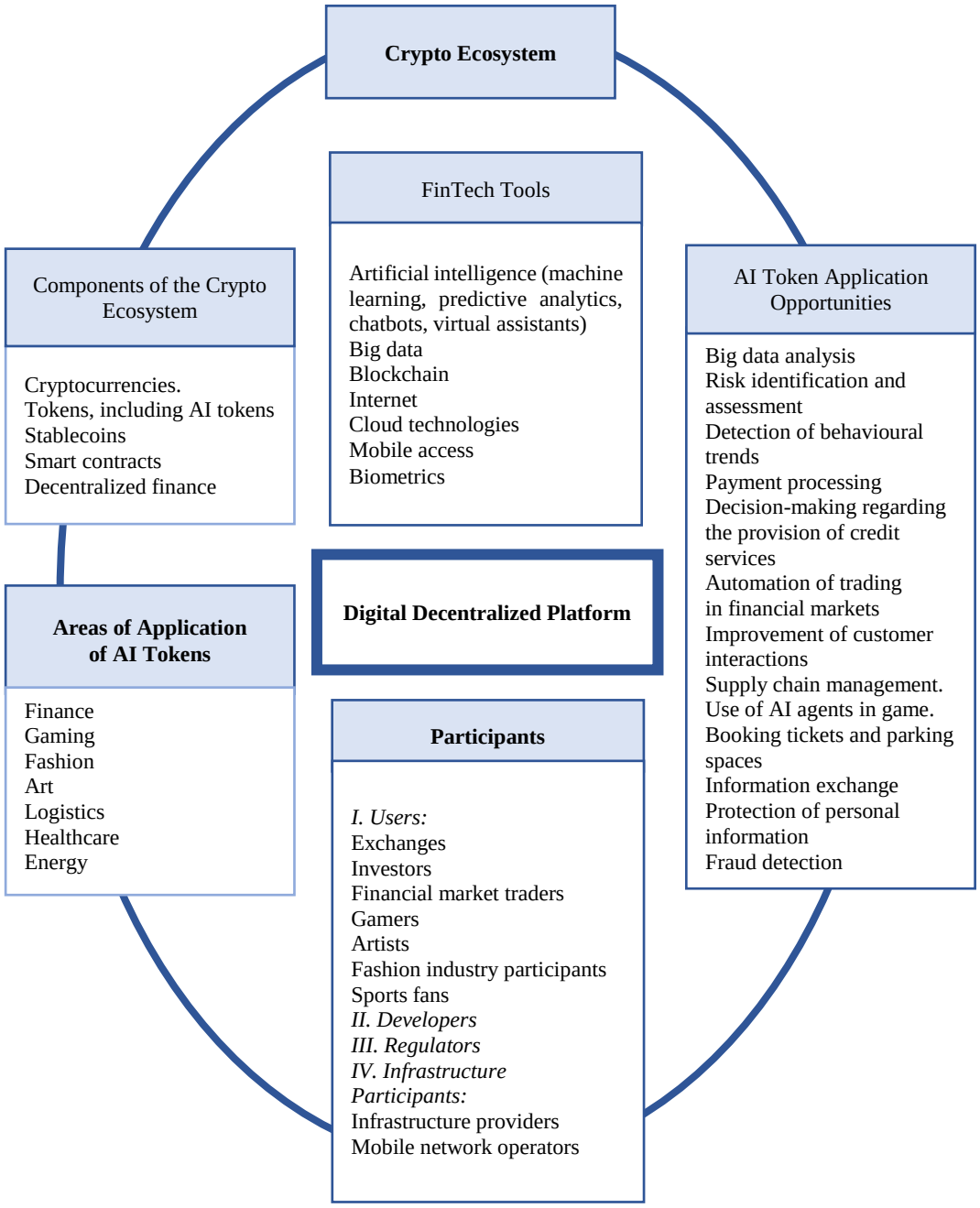


Figure 3. Artificial intelligence tokens in the crypto ecosystem

Source: compiled by the authors based on the Bank for International Settlements (2023, July 11) and their own research.

As a component of cryptoassets, AI tokens are used in their operations alongside various financial technology tools, the main ones being artificial intelligence and blockchain. However, the current development of AI tokens also involves the use of biometrics (iris recognition – the Worldcoin token); mobile access (the *ASI* token) (Hryniv, 2024, February 21); and cloud technologies (the FET and ASI tokens on the *Fetch.ai* platform). Participants in the AI token ecosystem include users, developers, regulators, and infrastructure entities, which interact through a digital decentralized platform.

Artificial intelligence tokens are used in such areas as finance, gaming, logistics, healthcare, and digital art. Their application in these areas involves:

- operational activities;
- facilitating transactions;
- incentivizing participants;
- ownership-related activities.

The potential applications of AI tokens are presented in *Table 2*.

Table 2

Applications of artificial intelligence tokens

Operational Activities	Facilitating Transactions	Incentivizing Participants	Ownership-Related Activities
Model training Data processing Predictive analytics Portfolio management Image generation Data exchange Decision-making	Conducting transactions on the platform Purchasing or renting AI models Accessing AI-based platform services	Offering rewards for: • Contributing data to the network; • Providing computing power; • Developing AI software	Investing in AI tokens Granting governance rights over the platform

Source: compiled by the authors based on (Kraken, 2024, November 21; CoinGecko, 2026).

The operational applications of AI tokens and the ways in which they incentivize participants may vary slightly depending on the area in which AI tokens are used within the crypto ecosystem.

In the *financial* sector, artificial intelligence-based tokens make it possible to:

- personalize the provision of financial services to clients based on users' histories and reputations, thereby increasing user satisfaction and encouraging long-term participation in decentralized financial systems;
- facilitate financial planning through the early detection of market instability and liquidity problems using predictive analytics based on a wide

range of data and multiple scenarios, enabling appropriate decisions to be made before losses increase;

- interact with users through chatbots and robo-advisors;
- establish decentralized autonomous investment organizations (DAOs) that combine the automated provision of recommendations to token holders based on outcome modelling with community voting on ideas proposed by any participant, thereby democratizing the investment process;
- copy the successful investment strategies of other traders;
- adjust interest rates and reduce the risk of default based on dynamic assessments of borrowers' creditworthiness, market volatility, and collateral value;
- mine cryptocurrency;
- detect suspicious activities, fraudulent transactions, and money laundering by aligning AI projects with regulatory requirements and investors' expectations.

Thus, financial service providers can use AI tokens to strengthen their competitive position in the market by enhancing customer orientation, operational efficiency, and the soundness of decision-making. The emergence and development of AI tokens have led to the formation of a segment of the crypto ecosystem known as *DeFAI* (autonomous finance, AgentFi), which involves integrating AI agents into decentralized finance and automating big data analysis and transaction execution. This contributes to a certain degree of democratization of the financial sector.

AI tokens have created opportunities for the development of the gaming market. Players are offered personalized experiences based on individual interactions with an agent, which increases their engagement. Tokens provide ownership rights to AI agents, allowing them to be sold, exchanged, or rented. As a result, incentives to invest in and train AI agents increase. Tokens also enable the same AI agents to be used across different games and platforms. This creates the foundations for a gaming ecosystem that offers participants broader economic opportunities and an improved gaming experience. AI tokens are becoming an attractive investment instrument, strengthening the links between the gaming industry and the financial sector within the crypto ecosystem.

AI tokens can serve as a tool for artists to create digital works while ensuring ownership rights and the authenticity of the digital artwork for buyers. An example of the application of AI tokens in digital art is the Image Generation AI (IMGNAI) token, which users of Discord and Telegram employ through the Nai bot to generate images using machine learning, including anime and *3D* images.

In the *energy* sector, AI tokens enable the automation of data collection and analysis concerning grid operations, as well as real-time electricity payments, thereby improving grid management efficiency. At the same time, it is hoped that this tool will help overcome inequities in access

to energy among certain categories of consumers and promote the development of renewable energy (*RWA.io,* 2025, December 11). In the operation of electric vehicles, AI tokens automate processes related to trip payments, route tracking, and vehicle fault detection.

In *healthcare*, AI tokens are used to improve diagnostics, treatment processes, data exchange, drug development, and billing. *Table 3* presents the strengths and weaknesses of AI tokens, as well as the opportunities and threats associated with their development.

Table 3

SWOT Analysis of artificial intelligence cryptocurrencies

Strengths	Weaknesses
Real-time fraud detection	Market volatility
Increased process transparency	Low liquidity
Reduced operating costs and transaction times	Ambiguity of regulatory requirements
Reduced transaction processing time	Technical difficulties in adapting AI models to the limitations of blockchain platforms
Reduced electricity consumption	Costs associated with performing tasks despite the availability of free alternatives
Increased computing speed and data storage capabilities through the decentralization of internet infrastructure	Lower computing power and efficiency compared with centralized systems
Threats	Opportunities
Loss of confidentiality of data used by AI in tokens	Making optimal decisions based on historical data in real time
Fraudulent activities targeting inexperienced users who do not sufficiently understand how AI-based decentralized platforms operate	Expanding the role of AI tokens in facilitating cross-border transactions and interactions
Changes in regulatory requirements	Forecasting price trends in markets
Disproportionately high levels of speculation compared with actual platform usage	Helping stabilize prices under conditions of market volatility
Difficulties in complying with financial legislation due to the uncertain legal nature of tokens	Integration with traditional financial systems
	Ensuring fair access to credit and investment instruments

Source: compiled by the authors based on (Mafrur, 2025; IzockeyI, 2025) and their own research.

Thus, we will attempt to forecast the future development of AI tokens as a component of the crypto ecosystem. *First*, AI tokens are expected to operate in conjunction with other financial technology tools alongside AI and blockchain, particularly big data, biometrics, and cloud technologies, which will promote synergies in their use. *Second*, regulatory restrictions on AI tokens are expected to become stricter at both global and national levels, with severe sanctions imposed on those who violate regulatory requirements. At present, regulatory capabilities lag behind the pace at which AI tokens are being introduced into various areas of human activity. As a result, low-

quality tokens may circulate in the market, while consumer rights remain inadequately protected. *Third*, the use of AI tokens is expected to expand further across the financial sector, energy, gaming, logistics, and healthcare. Growing demand for AI tokens and improvements in their efficiency will, on the one hand, drive an increase in global investment in AI tokens and, on the other, may trigger the Jevons paradox, potentially leading to increased energy intensity in this segment of the crypto ecosystem.

Conclusions

The research findings confirmed the hypothesis that the emergence and development of artificial intelligence tokens contribute to expanding the range of participants and areas of the crypto ecosystem, leading to the formation of new properties. At the same time, increased technological sophistication and customer orientation are driving transformations in the financial sector, logistics, the gaming industry, healthcare, the energy sector, art, fashion, and sports.

The identification of functional, technological, and project-based approaches to understanding AI tokens, as well as the determination of their place within the crypto ecosystem, made it possible to refine their definition as elements of the crypto ecosystem that ensure the functioning of decentralized artificial intelligence platforms and provide users across various sectors with opportunities to automate their operational activities, facilitate transactions, incentivize participation, and manage the development of artificial intelligence.

The research made it possible to systematize the following functions of artificial intelligence tokens: operational, communication, training, and governance. As digital assets, AI tokens perform these functions by enabling the automation of certain processes, enhancing the security of transactions, increasing service personalization, providing opportunities to participate in improving the performance of AI platforms, and allowing participants to receive rewards.

For the first time, this article systematizes the factors influencing the emergence and development of artificial intelligence tokens into the following groups: technological, economic, legal, and energy-related. This provided the basis for identifying the following stages in the development of AI tokens on the global market: emergence, refinement, and boom. It should be noted that technological factors are dominant, as the use of additional *FinTech* tools generates synergies and expands the operational capabilities of AI tokens, whose functioning is underpinned by artificial intelligence and blockchain.

The research demonstrated that there are two development trajectories for artificial intelligence tokens: product-based trajectories, which involve expanding their operational capabilities, and sectoral trajectories, which involve broadening their areas of application.

Future research into the functioning of AI tokens will focus on scenario analysis of their development, particularly in financial markets.

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