# CRYPTOCURRENCY PROJECT SUPPORT SYSTEM

## Whitepaper

# LTD
# Algebraic Technologies

When we talk about supporting a crypto project that uses its own token or cryptocurrency, we care about its token economy, which determines the circulation of the token and its value relative to fiat. The preservation of economic balance, the absence of undesirable scenarios, and resistance to malicious actions are essential for the project's success and viability. We also see the need to predict the behaviour scenarios of agents or actors. To get answers to our questions, we create mathematical models and use formal algebraic methods.

When working on developing their own service, the owners of crypto projects pay a lot of attention to smart contracts, which actually implement the token economy. The smart contracts must be optimal and secure.

On the other hand, regardless of the presence of a successful project development plan and its high-quality implementation, we must consider the market influence. The tokenomics scenario does not always work as planned because it depends on many external market factors - the demand for services, the value of cryptocurrency, the activities and public statements of leading companies and celebrities, public attitudes, and so on. In this case, the best method for predicting the development of events in the project is AI methods and the synergy of the mathematical model and neural network technology, which will allow to make decisions on further development and necessary changes in the project in case of critical events or recommend actions to obtain maximum profit.

# PROJECT GOAL

***Develop and deploy the Cryptocurrency project support system at any stage of its development and implementation, the core of which lies in the Algebraic Method and AI technologies.***

This service will provide unique opportunities to investors, crypto project owners and developers, which includes, but is not limited to:

- Self-dependent creation of a competitive and self-managed token economy, research of its properties and possible scenarios with the help of an automated service - Tokenomics Constructor;
- Forecasting scenarios of the token economy in real-time due to the analysis of current exchange data and other market information based on AI methods;
- Generation of secure smart contracts that correspond to the established token economy and can be adapted to the appropriate platform and network interfaces;
- Ensuring the monitoring of the functioning of the project's tokenomics with the prediction of possible scenarios, using AI methods and possible prompts for corrective actions for project owners and investors;
- Ensuring comprehensive preparation of the crypto project for launch with the generation of a tokenomics paper, graphical information, and current market data;
- The possibility of using the initial templates of effective tokenomics with the possibility of customization to the customer's needs.

The service is created by tokenomics specialists, programmers and scientists based on an Algebraic Approach and AI methods.

An MVP, presented as Tokenomics Constructor, has been created at this stage. Tokenomics Constructor provides an opportunity to create a crypto project tokenomics, model it, and explore its properties. It is connected to an algebraic server, which provides algebraic modelling and verification of the properties of the tokenomics model, which is automatically created in the Tokenomics Constructor environment.

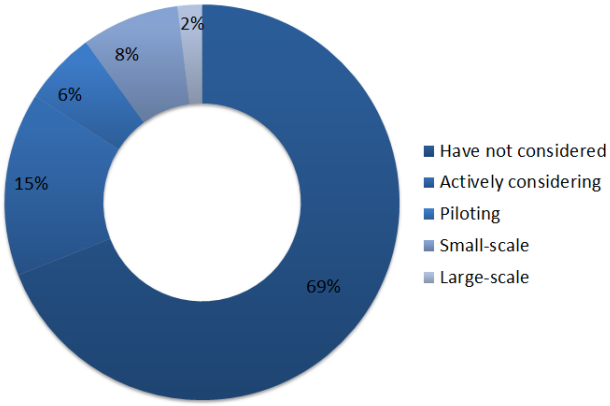
The service is expected to be tokenized and deployed in the blockchain network. Tokenization involves the introduction of the service's token - ALMOD - which will be used to sell on the stock exchange and pay for the services provided.

To speed up service development and deployment, we consider the involvement of investments in the form of selling up to 20% of the business share and part of the tokens received as payment for the service.

# MARKET OVERVIEW

## OVERVIEW OF THE PROBLEM AND ANALYSIS OF THE CRYPTO PROJECTS MARKET

According to Statista, by 2023, 15% percent of digital leaders worldwide said their companies were actively considering blockchain adoption.

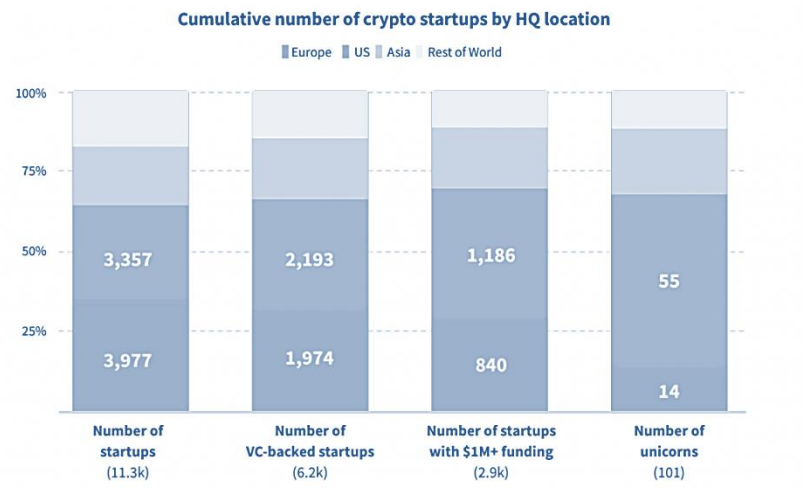



In 6% of respondents, blockchain implementation is at the pilot stage; in 8% of respondents, blockchain technology has been implemented on a small scale and a large scale in 2%.

Both global revenues from blockchain technology and spending on blockchain solutions are expected to increase significantly, forecasted to reach more than $39 billion by 2025 and almost $19 billion in 2024, respectively.

Despite the significant fluctuations of the "main cryptocurrencies", the market of crypto projects also continues to grow.

According to a report by the RockawayX company and the Dealroom project team, the most significant number of startups working on blockchain technology and cryptocurrencies as of the beginning of 2023 is located in Europe — 3,977. However, the United States dominates the number of unicorn startups.




However, at the same time, the number of blockchain and, in particular, crypto-startups that fail is almost the highest on the market, accounting for nearly 90% of the announced projects.

According to coinkickoff, 91% of coins created in 2014 died during the year due to low trading volume or project abandonment. The China Academy of Information and Communication Technology (CAICT) report states that 92% of previously launched blockchain projects are inactive, with an average project lifespan of 1.22 years.

This high percentage is due to many startups rushing to adopt blockchain without a clear use case or value proposition. Many companies, such as TradeLens (a joint venture between Maersk and IBM), have gone out of business due to their inability to present the right solutions for their blockchain platforms. In particular, the leading causes of dead coins have been failed initial offerings (ICOs), abandonment of startups with less than $1,000 in trading volume in the first three months of trading, fraud, or the fact that the coins were intended as a joke.

Another issue facing governments and global markets is the regulation of cryptocurrencies to protect investors in the future. For example, a report by Stasis Group, an ICO consulting company, found that 80% of the offerings in 2017, which raised $11.9 billion, were fraudulent, and the year itself was recognized as a peak year for fraudulent coin releases. In particular, according to Chainanalysis, the renewed interest in the market after the recent price jumps in 2021 again led to a new wave of crypto crime - worth about $ 14 billion.

Thus, the need for well-thought-out project creation, particularly the development and analysis of token economy corresponding to the planned properties, secure smart contracts and project monitoring methodology for making the right decisions, is a very relevant issue for the owners of such projects and investors.

## MARKET OVERVIEW OF BLOCKCHAIN SOLUTIONS SUPPORT SERVICES AND ADVANTAGES OF THE OFFERED SERVICE

There is a significant number of companies in the existing blockchain solution support services market. These are companies that conduct token economics consultations, conduct scenario simulations, and implement smart contract audits, both manual and automated.

Among such projects are cadCAD, Tokesim, R - language and environment for statistical calculations and graphics, TokenSPICE and others for tokenomics analysis, ZEUS, SmartCheck, EtherTrust, Oyente, Manticore, MAIAN, and so on for verification of smart contracts.

Our company offers a solution that differs from the existing ones. The main advantages of the planned platform are the following:

- the ability to create a token economy model independently, without relevant mathematical and economic knowledge, using the user-friendly "Tokenomics constructor";
- the ability to verify desired Tokenomics properties based on formal and AI methods and obtain EVIDENCE PROVING that the Tokenomics algorithm is working correctly;
- generation of secure smart contracts, which will make it possible to reduce the time and costs of manual creation;
- monitoring and making the right decisions according to forecasts based on modern data analyzed by AI methods and confirmed by algebraic modelling;
- in contrast to the widespread method of imitation modelling and simulation, we use algebraic modelling that considers sets of potential project scenarios;
- we use the synergy of AI methods and an algebraic approach, which has a significant effect on the accuracy of predictions.

# INVESTMENTS

## INVESTORS ATTRACTING

At the expense of investors, it is considered attracting $1,000,000 for the development of the service, estimated as 20% of the share of the business. This share will be sold in the form of NFT and can be transferred or resold by investors to other persons throughout the life of the project.

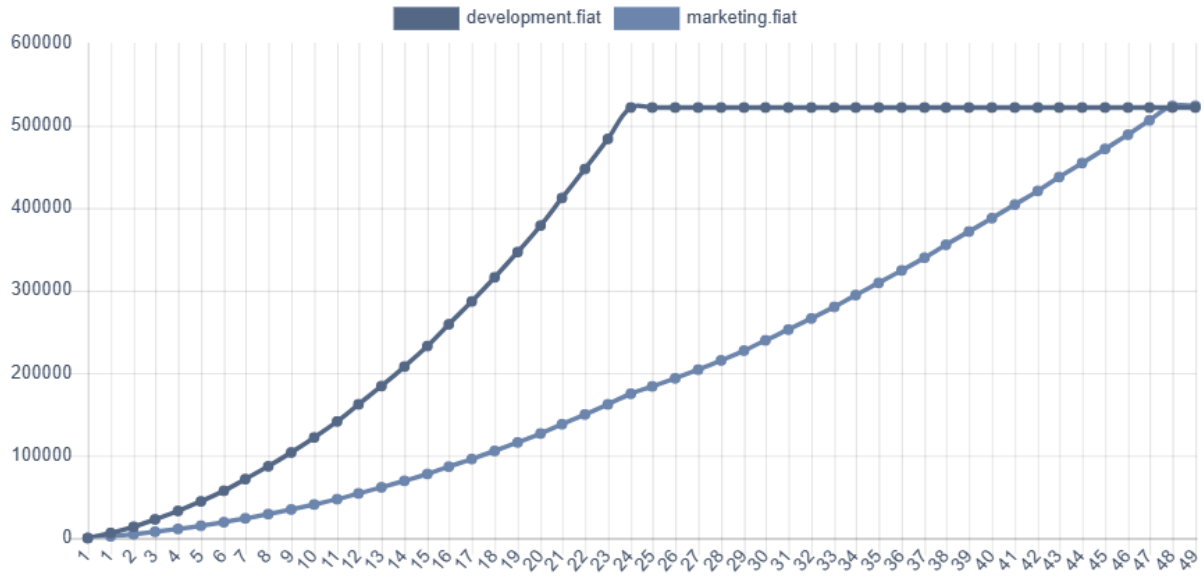
According to the percentage distribution of NFT between investors, the distribution of 20% of the monthly profit (tokens received by the platform as payment by users for the services used) to them is planned.

## INVESTMENT IN DEVELOPMENT FROM INCOME

It is assumed that 50% of the tokens received as payment by users of the platform services will be sold on the exchange within the first two years from the start of the project to obtain additional funds directed exclusively to the service's development. Another 20% of the received tokens will be sold on the exchange to support marketing activities during the first two years of service operation.

Starting from the 25th month of service operation, it is planned to sell 10% to 15% of received tokens on the exchange to ensure marketing activities and support and expand the service's functionality. After the service's development is completed, some of the fiat earned from the sold tokens will be stored in the platform's fiat account to maintain the liquidity pool, etc.

**Fiat received from the sale of received tokens for service development, marketing services and other operating expenses** (based on average sales volume)



Thus, taking into account the expected sales plan, it is assumed that the investment from the profit invested by the team in the development and development of the service (including additional operating costs and replenishment of the platform pool for liquidity control) will reach about $1,045,649 according to the average expected indicators of token sales during the first four years of service operation.

## SALES PLAN

We evaluate service sales plans by analyzing market needs for the services provided. In particular, we predict that of the 11.3K existing blockchain startups, most of them will be interested precisely in the possibility of project monitoring, which will be launched in the second or third year of development and start of operation of the Cryptocurrency project support system (see the Project Roadmap).

A part of the already declared startups (we estimate it as 40-60% of the existing blockchain startups) needs support for the development of smart contracts and additional verification and advice in the modernization of the project's tokenomics model, which covers the first and second year of the project's operation, and therefore provides the opportunity to receive profit from the first month of launch.

The market assessment also shows that the creation of new blockchain companies fluctuates yearly (from 500 to 3,000 per year), indicating the relevance and potential need to use all the services of the proposed project. In addition, today, we see an interest in the introduction of the cryptocurrency market in an increasing number of industries at the level of public administration and taxation by many countries of the world, which will not leave out the interest of both small and large businesses in tokenizing their own business, which is predicted to trigger a new development boom crypto industry and, accordingly, the need for efficient and guaranteed correct planning of tokenomics models of such projects.

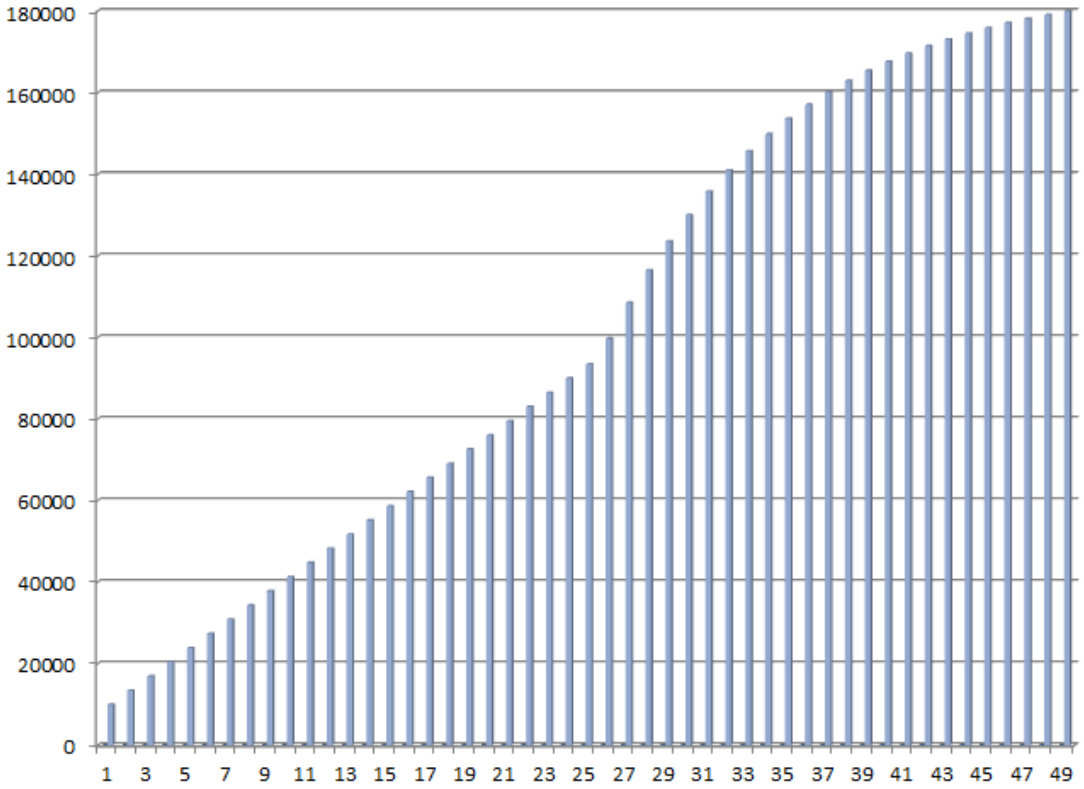
Considering the current market state and assessing the heavy dependence on the marketing component, namely on the popularization of the service, we are considering such a possible option for business development and the corresponding plans for token sales:

- According to the average indicators of the increasing demand for the use of the Cryptocurrency project support system, the sale of platform tokens on the exchange is expected in the amount:
  - from $10,000 in the first month to $90,000 per month during the first two years of service operation ;
  - from $90,000 to $180,000 per month over the next two years.

In particular, it is assumed that tokens will be purchased for participation in Staking according to the following plan:

- from $500 in the first month to $4,000 per month during the first two years of the service;
- from $4,000 to $10,000 per month over the next two years.

**Projected sales of platform tokens (in USD) based on average indicators of the development of demand for the use of the service**




## ESTIMATED COSTS

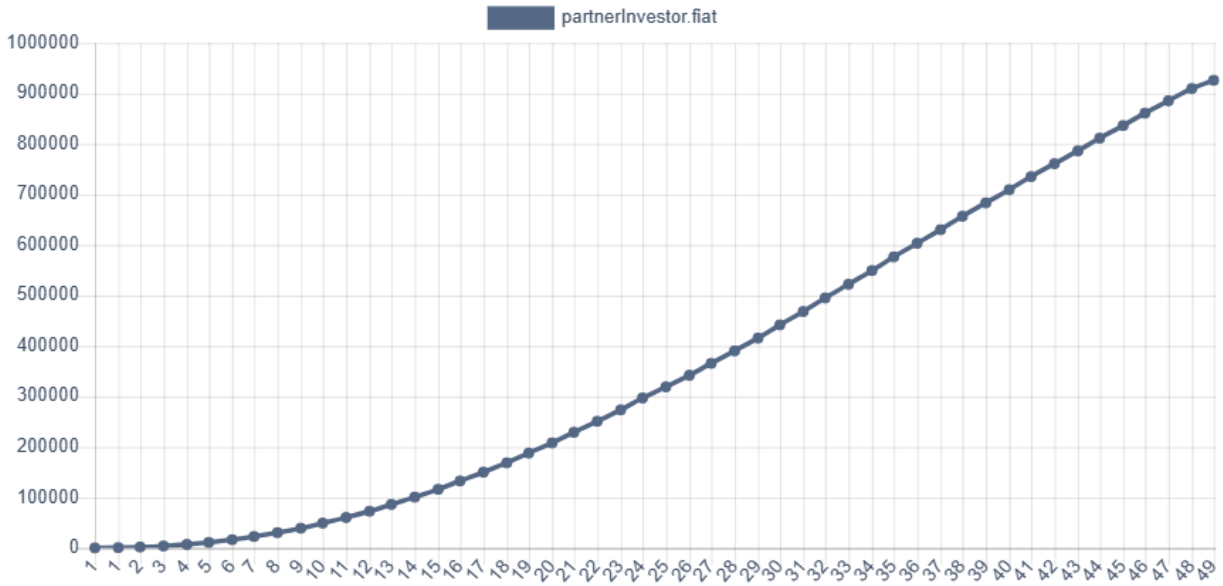
For development, marketing and other operational services during the first 30 months of project development, it is expected to spend $ 2,450,000, of which $ 1,000,000 will be received at the expense of attracting investors and about $ 1,450,000 will be received from the sale of a percentage of tokens received as payment for platform services.

- Software product development: $58,000/month (the first four months before the start of the service and 24 months from the launch of the platform) and $17,400/month (from the 25th month).
- Marketing: $ 14,800/month (the entire period).
- Equipment rental: $ 2230/month.
- Scientific research: $ 9,800/month (first four months before the start of the service and 24 months from the launch of the platform), $ 2,940/month (from the 25th month).

## REFUNDS AS PROFITS FROM THE SERVICE

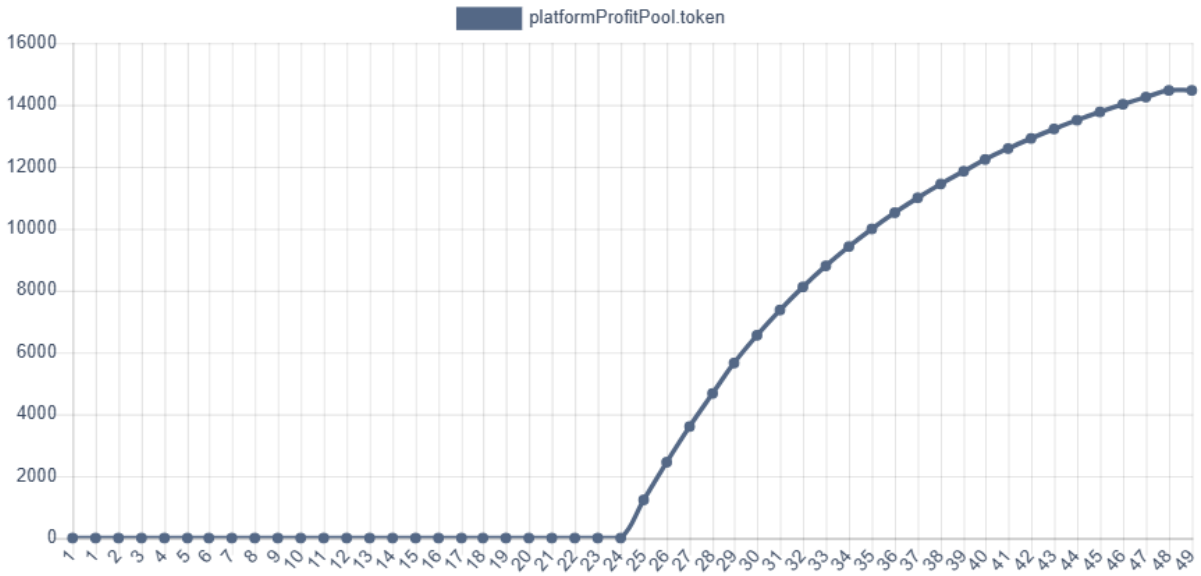
Taking into account the expected sales plans, it is assumed that the return of invested funds by investors due to the received share of tokens from the monthly sale will reach the amount of the deposit ($1,000,000) for the average expected sales figures during the first four years of service operation and within two years according to the maximum sales plan.

**Fiat received from the sale of received tokens by investors**[1] **(**based on average sales volume**)**



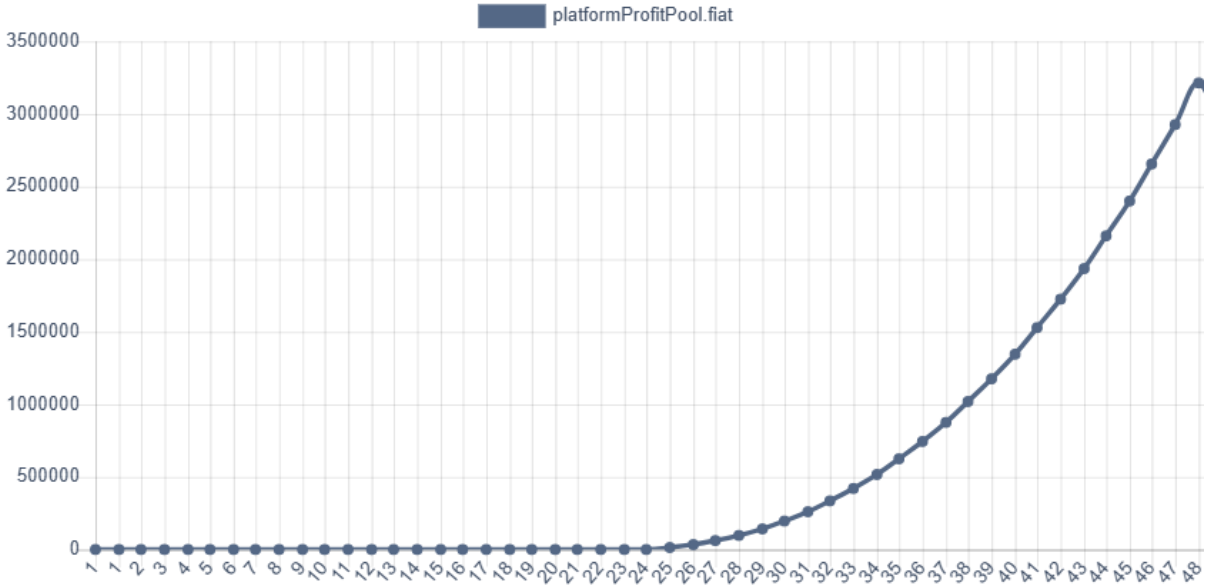

According to the token distribution plan, the service development plan, and, accordingly, the expected spending plans, the service will be profitable from the second year of operation after launch. Accordingly, from the 24th month, after allocating part of the funds for operational expenses (marketing expenses, expenses for support and development of the service, etc.) and corresponding rewards to investors and the project team, we receive the remaining tokens, which is the *platform's profit.*

**Platform profit in tokens** (based on average sales volume)




[1] Given the gradual increase in the token's value according to the modelling results, it is assumed that investors will sell no more than 20% of their tokens monthly.

**Platform profit in fiat**[2] **(**based on average sales volume**)**




[2] The platform's profit in fiat is calculated as the product of the number of tokens by the current value of the token at the end of each month, which is obtained from the modelling.

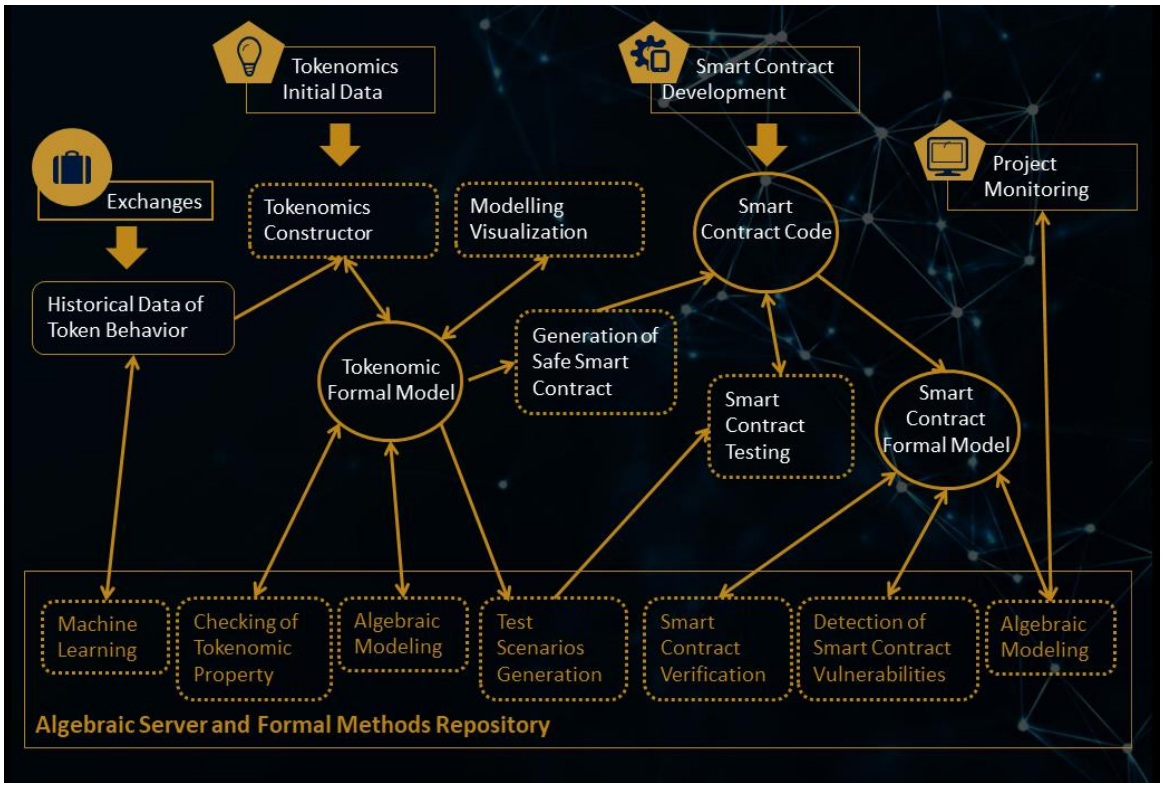
# DESCRIPTION OF THE CRYPTOCURRENCY PROJECT SUPPORT SYSTEM

The Cryptocurrency project support system is unique and has no global analogues. It is based on an algebraic approach and AI technology. Scientists from various universities and scientific institutes created platform algorithms.

The system is a SAAS service for crypto projects of any size and complexity created remotely.

The Cryptocurrency project support system includes such services as creating and verifying the cryptocurrency project token economy model, automatically generating smart contracts based on the developed token economy, supporting the development of smart contracts, supporting the launch of the cryptocurrency project, and real-time data monitoring.

**The general structure of the Cryptocurrency project support system**




Project creation begins with developing a token economy model. The TOKENOMIC CONSTRUCTOR framework was developed for these purposes and has started work in test mod.

**TOCENOMIC CONSTRUCTOR and technology video review**

Go to TOKENOMIC CONSTRUCTOR

Within the Tokenomic Constructor, any user can enter their project data, including financial data, service algorithm, rewards and other data. The system automatically creates a mathematical model and submits data to an algebraic server that analyzes the created token economy for such properties as tokenomics balance, the possibility of centralization, token leakage, token price stability and so on.

The system uses the company's algebraic server and data from exchanges, and open information on the sale of major cryptocurrencies. This data and the corresponding neural networks are planned to be used to predict the volumes of sale and purchase of tokens depending on the price change.

As a result, a tokenomics report or tokenomics paper with relevant data and charts is automatically generated.

After obtaining a satisfactory tokenomics model, it is planned to automatically generate secure smart contracts within the environment of certain protocols, with appropriate settings.

The generated smart contracts can be used as projects of more detailed smart contracts for transfer to the appropriate development environment.

The system supports smart contracts, their modelling, testing, formal verification of vulnerabilities, and analysis of cyber-attack resistance. Many smart contract languages are supported, such as Solidity, Rust, and others.

The system supports the launch of a crypto project and data monitoring. The user can review sales data and current price changes and predict the development of the contract performance scenario using AI and algebraic modelling based on exchange data about other cryptocurrencies and similar projects.

When critical situations arise are possible, corrective actions and advice are provided to investors and project owners. Tips are also offered to increase the system's profit depending on the project's status.

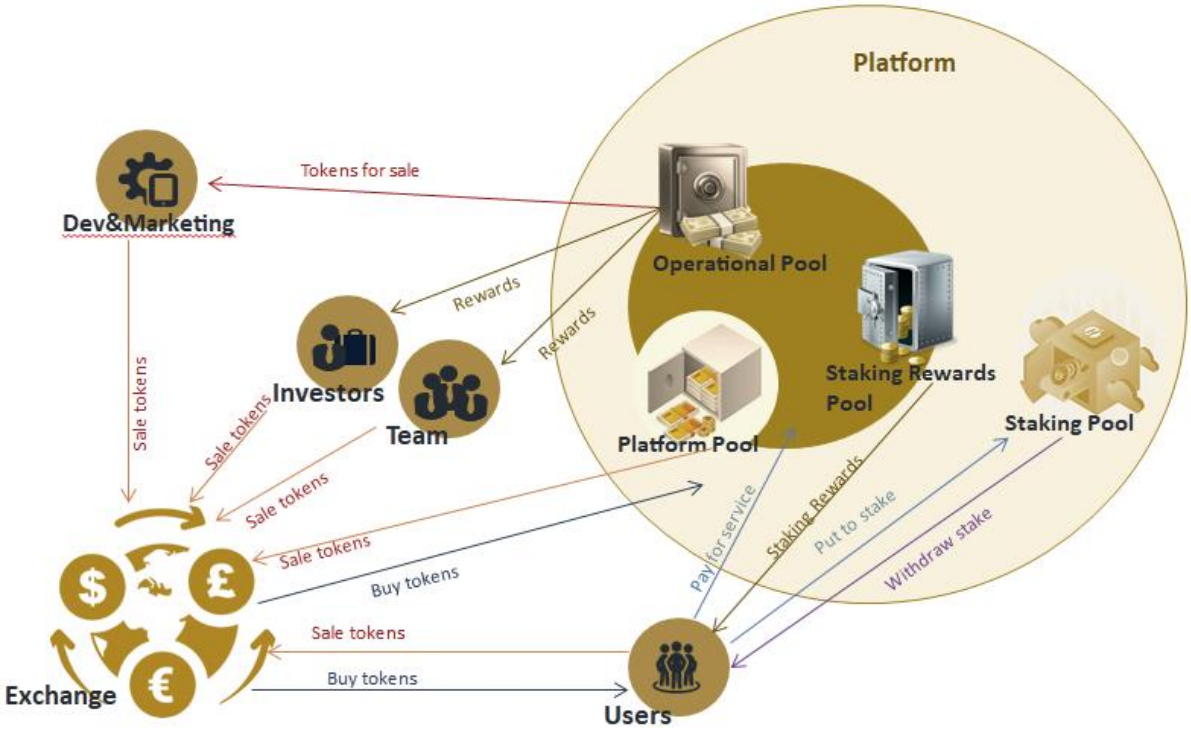
# PROJECT's TOKEN ECONOMY

To ensure the payment of support services for crypto projects that the service will provide, it planned to create and list its token ALMOD on a decentralized exchange.

This token will be used to pay for system services (purchasing tokens on the exchange), award rewards to investors and the project team, and obtain additional funds for service development, marketing activities, and other operational services. In addition, a Staking service for platform users is planned to be launched.

The general scheme of token circulation in the system is presented below.

**The general scheme of token circulation in the system**




The system considers the presence of such main entities of the tokenomics model between which tokens move, such as agents (stakeholders) and pools.

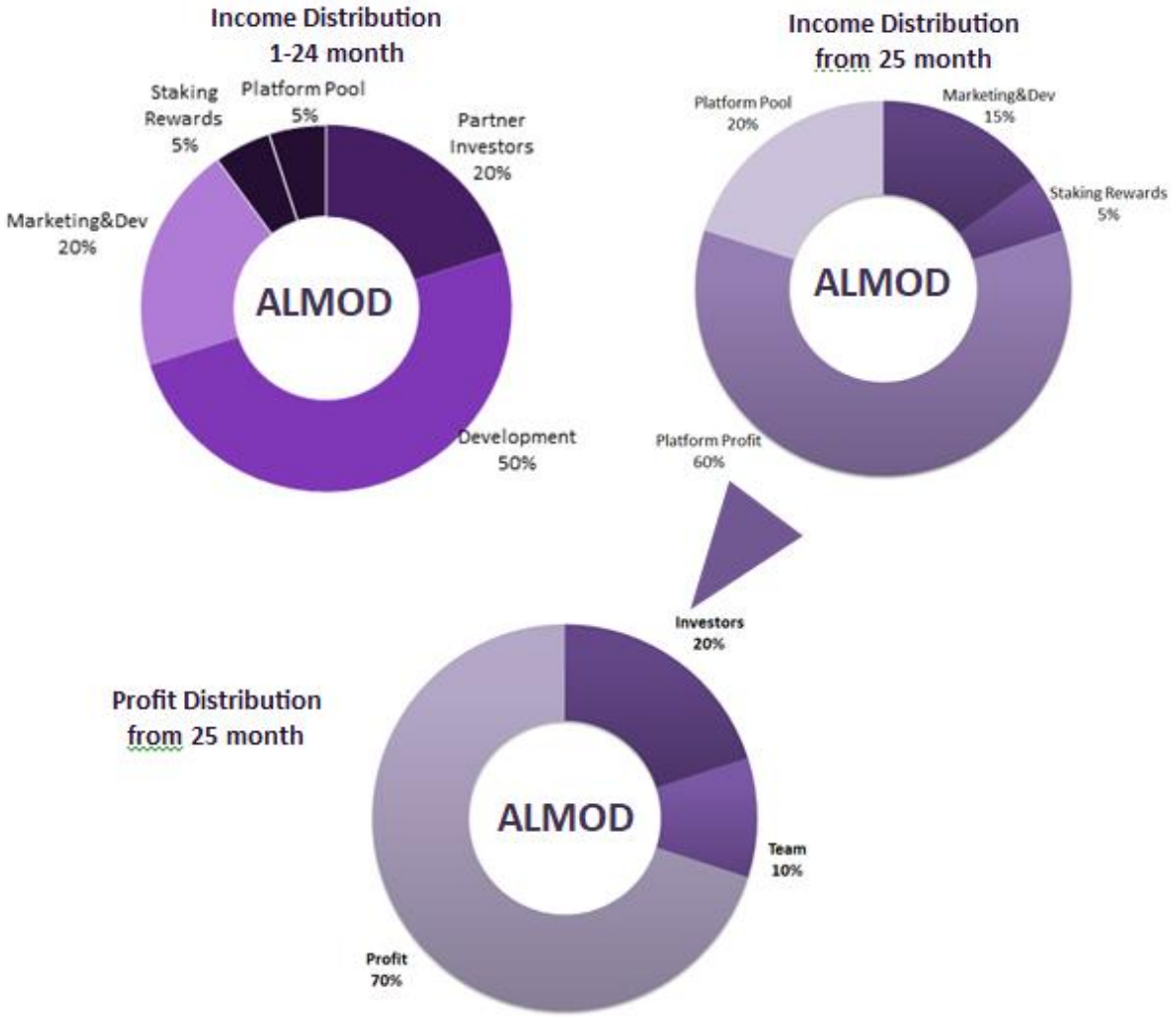
Agents are users, investors, service owners/teams, and traders.

Pools are used as separate wallets for high-quality distribution and management of system token circulation. We define the main pool of the platform, the staking pool, the pool of staking rewards, and the pool of operational cost distribution.

## TOKENS DISTRIBUTION

It is planned the creation and placing on the exchange 200,000 tokens at an initial cost of $0.25, which is $50,000 in fiat.

The team and investors do not receive tokens at the initial distribution but receive a reward in platform tokens after the start of the service as a percentage of the tokens received as payment for the platform service. Part of the received tokens will be sold on the exchange to raise funds for further development and support of the service, marketing activities, and other operational services (see Token Distribution Diagrams).



## PREDICTED MODEL BEHAVIOUR SCENARIO

An algebraic model of the project token economy was developed to create a predicted behaviour scenario.

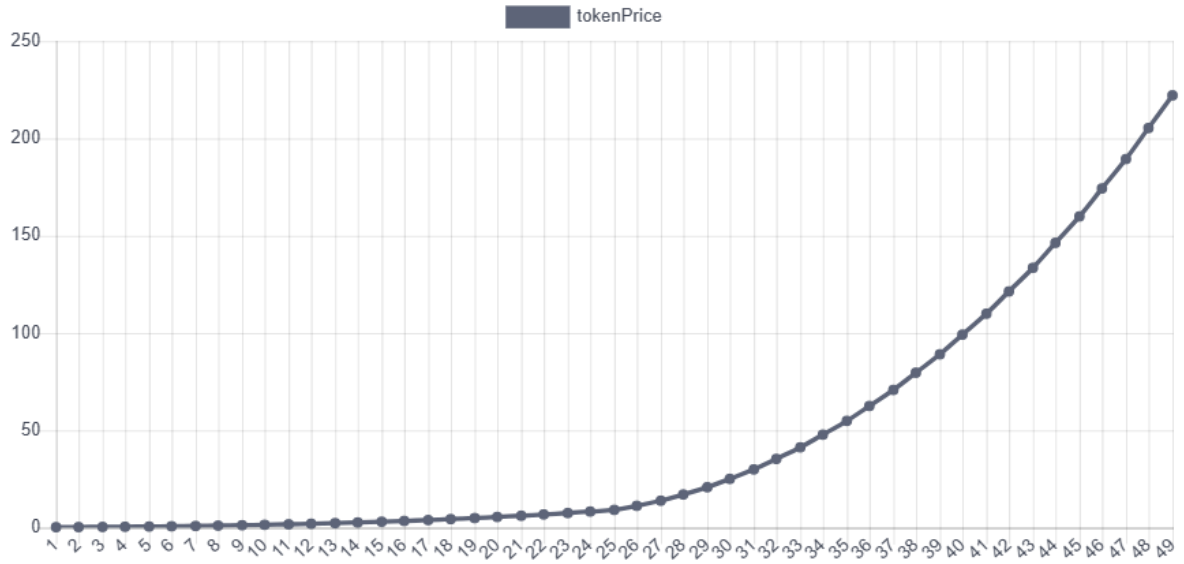
The Algebraic modelling approach was implemented using the Insertion Modeling System IMS, which is a special software based on the theory of the agents and environments interactions. This theory and software are the intellectual property of the project's authors.

The initial data for the modelling were determined, including conservative values for parameters such as the price of tokens, the distribution of tokens between agents, and the marketing plan for the service's development.

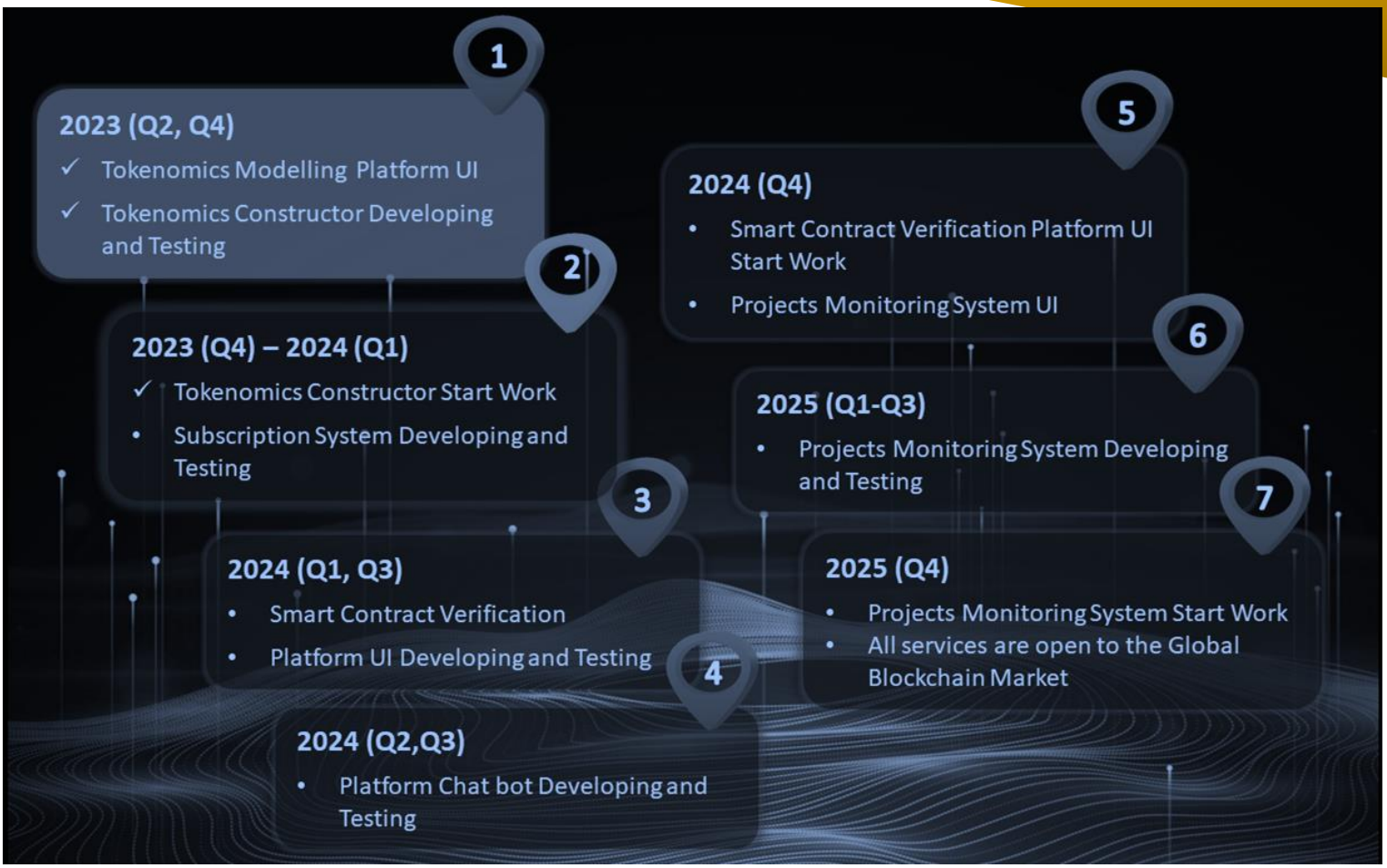
The modelling results demonstrate the equilibrium of the token's life cycle and the initial parameters of tokenomics, which were determined using algebraic modelling.

According to the average indicators of the increasing demand for the use of the Cryptocurrency project support system (see the project Tokenomics paper, Model 1), it is predicted that the value of the token of the project will increase from $0.25 of the initial value to $11.22 during the first two years of the project's life, which includes the stage of development of platform services and their phased introduction to the market, and as of the 48th month from the start of the service - $222. The rapid growth of the value of the token since the 26th month is due to the decrease in the volume of sales of tokens for the development of the service and the increase in the volume of sales of tokens to users.

**The curve of changes in the value of the token during the 48 months of the project's life**
**(**according to the average indicators of the demand for the use of the service)



# PROJECT ROADMAP




**Save Money when investing & developing**

**Make Money when investing & launching**

**Share Blockchain Culture**

# TEAM

Professor **Oleksandr Letychevskyi**
A scientist-algebraist, he has been engaged in formal methods in the verification of various subject areas for many years. The author of numerous works on using algebraic modelling in the blockchain area. His article "Creation of a Self-Sustaining Token Economy" was recognized as the best work on tokenomics in 2022 by the "Journal of the British Blockchain Association". He is a professor at the Herriot-Watt University (Edinburgh). He also worked as a contractor at Motorola for the application of algebraic methods in the testing and verification of software and hardware systems and as a project leader, architect, and scientific leader in research.

Professor **Volodymyr Peschanenko**

Co-founder of Algebraic Technologies LTD and private enterprise Litsoft, Volodymyr is also Chair of the Department of Computer Science and Software Engineering of Kherson State University. His strengths are insertion modelling, symbolic modelling, deductive systems, the development of mathematical software, and computer algebra algorithms. Volodymyr has more than 100 scientific publications in informatics.

Ph.D. **Vladyslav Volkov**
Senior researcher at the V.M. Glushkov Institute of Cybernetics of the National Academy of Sciences of Ukraine. Researcher with over 30 years of experience in applying of formal methods to automated test generation and requirements verification, algebraic programming and insertion modelling. Author of more than 40 scientific publications.
Manager of software development projects with over 20 years of experience especially in CMM/CMMI and Agile based process models.

Ph.D. **Yuliia Tarasich**

Doctoral student of the V.M. Glushkov Institute of Cybernetics of the National Academy of Sciences of Ukraine and researcher of the private company LitSoft and LTD Algebraic Technologies.
She is the author of numerous scientific publications in informatics and information technologies.
Her research interests include insertion modelling, symbolic modelling, algebraic modelling, tokenomics, and scientometrics.

# AWARDS


**Best Research Papers of 2022**

'Creation of a Self-Sustaining Token Economy' by Dr. Oleksandr Letychevskyi is one of the Best Research Papers of 2022 in the 'Crypto-economics or Blockchain Economics' category.

The list of the Best Research Papers of 2022 (papers published during the period 20 November 2021 – 10 December 2022) was announced by The Journal of the British Blockchain Association.

**The best research abstract and presentation**

Bronze award for the best research abstract and presentation as a result of participation in the 4th Blockchain International conference conducted by the British Blockchain Association in March 2022.



**Best blockchain research abstract**

2nd Price for the best research abstract as a result of participation in the Scientific International Blockchain conference in Edinburg in 2021.

# COMPLETED PROJECTS

**MESH+ Project (**now **Chirp)**


The project involves the deployment of a network of antenna devices to enable connectivity for the Internet-of-Things (IoT). This service functions on the IOTA Tangle using the MESH+ token.

**Official Website** **Tokenomics Paper**


**8.Finance** is an educational platform with simple games that helps everyone easily take their first steps in the Crypto World.

**8.Finance** is also a marketing platform that helps Web3 (and other) projects attract new users and entertain their current communities by providing abilities to run Airdrops, Tournaments and Educational videos with Quizzes about their projects in the Games.

**Official Website** **Tokenomics Paper**

The models of these projects' token economy were created and verified using the current version of the Cryptocurrency project support system MVP, which has been operational for over two years. It includes a Tokenomics Constructor, an Insertion Model Creator tool (for formal token economy model creation), and an Algebraic Server supporting the use of formal methods.

Currently, we can create algebraic models of tokenomics of any complexity, analyze them, and study properties such as balancing, corruption of decentralization, token leakage, malicious stakeholder actions, and more.

We generate automatic reports on tokenomics behavioural scenarios, predict token value, and propose corrective actions for the stable operation of tokenomics.