REPUBLIA



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ABSTRACT



Robert Veiday, Head of the Department of Technological Development Khemeia Consulting

ABSTRACT

Republia is a large-scale decentralized ecosystem, that includes elements of the countries that are familiar to us in the digital space and operates mechanisms based on blockchain technology.

The coordination structure of Republia is analogous to "we-government" model that is aimed at direct management of the ecosystem, without involving the relevant regulatory institutions.

"We-ecosystem" is a new stage of management that excludes mediation and provides platform users with opportunity to influence the development of the system and make decisions according to different changes.

The project collected all the most relevant mechanisms of the real countries that are familiar to us and combined them with highly efficient technologies.

The global ecosystem Republia is a set of operating tools based on wellorganized structure, operating under a set of internal rules, that ensures safe and comfortable usage at every stage of operation.

Ecosystem is based on the main principles of the operation of blockchain technologies.

- secure storage of user data (information and resources are protected through integration with Republia blockchain);
 - justice (all disputes are resolved by consensus);
- transparency (ecosystem users always have access to all the necessary information);
- full democracy (members of the ecosystem directly affect the life of Republia).

Republia Whitepaper Abstract

The key components of the decentralized ecosystem provide a trusted and absolutely transparent relationship between users, presenting a unique concept of smart contracts, a platform for creating and modifying the entire ecosystem as well as comfortable way of communication between community members.

A distinctive feature for Republia project is an approach to safety: innovative protocol is embedded in the project ensuring data and resource protection in the conditions of the entire global ecosystem.

Republia's internal payment tool is an RPB coin protected from strong volatility, smoothing of volatility shows undoubted advantage of RPB along with other coins of the crypto industry.

Republia can be seen as a platform for organizing campaigns to attract investments through ICO, while protecting all blockchain communities from fraudulent schemes.

The white paper of Republia project includes the study of all components of the decentralized global ecosystem, the description of the possibilities of fundamentally new technology and a proof of the need for such solutions in industry.



INTRODUCTION



The more artificial the environment around us, the more we depend on the technology, its reliability and failures if it allows them.

Stanislav Lem "Sum of technology"

INTRODUCTION

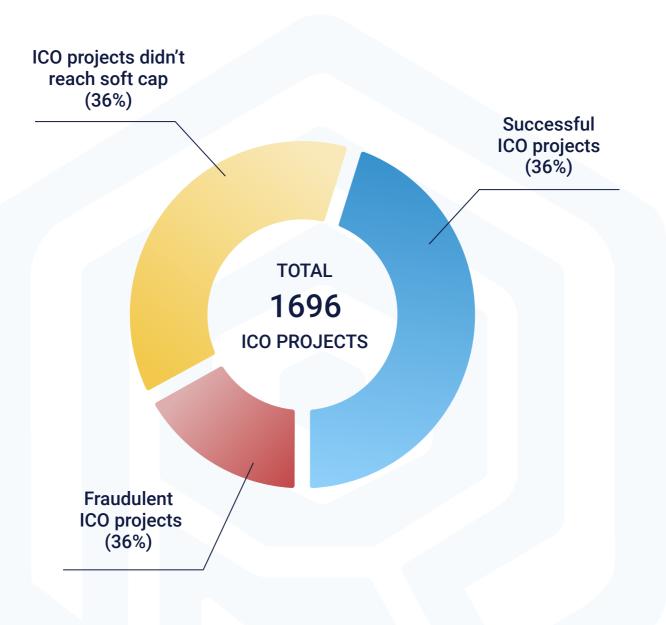
1.1 _____ Oversaturation of the industry with ICO projects

Nowadays new ICO are being created on the blockchain Ethereum Platform, NEM, NXT, Waves etc. The first of them, in turn, is able to conduct maximum of 25 transactions per second which is the minimum indicator of the comfortable usage of the network.

Limited capacity of the network is an important drawback of the existing crypto-currencies and it is associated with the original nature of the blockchain. New projects often do not represent specific technologies, which creates mass character, but not market stability.

Against the backdrop of the emergence of a huge number of ICOs which are connected neither ideologically no technologically, there is a glut of the industry.

Statistics on ICO from 2014 to 2018



Companies managed to raise \$11,7 billion. Among them almost 40% did not collect appropriate amount and closed, every seventh ICO had signs of a fraudulent scheme or proved to be unpromising.

These statistics are not comforting and confirms a list of problems such as deceived investors, government bans, disenchantment with technology.

Republia Whitepaper Introduction

1.2 Hard forks

Starting from 2008 network of Bitcoin cryptocurrency has been undergoing a lot of hard forks. Users turn to this step in order to solve the problem of scalability, low capacity of transactions, limited block size and generally offload common Bitcoin network.

At the same time hard fork entails creation of a new network chain which no longer operates according to the rules that were established by an old protocol of the blockchain. The nodes of a new and an old network are incompatible since hard fork means changes in the mechanism of consensus itself.

According to the experts such an oversaturation of the industry with so many variations of one crypto-currency undermines trust of users towards blockchain, because, in fact, hard fork is a side effect of disagreements within the crypto community.

Many crypto enthusiasts are sure that instead of permanent separation from the main networks, it is better to come to a common agreement.²

1.3 Crypto-market volatility

Various factors affect crypto-market: economic and political situation, emergence of new-cryptocurrencies, news, demand or supply from users or investors.

The volatility of crypto-currency can be 50-100% just because of one piece of news and several large traders that came into the market. If you compare digital assets with fiat money, average annual volatility of fiat money usually does not exceed 3-4%. In cryptocurrency this figure often is more than 20%.

on the materials of the article: https://cointelegraph.com/news/industry-leaders-give-perspective-on-bitcoin-forks-some-advantages-many-problems

The volatility of the crypto-market with the Bitcoin network as an example



1.4 Informational and financial losses

Members of the blockchain community are constantly at risk by providing their data and funds to various projects. Only in 2017 several serious hacking were recorded, which resulted in losses of billions of dollars.



As a result, reputation of both the hacked project and the industry as a whole suffer, investors lose trust together with funds.



BACKGROUND



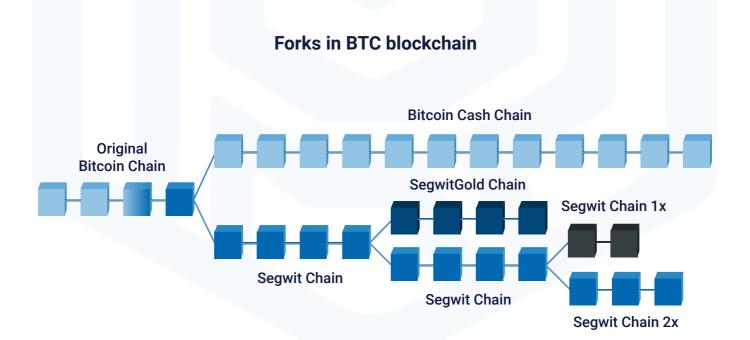
The first step is to determine that it is possible; opportunity will appear by itself.

Илон Маск, основатель SpaceX и Tesla

BACKGROUND

2.1 Solving the problem of hardforks

It is known that crypto community can be conditionally divided into two groups. The first group perceives crypto-currencies as a payment tool, and the second group considers them as an investment tool. Often these two groups argue with each other and it leads to uncompromising division of the crypto-currency into two new digital assets with own rules and regulations.



Background

The problem is that fragmentation will not stop, as a result, the market will be filled with new coins and tokens.

Since Republia acts on "we-ecosystem" ideology, where users can directly participate in the process of modernization of technological solutions, the project is based on the advanced system of consensus, which is one of the main advantages of technology. Modernization means addition of new functions to the subsystem.

Voting Republia

```
type t = int32
type voting = t
include (Compare.Int32 : Compare.S with type t := t)
let encoding = Data_encoding.int32
let pp ppf level = Format.fprintf ppf "%ld" level
let arg =
 let construct voting = Int32.to_string voting in
 let destruct str =
  match Int32.of_string str with
  | exception _ -> Error "Cannot parse voting"
  | voting -> Ok voting in
 RPC.Arg.make
  ~descr:"Republia voting"
  ~name: "voting"
  ~construct
  ~destruct
let root = 0l
let succ = Int32.succ
let to_int32 I = I
let of_int32_exn I =
 if Compare.Int32.(I >= 0I)
 then I
 else invalid_arg "Voting_repr.of_int32"
```

Republia Whitepaper Background

```
type check =
 RepID
 | Hash
 | Total
 let open Data_encoding in
  union ~tag_size:`Int8 [ let check_encoding
   case ~tag:0
    (constant "RepID")
    (function repid -> Some () | _ -> None)
    (fun () -> repid);
   case ~tag:1
    (constant "Hash")
    (function hash -> Some () | _ -> None)
    (fun () -> hash);
   case ~tag:2
    (constant "total")
    (function total -> Some () | _ -> None)
    (fun () -> total);
type kind =
 | Proposal
 Check
 Vote
let kind_encoding =
 let open Data_encoding in
 union ~tag_size:`Int8
  case ~tag:0
   (constant "proposal")
   (function Proposal -> Some () | _ -> None)
   (fun () -> Proposal);
  case ~tag:1
   (constant "check")
   (function check_vote -> Some () | _ -> None)
   (fun () -> check_vote);
  case ~tag:2
   (constant "vote")
   (function vote -> Some () | _ -> None)
   (fun () -> vote);
```

Background

Due to voting system, that leads to adoption the decisions by consensus, and then automated updating of the protocol among users, Republia completely solves the problem of hardforks.

Republia creates a single public blockchain, and its protocol is automatically updated. Since the system of the blockchain protocol is divided into three layers (network layer, layer of consensus, transaction layer), separating one layer from the others means that protocol can be modified without need for hardfork, the general system is doomed to split because of hardfork. **Read more in Technical Paper.**

2.2 Protection of fraudulent projects

Republia can be considered as a platform for ICO, while it protects the entire blockchain community from the emergence of projects that are ultimately announced as SCAM. This goal has been achieved by expanding the entire Republia ecosystem with interrelated projects, rather than adding competitive ICOs, as it occurs inside, for example, the Ethereum Platform. However, competition remains in another form. Users compete for modernization, but not for maximizing profits.

To add the desired project to Republia ecosystem you will need to submit an application within Republia ICO Platform and go through voting phase among users, which is based on the layer of Republia Blockchain consensus protocol. Users can apply amendments to any subsystem as well, when most users consider a particular function as an error in the ecosystem, they can vote for changing or deleting this function.

Each decision on a particular vote is entered in the blockchain and has its own hash and hash of the decision that was adopted or rejected. Also participants who voted will be recorded in the block, their decisions and time of the vote will be shown to the entire community, this type of the block can be viewed at any time, in this case falsifications are impossible.

Thus Republia is a complex system, in which each subsequent addition is a product, and there is a demand among real users for this product.

2.3 _____ Data security within Republia ecosystem

Security is a priority for Republia team, all important information is stored in Cloud X. It is a decentralized data storage, that provides security of information and funds in the context of the entire global ecosystem.

Republia offers its users a unique digital analog Identity Card - RepubliaID. The main feature of RepubliaID is advanced security, which minimizes the risks of losing funds or hacking user accounts. Moreover, RepubliaID is used to identify users in the voting, exchange and Republia banking system. In this way, participant that owns RepubliaID becomes a full member of Republia community and can directly influence the life of the community.



Republia offers three-level security - Veracity System:

- The first level is a password and biometric identification of users;
- The second level is a confirmation by email + two-factor authentication;
- The third level is RepubliaID.

In case of hacking attempt Veracity System automatically freezes all user data, including his private information and information on his accounts.

Moreover, Veracity System will help to ensure that user can access his data and funds within the shortest period of time.

Veracity System is an innovative security system, which is the first product in the line of Republia development using artificial intelligence.



PROJECT SPECIFIC SECTION



There is something fundamental in using products, that are centered around people, as opposed to products centered around information, that does not relate to people.

Mark Zuckerberg, founder of Facebook

PROJECT SPECIFIC SECTION

The developers of the project laid a powerful technological foundation, due to this foundation all elements of the ecosystem will be realized with higher efficiency, than existing technological solutions, thus, the basic principles of the operation of blockchain technology will be observed - decentralized management, justice and pure democracy.

The goal of Republia project is to create large-scale decentralized ecosystem, which combines elements of countries that are familiar to us and mechanisms based on blockchain technology, where users make decisions through consensus and influence modernization of the entire ecosystem directly.

Republia tasks:

- to enable users to manage components of the ecosystem through transparent and democratic management system (we-ecosystem);
 - to prevent the emergence of SCAM-projects;
- to establish trustworthy and transparent relationship between users by means of advanced system of smart contracts;
- to exclude the possibility of loss or theft of user accounts through three-level security (Veracity System);
- to provide a service for exchange of assets and the creation of liquidity for RPB crypto-currency;
 - to introduce a coin excluding high volatility.

Republia Whitepaper

Project specific section

Having become a member of the community user can make important decisions in the life of Republia and influence the modernization and expansion of ecosystem elements, it ensures transparency and democracy of governance.

Republia missions:

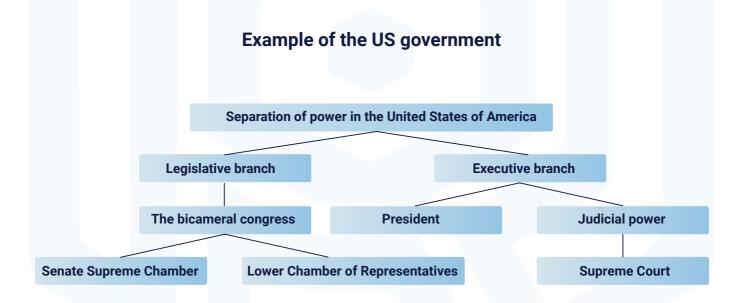
- safe and comfortable usage at each stage of operation;
- solving global problems;
- expansion and complementarity of blockchain ecosystem by means of Republia ICO Platform;
- creation of generally recognized, ideal ecosystem for the development and maintenance of the project.

3.1 _____ Transparent and trustworthy management system

The large-scale ecosystem of Republia allows its users to make important decisions in the life of Republia and to influence the modernization and expansion of ecosystem elements. Such possibility appears due to Republia operation within the framework of "we-ecosystem" model, which, in turn, is aimed at direct management of the platform, avoiding relevant regulatory authorities.

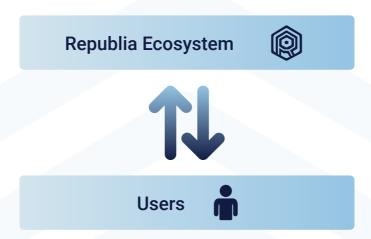
3.1.1 _____ Distinction of "we-ecosystem"

In the traditional model of governance of a democratic state there are numerous branches of legislative and executive authorities between the head of state (president) and nation.



If we exclude mediation in the digital world and provide users with opportunity to influence the development of the system by themselves, making decisions according to the changes in the community independently, new stage of management will appear - "we-ecosystem".

Example of Republia Ecosystem control



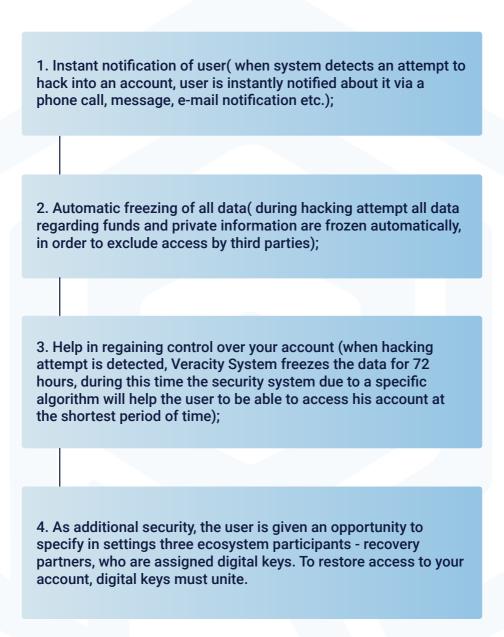
The project has collected the best features of real countries that are familiar to us and combined them with highly efficient technologies.

3.2 _____ Data security in Republia Ecosystem of "we-ecosystem"

Within Republia Ecosystem there is a digital analogue Identity Card - RepubliaID, this technology minimizes risks of loss of funds or hacking of user accounts.



Operations of Veracity System when recording suspicious activity of an account:



All user information is stored in Cloud X, which provides transparent relationship between community members and minimizes the risks of losses both informational and financial.

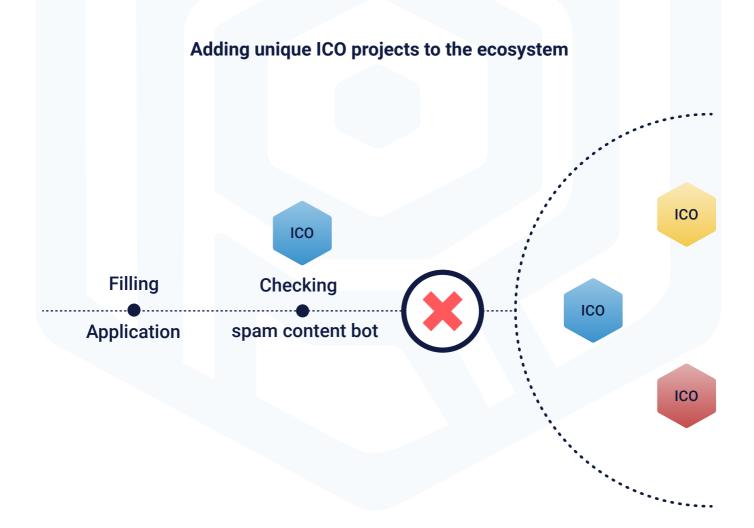
3.3 Republia ICO Platform

Taking into account all the drawbacks of existing market solutions, Republia presents its own ICO Platform.

All elements of Republia ecosystem will be interrelated, as they will logically complement each other.

For example, consensus will not allow to pass ICO, if such a project already exists in the system, since there is no need to create projects on the platform several times, taking into account narrow market.

User account will show the requests of teams, wishing to conduct their ICO on the platform and supplement Republia ecosystem with their projects.



To expand the ecosystem with your project you need:

- to be a member of Republia ecosystem;
- to have a unique RepubliaID;
- to fill in an application form;
- to pass automated verification Republia Spam-Content Bot;
- to pass an independent expert evaluation, which is carried out by professionals, chosen by the community members;
- to pass successfully a voting stage, in which at least 50% of ecosystem members should take part, while 51% of them will support the hosted project.

Republia ICO Platform will allow to expand, add and supplement one or another product of the system.

One of the advantages of such a system is data analysis in conditions of Republia ICO Platform, which occurs according to this principle:

- processing stage represents initial concept of the project with description of the idea, functionality, legal aspects of implementation;
- analysis is a stage at which the project is verified by specialists of various fields, who express their expert opinions about the project that is under consideration.
- their circle includes envoys, who are known to the community and are respectable representatives of various fields. Specialists can be chosen only by community members in the framework of separate decentralized polls;
- verification is a final stage in decision making process, which is left for the community members, and it shows a basic principle of democracy.

Project specific section

Republia ICO Platform is a place, where you can bring your idea to realisation without owning a huge capital and get a response from blockchain community. In addition to the above Republia ICO Platform operates in order to inspire users to new accomplishments in the industry, always pointing out inaccuracies during consideration of the projects for the purpose of further improvements.

3.4 ____ Republia Bank

RPB coin is a main payment tool in Republia Bank, which is based on decentralized and transparent mechanisms.

The smoothing volatility is a definite advantage of RPB along with other coins of the crypto industry, the goal was achieved by implementation of Republia Bank, which is the main component of the economic model of decentralized Republia ecosystem. Its main purpose is to smooth the volatility of RPB coin and two types of tokens released by Republia.

Republia Bank combined principles of the Central Banks of countries familiar to us and innovative technologies. Republia Bank automatically regulates the volume of demand and supply on exchanges. Smoothed volatility is a result of a balance and an automated analysis of the market situation. Republia participants are an integral part of the stabilization of RPB coin, as the system offers them rewards for holding coins depending on the balance of demand and supply, which are formed from commission charges for the mining of RPB and reserve fund of Republia Bank.

RPB cryptocurrency does not depend on top 10 cryptocurrency, this step provides support for the coin rate of exchange while the price of popular cryptocurrency is declining.

Stability makes RPB coin suitable for both trading, long-term investments and for daily financial transactions.

RPB is a cryptocurrency, which is a convenient payment tool for daily usage.

Republia represents two generations of the bank - Republia Bank Classic and Republia Bank Next.

3.4.1 _____ Tools for smoothing volatility

Parking	Currency interventions	USDR
The user voluntary holds some of the coins in his wallet. Such an operation does not require the participation of the bank for accepting funds and keeping them in its accounts. For coins 'parked' in Republia Bank the user receives interest charges, which will be paid after expiration of parking period. The user can store coins on his wallets, that are not brought to the market, during the time that will be chosen by him.	The work is based on the impact on the market through currency interventions, used to maintain RPB rate in a particular price range and means sale or purchase of coins. In case of a panic mood in the market, currency interventions will be used as the last step to avoid spike in the market.	It is introduced for the purpose of safety of user funds through in-chain conversion of RPB coin to a token. At market spike there is no need to convert funds on the exchange, it is enough to exchange RPB for dollar equivalent, which will be released as a token of USDR. USDR is bound to the US dollar and 1 USDR = 1 USD, being provided from Republia reserve fund. Any user, if there is an appropriate request, receives the appropriate amount in funds(USD).

3.4.2 Wallets of Republia Bank

Republia Bank involves in its work two cold and one hot wallet.

The first cold wallet performs the role of a reserve fund, which is constantly supplemented by a commission, accrued by mining. This type of wallet is formed in Genesis Block.

The purpose of the second cold wallet is to accept funds when user converts RPB coin to USDR token.

The third type of wallet, hot wallet, is used to pay interest rates in the bank.

Republia Whitepaper

Project specific section

Data about all wallets is available at any time in Republia Blockchain to assure users that claimed amount is stored. Republia Bank is a new era in banking, which marks trustworthy relationship between users and the structure.

3.4.3 ____ "Parking" technology

In Republia Bank 4 types of "parkings" are available (day, week, month and 6 months). The user receives a reward for holding funds at his wallet accrued according to "parked" amount.

Interest is accrued from the reserve fund Republia Bank, which consists of 160 million coins. A fee is also charged for each of the guessed block, which is recorded in Genesis Block Republia Blockchain.

In the addition to above, each user is provided with information on funds, stored in the bank, function of viewing the bank's expenses and incomes as well as overall financial status of Republia Bank, which is a proof of its openness to ecosystem participants. Republia Bank, as a legal entity, is an institution, which is a subject to independent audit, it shows user the entire structure of all financial arrangements.

3.4.4 _____ Republia Bank Classic

Republia Bank Classic will be functioning for the first two years of the ecosystem and then it will be transformed into Republia Bank Next, transferring part of functionality from the previous version.

The main objectives of Republia Bank Classic are to reduce volatility in the first stages of operation and popularize the ecosystem in the industry.

The tool for smoothing volatility, "Parking", will also tolerate the transition to another stage, thereby dividing Republia Bank into two generations. This step provides users with an honest and voluntary system of holding funds with transparent payments.

Republia Whitepaper

Project specific section

From the economic point of view, such technology as "Parking", will not be able for many years to satisfy the level of user demand that is observed on the market.

Thus, interest rates during the first two years will be at the maximum levels - 70% per annum, then they will gradually and evenly decline.

3.4.5 Republia Bank Next

Taking into account high demand for payments after two years of operation of the system, Republia Bank Nex will be brought into operation. This project is a financial institution that will act as an investment bank in the real economic sector.

Republia Bank Next will undertake a task of accepting payments and will act within the framework of European legislation in accordance with regulations of international banking standards.

Users of the ecosystem are offered two types of banking:

- 1. Decentralized (when using a decentralized version, interest after two-year period will be lower than in the regulated Republia Bank Next).
- 2. Regulated in the real sector (percentage deductions from "parking" of the second type will remain almost at the same high level, as in Republia Bank Classic).

In the addition to above, Republia Bank Next will provide quarterly reports, which will describe all investment activities.

3.4.6 _____ USDR tokens and Republia Bonds

In order to achieve smoothed volatility of RPB coin USDR tokens and Republia Bonds operate in Republia ecosystem.

These tools are introduced taking into account behavioural theory, according to this theory some shareholders want to move to more reliable and secure asset during disbalance of demand and supply. This disbalance is characterized by moving the investors to more stable assets(for example, the Swiss franc or gold) and is observed in global crises, during the fall of stock markets. "USDR' system operates by the same principle. It is designed to encourage users to "lock in" during strong market fluctuations. USDR token is provided by the reserve fund Republia Bank in the conditions of real banking institutions.

USDR tokens, in turn, are backed by the corresponding amount of US dollars. In order to achieve minimum market price fluctuation in USDR, Republia introduces an advanced algorithm, based on artificial intelligence and participation of financial experts. This algorithm is based on usage of the system of bonds (Republia Bonds).

Bond tokens are released by Republia Group and are sold on the basis of auctions. The number of bonds and, correspondingly, the number of USDR tokens (1USDR:1USD) are known in advance, as Republia Group assumes an obligation to provide financial statements on financial condition of the banking institution on a quarterly basis.

After making a decision to release a certain number of USDR tokens on the market, automatic exchange of bond tokens to USDR starts by "First in - First out" principle, which means that the first participants of auction will be given top priority in receiving USDR.

If the price does not correspond to the declared characteristics of the token (1token:1USD) or if the balance of demand and supply is undetermined, Republia Group activates additional number of bonds, which had been released, but were not distributed among the participants of auction. In the addition to above, the user is provided with an opportunity to exchange his USDR tokens to the US dollars at any time via Republia Exchange and receive the amount to his bank account, in this case his tokens will be burned.

Republia Whitepaper

Project specific section

3.4.7 Republia Debit card

Republia Bank releases its own debit card, and USDR token will be a payment tool of this card, which is very convenient way of exchanging cryptocurrency to fiat funds when paying bills by debit card, since USDR is bound to a stable fiat currency - USD.

Fast transactions are provided by internal conversion of RPB coin to USDR token, which is equivalent to the US dollar 1:1. Due to Republia Blockchain transactions will be executed much faster, than via such popular systems as Mastercard, American Express or Visa.

Republia Bank system is configured in such a way that that users always have an opportunity to "lock in" in dollar and to have more innovative tool of management - "parking", while receiving a stable income.



REPUBLIA EXCHANGE

Jim Rohn, American entrepreneur

REPUBLIA EXCHANGE

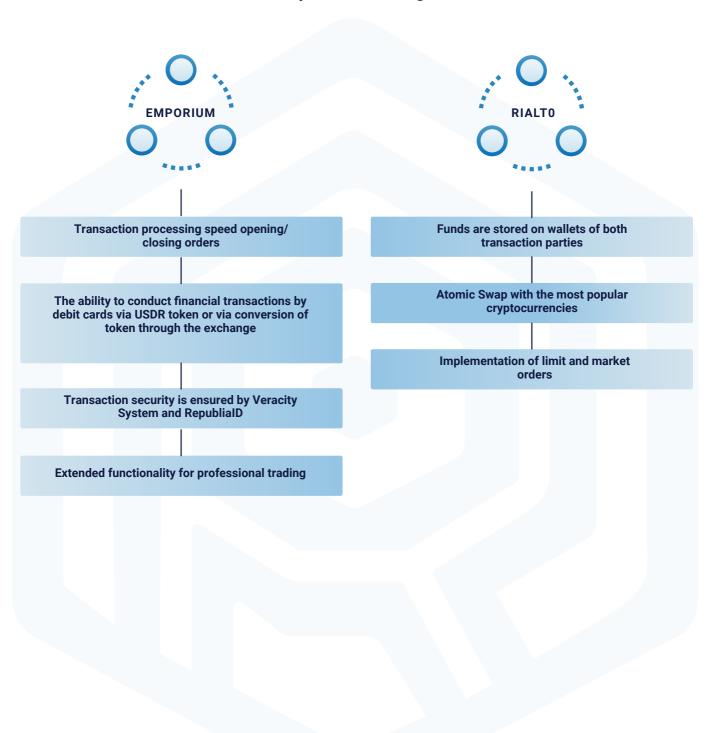
Republia Exchange is the main platform for exchange of assets and creation of liquidity for RPB cryptocurrency. Users can choose among two types of exchanges - Rialto and Emporium, the first one was represented with the help of implementation of Atomic Swap technology with the most popular cryptocurrencies from Top-20, its priority is complete anonymity when making transactions.

Republia plans to achieve the same transaction speed in decentralized Rialto Exchange, as it happens inside decentralized analogues.

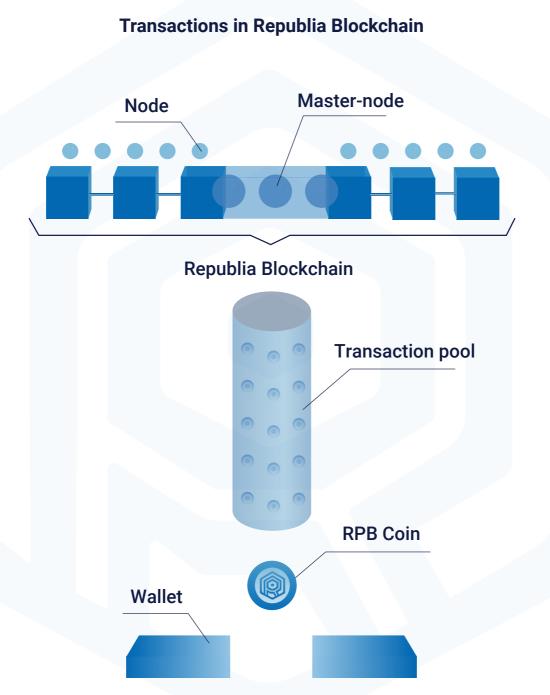
Republia Exchange is a platform for making fast and secure transaction, which is ensured by Veracity System.

Emporium provides an opportunity for the exchange and executions of transactions via internal Republia bank cards. When making a transaction by Republia debit card, certain amount of RPB coins will be sold under a market order and the transaction will be made faster, than via such popular payment systems as MasterCard or Visa, due to instantaneous operation of Atomic Swap.

Republia Exchange



Republia Exchange is one of the most effective factors influencing the creation of **liquidity of RPB cryptocurrency**.





ARTIFICIAL INTELLIGENCE PROTOCOL



It is important to create an environment, where innovations will flourish, but it is even more important to let them to develop in Darwinian spirit.

Elon Musk, founder of SpaceX and Tesla

ARTIFICIAL INTELLIGENCE PROTOCOL IN REPUBLIA BANK

The artificial intelligence system Republia Bank operates on the basis of algorithms, each algorithm is responsible for individual tasks in functioning of Republia AI:

- analysis of the situation on the market and the change in interest rates for "Parking" instrument. The algorithm for changing interest rates is an improved version of the mechanism of the world central banks. This algorithm was moved to the digital space in order to record spike on top crypto exchanges. In the addition to above, this algorithm does not react to small market movements (for example, short-term buying and selling RPB cryptocurrency, such small unsteadiness will be restored by the market independently.) The algorithm involves tools of technical analysis to determine long-term trends, while changing interest rates, which are coordinated with other bank systems.
- recording of critical points, sharp market volatility, and on the basis of collected data injects or charges money flows from top exchanges, on which RPB is traded. This algorithm is called Intervencium and it is designed to prevent short-term, but prolonged movements in the market, in order to change the trend quickly in the opposite direction. The algorithm is set to stabilize RPB cryptocurrency, it is achieved by gradual bringing the offer into the market during prolonged downward movements.

Artificial intelligence protocol in Republia Bank

- creation of USDR token. The purpose of the algorithm is to calculate actual indicators for demand and supply for this token, and then to generate the required amount of USDR. This smart algorithm is stabilizing, activating the release of USDR tokens in equivalent to the US dollar.
- creation of bonds, which represent obligations of Republia Bank towards users, such as returning funds, exchanging bonds to USDR.

The algorithm for changing interest rates and Intervencium algorithm operate together in order to provide Republia Bank with RPB cryptocurrency with smoothed volatility. The algorithm for changing interest rates and Intervencium algorithm involve generalized analysis of information, so only correct results are guaranteed.



SMART CONTRACT PLATFORM



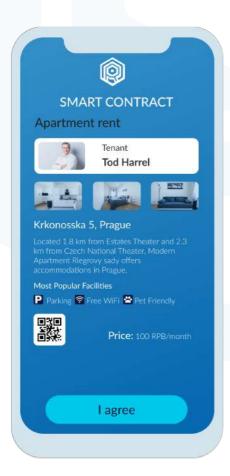
Titus Livius, Roman historian

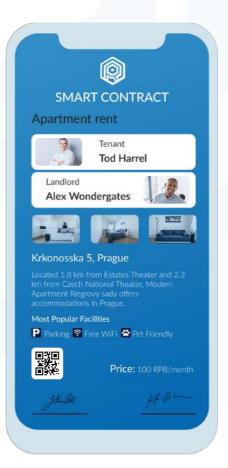
SMART CONTRACT PLATFORM

Trustworthy and transparent relationship between users of Republia ecosystem are achieved through an advanced system of smart contracts.

Republia Smart Contract Platform is a "user-friendly" environment for generating smart contracts, which eliminates problems of creating, executing and managing smart contracts on the basis of Republia blockchain.

This platform allows users to generate digital types of contracts without knowledge and experience in the field of creating smart contracts and software engineering.





Advantages of Republia SC Platform:

- usage without knowledge and experience in software engineering
- creation of individual smart contracts for developers
- creation of templates, when the solution is available based on IoT technology
 - making a search for finished projects by rating

Republia SC Platform involves three modes user mode, developer mode and template mode.

The user mode in Republia SC Platform is the ability of each participant of Republia ecosystem to create digital agreements for all types of transactions with no need for extensive programming skills.

The developer mode in Republia SC Platform is a chance for developers with deep knowledge in the field of programming to realize their potential in creating individual smart contracts.

The template mode in Republia SC Platform is the implementation of their templates in smart contract environment, it will allow developers to share their experience in this area as well as charge fee for their templates.

Advantages of Republia SC Platform:

Comfortable usage

Republia provides the ability to create user contracts according to the needs of participants. In addition to the above all projects are available to users at any time convenient for them and wherever.

Security

Description of the system of smart contracts in functional programming languages provided security during operation of this technology through formal verification of code.

Republia Smart Contract Platform



Guarantees

Smart contracts act under a principle of timestamp, without using GAS, which ensures accurate execution of transaction and avoiding situations of transition of smart contracts into an endless cycle.

Accessibility

Each participant without knowledge and experience in the field of creating smart contracts and software engineering can generate digital agreements for all types of transactions.

Professional usage

Republia Smart Contract Platform provides advanced developers with an opportunity to create individual smart contracts.

Republia SC Platform is an extensive platform for the implementation of IoT-solutions, because it is based on the paradigm of functional programming and the programming language OCaml, which supports formal verification of code.

Read more in Technical Paper.



CONSENSUS

Eric Berne, American psychologist

CONSENSUS

One of the main advantages of the technology, underlying the project, is the ability of users to participate directly in the process of modernization of technological and ideological solutions of the entire ecosystem, it is called consensus.

Modernization means addition of new functions to the subsystem.

1. Consensus in Republia ICO Platform.

Republia users decide whether the proposed ICO is needed or not in the ecosystem.

2. Consensus for changing any subsystem.

When most users consider a function as a critical error in the ecosystem, they can vote for changing or deleting this function.

Falsifications are impossible

Elimination of falsifications in voting:

- decision is recorded in blockchain;
- regardless of the result, the decision has own hash;
- openness throughout the community (decisions of all participants, time of their votes are available for viewing)

Republia Smart Contract Platform

```
type gov_block_info = {
    hash: Gov_block_hash.t;
    predecessor: Gov_block_hash.t;
    size: MBytes.t list;
    timestamp: Time.t;
    result: Result_hash.t;
    protocol: Protocol_hash.t option;
    operations: Operation_hash.t list option;
    users: voting_users_pass.t;
    net: net;
}

val info:
    ?operations:bool -> block -> gov_block_info Lwt.t

val list:
    ?operations:bool -> ?length:int -> ?heads:Gov_block_hash.t list -> ?delay:int ->
    unit -> gov_block_info list Lwt.t
```

Republia consensus acts using Delegated Proof-of-Authority (DPoA) + BFT (Byzantine Fault Tolerance) algorithm, which records all decisions on voting to distributed register and helps to avoid attacks, because users own a unique RepublialD, which guarantees the reliability of each member of the ecosystem and the confidence that one participant within a certain vote will be able to vote only once.

7.1 ____ Influence on solving global issues

Also the concept of additional voting will be introduced by the ecosystem, this process will not be connected with the ecosystem, but it will be created to allocate funds (coins) for solving global issues (assistance to victims of environmental catastrophes, charity etc.).

Republia provides not only decentralized technology, but also shows decentralized network of people, who are united by common and good purpose - assistance in solving global issues.



REPUBLIAID



You have to work hard to start thinking clearly and do some simple thing. When you are good at doing this, you become an omnipotent.

Steve Jobs, founder of Apple

REPUBLIA ID

Republia offers its users a unique, improved ID Card - Republia ID. The main feature of RepubliaID is advanced security - Veracity System, which minimizes the risk of loss of funds or hacking user accounts. Also RepubliaID and Veracity System are implemented into all components of the global ecosystem, where it is possible to harm other Republia community members.

Thus, participant with RepubliaID becomes members of Republia community and can directly influence the life of the community.

Information about RepubliaID is stored in encrypted form in Cloud X, which makes Republia community transparent and helps to avoid information and financial losses.

RepubliaID can be used in several other areas - IoT-solutions and smart contracts. Since the smart house system and other systems, related to IoT-solutions, will require personal information, a proper level of security should be ensured. In case of AI system (artificial intelligence), each user separately must provide personal information under the protection of RepubliaID for safe and decentralized teaching gadgets personally.

All information that is recorded in RepubliaID is described by the function:

```
type reppass_info = {
    hash: reppass_id_hash.t;
    size: MBytes.t list;
    name: usr_name_hash.t;
    dob: dob_hash.t;
    title: title_hash.t;
    validation: vld_hash_t;
}
8.1 Advantage of RepublialD in voting
```

Using the number of your RepubliaID ensures fair and open voting, confirming that it is not falsified, as it is impossible to forge, because it is a unique, digital passport, and information about this passport is stored in Republia distributed register.

Republia does not allow any falsifications in its ecosystem: user can see ID of each voter, as they all use this security tool.



REPUBLIA CLOUD X

Bill Gates, founder of Microsoft

REPUBLIA CLOUD X

Decentralized data storage is the future.

All data exchanged between users in Republia ecosystem is stored under reliable protection of Cloud X technology.

Cloud X was developed by Republia, and it is a decentralized cloud storage.

Large flows of information flow through Republia ecosystem. Taking care of data security, they are not stored on Republia servers, instead all user information is stored decentrally in an encrypted form.

Economy of Republia project is built in such a way, that users are paid for the storage of data. Cloud X technology eliminates the problem of information theft. Popular services such as Facebook or Google, for the purpose of targeting, collect personal information and data about site visits. Considering this, Repulia provides complete security inside the ecosystem, because user data is stored decentrally in an encrypted form. Payment for data storage is not provided.

Republia Cloud X is a safe data storage, and it is the future of the entire global ecosystem. All information is controlled by users without centralized servers.

Republia Cloud X in the ecosystem is responsible for storing:

- 1. Data about chats between users;
- 2. Attached files;
- 3. Media files;
- 4. Information, recorded in RepubliaID;
- 5. Confidential information, generated on the platform (user data is recorded in Republia blockchain, due to this process the identity of ecosystem participant is verified)

Republia Cloud X is also responsible for decentralized training of artificial intelligence (Machine Learning). So all data of the machine that you are training is stored in Cloud X. Decentralized training will take longer time than in case of Google AI, but with higher quality and safer.

The inspiration of this technology is the development of the open source system of machine learning IBM (IBM Analytics).

In the code it will be written:

```
class learning =
  object

initializer
  _className <- "learning"

val _env =
  Env.getEnv()

val mutable _learningObject : learningObject =
  new dummyLearningObject

method getLearningObject : learningObject =
  _learningObject

method setLearningObject (obj : learningObject) =
  _learningObject <- obj</pre>
```



REPUBLIA RATING SYSTEM

Stephen Hawking, theoretical physicist

REPUBLIA RATING SYSTEM

Republia Rating system is designed to exclude malevolent users from the ecosystem, whose purpose is to harm, discriminate the system or to create obstacles for other users in making decisions and in Republia life.

Republia Rating system provides users with confidence in professional competence of each Republia participant.

Republia Rating system is embedded in such subsystems as:

- Republia Bank;
- Republia Exchange (in Emporium and Rialto);
- Smart Contract Platform;
- Votings (Consensus);
- Republia Cloud X;
- Spam-Content Bot.

Participants with high rating will receive additional bonuses of the ecosystem (visiting free meetups, organized by Republia Foundation, reducing commission etc.)

The user rating will decrease for misbehaviour inside ecosystem (spam attacks, deception of other participants, theft of funds and attempts to hack accounts).

Republia Rating system

Reducing a rating could also be a consequence of verification which was not passed by spam content. In this case user is not allowed to access functions of "parking" in Republia Bank, to trade on Republia Exchange, to take part in voting on ICO Platform.

Errors in calculation of the rating and falsified results are impossible in Republia Rating System, because this system is completely autonomous. If the user does not agree with his rating, there is a special automatic revision of coefficients in response to a user request.

Such steps are aimed at users mutual respect and Republia intention to become one of the most progressive ecosystems in blockchain community.



REPUBLIA WALLET

REPUBLIA WALLET

Republia Wallet is a unique, complex technology, that includes both a wallet and an instant messenger with the addition of contacts via RepublialD.

Republia Wallet solves the problem of heavy wallets with 16-digit addresses through the implementation of the possibility of transaction using the number of RepubliaID.

In Republia Wallet users can view their transaction history of their transactions, using clear and user-friendly graphical interface they can send or accept payment, and all transactions are under the protection of Veracity System. Holders of Republia Wallet can use a convenient function of expanding their address book by contacts via RepubliaID and users can open or close an access to sending funds.

Republia Wallet includes not only the technology of wallet, but also instant messenger, users can exchange messages, files (stored in Republia Cloud X), and create smart contracts with their contacts.

The possibility of direct voting is introduced in Republia Wallet as well, the user can directly participate in any voting created in the ecosystem, the result of voting will influence the modernization of Republia technologies.

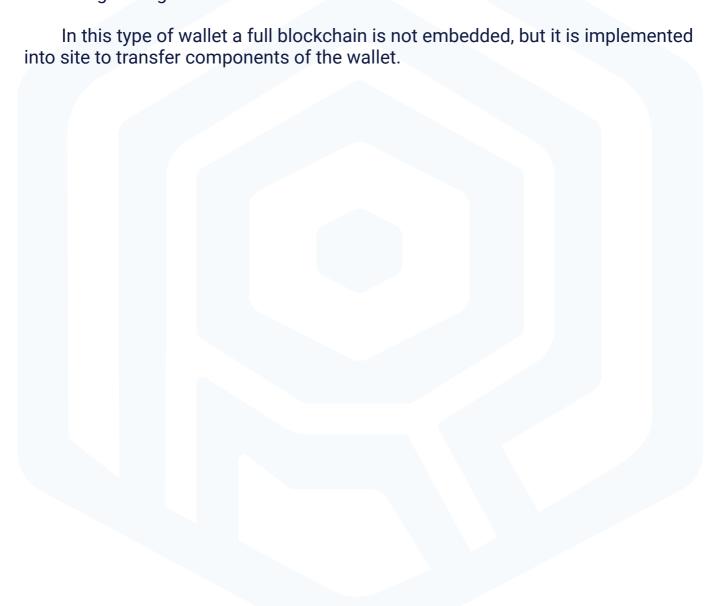
Republia ecosystem offers several types of wallets:

- 1. Heavy wallet (full node):
- with GUI secure locker;
- with GUI full version of the ecosystem.

Republia Wallet

In a heavy wallet there are a full node and a full Republia client, in which all the functions of the ecosystem are available, including Republia Bank, Republia Exchange, ICO Platform etc. After downloading a full node, the user also becomes a participant in blocks confirmation, in other words in PoA mining. The ecosystem provides a version in which only a full node will be available with the ability to store funds, in this case GUI will look like a secure locker and storage.

2. Light weight wallet:





TECHNOLOGIES OF AI (1/2)



It is great to live at a time when everything is changing in the world and to feel progress by your fingertips on the keyboard.

Julian Assange, founder of WikiLeaks site

TECHNOLOGIES OF AI (1/2)

Republia implements artificial intelligence as machine learning for one personal user. The user will train his one machine and all data will be stored in Cloud X system and under reliable protection of Veracity System. In the future these results will be used in IoT component. Republia offers a solution which will allow to use confidential information decentrally without collecting it. Thus, Republia develops decentralized AI.

Personal machine learning is a basis for real AI which will operate in decentralized manner. All data collected by AI1 are not recorded in public register, but are stored in Cloud X. Analysis of this data will be personalized which excludes the usage of confidential information by third parties.

In the ecosystem Artificial intelligence will be used: 1) in Republia Bank (regulation of interest rates); 2) spam content; 3) in the rating system; 4) for personal machine learning

Artificial intelligence in RepubliaID decentrally read out information about the type of device when logging in, analyzing recent entries.

While implementing decentralized mechanisms of data analysis, Republia completely protects its users from transferring/ hacking/ selling accounts.

Al2 is a deep immersion in artificial intelligence and the creation of innovative Al, which operates in decentralized manner and provides strong platform for IoT market.



THE DESCRIPTION OF MINIMUM PROTOTYPE, MVP

THE DESCRIPTION OF MINIMUM PROTOTYPE, MVP

MVP strategy of Republia focuses on testing hypotheses, but not on the reducing functionality for the sake of a cost-saving measure. All products in the early stages will be integrated into the system on the basis of reviews of the first users.

Republia Foundation uses the following products to test viability of different solutions:

- Bank
- Wallet (Messenger)
- Smart-contract platform
- Voting

13.1 ____ MVP Bank

The minimal product Republia Bank is designed for users to get to know about the bank and the "parking" system from the initial stage of the project. "Parking" is a voluntary deposit of coins. Upon registration each user gets 10 conventional units, those interests that users will receive from "parking" process, will be converted into real RPB coins.

Interest rates on the type of "parking" will change in order to understand the structure of banking system.

20% from "parking" in case of parking again.

Functions of MVP RepubliaBank:

- Deposit of funds;
- Receiving interests from "parking".

The description of minimum prototype, MVP

13.2 MVP Wallet

MVP Wallet provides the ability to test the speed of Republia blockchain and send money to each other not by hash function of the wallet, but by usual username. The system of contacts (Republia ID) is embedded in Republia Wallet, where the user can send funds to another member of the ecosystem with a single click on the contact.

The function of messenger will be implemented into Republia Wallet, all data about chats are stored decentrally in an encrypted form. The function of creating smart contracts and attaching files is implemented into Republia Wallet.

Republia Wallet is a personal secure house and a social network, which cannot be compared with centralized analogues.

Functions of Republia Wallet:

- Sending funds;
- Acceptance of payment;
- Transaction history;
- Messenger;
- Creation of smart contract;
- DCS functions;
- File sharing.

The description of minimum prototype, MVP

13.3 MVP Smart-Contract Platform

MVP Smart-Contract Platform is developed to assess the convenience of creating smart contracts in GUI. In MVP Smart Contract Platform users can create a smart contract simply by clicking on the desired icons.

Users can try to create smart contract for renting a house, monthly payment for utilities, payment of debt etc..

Users can choose the desired type of smart contract from the templates provided by Republia team. Each ecosystem participant can create smart contract without special knowledge in software engineering.

IDE is implemented into Republia Smart Contract Platform, in IDE developer, using tips and certain templates, can implement and run smart contract.

Functions of MVP Smart-Contract Platform:

- Creating smart contracts in GUI;
- Renting a house;
- Payment for utilities;
- To lend funds;
- Payment of debt;
- Escrow deposit of funds;
- Developer Mode;
- Tracking the history of creating smart contracts;
- Active smart contracts;
- Completed smart contracts;
- Remote smart contracts.

The description of minimum prototype, MVP

13.4 ____ MVP Voting System

MVP Voting System introduces advantages of WE-Government technology. In MVP Voting System participants can vote for changing or modifying an ecosystem product. Also this system includes voting for/against changes in the technical protocol of the project, which eliminates problem of hardforks.

Republia Voting System platform eradicates numerous disputes, that occur in blockchain community. After adoption of technical vote, protocol will be updated by itself, depending on the decision of the participants.

Republia Foundation acts as a performer, and the entire system is managed by the community. The whole history of voters is recorded in blockchain, which excludes all possible falsifications.

Functions of MVP Voting System

- Creating polls;
- Voting process using Republia Pass;
- Viewing all Republia Pass that voted for improvements;
- Viewing information about the voting (who voted for/against);
- History of all polls.

Voting is divided into several types:

- voting on technical part of the project;
- voting for the modification of the project ecosystem;
- voting for adding new features to the project.



KEY PERSONS OF THE COMPANY

KEY PERSONS OF THE COMPANY



Daniel Shulyaev
Co-founder

Daniel has an extensive experience in the development of blockchain related technologies, which he uses to implement new projects, support, maintain, analyse existing solutions of Ukrainian and international companies. He contributed to four successfully functioning projects.



Vladyslav Gyrych Co-founder

Vladyslav has many years of experience in the implementation and cooperation with international blockchain projects, including work in MinexCoin, and own project - Ukrainian logistics and technology, as well as direct participation in development and investment. Vladyslav also actively participates in various blockchain conferences as a speaker.



Konstantyn Denysenko
Chief Communications Officer

Experience in the area of political consulting, support of investment projects as well as skills gained during participation in the development of ULT project, which united blockchain technology with logistic services.



Hayk Khachatryan Technical Director

Around 20 years of experience in IT industry, including several years in the position of Lead Engineer and Project Team Lead of Bada OS in Samsung Electronics company, as well as direct participation in the development of the national banking program - Armenian Card.

ADVISORS



Boris Shulyaev
MinexCoin Founder and CEO

Entrepreneur, blockchain enthusiasts and professional economist, owner of one of the largest mining farms in Europe, has a lot of experience in founding and managing large private and public companies. Business angel.



Oleksiy Yakovlev
The head of the Innovative Projects Department at Moore Stephens

Deep expertise in providing the financial services for corporate and public sectors. Additional activities: Investing in Blockchain startups, Cybersecurity, automation of business processes.



Yunzhu Lin Co-founder of Xstar.io

Mr. Yunzhu Lin (Frank) is a New York and Wisconsin Licensed Attorney. Before founding 7 Seas Capital, Mr. Lin started his blockchain journey in 2013, he was Head of Global Market in Gridseed, the first Litecoin miner manufacturer in the world, and co-founded Xstar, a cryptocurrency exchange in China.



REPUBLIA INITIAL COIN OFFERING

REPUBLIA INITIAL COIN OFFERING

The date of Pre-SALE is from 23.08.18 to 23.09.18.

The date of PUBLIC SALE is from 23.11.18 to 23.12.18.

Republia conduct a campaign for attracting investment in two stages in order to provide maximum transparency and efficiency of using the collected funds.

Thus, during Pre-SALE, Republia attracts financing for finalization and official release of the test version of Republia Blockchain (testnet). Before the beginning of PUBLIC SALE phase all users will be provided with opportunity to participate in testing of this protocol. Hard cap of Pre-SALE stage implies the release of maximum full-fledged product, which together with existing results of Republia Group (MVP) will show all the advantages of the project. In addition, before Pre-SALE, Private Round is started, which has a number of distinctions from existing forms of attracting funds. During the month before Pre-SALE stage, Republia Group will provide everybody with an opportunity to leave objective feedback about the project, point out possible errors and assist in the implementation of their corrections. Private Round does not mean attracting funds, but only real participation of users and potential community for the improvement of any component of the project. This step will provide Republia project with an opportunity to move to the stage of collecting funds taking into account suggestions of all users, which entails the creation of real democratic project, in which decisions and possible adjustments are made by users.

Collecting funds take place on the principle of share participation, which means obtaining a share by each investor, which is calculated in relation to the total amount invested by all PUBLIC SALE participants. In addition to the above, Private Round participants receive additional 5% from invested funds as a bonus, which is an incentive to participate in the modernization of the project.

PUBLIC SALE phase is conducted to attract investment for the implementation of the entire ecosystem. Taking into account the real demand of investors for the fastest project implementation, Republia Group will do its best to implement the entire project and the components of the ecosystem during 1-2 years, which, first of all, directly depends on the amount of collected funds.

Republia Initial Coin Offering

At the end of PUBLIC SALE, Post-PUBLIC SALE Portfolio is organized, in which some risks are transferred to fiat funds, some cryptocurrencies and precious metals. Decision on the components of Post-PUBLIC SALE Portfolio may be changed before the end of PUBLIC SALE, depending on the market trends. RPB coins will be available after the release of Republia blockchain, at the end of PUBLIC SALE stage.

In case the soft cap is not reached at one of the stages, the funds will be immediately returned to investors.

In case the hard cap is reached before the deadline, at one of the stages, - collecting funds will be finished in advance.

The date of the beginning: August 23, 2018

Pre-SALE period soft cap: 500.000\$
Pre-SALE period hard cap: 5.000.000\$
PUBLIC SALE period soft cap: 5.000.000\$*
PUBLIC SALE period hard cap: 50.000.000\$

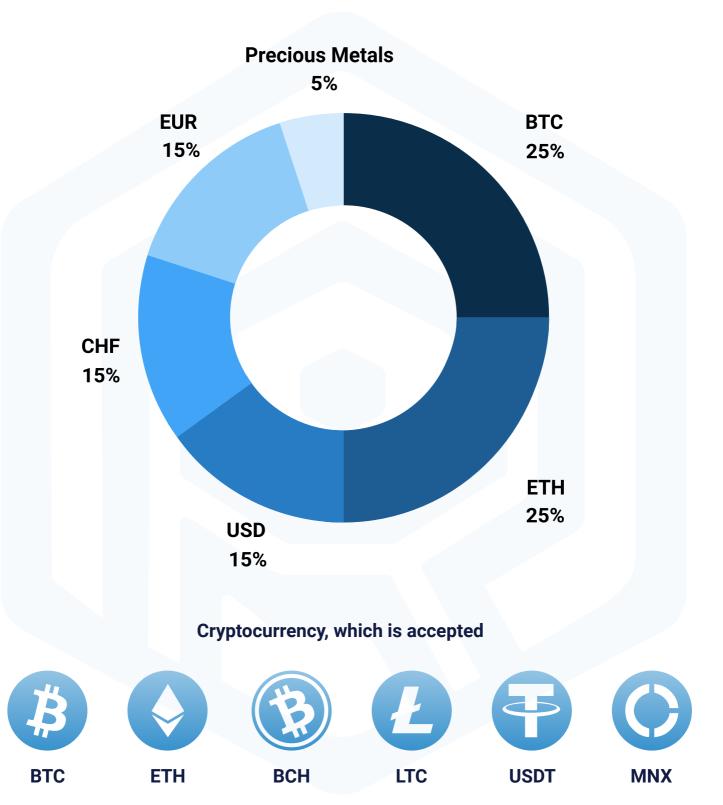
Minimum purchase: 100\$

The soft cap of PUBLIC SALE period begins with the amount that was attracted during Pre-SALE.

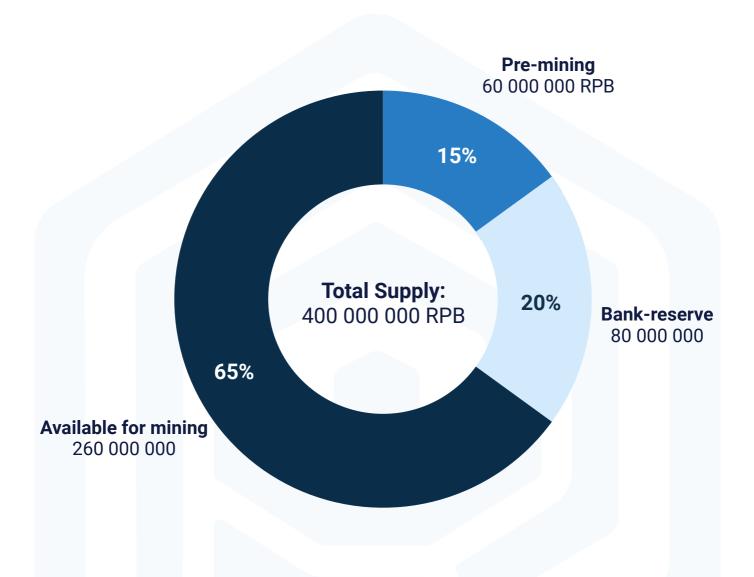
Bounty-campaign

Туре	%	RPB	
Facebook	14%	420,000	
Twitter	14%	420,000	
LinkedIn	6%	180,000	
Bitcoin Talk	16%	480,000	
E-mail newsletter	3%	90,000	
Blogs	6%	180,000	
Videos	7%	210,000	
Forums	1%	30,000	
Telegram	5%	150,000	
WeChat	1%	30,000	
KakaoTalk	1%	30,000	
Slack	3%	90,000	
Translations	5%	150,000	
Reddit	5%	150,000	
Instagram	7%	210,000	
Other	6%	180,000	
SUM	100%	3,000,000	

Post-PUBLIC SALE Portfolio



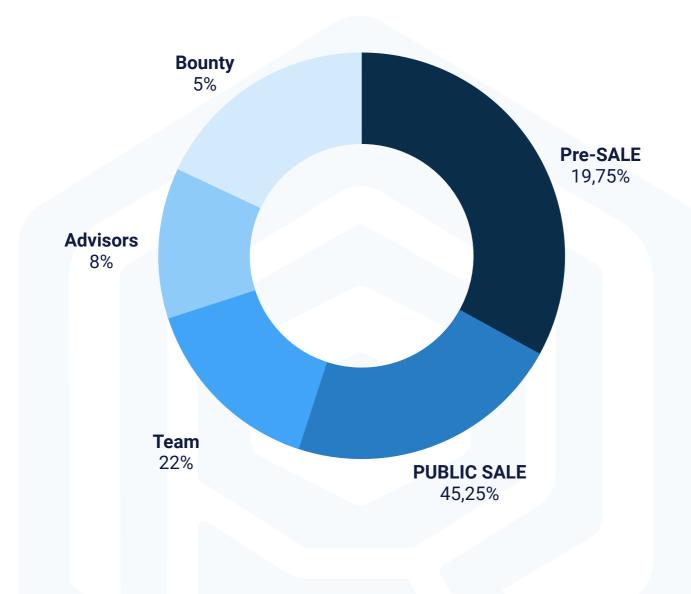
Distribution of coins



In Republia Blockchain 400 million RPB coins will be available in total. 65% of the total number of coins is allocated to the genesis block and will be available when the network starts operating.

The reserve of Republia Bank is 20% of Total Supply. This amount of funds will provide users with functional system, which will be able to operate during specified time. 260 million coins are available for mining.

Pre-mining distribution



RPB coins of Republia team are frozen for 2 years and RPB coins of advisors are frozen for 6 months after the end of the PUBLIC SALE.

Pre-mining distribution

Block structure				
Name	Amount			
New block in network (sec)	1			
Bank fee	50%			
Block reward, RPB	0,3298			
Bank fee, RPB	0,1649			
Miners reward, RPB	0,1649			

Bonus for prior participation

At the time of PUBLIC SALE and Pre-SALE investors are offered a bonus for prior participation. Thus, fast achievement of the objectives related to collecting funds is stimulated. In addition, bonuses for participation in Private Roun are taken into account, the highest bonus in Republia Initial Coin Offering is around 30%

Pre-SALE

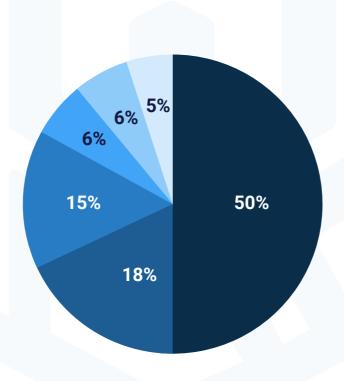
Contribution amount					
	100\$-2000\$	2.000\$ - 5.000\$	More than 5.000\$		
1st week	20%	22,5%	25%		
2nd week	10%	12,5%	15%		
3rd week	5%	7,5%	10%		
4th week	0%	2,5%	5%		

Bonus for prior participation

The use of funds collected during the PUBLIC SALE is calculated taking into account the risks in the Post-PUBLIC SALE portfolio, the possible exchange rate fluctuations in assets, and in accordance with the road map.

Coin distribution

Ecosystem research and development	50%	25,000,000\$
Marketing and business development	18%	9,000,000\$
Administrative and operational expenses	15%	7,500,000\$
Negotiation and listing on exchanges	6%	3,000,000\$
Legal support	6%	3,000,000\$
Unexpected circumstances	5%	2,500,000\$



Republia Initial Coin Offering

"Ecosystem research and development" means covering the expenses of creating of main products of Republia ecosystem, including Republia Blockchain, with the use of services of international outsourcing companies in a particular area, as well as providing working conditions for employees, including an office for 40 engineers and management staff.

"Marketing and business development" means covering expenses of marketing campaigns in order to attract new users and investors, as well as costs to expand into new markets.

"Administrative and operational expenses" include the budget for maintenance of operational Republia office, excluding R&D department.

"Negotiation and listing on exchanges" means covering costs of negotiations with large stock exchanges in Post-PUBLIC SALE period and listing during one month following the end of PUBLIC SALE.

"Legal support" includes all costs for resolving issues related to functioning and expansion of Republia in different countries and areas.

"Unexpected circumstances" - costs that were not listed above.



CONCLUSION

CONCLUSION

Republia project is the beginning of a new history in the development of decentralized ecosystems, as keynote idea of Republia team is direct influence and active participation of users.



This fact proves functioning using a new type of management - "We-ecosystem", which contributes to full democracy, justice, transparency and decentralization within the entire ecosystem.

Since the entire Republia ecosystem is very extensive and includes various structural elements (Republia Bank, Republia ICO Platform, Republia Exchange, Republia Wallet, Republia Smart Contract Platform), every stage of secure operation was carefully thought out and provided with innovative technologies of its own design.

Moreover, having examined the document, you can be sure of thorough analysis of risks and elimination of most of the vulnerabilities, that emerge in the representatives of other industries.



Republia also provides users with a comfortable environment for operations with cryptocurrencies, solving the problem of the highest volatility, by introducing own RPB coin, which an internal payment tool. Smoothed volatility of RPB cryptocurrency is achieved by artificial intelligence, created using Republia blockchain.

In the conditions of Republia ecosystem each participant will find all the advantages of using blockchain technology, which satisfy his requirements from the creation of his own ICO, generation of smart contracts, secure storage of his data to fast execution of transactions, comfortable communication with other community members and user-friendly interface.



LEADING-EDGE ECOSYSTEM AND TECHNOLOGY