

# CASPER<sup>API</sup>

## WHITE PAPER



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# Introduction

Casper API creates an infrastructure to store data on any Blockchain platform with smart contract capabilities. You can store documents, photo, video, 3D model and audio files.

We are developing a universal solution that can work with any blockchain. Emerging markets see players come and go. Integration with multiple platforms mitigates the risk of error in choosing any single partner, making our economic model more stable, which in turn allows for storing data with providers from different sources.

According to Gartner research, cloud storage market will have reached 72 billion dollars by 2020. In their research, Gartner did not discern the traditional centralized storage market from the decentralized applications market. We clearly see the new opportunity to satisfy the market demand. In 2017 alone 1092 DApps (decentralized blockchain applications) were created and this trend is becoming even more widespread in 2018.

The existing blockchain-based data storage solutions are extremely expensive and cumbersome. Traditional ones are not fit for the new, decentralized market segment. DApps are facing the need to organize decentralized data storage in a profitable, secure and innovative way. To accomplish that DApps need a decentralized infrastructure.

In the near future information will be generated by people as well as billions of IoT and AR/VR devices, drones, self-driving vehicles and robots. All that will require vast storage volumes, forming a substantial demand for this service from both traditional applications and DApps.

Casper API is attractive to traditional businesses since it allows to reduce data storage expenses three-fold compared to centralized solutions. Decentralized structure proves valuable to DApps as it provides full transaction transparency, simple integration via SDK and both secure and cost-efficient storage.

## What is Casper API for?

Casper API allows us to make use of all the capabilities already present in cloud storage, such as data storage and content distribution network (CDN). The infrastructure can be used for all kinds of applications, websites and even offline businesses with no use of smart contracts. Combined with the architecture capabilities such as automated content delivery through smart contracts on blockchains as well as SDK for DApps make Casper API an attractive solution for the budding market of decentralized applications.

## What is Casper API?

Casper API is an infrastructure project designed for decentralized data storage compatible with any blockchain platform with smart contract capabilities.

## Platform overview

We make use of: smart contracts – facilitating communication between clients and providers; P2P architecture – increasing network reliability; zk-SNARK cryptography method – processing data in a strictly confidential manner. We also provide SDK allowing you to integrate any application, including DApps, into our platform quickly and easily.

### Smart contract

The Casper API smart contract stores a service providers register, connects providers with users and performs billing procedures. The smart contract regulates the storage network and supervises the work of providers.

### P2P architecture

**Reliability.** All the network participants connect with each other with relying on large nodes such as servers allowing for an increased resistance to DDoS attacks.

**Content delivery.** P2P network participants have no geographical limits. Therefore, users are able to receive their data from the nearest provider in order to have their upload and download speed increase

**Data accessibility.** Several copies of one file are stored by different providers allows to download data even if one of the providers is down.

### zk-SNARK

To ensure strict confidentiality the data on all the operations is transferred to the smart contract in a secure and encrypted way. We use the zk-SNARK encrypting method, also used in ZCash. This makes Casper API suitable for use in corporate level DApps.

### SDK

Casper API provides SDK for integration, allowing application developers to access their data within the Casper API infrastructure.

## Casper API services

### Data storage

The main service we provide is decentralized data storage, including upload, download, editing, deleting, access permission management, file random read function, unencrypted data modification without replacing it as well as the possibility to mount your virtual storage as an external drive. The decentralized data storage system reduces possible delays and increases accessibility which means that all the data is accessible 24/7.

### Backup copy storage

We offer a special backup data storage plans that allow for cheaper service if you access your data rarely. In order to ensure a higher level of safekeeping for your backups we

offer to store another copy of your files in partner data centres and other major providers who are ready to take on the responsibility for the security of your data.

## CDN

Your website load time is fast within a target region. Thanks to the decentralized architecture, Casper API is able to provide fast file downloading and website loading as well as increase the stability of your website even under high loads. Thanks to Casper API you are able to choose between provider networks in your target regions.

## Universal solution

Casper API does not depend on any blockchain and allows receiving data from different blockchain platforms at the same time. Due to this fact it is compatible with any application on any platform. Providers have the opportunity to increase their profits, while application developers enjoy easy integration with different platforms.

## CST token emission

Casper API issues its own currency unit – Casper token (CST). It is used in every transaction within our project on any blockchain platform as well as by providers when they acquire a franchise.

## A franchise-like storage volume registration system.

When a CST token holder decides to become a provider they have to purchase a certain storage volume quota which they must then register in the smart contract. The quota is attributed according to the rate of 25.6 GB for 1 CST. To purchase a quota, the potential provider invokes the register (tokenCount) function of the smart contract and enters the desired amount of tokens as the argument. The indicated amount of tokens is locked and may not be used by the token holder for selling, leasing or any other purpose described in the document. The token holder is eligible to modify the amount of locked tokens at any moment by modifying the quota by invoking the register (tokenCount) function, entering the new number of tokens, even 0.

When the user places a request for data storing by invoking the getPeers (sizeToStore) function of the smart contract, providers are selected depending on the available storage volume within their respective quotas. The 25.6 GB for 1 CST quota is designed in order to ensure the payback period of N months, thus attracting those providers who are ready for a long-term cooperation.

HDD volume registration mechanism that is pegged to CST is similar to entering a franchise.

## A medium of exchange independent from any given cryptocurrency on the blockchain integrated with Casper API

In the Casper API system, users pay for data storage and CDN services and providers are rewarded for supplying these services. Technically, Casper API's operations are based on a blockchain with its own monetary unit. Casper API will be launched on several blockchain platforms using smart contracts; the provider will receive storage requests from users of several blockchain platforms at the same time. To provide transparency in transactions between the provider and the users of different blockchain platforms, the reward will be credited to the provider's account in CST tokens. CST tokens will be issued on the Ethereum platform but may be shifted to other platforms keeping the same total amount of tokens on all the platforms.

### Asset-backed token value

The price of a CST token is backed by the profitability of services rendered by the provider for the storage volume registered for 1 CST as well as by CST token turnover. During the ICO, a limited amount of tokens is issued. With the quota of 25.6 GB per CST, Casper API can register a limited storage volume with all the tokens. When the network registers storage volume exceeding a certain limit of the maximum volume while a certain minimum limit of the registered storage volume is already in use, the quota for 1 CST will begin to increase. The purpose of raising the quota is to keep a certain share of the total storage volume always available to be filled with user data. Therefore, as the real usage of the Casper API network will grow, CST tokens will be backed by more and more real assets.

### Selling tokens on exchanges and token leasing

The Casper API smart contract will be based on the ERC20 standard. You will be able to put CST tokens on an exchange and sell/purchase them freely. Many exchange markets also allow their users to lease tokens under flexible conditions. Thus CST tokens will be traded and leased on many exchange markets.

CST token leasing is a very important financial instrument for the Casper API economic model. Free circulation of CST tokens on exchanges can lead to a sharp increase in the price of the token. This presents obstacles in purchasing CST tokens, consequently hindering the development of the service. Leasing remains financially attractive even if the prices on the market are high. The token holder rents them out and thus becomes closer to the break-even point. This scheme is profitable and transparent for both the token holder and the lessee.

### Token emission

#### Token purchase during Pre-ICO

19 December 2017, we issued CSPT tokens for the Pre-ICO with a non-ERC20 contract. The day ICO goes live these tokens can be swapped for CST tokens of the

operational smart contract that complies with the ERC20 standard. CST tokens will be locked for one year from the swap. Once the year has passed they are free to be traded on an exchange.

## Token purchase during ICO

CST tokens will be issued during the ICO using a separate ERC20-compliant smart contract. The tokens issued during the ICO will be locked for 9 months (pre-sale tokens) or 6 months (for crowd-sale tokens) before you are able to trade the tokens on an exchange. You will be able to swap the tokens purchased during the Pre-ICO for the ICO tokens via the exchange() function of the smart contract. After the ICO is terminated, the purchased tokens can be swapped for CST tokens of the operational smart contract.

## Token swap through Casper API Ethereum smart contract.

The Casper API smart contract will have an exchange() function that allows you to swap pre-ICO and ICO tokens for the operational smart contract tokens.

## Pricing policy

According to our basic pricing policy, users pay monthly for GB storage as well as downloads per GB.

The providers are rewarded for storing a certain number of GB per month and for providing data for downloads in GB. The payment is performed in CST according to the rate determined in the smart contract and taking in account the provider's scoring.

The user pays for data storage services in CST (according to the current USD/CST rate). The amount of CST tokens may vary depending on the exchange rate. The smart contract selects storage providers automatically. As soon as the file is successfully put into storage the smart contract starts charging the user for the storage on a monthly basis. The charges are deducted from the user's prepayment. If the user deletes the file from the service, the remaining prepayment is returned to the user.

The user submits the prepayment via the client application in BTC, ETH or USD then converted to CST.

## Providers economics

The provider uses equipment for which the cost structure can be calculated, including amortization costs, energy costs, Internet and rent expenses.

The providers offer their hard disk space to store data, incoming and outgoing internet connection.

Casper API does not reward the provider for incoming connections. The users upload their files for free and the provider is not rewarded for this operation. Still, the user has to pay for the file storage and for each downloading. As it usually happens on the market, data download traffic is higher than data upload traffic. So if the provider offers data upload for free, payments for data download services will generally compensate for it. As for users, the entrance price barrier will be lower to begin with considering charges will be only for data storage services.

## Payback period

We have calculated an approximate payback period for 50 Tb storage. The prices are calculated for Saint-Petersburg, Russia.

### Provider initial investment

	Model	Tb	Price (RUR)	Price per unit (RUR)	Price per unit (USD)
HDD	Seagate ST4000DM004	4	7000	87500	1458,333333
Network attached storage	Thecus N2310	8	8700	54375	906,25

### Regular payments:

	Mb	Price (RUR)	Price per unit (RUR)	Price per unit (USD)
Internet	100	600	600	10
Electricity			715	12

According to the calculations above, to become a Casper API provider you need to acquire a 50 Tb HDD, a NAS rack, a router, 1920 CST tokens (according to the ratio of 25.6 GB per 1 CST). It is also necessary to pay for broadband Internet and for electricity that are indispensable for the system to function.

It means that in order to enter the system, the provider has to spend \$2515 in total the first month.

## Comparing Casper API with competitors on the data storage market

We have analyzed our key competitors prices (Amazon and Google cloud platform) for data storage and transfer services.

Name of the company	Service/product	Link	Price (\$/Gb)
<b>Amazon</b>	Amazon EBS HDD with an improved data transfer rate	<a href="https://aws.amazon.com/ru/ebs/pricing/">https://aws.amazon.com/ru/ebs/pricing/</a>	0.053
<b>Amazon</b>	Amazon S3	<a href="https://aws.amazon.com/ru/s3/pricing/">https://aws.amazon.com/ru/s3/pricing/</a>	0.023
<b>Google</b>	Google cloud platform	<a href="https://cloud.google.com/storage/pricing-summary/">https://cloud.google.com/storage/pricing-summary/</a>	0.026
<b>Amazon</b>	Amazon CloudFront (CDN)	<a href="https://aws.amazon.com/ru/cloudfront/pricing/">https://aws.amazon.com/ru/cloudfront/pricing/</a>	0.12

While determining Casper API's pricing policy, we decided to establish a rate that would be three times lower than those of our competitors. We decided to benchmark our services against Amazon S3 which is the cheapest offer among our competitors. As for our CDN service we also benchmarked it against Amazon (Amazon CloudFront). The following rates are set for Casper API and used in the project's financial model.

Casper API offer	Competitor rate, USD	Casper API rate, USD	Difference
<b>Storage</b>	0.023	0.008	-66%
<b>CDN</b>	0.12	0.04	-66%

We suppose that the user will transmit 50 TB of data via CDN if the storage volume is the same (50 TB). In this case and according to the rates determined, the provider's profits will be calculated in the following way.

Casper API offer				
50Tb storage costs (USD)	CDN costs for 50 Tb (USD)	Copies	Casper API fee	Provider profits (USD)
393	2048	4	0.15	518

(\* - the word "profits" implies the entire capacity of 50 Tb is occupied the entire month)

Since we deduct a fee of 15% and since each file is copied 4 times, the provider will receive a monthly profit of \$505 from data storage and transmission (with electricity and Internet expenses already deducted), forming a payback period of approximately five months.

To calculate the indices of the country you are interested in, you are able to make use of the calculator you will find on our website.

## Pricing

Our basic rate quickly adapts to the user's needs. If the user hosts website static content via Casper API, he will probably store small files that are downloaded frequently. In this case, the user will pay more for the traffic. If the user stores backups via our service, he will pay more for storage.



# Finances and business

## Casper token (CST)

Casper token (CST) is the key element of the system and provides the opportunity to perform in-system transactions. CST is designed to allow greater system flexibility in real time as well as provide grounds for future growth and development of the system. All CST tokens will be issued during the ICO. A CST token may be divided up to 0.00000001 CST.

## CST token use cases

### Casper API

CST may be purchased, exchanged, sold, leased or rent out.

A token holder can register in the system as a provider. The provider can become a participant in the system by putting their own storage volumes into the Casper API network. In this case, the provider can put 25.6 GB of the storage volume into the network for each CST token. The provider is rewarded in CST for putting up his storage volumes into the Casper API network and meeting technical requirements (server uptime, connection speed). The provider as well as any other CST token holder is eligible to fully dispose of the tokens.

Any Casper API user may lease his tokens or rent them out to other Casper API users. If a CST token is leased, the lessee acquires the right to use the token like users and providers do. The lease is ensured by the smart contract. Lease price is based on market conditions.

Decentralized Applications or DApps will act as users of the service. They will have separate fixed USD rates for data storage and transmission (GB/month).

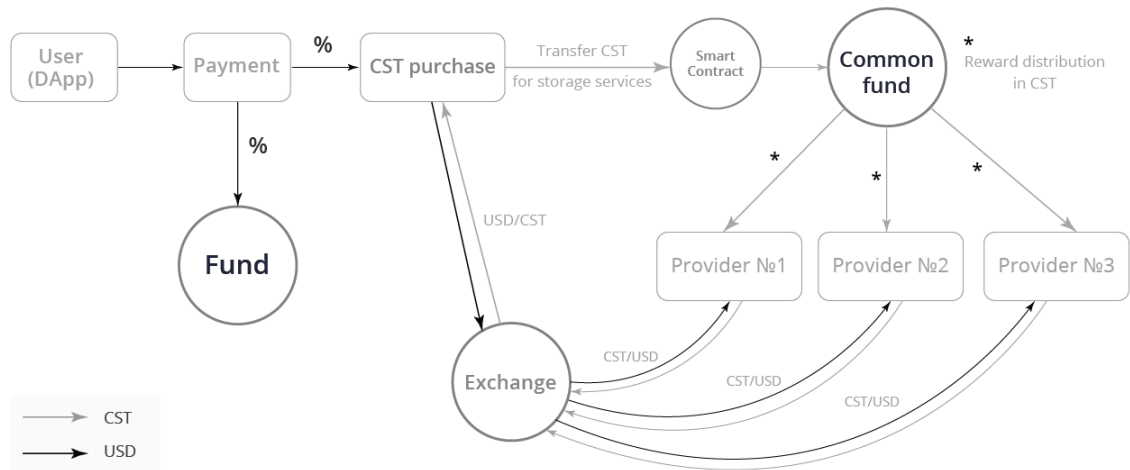
Casper API, the software developer, will provide payment processing as well as user access to the network.

Since the smart contract will work with CST only, Casper API will withhold a certain part from incoming payments in order to ensure that the network and the software run normally. The other part will be converted into CST according to the current exchange rate and sent to the smart contract. These tokens will serve as a reward for the providers and will be distributed among them according to pricing and depending on their individual contribution to the system. This system will allow the provider to be rewarded in fiat currency and put tokens back in circulation again. The growing number of our investors will encourage token purchases performed by Casper API. In its turn, this will contribute to the token exchange rate increase.

In order to ensure that the inner financial system is stable, Casper API reserves a fraction of the tokens (11.4% - 25%) and about 10% of all the funds raised during the ICO. This reserve will help the company provide a fully functioning service at the early stages if providers are not active enough. It will also allow for a more stable CST/USD exchange rate.

Tokens and fiat money movements within the Casper API system

#### 14. Business model



## Casper token emission

### Pre-ICO

During Pre-ICO, tokens are sold with a discount.

1 CST = \$0.08. Hard cap: \$1,040,000. Tokens were sold via a smart contract on Ethereum according to the USD/ETH exchange rate for the Pre-ICO launch date.

### ICO

Funds planned to be raised via the ICO token sale: \$31,800,000. The Pre-ICO was sold out at \$1,040,000.

Soft Cap: \$6,700,000.

Tokens will be sold via a smart contract on Ethereum according to the USD/ETH exchange rate that is in force for the token purchase date.

ICO is terminated if: all the tokens are purchased or two calendar months have passed.

Token distribution table:

	Price	Tokens (CST)	USD
Total		440,000,000	32,800,000
Pre-ICO	1CST = \$0.08	13,000,000	1,040,000
ICO (pre-sale)	1CST = \$0.12	238,333,333	28,600,000

ICO (crowd-sale)	1CST = \$0.16	19,750,000	3,160,000
System fund		35,500,000	
Bonuses to major investors		47,666,667	
Team		66,000,000	
Advisors		7,000,000	
Bounty		8,800,000	
Referral program		3,950,000	

During the Pre-Sale, major investors gain an extra CST token bonus. The amount of the bonus represents a part of the CST tokens purchased and depends on the amount of the investment:

- From \$10,000 to \$50,000 – 0% of the tokens purchased
- From \$50,000 to \$100,000 – 5%
- From \$100,000 to \$250,000 – 10%
- From \$250,000 to \$400,000 – 15%
- From \$400,000 to \$500,000 – 20%

## ICO: main terms and conditions

- The ICO is conducted on the Ethereum platform through a smart contract.
- CST token emission or mining is impossible after the end of the ICO.
- If we fail to reach the soft cap during the ICO, the raised funds will be returned to investors. Please note that the funds raised during the Pre-ICO are non-refundable.

## Providers compensation formula\*:

( [monthly rate for 1GB of storage] x [actual storage volume utilized] + [rate for 1Gb transferred] x [actual data transmitted] ) x 0.85/4

\*if all the technical requirements for equipment and uptime are met.

## CST value projection and CST holder privileges

As it was said before, Casper API plans to list CST on the biggest crypto exchanges so CST/USD exchange rate can be established in live trading where the supply and demand market forces are at play. However, in the long-term the main CST growth driver will be the volume of data within the system – the number of Tb the users will purchase through Casper API.

Below you can find our understanding of the logic behind establishing a fair CST exchange rate that comes from the fundamental factors, such as CST distribution among

market participants, overall data volume and the quota size for providers per 1 CST (hereafter – CST capacity).

CST value projection was estimated utilizing one of the basic principles of macroeconomics – the Fisher equation.

$MV = PQ$ , where

M – money supply

V – velocity of circulation

P – price level in the economy

Q – output produced by the economy

Applying this equation to the Casper API economics we assume that PQ is the volume of money transfers in the system that rely on CST.

The money supply in our model is the amount of CST in circulation, multiplied by the market exchange rate of CST/USD.

From there we produce the basic equation for CST/USD exchange rate projection:

$$\text{CST exchange rate} = \text{USD transaction volume per year} / \text{CST in circulation} / \text{CST velocity of circulation}.$$

Next we make a projection for each of the three figures.

### **1. USD transaction volume per year.**

Since provider storage and transfer services are paid for in CST, transaction volume is nothing else than the target market volume for Casper API included in the financial model, multiplied by the rates set in the system for services.

However, it should be noted that Casper API allows users to pay for services in both CST (by purchasing on exchanges) or in fiat money, in which case Casper API transfers CST for the provider from the reserve fund, or purchases CST on exchanges should this need arise. In case of the latter, Casper API deducts a fee from the fiat money paid by the user and buys CST on an exchange for the remainder of the money. In other words, if the user pays in fiat currencies, CST is purchased with the amount of money after the fee is deducted. Therefore when calculating transaction volume it is necessary to deduct the Casper API fee for the share of users paying for the service in fiat currencies. We assume the fiat to CST ratio among the users will be 1:1 on average.

### **2. Amount of CST in circulation**

It is important to note that the CST in circulation figure is not the total supply of CST on the market. This figure represents the CST used in transactions within the system, meaning the CST that users buy to pay providers for the services, and providers sell to receive their revenue in fiat money.

To estimate the volume of these tokens we have to draw up relative categories for CST holders along with their characteristics:

- a. Investors – purchased CST during the ICO (or before, or after on exchanges) and hold the tokens for long periods of time – from 1 to 5 years. This volume of CST is virtually out of the market.
- b. Providers – they reserve CST in the system to provide their resources. They also receive CST from users as a reward for their services. Providers may dispose of the CST received for the following purposes:
  - i. Reserve further, increasing the resources on offer in the system;
  - ii. Sell and take the revenue in fiat currencies (thus falling under the category of Transactors)
  - iii. Keep the tokens to sell later at a higher price, thus becoming Traders.
  - iv. Keep the tokens and rent them out to other Providers, essentially keeping their status as providers that reserve CST with the exception that the resources are provided by the CST lessee.
- c. Transactors within the system.  
Transactions are understood as CST buys and sells that are linked to the system function: users buying CST to pay for the services and providers selling the CST they earned. Technically, Casper API may serve as a user when it buys CST for the Users.
- d. Reserve Fund of the system serves as a market maker. The fund keeps a stable number of CST. The Fund's CST are sold during price hikes to be bought back later and restore the previous amount of CST in the Fund.
- e. Traders are those who buy CST for speculative reasons, seeking to profit from price difference.

To determine the volume of CST in circulation, we deduct the amount of tokens held by Investors from the total amount on the market (440,000,000) since these CST won't be involved in transactions. We assume that during the first year the share of CST in this category will be approximately 90% until Investors gradually begin taking profits and sell as CST price goes up – by 20% a year to 10% on year five.

We also deduct the CST stored in the Reserve Fund of the system. In the short term, a fraction of this CST can be used for market-making, however, in the long term, however, the amount of CST in the Fund must be stable. The description of the Fund and its logic will be provided further.

After deducting CST held by Investors and the Fund, a share of CST is distributed among Providers and Traders with the remainder of CST circulating in transactions (in fact, that CST may be in possession of either Providers or Users or Casper API at any given moment).

The amount of CST reserved by Providers is determined by the following factors:

- Storage volume in the system;
- CST capacity (total capacity a Provider can put up after reserving one CST);  
As it was mentioned before, CST capacity is determined and regularly updated by Casper API to ensure Providers get a payback period of 12 months for CST purchases. The 12 month figure is currently hypothetical and will be tested with market-making. The actual CST payback period for Providers will be determined by a

number of factors such as user confidence in Casper API, Provider capacities utilization etc. In addition to that, the platform may evolve and develop over time.

The financial model includes a potential Provider (data-center) profit for 1 TB of storage. Based on current CST capacity and CST exchange rate projections (that is determined after all the calculations) the payback period for Providers per 1 CST is estimated. Then based on the resulting payback period Casper API determines CST capacity so that CST payback period stays within the target boundaries. With the resulting CST capacity and the data storage utilized in the system we can derive the amount of CST that must be reserved by Providers this year to service the required storage volume. This CST is also taken out of circulation.

A share of the remaining CST is bought and sold by Traders. The size of that share is rather difficult to predict, however, we believe the first year this share will be 94% (during the first year the volume of data will remain rather low, the system will work with a low circulating supply of CST at an exchange rate near the ICO level), while the second year will see that figure go down to 30% and head towards 5% on year five. These CST will effectively be put out of circulation as they won't participate in transactions.

The remaining CST are in circulation, ensuring the work of the system. It is these CST that determine the projected exchange rate against USD.

### **3. CST velocity of circulation**

The turnover ratio of CST characterizes the number of times on CST can be used in one year. We believe that the first year this ratio will be rather low, as data volumes increase Providers will be keeping their CST and reserving them in the system. Next we predict a gradual increase in turnover up to a figure of 12 on year five.

Our projections are confirmed by benchmarking results – the analysis we ran on trading volume dynamics for tokens of similar projects. The analysis included such projects as NXT and MaidSafe over the period of 2015-2017. The results returned the average token turnover ratio of 1.25 in 2015, 3.55 in 2016 and 7.9 in 2017. These parameters were used to model the CST exchange rate projections for the first three years of the model. For later periods we believe the ratio will increase by 2 points on average up until 12 points on year five. Thus having used all three variables in the Fisher equation adjusted for CST, we are able to project an approximate CST/USD exchange rate for the next 5 years considering the conditions present in our financial model. It is important to note that one of the more difficult aspects of estimating CST exchange rate was CST capacity management as these two variables are interdependent: CST value is dependent on the amount of CST reserved by Providers (thus, CST capacity), and CST capacity is determined by Casper API based on the current CST market value.

It is also important to understand that Casper API cannot change CST capacity on the fly as it will directly affect Providers. This is why CST capacity update period is set to 1 month.

CST capacity change is by design one of market-making instruments along with CST sales by the Reserve Fund of the system. The following is the description of the market-making logic in the Casper API system.

## Using Reserve Fund for market-making, marketing and DApp startup development

The project implies the creation of a Reserve fund that will consist of a certain amount of CST and USD, which is considered one of items of expenditure present in the project's financial model.

### **Fund's objectives**

The Reserve Fund will be utilized for the two following purposes: market-making and marketing.

#### Market-making

Market-making implies certain actions taken by Casper API that directly or indirectly affect the market value of CST. It is important to understand that Casper API market interventions follow strict logic and will be predictable, ruling out any subjective attempts at influencing the value of CST by the team.

The idea behind Casper API interventions into the market value of CST is based on the following objectives:

Ensure that Providers capacities are in use by 70% on average, even during spikes in demand (higher download traffic) and number of Providers (lower download traffic).

- a. Ensure a CST payback period of no longer than 12 months for Providers by changing CST capacity according to current CST price on exchanges.

To conduct market-making Casper API uses two instruments:

- Monthly CST capacity correction according to current CST price on exchanges and the projected CST payback period for Providers. In case of an increase in CST payback period as a result of an increase in CST price, Casper API increases CST capacity to reduce CST payback period for Providers to its target boundaries.
- Fund interventions in the market. Since CST capacity change cannot occur more often than once a month, in the meantime some imbalances may be observed on the market: an inflow of new Users can drive the value of CST up, making the payback period longer for Providers that in turn can sell CST at a higher price. As a result, during a rise in demand Providers may begin leaving the system, increasing the load on the remaining Providers, destabilizing the entire system. To prevent these risks, Casper API will use its own CST to sell them on exchanges in times of price hikes until CST capacity can be changed. In an opposite situation, where CST price drops within a month, Casper API will begin buying CST on exchanges using the Fund's fiat money. After CST capacity changes, Providers will either have surplus CST (if capacity is increased) or a deficit (if capacity is decreased) that will lead to CST price correction. Next Casper API buys enough CST for cheap in the amount required to restore the initial amount of tokens in the Fund (or sells back during reverse interventions).

#### Marketing

The Fund's resources can be used to conduct marketing activities.

In particular, the Fund's CST can be allocated towards select DApps in the form of grants. Having received these investments, such projects can later begin using the Casper API platform and strengthen the company's position on the market.

## Fund resources

The amount of the Fund's resources allocated towards marketing will also depend on the sum raised during the ICO as well as the number of CST sold. The amount of fiat at the Fund's disposal will depend on the sum raised during the ICO and as result, on the project's development scenario:

### Casper API Fiat reserve fund, million USD

Scenario	Total amount raised	Fiat reserve fund
Aggressive	32.8	5.0
Base	14.2	3.0
Conservative	6.7	1.0

The amount of CST in the Reserve Fund depends on the amount of CST sold during the ICO, и как следствие, and as result, on the project's development scenario:

### Amount of CST in Casper API Reserve Fund

Scenario	CST sold (including pre-ICO)	CST in Reserve fund (of total CST issued)
Aggressive	322,700,000	35,500,000 (8.1%)
Base	159,462,039	198,737,960 (45.2%)
Conservative	69,588,326	288,611,674 (65.6%)

We believe the final amount of CST in Reserve should be between 10% to 20% of the total amount of CST issued. Thus in a conservative scenario with ICO sales of about 70 million CST, the share of CST in the Fund will reach as high as 65% and more. In this case the surplus CST (45%) will be allocated towards marketing and gradually finds its way onto the market.



## CST Price Projection

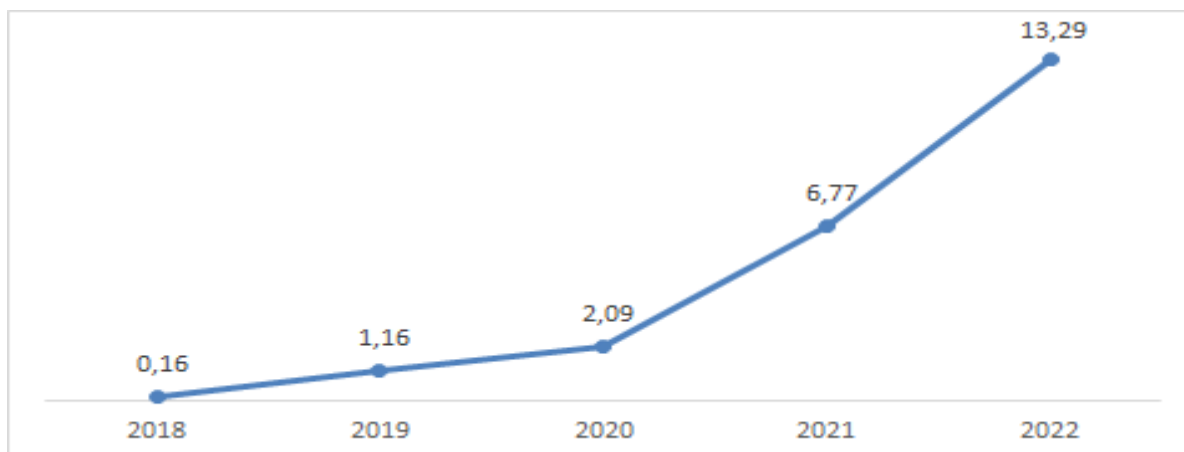
Aggressive scenario:

Figure	Unit	2018	2019	2020	2021	2022
<b>CDN Market</b>						
Monthly CDN traffic	Tb / month	56,778,342	71,536,228	90,130,000	108,156,000	124,379,400
DApp share on CDN market	%	1%	3%	5%	10%	15%
CDN traffic volume for DApp	Tb/ month	567,783	2,146,087	4,506,500	10,815,600	18,656,910
Casper API share on CDN market for DApp	%	0%	5%	10%	20%	30%
Monthly CDN traffic in Casper API	Tb/ month	284	107 304	450 650	2 163 120	5 597 073
Casper API rate	\$/ Tb	41	41	41	41	41
<b>Transaction volume for CDN</b>	<b>\$1000</b>	<b>140</b>	<b>52,742</b>	<b>221,503</b>	<b>1,063,217</b>	<b>2,751,073</b>
<b>Storage market</b>						
IaaS market volume	1000 TB	690,000	950,000	1,290,000	1,677,000	2,096,250
DApp share on IaaS market	%	1%	3%	5%	10%	15%
DApp share on IaaS market	1000 Tb	6,900	28,500	64,500	167,700	314,438
Casper API share on storage market for DApp	%	0%	5%	10%	20%	30%

Casper API storage capacity	1000 Tb	3	1,425	6,450	33,540	94,331
Rate	\$/Tb/year	94	94	94	94	94
<b>System transaction volume for Storage</b>	<b>\$1000</b>	<b>337</b>	<b>138,641</b>	<b>626,100</b>	<b>3,248,337</b>	<b>9,116,014</b>
Casper API fee	%	10%	15%	15%	15%	15%
Share of CST transactions	%	50%	50%	50%	50%	50%
Effective Casper API fee rate	%	5%	8%	8%	8%	8%
<b>Total system transactions volume</b>	<b>\$1000</b>	<b>441</b>	<b>172,919</b>	<b>766,959</b>	<b>3,906,232</b>	<b>10,764,994</b>
Tokens total	CST	440,000,000	440,000,000	440,000,000	440,000,000	440,000,000
Tokens in Fund	CST	35,500,000	35,500,000	35,500,000	35,500,000	35,500,000
Tokens on market	CST	404,500,000	404,500,000	404,500,000	404,500,000	404,500,000
Share of tokens with Investors	%	90%	70%	50%	30%	10%
<b>Tokens on exchanges</b>	<b>CST</b>	<b>40,450,000</b>	<b>121,350,000</b>	<b>202,250,000</b>	<b>283,150,000</b>	<b>364,050,000</b>
<b>CST OWNERSHIP STRUCTURE:</b>						
<b>1. PROVIDERS (reserving CST)</b>						

CST capacity for Providers	Gb	25.6	170.0	327.0	1,120.0	2,355.0
Copies	pcs.	5	5	5	5	5
Providers capacities utilization	%	70%	70%	70%	70%	70%
<b>Amount of CST with Providers</b>	<b>CST</b>	<b>985,714</b>	<b>61,310,924</b>	<b>144,272,608</b>	<b>219,036,735</b>	<b>292,979,072</b>
Provider profits from 1 Tb	\$/year	9.1	7.1	6.7	6.2	5.8
Payback period per 1 CST for Providers	months	8	12	12	12	12
<b>2. Traders</b>						
Share of CST with Traders	%	94%	30%	20%	10%	5%
<b>Number of CST with Traders</b>	<b>CST</b>	<b>37,096,429</b>	<b>18,011,723</b>	<b>11,595,478</b>	<b>6,411,327</b>	<b>3,553,546</b>
<b>3. Transactions (Users and Providers)</b>						
System transactions volume	\$1000	441	172,919	766,959	3,906,232	10,764,994
CST turnover ratio, annual	times	1.3	3.6	7.9	10.0	12.0
CST in circulation remaining	CST	2,367,857	42,027,353	46,381,913	57,701,939	67,517,382
<b>CST price</b>	<b>\$</b>	<b>0.16</b>	<b>1.16</b>	<b>2.09</b>	<b>6.77</b>	<b>13.29</b>
<b>CST value increase</b>	<b>%</b>		<b>624%</b>	<b>81%</b>	<b>223%</b>	<b>96%</b>

**CST price increase projection, aggressive scenario, \$**



**Conservative scenario**

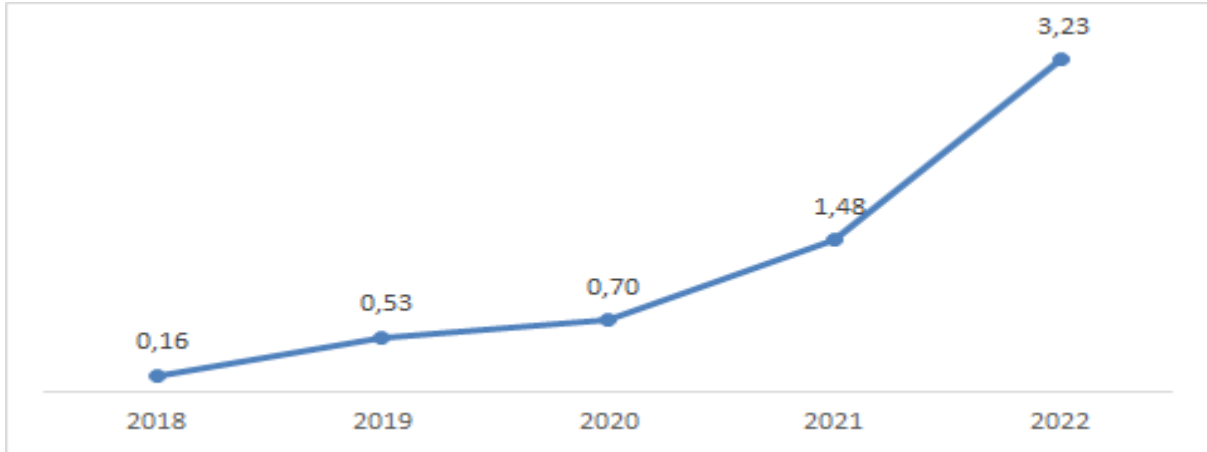
Figure	Unit	2018	2019	2020	2021	2022
<b>CDN Market</b>						
Monthly CDN traffic	Tb / month	56 778 342	71 536 228	90 130 000	108 156 000	124 379 400
DApp share on CDN market	%	1%	3%	5%	10%	15%
CDN traffic volume for DApp	Tb/ month	567 783	2 146 087	4 506 500	10 815 600	18 656 910
Casper API share on CDN market for DApp	%	0%	2%	3%	5%	10%
Monthly CDN traffic in Casper API	Tb/ month	-	32 191	135 195	540 780	1 865 691
Casper API rate	\$/ Tb	41	41	41	41	41
<b>Transaction volume for CDN</b>	<b>\$1000</b>	<b>-</b>	<b>15 823</b>	<b>66 451</b>	<b>265 804</b>	<b>917 024</b>
<b>Storage market</b>						

IaaS market volume	1000 Tb	690 000	950 000	1 290 000	1 677 000	2 096 250
DApp share on IaaS market	%	1%	3%	5%	10%	15%
DApp share on IaaS market	1000 Tb	6 900	28 500	64 500	167 700	314 438
Casper API share on storage market for DApp	%	0%	2%	3%	5%	10%
Casper API storage capacity	1000 Tb	-	427	1 935	8 385	31 444
Rate	\$/Tb/year	94	94	94	94	94
<b>System transaction volume for Storage</b>	<b>\$1000</b>	<b>-</b>	<b>40 274</b>	<b>182 292</b>	<b>789 934</b>	<b>2 962 253</b>
Casper API fee	%	20%	25%	25%	25%	25%
Share of CST transactions	%	50%	50%	50%	50%	50%
Effective Casper API fee rate	%	10%	13%	13%	13%	13%
<b>Total system transactions volume</b>	<b>\$1000</b>	<b>-</b>	<b>49 085</b>	<b>217 651</b>	<b>923 771</b>	<b>3 394 368</b>
Tokens total	CST	440 000 000	440 000 000	440 000 000	440 000 000	440 000 000
Tokens in Fund	CST	288 611 674	228 611 674	168 611 674	108 611 674	48 611 674
Tokens on market	CST	151 388 326	211 388 326	271 388 326	331 388 326	391 388 326
Share of tokens with Investors	%	90%	70%	50%	30%	10%
<b>Tokens on exchanges</b>	<b>CST</b>	<b>15 138 833</b>	<b>63 416 498</b>	<b>135 694 163</b>	<b>231 971 828</b>	<b>352 249 493</b>

<b>CST OWNERSHIP STRUCTURE:</b>						
<b>1. PROVIDERS (reserving CST)</b>						
CST capacity for Providers	Gb	25,6	120,0	170,0	390,0	915,0
Copies	pcs.	5	5	5	5	5
Providers capacities utilization	%	70%	70%	70%	70%	70%
<b>Amount of CST with Providers</b>	<b>CST</b>	<b>-</b>	<b>26 057 143</b>	<b>83 253 782</b>	<b>157 257 143</b>	<b>251 353 630</b>
Provider profits from 1 TB	\$/year	0,0	4,5	4,1	3,7	3,3
Payback period per 1 CST for Providers	months	0	12	12	12	12
<b>2. Traders</b>						
Share of CST with Traders	%	94%	30%	20%	10%	5%
<b>Number of CST with Traders</b>	<b>CST</b>	<b>14 230 503</b>	<b>11 207 806</b>	<b>10 488 076</b>	<b>7 471 469</b>	<b>5 044 793</b>
<b>3. Transactions (Users and Providers)</b>						
System transactions volume	\$1000	-	49 085	217 651	923 771	3 394 368
CST turnover ratio, annual	times	1,3	3,6	7,9	10,0	12,0
CST in circulation remaining	CST	908 330	26 151 548	41 952 305	67 243 217	95 851 070

<b>CST price</b>	\$	<b>0,16</b>	<b>0,53</b>	<b>0,66</b>	<b>1,37</b>	<b>2,95</b>
<b>CST value increase</b>	%		230%	24%	109%	115%

**CST price increase projection, conservative scenario, \$**



**Base scenario**

Figure	Unit	2018	2019	2020	2021	2022
<b>CDN Market</b>						
Monthly CDN traffic	Tb / month	56 778 342	71 536 228	90 130 000	108 156 000	124 379 400
DApp share on CDN market	%	1%	3%	5%	10%	15%
CDN traffic volume for DApp	Tb / month	567 783	2 146 087	4 506 500	10 815 600	18 656 910
Casper API share on CDN market for DApp	%	0%	3%	6%	11%	17%
Monthly CDN traffic in Casper API	Tb / month	57	60 806	255 368	1 225 768	3 171 675
Casper API rate	\$/ Tb	41	41	41	41	41

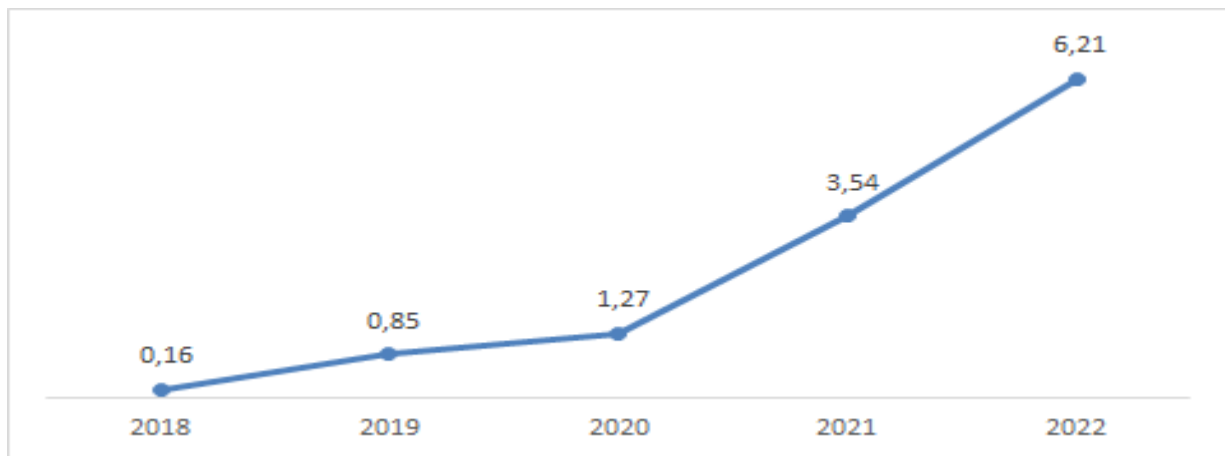
<b>Transaction volume for CDN</b>	<b>\$1000</b>	<b>28</b>	<b>29 887</b>	<b>125 519</b>	<b>602 489</b>	<b>1 558 942</b>
<b>Storage market</b>						
IaaS market volume	1000 Tb	690 000	950 000	1 290 000	1 677 000	2 096 250
DApp share on IaaS market	%	1%	3%	5%	10%	15%
DApp share on IaaS market	1000 Tb	6 900	28 500	64 500	167 700	314 438
Casper API share on storage market for DApp	%	0%	3%	6%	11%	17%
Casper API storage capacity	1000 Tb	1	808	3 655	19 006	53 454
Rate	\$/Tb/year	94	94	94	94	94
<b>System transaction volume for Storage</b>	<b>\$1000</b>	<b>65</b>	<b>76 073</b>	<b>344 330</b>	<b>1 790 517</b>	<b>5 035 830</b>
Casper API fee	%	15%	20%	20%	23%	25%
Share of CST transactions	%	50%	50%	50%	50%	50%
Effective Casper API fee rate	%	8%	10%	10%	11%	13%
<b>Total system transactions volume</b>	<b>\$1000</b>	<b>86</b>	<b>95 364</b>	<b>422 864</b>	<b>2 153 706</b>	<b>5 935 294</b>
Tokens total	CST	440 000 000	440 000 000	440 000 000	440 000 000	440 000 000
Tokens in Fund	CST	198 737 961	158 737 961	118 737 961	78 737 961	38 737 961
Tokens on market	CST	241 262 039	281 262 039	321 262 039	361 262 039	401 262 039



Share of tokens with Investors	%	90%	70%	50%	30%	10%
<b>Tokens on exchanges</b>	<b>CST</b>	<b>24 126 204</b>	<b>84 378 612</b>	<b>160 631 020</b>	<b>252 883 427</b>	<b>361 135 835</b>
<b>CST OWNERSHIP STRUCTURE:</b>						
<b>1. PROVIDERS (reserving CST)</b>						
CST capacity for Providers	GB	25.6	150.0	248.0	750.0	1 410.0
Copies	pcs.	5	5	5	5	5
Providers capacities utilization	%	70%	70%	70%	70%	70%
<b>Amount of CST with Providers</b>	<b>CST</b>	<b>197 143</b>	<b>39 375 238</b>	<b>107 797 235</b>	<b>185 353 752</b>	<b>277 291 185</b>
Provider profits from 1 TB	\$/year	7,7	5,8	5,4	5,0	4,6
Payback period per 1 CST for Providers	months	<b>10</b>	<b>12</b>	<b>12</b>	<b>12</b>	<b>12</b>
<b>2. Traders</b>						
Share of CST with Traders	%	98%	30%	20%	10%	5%
<b>Number of CST with Traders</b>	<b>CST</b>	<b>22 493 317</b>	<b>13 501 012</b>	<b>10 566 757</b>	<b>6 752 968</b>	<b>4 192 232</b>
<b>3. Transactions (Users and Providers)</b>						
System transactions volume	\$1000	86	95 364	422 864	2 153 706	5 935 294

CST turnover ratio, annual	times	1,3	3,6	7,9	10,0	12,0
CST in circulation remaining	CST	1 435 744	31 502 362	42 267 028	60 776 708	79 652 417
<b>CST price</b>	\$	<b>0,16</b>	<b>0,85</b>	<b>1,27</b>	<b>3,54</b>	<b>6,21</b>
<b>CST value increase</b>	%		433%	49%	180%	75%

### CST price increase projection, base scenario, \$



## Cloud storage market for decentralized applications

According to GARTNER research, the cloud storage market volume will reach 383.4 billion dollars by 2020.

Global cloud technologies market according to GARTNER, billion USD

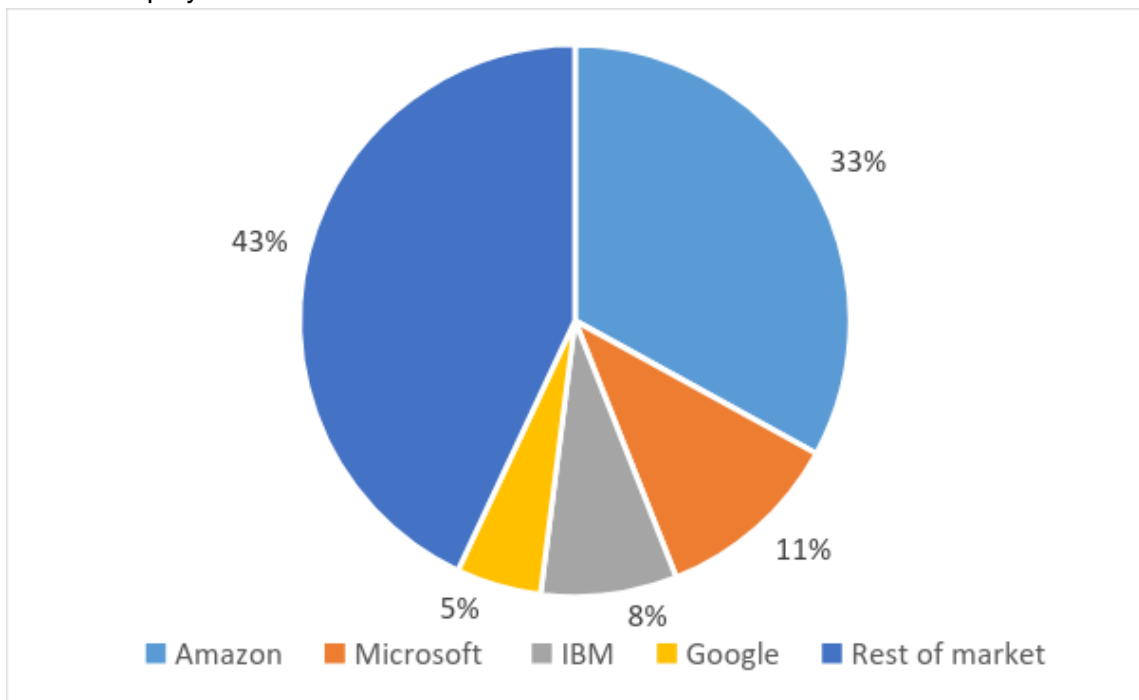
	2016	2017	2018	2019	2020
Cloud Business Process Services (BPaaS)	40,8	43,8	47,6	51,7	56,2
Cloud Application Infrastructure Services (PaaS)	7,2	8,9	10,6	12,6	14,8
Cloud Application Services (SaaS)	38,6	46,3	55,1	64,9	75,7
Cloud Management and Security Services	7,2	8,8	10,4	12,2	14,0
Cloud System Infrastructure Services (IaaS)	25,3	34,6	45,6	57,9	71,6
Cloud Advertising	90,3	104,5	118,5	133,6	151,1

Total Market	209,2	246,8	287,8	332,7	383,4
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Cloud System Infrastructure Services (IaaS) is the fastest growing cloud technologies market segment with the average annual growth rate of 30%. By 2020 the IaaS segment will reach 71.6 billion dollars. One of the main growth factors for the market is the trend to optimize expenses and increase utilization of IT cloud solutions by small-to-medium businesses.

The Top 4 players on the IaaS market control about 50% of the market. The leader on the IaaS market is Amazon Web Services with a staggering 43% market share.

Main IaaS players market distribution



With the advent and popularization of blockchain technologies more and more software developers are focusing their attention on DApps. At this point the Ethereum platform has quoted over 1092 DApps. Services offering decentralized cloud data storage are picking up in popularity. Just as the Casper API platform, a number of players is positioning themselves as DApps-focused, among them are MaidSafe, Swarm, Crypti and Nxt.

Project	Year	Characteristics
Sia	2014	Decentralized encrypted platform for data storage. Focused on Enterprise
Filecoin	2014	Blockchain-based decentralized network for data storage. No focus.
Storj	2014	Distributed encrypted platform for data storage. Focused on developers and companies.
Cryptyk	2015	Decentralized ecosystem for safe data storage and file sharing. Focused on Enterprise
MaidSafe	2006	More than a data storage platform, includes decentralized calculations

Swarm	2016	Platform for decentralized data storage and decentralized applications
Crypti	2017	Decentralized payment system with monetized applications capability on the Crypti platform
Nxt	2017	Platform for creating decentralized applications

However, none of the above offer a service that would provide a comfortable environment for DApps growth and development.

Real representations of the cloud storage market volume and CDN traffic volume are calculated as follows:

Figure	Unit	2018	2019	2020	2021	2022
Cloud storage volume, global	EB	690	950	1 290	1 677	2 096
CDN monthly traffic volume, global	EB/month	57	72	90	108	124

*Source: Cisco Systems*

We believe that the blockchain-based IaaS market segment will reach approximately 15% by 2022. Currently the top-4 cloud storage market players (Amazon, Microsoft, IBM, Google) occupy 60% of the entire market. Considering the fact that we are building a decentralized cloud storage platform and aiming for the leading positions in the industry, the goal for Casper API is to reach a 30% share of the IaaS and CDN for DApp market by 2022 in the aggressive scenario and 10% in the conservative scenario.

## Financial model

### Main provisions and assumptions of the Casper API financial model:

- Operating expenses are covered with Casper API profit and fixed capital.
- Company profit is comprised of users (DApps) payments for data storage minus the money allocated for the providers reward fund and the sales revenue from CST acquired from commission fees on CST turnover within the system (token lease)
- The fixed capital of the company is comprised of the cryptocurrency assets raised during the ICO.
- Main expenses:
  - Project team budget (salaries) and associated costs (office and equipment rent, taxes);
  - Project team reward – 18% of raised funds;
  - Marketing costs – attracting new users;
  - Company reserve capacities costs (hosting fees);
  - Listing on exchanges;
  - Money allocation for the reserve fund;
- The main factors affecting the financial state of the company are:
  - The number of users (DApps) and their demand for the service;
  - New users attraction cost;
  - The number of providers joining in (storage volumes available for use).

### Aggressive project development scenario

Premises:

- DApps share of IAAS market increases from 1% in 2018 to 15% in 2022.
- Casper API decentralized data storage market and CDN market increases from 0% in 2018 to 30% in 2022.
- Casper API transaction fee increases from 10% in 2018 to 15% in 2019 and more.
- Casper API own reserve capacities decrease from 80% in 2018 to 22.5% in 2019 and further until reaching 2% in 2022.
- Fiat money reserve fund to total at 5 million USD.
- CST is listed on 5 exchanges in 2018 and on 10 exchanges in 2019.

CASPER API PROFIT & LOSS STATEMENT, AGGRESSIVE SCENARIO, \$

	2018	2019	2020	2021	2022
<b>Company turnover</b>	<b>242 743</b>	<b>96 707 529</b>	<b>519 326 186</b>	<b>2 625 348 591</b>	<b>8 110 167 737</b>

<b>Revenue</b>	<b>24 274</b>	<b>14 506 129</b>	<b>77 898 928</b>	<b>393 802 289</b>	<b>1 216 525 161</b>
ICO Costs	-6 410 333	0	0	0	0
Exchange registration	-1 100 000	-1 000 000	0	0	0
Advertising Costs	-2 792 200	-9 684 647	-31 015 860	-103 760 053	-254 508 485
Reserve hosting	-130 007	-12 052 642	-30 382 080	-78 993 408	-88 867 584
Staff salaries	-1 052 500	-4 139 910	-11 415 661	-35 359 670	-76 592 777
Payroll taxes	-188 627	-426 736	-970 093	-2 686 311	-5 549 820
Staff extra expenses	-52 625	-206 996	-570 783	-1 767 984	-3 829 639
Rental Costs	-123 750	-507 870	-1 419 728	-4 375 941	-9 468 751
Unexpected expenses	-1 214	-725 306	-3 894 946	-19 690 114	-60 826 258
<b>EBIT</b>	<b>-11 826 981</b>	<b>-14 237 978</b>	<b>-1 770 223</b>	<b>147 168 808</b>	<b>716 881 847</b>
<b>EBITDA</b>	<b>-11 826 981</b>	<b>-14 237 978</b>	<b>-1 770 223</b>	<b>147 168 808</b>	<b>716 881 847</b>
Income before taxes	-11 826 981	-14 237 978	-1 770 223	147 168 808	716 881 847
Corporate Income Taxes	0	0	0	31 641 294	154 129 597
<b>Net income</b>	<b>-11 826 981</b>	<b>-14 237 978</b>	<b>-1 770 223</b>	<b>115 527 514</b>	<b>562 752 250</b>

Project financing:

	2018	2019	2020	2021	2022
<b>Operating expenses</b>	<b>11 826 981</b>	<b>14 237 978</b>	<b>1 770 223</b>	<b>0</b>	<b>0</b>
<b>Working Capital Investment (Reserve Fund)</b>	<b>5 000 000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Amount</b>	<b>16 826 981</b>	<b>14 237 978</b>	<b>1 770 223</b>	<b>0</b>	<b>0</b>

Total amount of project financing in the aggressive scenario (hard cap) – 32.8 million USD.

### Conservative project development scenario

- DApp share of IAAS market increases from 1% in 2018 to 15% in 2022.
- Casper API share of the decentralized storage and CDN markets increases from 0% in 2018 to 10% in 2022.
- Casper API transaction fees increase from 20% to 25% in 2019 and further.
- Casper API reserve capacities decrease from 80% in 2018 to 8.5% in 2019 and 5% in 2020 and further.
- Fiat money reserve fund to total at 1 million USD.
- CST is listed on 1 exchange in 2018 and on 3 exchanges in 2019.

## CASPER API PROFIT & LOSS STATEMENT, CONSERVATIVE SCENARIO, \$

	2018	2019	2020	2021	2022
<b>Company turnover</b>	-	48 065 713	259 659 889	1 135 599 759	4 187 623 864
<b>Revenue</b>	0	7 209 857	38 948 983	170 339 964	628 143 580
ICO Costs	-1 705 790	0	0	0	0
Exchange registration	-220 000	-300 000	0	0	0
Advertising Costs	-833 388	-2 906 372	-8 327 174	-28 260 064	-87 882 268
Reserve hosting	0	-1 711 642	-4 557 312	-19 748 352	-74 056 320
Staff salaries	-942 500	-2 785 590	-5 978 630	-12 615 762	-30 058 740
Payroll taxes	-180 107	-324 496	-569 653	-1 050 471	-2 278 140
Staff extra expenses	-47 125	-139 280	-298 932	-630 788	-1 502 937
Rental Costs	-110 250	-341 658	-752 456	-1 584 643	-3 757 756
Unexpected expenses	0	-360 493	-1 947 449	-8 516 998	-31 407 179
<b>EBIT</b>	<b>-4 039 160</b>	<b>-1 659 673</b>	<b>16 517 377</b>	<b>97 932 886</b>	<b>397 200 241</b>
<b>EBITDA</b>	<b>-4 039 160</b>	<b>-1 659 673</b>	<b>16 517 377</b>	<b>97 932 886</b>	<b>397 200 241</b>
Income before taxes	-4 039 160	-1 659 673	16 517 377	97 932 886	397 200 241
Corporate Income Taxes	0	0	3 551 236	21 055 571	85 398 052
<b>Net income</b>	<b>-4 039 160</b>	<b>-1 659 673</b>	<b>12 966 141</b>	<b>76 877 316</b>	<b>311 802 189</b>

Project financing:

	2018	2019	2020	2021	2022
<b>Operating expenses</b>	<b>4 039 160</b>	<b>1 659 673</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Working Capital Investment (Reserve Fund)</b>	<b>1 000 000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Amount</b>	<b>5 039 160</b>	<b>1 659 673</b>	<b>0</b>	<b>0</b>	<b>0</b>

Total amount of project financing in the conservative scenario (soft cap) – 6.7 million USD.

### Base project development scenario

- DApp share of the IAAS market increases from 1% in 2018 to 15% in 2022.
- Casper API share of the decentralized data storage and CDN market increases from 0% in 2018 to 17% 2022.
- Casper API transaction fees increase from 15% in 2018 to 20% in 2019 and further.
- Casper API own reserve capacities decrease from 80% in 2018 to 15% in 2019 and further until stopping at 3.5% in 2022.
- Fiat money reserve fund totals at 3 million USD.
- CST is listed on 3 exchanges in 2018 and on 7 exchanges in 2019.

### CASPER API PROFIT & LOSS STATEMENT, BASIC SCENARIO, \$

	2018	2019	2020	2021	2022
<b>Company turnover</b>	<b>48 549</b>	<b>72 702 292</b>	<b>392 376 653</b>	<b>1 983 586 309</b>	<b>6 127 678 330</b>
<b>Revenue</b>	<b>7 282</b>	<b>10 905 344</b>	<b>58 856 498</b>	<b>297 537 946</b>	<b>919 151 749</b>
ICO Costs	-3 323 517	0	0	0	0
Exchange registration	-660 000	-700 000	0	0	0
Advertising Costs	-1 577 026	-5 489 162	-17 577 291	-58 797 966	-144 221 846
Reserve hosting	-26 001	-5 705 472	-12 912 384	-44 762 931	-88 127 021
Staff salaries	-1 052 500	-3 237 030	-8 060 897	-22 210 848	-46 297 180
Payroll taxes	-188 627	-358 576	-723 013	-1 740 591	-3 419 820
Staff extra expenses	-52 625	-161 852	-403 045	-1 110 542	-2 314 859
Rental Costs	-123 750	-397 062	-1 008 007	-2 762 222	-5 750 655
Unexpected expenses	-364	-545 267	-2 942 825	-14 876 897	-45 957 587
<b>EBIT</b>	<b>-6 997 127</b>	<b>-5 689 077</b>	<b>15 229 036</b>	<b>151 275 948</b>	<b>583 062 781</b>



<b>EBITDA</b>	<b>-6 997 127</b>	<b>-5 689 077</b>	<b>15 229 036</b>	<b>151 275 948</b>	<b>583 062 781</b>
Income before taxes	-6 997 127	-5 689 077	15 229 036	151 275 948	583 062 781
Corporate Income Taxes	0	0	3 274 243	32 524 329	125 358 498
<b>Net income</b>	<b>-6 997 127</b>	<b>-5 689 077</b>	<b>11 954 793</b>	<b>118 751 620</b>	<b>457 704 283</b>

Project financing:

	2018	2019	2020	2021	2022
<b>Operating expenses</b>	<b>6 997 127</b>	<b>5 689 077</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Working Capital Investment (Reserve Fund)</b>	<b>3 000 000</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Amount</b>	<b>9 997 127</b>	<b>5 689 077</b>	<b>0</b>	<b>0</b>	<b>0</b>

Total amount of project financing in the base scenario – 15.7 million USD.

## Pre-ICO financial plan

### Review

<b>Pre-ICO Goal</b>	<b>\$1 040 000</b>
Costs (up to 4 months)	
Global marketing & PR campaign	\$400 000
Legal	\$80 000
Business expenses (regular)	\$60 000
Development	\$160 000

Roadshow	\$220 000
Team	\$120000

## Marketing

Activity	RUB	USD
Publications about the project		
The preparation of three publications about Casper API	19 500	336
Publications in the major Russian-language IT, cryptocurrencies and blockchain technology media.	700 000	12069
Publications and advertising in the major English-language IT, cryptocurrencies and blockchain technology media.	2 000 000	34483
Publications and advertising in the major Chinese-language IT, cryptocurrencies and blockchain technology media.	2 000 000	34483
Publications and advertising in the major Spanish-language IT, cryptocurrencies and blockchain technology media.	2 000 000	34483
Direct marketing		
Facebook ads	4 000 000	68966
Contextual advertising	2 000 000	34483
ICO Rating	8 000 000	137931
Other companies services		

Open Ledger services	1 200 000	20690
Casper API video explainer for the landing page. Animation.	300 000	5172
Additional events		
Hackathon to find talented programmers, with prizes for the 3 best participants.	1 500 000	25862
Content translation		
Landing page translation into Chinese	10 000	172
Landing page translation into Korean	10 000	172
Landing page translation into Japanese	10 000	172
Landing page translation into Spanish	10 000	172
Landing page translation into Portuguese	10 000	172
Landing page translation into Hindi	10 000	172
WP translation into Chinese	40 000	690
WP translation into Spanish	35 000	603
WP translation into Portuguese	35 000	603
WP translation into Hindi	40 000	690
Casper API publication translation into English (3pcs.)	30 000	517
Casper API publication translation into Chinese (3pcs.)	30 000	517
Casper API publication translation into Spanish (3pcs.)	30 000	517

Casper API publication translation into Hindi (3pcs.)	30 000	517
<b>Total:</b>	<b>24 049 500 ₱</b>	<b>\$414 647</b>

## Other

Legal support	RUB	USD
Consulting company, full support in foreign jurisdictions	4 656 000 ₱	\$80 000
Business (up to 4 months)	RUB	USD
Rent office space and equipment	2 328 000 ₱	\$40 000
Accounting & Taxation	1 164 000 ₱	\$20 000
Tech experts reward	RUB	USD
Expert in cloud storage services (consulting)	291 000 ₱	\$5 000
Expert in P2P networks (consulting)	291 000 ₱	\$5 000

## Marketing plan

Anyone planning to create a DApp knows what opportunities the blockchain technology has to offer.

We want to help our users concentrate their efforts on the main advantages of their DApps and not bother with their own data storage infrastructure development, which can be easily replaced with the Casper API services. We offer secure decentralized data storage infrastructure for your DApps. Our storage fees will lower every year, cutting your expenses and increasing your DApps market competitiveness.

Our main marketing objective is not only to let developers know about Casper API infrastructure capabilities, but also to persuade regular users that using Casper API for DApps is the new way of data storage that guarantees their data security and confidentiality.

To make our marketing plan clear to everyone we decided to organize it into separate blocks. They show how we are going to promote Casper API, cover our progress, find new team members and manage our community. This is how we try to make our marketing spending of the funds raised during the PRE-ICO and ICO more transparent.

We pay close attention to community management. We will do everything we can to make our replies prompt, detailed and clear, and we will take your replies into account and make the necessary changes.

## **What makes Casper API attractive**

We do not want to create another cloud storage, but a data storage solution for DApps operating on any blockchain platform with smart contract capabilities as well as facilitate the development of projects in the blockchain industry.

## **Casper API promotion**

The target audience of Casper API uses various apps, services and social networks for work and communication. We want to make the most out of this chance to tell the widest range of people about our project.

### **Targeted advertising on social networks**

Just think about it: Facebook has over 1.9 billion users, Instagram has 700 hundred million and Telegram has 100 million. All these networks serve as the perfect platforms with a variety of effective advertising tools such as the carousel ad format, advertising posts and videos.

These social networks are the primary way to tell the world about the ideas Casper API is based on.

### **Messengers ads**

Messengers are getting more and more popular nowadays, with a lot of original channels providing interesting content which attracts many observant and active subscribers.

One of the most popular messengers in the world is the Chinese app WeChat with over 900 million users. It has become more than a messenger – a whole ecosystem with payment and booking services etc.

Kakao – is the most popular South Korean messenger with 100 million users.

Telegram – is a popular messenger actively used by 100 million people worldwide.

These are modern and relevant tools used to deliver your information to the audience that prefers to consume and engross itself in original content.

### **Contextual advertising**

Some of our marketing team members have previously worked at Legion digital agency with six years of experience in contextual advertisement. We are certified Google partners and we know that contextual advertisement is an effective way to reach target audience on the Internet. It is absolutely clear that people usually hesitate to invest in

blockchain projects, so it's important to hit the potential user with as many impressions as possible for him to notice our service among all the data noise on the Internet.

The world leading search engines Google and Baidu are the best for contextual advertising.

## **ICO lists**

ICO lists are various platforms that provide users with information about dates, token prices, stages and bonuses of upcoming ICOs worldwide. There are many global and local lists helping users to think through all the pros and cons, discuss projects with other users and make decisions.

## **IT, Blockchain and cryptocurrency media.**

No doubt we cannot ignore some detailed and thorough reviews of our project made by major online outlets covering the world of IT, blockchain and cryptocurrencies on a daily basis. The qualified opinions of journalists will help both to draw attention of Casper API target audience and to get some feedback from people reviewing projects professionally.

## **Meetups, conferences and exhibitions**

After the ICO we will make a list of the most important global conferences and exhibitions dedicated to the blockchain technology, data storage and safety. Our team will participate in them and will be ready to answer all the questions.

Besides, it is a great opportunity to convey our main ideas to the DApp developers. We will both find partners as well as assure and encourage other teams, showing how we can solve some of their projects' development issues with the Casper API infrastructure.

# **Community management**

## **Casper API social media accounts**

To make it more convenient we plan to create official Casper API social media accounts to post all the relevant information on project development as well as answer your questions.

We will create:

- A Facebook page in English and Russian, as it is the most popular social network worldwide.
- A Twitter account in English and Russian, as it is very convenient to post updates on Casper API project development.

## **Official Casper API chats in WeChat, Kakao and Telegram.**

These are our main channels of communication with community.

Would you like to know the details of our project?

Do you have any technical or other question?

Want to give us feedback on the project or share some ideas?

Or just want to talk to the team?

The best way to do it is via our official Telegram channels in English and Russian, WeChat in Chinese or Kakao in Korean.

We aim to be prompt and available any time.

You will find the links on our landing page.

## **Project blog on Medium**

The official Casper API page on Medium in Russian and English. All the in-depth information that needs to be relayed will be published here. You can expect all the relevant news on project development and upcoming events, where you could meet the team in person, discuss new problems and ways to solve them, new team members or partnerships. Find out more here.

You will find the link on our landing page.

## **Bitcointalk.org threads**

Anyone who follows the news of cryptocurrencies and blockchain knows that the most popular forum about it is bitcointalk.org.

That is why we will start 2 separate threads in English and Russian on the most popular forum on blockchain and cryptocurrencies, so you can ask any questions and find more information about Casper API.

You will find the link on our landing page.

## **Live broadcasts**

See our team's reaction to your questions. Ask the most tricky ones and hear answers right away. Or simply look at those who plan to make a revolution in cloud storage without intermediaries.

Watch our live broadcasts once every two weeks. Write questions and hear our answers live.

The best suggestions on service improvement and various other topics will also be brought up during the broadcasts.

## **Venture capital funds**

Attracting venture funds during the ICO will allow us to collect the sum necessary for project development. That is why we pay close attention to this aspect and approach the ICO with more than just an idea. We have a well-developed financial and marketing plans and a working MVP. That should leave no doubts in our team's ability to finish what we have started.

## **Cryptocurrency exchanges**

We know how important it is for token holders to be able to trade tokens on exchanges as well as profit from its use inside the system. That is why right after the PRE-ICO we will work on listing CST on the biggest exchanges such as: Poloniex, Kraken, Coinbase, Cex, Bitstamp, Bitsquare, Bittrex, Bitfinex, Coinbase, Shapeshift, Bithumb, Bitso, BitBay, YoBit, Exmo, HitBTC, GDAX etc.

Our official resources will post updates on the partnerships concluded with the exchanges.

## **Expanding the development team**

## Hackathons

Hackathons are marathons in the world of programming, where coders or teams of coders complete specific tasks set by developers. Our team plans to hold hackathons on a regular basis until the upcoming ICO launch. Here are the reasons to do it:

- Casper API functionality improvement
- IT community feedback
- Program framework testing
- Ethereum platform testing (our service is based on Ethereum)
- Hiring new talented developers
- Project promotion in the IT community
- Project promotion among DApp developers

We will announce the subject of each hackathon beforehand and select participants based on the initial test results. Participants can expect money prizes and some may receive an invitation to join the Casper API developers team.

## Blockchain projects development

### Start-up support

We understand how many difficulties a start-up faces on its way to success. And we want to be useful to projects that need to store large amounts of data. They can get access to a working network for data storage at a good price. It will solve many technical problems and allow them to focus on developing the primary features without stressing over storage issues.

Our team is sure that through our combined efforts we can facilitate blockchain adoption in all the fields that are undoubtedly set to profit the most from it, where it is really needed.

Besides, our support service is always ready to help your team in developing a smart contract for integration with Casper API. We will find the optimal solution for your DApp.

## Our team

### Artem Koltsov

Co-founder

Founder and CEO of a major Russian digital-agency Legion. Clients: Biocad, Pfizer, Estel, Carl's Junior, Vileda, Peterhof.

Head of Expert Council on digital economy and blockchain technologies under the Russian Federation State Parliament Committee

### Vitaly Cheremensky

CEO



Experienced practitioner of business management in various fields.  
Member of Expert Council on digital economy and blockchain technologies under the Russian Federation State Parliament Committee  
Education: ITMO University

### **Alyona Kolpashnikova**

Product Manager

5 years of experience in product and project management  
Business process building experience in teams varying from 5 to 120 members, both in-house and outsourced.  
Welltory project manager (a successful medical app).

### **Tlenegov Nurlan**

Head of marketing department.

6 years of work in a big corporate business – KaVo company.  
5 years of experience in event and digital marketing.  
Member of Expert Council on digital economy and blockchain technologies under the Russian Federation State Parliament Committee  
Education: SPbSU, Faculty of Economics and Faculty of Oriental Studies.

### **Alexey Verlinger**

Responsible for smart contract code supervision.

Principal Research Engineer at LG Electronics Russia R&D Lab.  
16 years in software development and team leading.  
Education: Saint Petersburg Electrotechnical University (masters degree)

### **Stanislav Kapulkin**

Head of Development Department

A mathematician–programmer. Studies mathematical methods and conducts research in cognitive psychology.  
Participant and prizewinner in various IT and AR start-ups and competitions.  
Co-organizer of Hack the brain hackathon in 2016.  
Winner of the regional Imagine Cup competition in 2015.  
The Intel RealSense App Challenge prizewinner in 2014.  
Participated in many IT conferences and regional hackathons.  
ScienceHackDay winner in the Tech nomination.  
HackCV hackathon winner in 2017  
Education: ITMO University (master's degree)

### **Vadim Batkin**

Financial analyst

Founder of the Senior Advisors consulting company.

11 years of experience in investment, finance and strategic consulting, venture, PE and M&A deals assistance in the fields of IT and Internet, retail, wood industry, energy, advertisement, trucking industry, food industry, real estate etc.

Education: Saint Petersburg State University of Economics and Finance  
Universite de Grenoble (Management, PhD)  
Hamburg University (MiBA) IFRS DiplIFR diploma.

### **Vladislav Seroshtan**

Financial analyst

Partner in a Senior Advisors consulting company.

6 years of experience in strategic economic studies and business consulting. Worked on several major projects on the field of investment and strategic consulting for Russian and international IT and Internet, retail, FMCG, energy, food industry, construction and other companies.

Education: Saint Petersburg State University of Economics and Finance () - specialist.  
SPbSU - postgraduate.

### **Evgeny Stratonikov**

go developer

2 years of work experience in RAIDIX. Worked on data storage systems development and maintenance.

Work experience at JetBrains

Education: SPbSU, Mathematics and Mechanics Faculty

### **Igor Koval**

go developer

4 years of experience as an enterprise programmer.  
Worked on VR/AR apps development and mobile devices graphics optimization (SpheraVR)

### **Ian Scarffe**

Blockchain and Crypto Advisor

Investor and consultant with business experience from around the world  
A leading expert in Bitcoin, Blockchain and Crypto industries

### **Michael Portnoy**

Capital Markets Advisor

Responsible for token exchange listing and market making  
20 years of experience in capital markets and investment management  
12 years of experience in trading strategies development, execution and risk management

BBA in Finance and Investments, New York University

## **Eddie Chou**

Advisor

Innovative engineer and entrepreneurial with in depth experience and local knowledge in Malaysia, Singapore, Hong Kong, mainland China and United States.

Diversify experience, from High Tech R&D Engineering, Factory Automation, Manufacturing, Sales and Marketing, Developed new market, Investor Relations, Corporate Finance to US listing

Chief Technical Officer for Biopack Environmental Solution Inc

Chief Machine Designer for ASM Pacific (Listed HKE 522) - Advance Automated semiconductor packaging equipment

University of London, Kings College, UK (bachelor degree)

## **Peter Ling**

Advisor

Founder and CEO of Qiantong Bit LTD (a leading cryptomining group in China)

Serial entrepreneur

Strategic investor of Penta Global

## **Yuri Gugin**

Advisor

Founder of the Karma.red project (a decentralized cross-border p2p loans ecosystem) that raised 10 billion USD in the ICO.

Formed Chief operating officer in ADV, the leading marketing communications group in Russia. (Worked with MOEX, VTB, Apple, Samsung, LEGO, Nike)

Founder of the RIK business school (more than 1000 graduates)

16 years of experience in IT

Candidate of Economic Sciences

## **David Kang**

Advisor, investors relations

Angel Investor, Startup Mentor, Startup Consultant, UX/UI Designer

Marketer, Investment Advisor