PIZZA
PIZZA-USDE

EOS Decentralized Stablecoin

The Entrance to the Decentralized Financial System

Paying tribute to the 10,000 BTC Pizza in the Very Beginning

Abstract

PIZZA - USDE is an EOS based two-token stablecoin system. The system issues stablecoin (USDE) by collateralizing crypto assets; with conservative Collateralization Ratios and the deployment of different smart contracts, the system neutralizes the potential crisis of confidence and allows the stablecoin to 1:1 peg to USD.

Building its main functions on the EOS platform, the PIZZA - USDE Stablecoin System is designed to utilize the current existed EOS ecosystem components, like EOS wallets, decentralized EOS exchanges, and various EOS DApps. On the other hand, USDE, as a tool to avoid risk, a media of value exchange, and a gateway between fiat and token, will gradually become an essential part of the ecosystem.

Chapter 1 System Overview

1.1 Background

Trustability, stability, and efficiency are 3 characteristics of stablecoins that hardly co-exist. The IOU (I owe you) type of stablecoin provides stability and efficiency through centralized financial institutes. However, the centralized nature of it makes its transparency often questionable and therefore losses the trustability. Onchain collateral type of stablecoins, on the other hand, could mitigate the crisis of centralization but is also considered as inefficient because of the excessive collateral requirement and the current limited blockchain network capacities. And the third one, the algorithmic central bank type of stablecoin: so far has no evidence to prove its feasibility theoretically or with real products.

However, an ideal stablecoin is not necessarily performing perfectly on all the 3 directions. Rather, it only needs a reasonable set of tradeoffs among the 3 characteristics.

USDT, the most well-known IOU type of stablecoin, used to make up of more than 94% of the stablecoin marketplace but later dropped to 70% because of the crisis of confidence. Since then, its market shares just keep shrinking; though the most of the lost market shares were taken

by the other IOU stablecoins. This type of stablecoins highly rely on market trust and an early setup on the market. And what's worse is, it somehow conflicts with the decentralization feature of blockchain. IOU is the most straight forward method of issuing a stablecoin, but for the long-term scalability, it might not be the best choice. On the other hand, the algorithmic central bank type of stablecoins looks more like a utopian dream.

However, the problems of the onchain collateral type of stablecoin are mainly from its collateral pool: volatility, liquidity, etc. But not like USDT type of single point failure risk or algorithmic central bank type of unrealistic, the problems of the onchain collateral type of stablecoins are very likely to be solved as the system grows.

As a result, we decide to build an onchain collateral backed stablecoin system on EOS platform and run it with a set of risk control mechanisms. And we call it the **PIZZA - USDE Stablecoin System.**

1.2 The Solutions

As mentioned above, the system will be backed by onchain collateral and issue USDE which is 1:1 pegged to US Dollar.

To avoid network congestion problems, USDE chose EOS, the best performance public chain at this moment, as the development platform. Besides, the high performance and the great real-time transaction demands derived from the high performance are expected to significantly benefit the future scalability and the product iterations of PIZZA - USDE Stablecoin system.

For the most serious problem we face - the potential risks from the instability of the collateral itself, the system is building a feasible hedging mechanism and looking forward to more diversified collateral portfolio in order to eventually bring about the risk neutralization. And for the liquidity of USDE token, the system will manage to reinforce the stability of the general collateral pool by rewarding PIZZA token to users who pledge crypto-assets to issue USDE tokens. The system will also actively seek for cooperation and collaboration with different exchanges; besides, the setup of the USDE OTC network will also be the most important part of the development schedule.

In general, USDE could be acquired by purchasing or generating. Users can purchase from OTC dealers with fiat currencies, or from exchanges with cryptocurrencies. Generating USDE needs user to lock in their

collateral and create a Collateralized Debt Position (CDP, a name
inherited from MakerDAO Stablecoin System). More specific
information will be described below.

1.3 The System Participants

The roles of the system includes:

- USDE Issuer: the core user group of the PIZZA - USDE Stablecoin
  System. Issuers will issue every single USDE that is going to circulate
  on the market. They pledge crypto assets to the smart contracts and
  maintain a rational Collateralization Ratio. Issuers are borrowers,
  they gain profits from trading stablecoin and the Issuer Reward that
  the system provides; or just simply use USDE as a media of value
  exchange to provide liquidity. The reward is meant to encourage the
  Issuers to hedge their **Collateralized Debt Positions (CDP) .**

- USDE holder: the core user group of the Stablecoin System. They
  acquire USDE with collateral, or get them from token trading, fiat to
  token trading or even as a gift.

- PIZZA Holder: stakeholders and managers of the stablecoin system.
 Their voting power will affect most of the decision makings of the

system parameters, such as handling fee, Issuer Reward,

Collateralization Ratio, trigger of global settlement, election of

PIZZA Council members and etc.

- USDE OTC Dealer: an OTC network that consist multiple third-party

  OTC platform partners. The system will reward the OTC platforms

  with a certain amount of PIZZA tokens. The fiat gateway that the

  OTC dealers provide is essential to the development of the general

  ecosystem.

- Eco-Partners: wallets, DApps, and exchanges. They are the direct

  user entrance.

- USDE Resource pool: the USDE in the Resource Pool will be used

  exclusively to participate in collateral liquidation and stabilizing
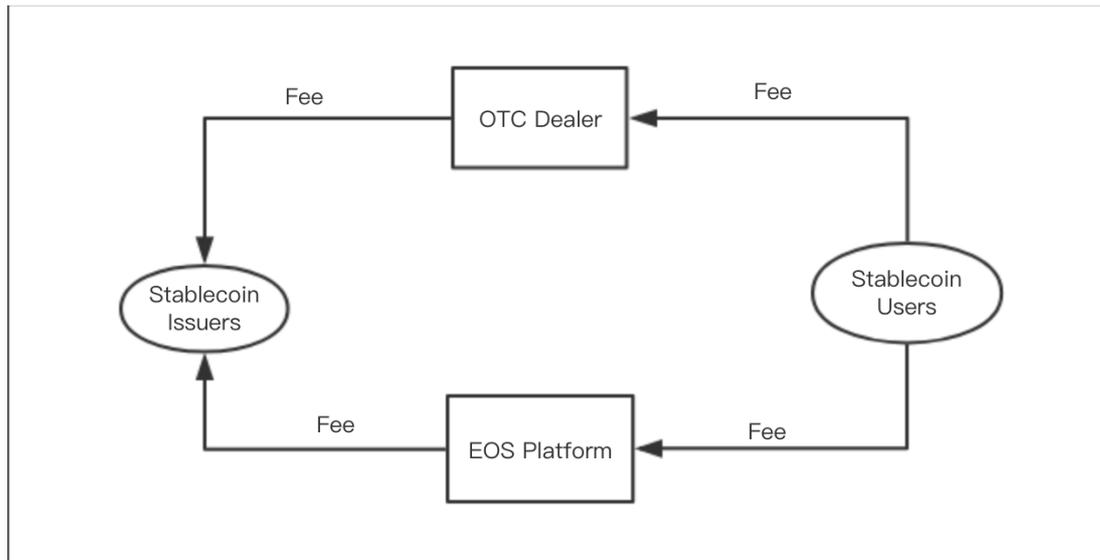
  USDE token price.
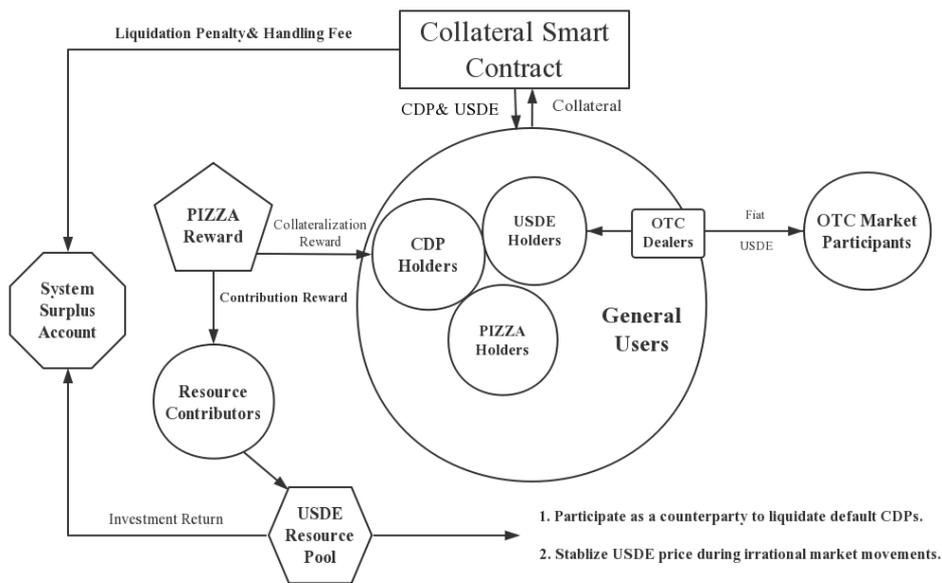
1-1 A bird view of the general system

The governance token based reward mechanism drives the operation of the system.
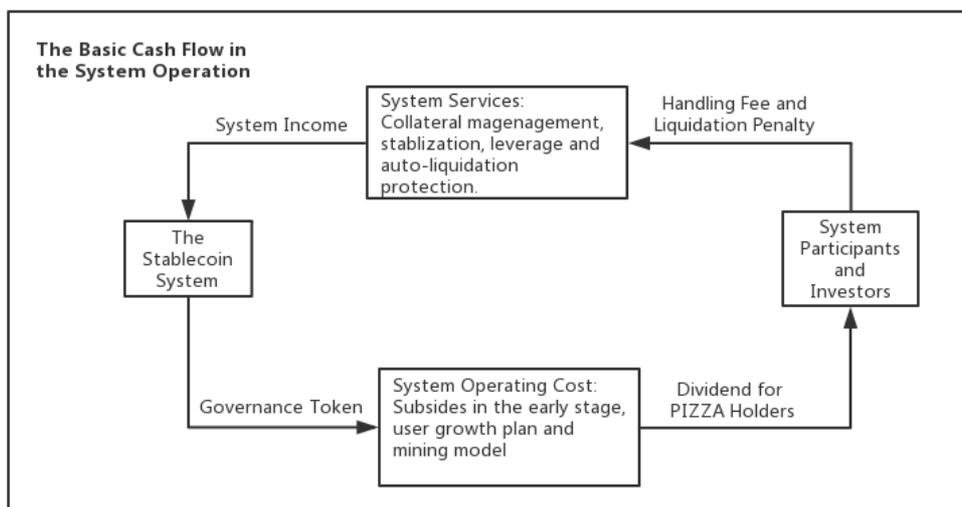
1-2 The Basic Cash Flow in the System Operation

The PIZZA reward mechanism is an essential part of the system. Below is the relationships among different system roles:

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1-3 the stablecoin ecosystem

In the first place, the usability and efficiency of the EOS platform provide various DApp use cases. USDE, as a supplement to the current EOS eco-system, provides users a valid tool of the value exchange and store, satisfies the demands of fiat-token exchange and token-token exchange. As the system grows, intermediaries like exchanges and OTC dealers will need to store a relatively large amount of USDE to support the related everyday transactions.

As suppliers of the USDE tokens, USDE Issuers are also risk takers in the PIZZA - USDE Stablecoin System. Issuers are expected to charge a certain amount of premium for each USDE sold to the market in order to cover the risks.

USDE users with higher level of risk aversion - such as DApp users, exchanges and OTC dealers - these groups of system participants could purchase USDE from Issuers with a reasonable extra premium, rather than generating USDE themselves and risking their assets.

The existence of USDE is expected to activate the value circulation. The raised user activities of DApps and the intermediary partners then increase and bring larger transactions, therefore higher profits. The stable profit gaining process leads to stable expending of stablecoin demands, and hence a positive USDE ecosystem feedback mechanism formed.

Chapter 2 The USDE Issuer System

2.1 The Issuer System in Brief

To issue stablecoin, a USDE Issuer will need to provide the amount of EOS to pledge, the amount of USDE expected to receive, and the corresponding **Collateralization Ratio** to the **CDP Management Platform**. The platform then send the collected CDP information along with the collateral to the **EOS Collateral Smart Contract**, which will then send back a specific amount of USDE to the Issuer. Issuers are responsible for maintaining the Collateralization Ratio of their CDP in a

healthy level. Issuers could pay back the debt and redeem the collateral at any time. The **EOS Liquidation Smart Contract** will be triggered once the Collateralization Ratio is lower than the required minimum collateralization ratio during market fluctuations. In the early version, the system will utilize a pre-deposited USDE pool (also collateral backed) as the counterpart during a liquidation. The counterpart takes away a portion of default collateral in return and pays for the USDE debt, the residual collateral will be sent back to the original owner of the default CDP. As the liquidity increases within the system, an auction system and an exchange system will be introduced respectively.

To encourage user participation, the PIZZA - USDE Stablecoin System rewards pledging behaviors with PIZZA token, which is distributed by the **Issuer Reward Contract**. USDE Issuers work as miners and are expected to claim their PIZZA rewards periodically by maintaining their CDPs. The reward rules are below:

a. Rewards are claimable every 2 weeks. Delayed claims are allowed and will be accumulated until successfully claimed or the corresponding CDPs are closed. The unclaimed rewards will be perpetually non-claimable once the corresponding positions are closed.

b. The amount of the reward depends on the size of the individual

CDP, the specific CDP duration, the Annual Issuer Reward Rate and

possibly the Risk Multiplier.
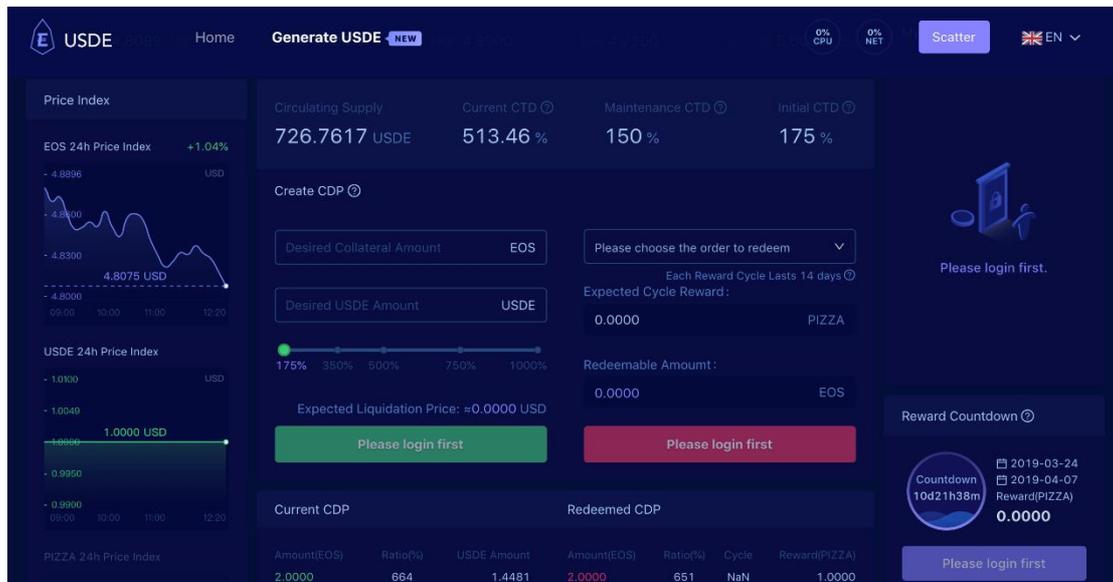
2-1 Issuer Reward

2.2 Smart Contracts: Collateral and Liquidation

The USDE Issuer System includes the **EOS Collateral Smart Contract**

and the **EOS Liquidation Smart Contract.**

The **Collateral Smart Contract** is mainly responsible for the generating

and return of USDE stablecoin, making sure the transparency of

collateral. The contract interacts with the CDP Management Platform

and performs the functions below:

a. issue and transfer USDE to the corresponding user account if the user requests a CDP creation and sends the collateral.

b. Lock the received collateral.

c. Return the corresponding collateral back to the user account if the user requests to settle the CDP and to redeem the collateral.

d. Receive data feed from the CDP Management Platform, if a user's collateral ratio is lower than liquidation ratio, the contract triggers the forced liquidation and transfer the collateral to the Liquidation Contract.

The **Liquidation Smart Contract** is responsible for liquidating the default collateral. For system stability, in the Genesis version, the system will process the liquidation with internal resources. The contract interacts with the CDP Management Platform and performs functions below:

a. Receive data feed from the CDP Management Platform and confirm the liquidation information, accept the liquidating collateral.

b. Charge X% of the default assets as the liquidation penalty.

c. Liquidate the collateral by utilizing the USDE Resource Pool as the counterpart.

d. return the rest of the collateral back to the user account.

The USDE Resource Pool is an independent account that's mainly funded by a Genesis funding from developer team and early supporters.

2-2 Collateral and Liquidation

2.3 Auction

In the future version, individual users will also participate the liquidation through an auction process, but the user will have to create an individual account in the **USDE Resource Pool**. Once liquidation started, the Collateral Contract will first deduct X% of the default collateral as the liquidation penalty, which will then be transferred to the **System Surplus Account.** The Collateral Contract then will transfer the rest of the collateral to the Liquidation Contract.

Chapter 3 The Ecosystem Partners

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Liquidity is one of the most important key words in a stablecoin system, it could be the liquidity between USDE and the other tokens or between USDE and USD. To allow better community acceptance and therefore better liquidity, the system will look for cooperation with various Eco-partners. Among which, DApp are the most obvious targets.

The partnerships with the major exchanges are another important part of the USDE road map. For example, exchanges would perform as price feed providers in the USDE Oracle Module. Base on the trading volume and reputation of each platform, we take the weighted median of their price feeds. The roles of exchanges in the PIZZA - USDE stablecoin system will include but not limited to the settlement of default collateral, and the risk hedging of CDPs.

The cooperation with established ecosystem participants like DApps and exchanges will significantly help the PIZZA - USDE Stablecoin System to be accepted by the community and create better liquidity with the other tokens. But for the liquidity between USDE and fiat currencies, there has to be an OTC dealer network. OTC dealers allow USDE to directly exchange with USD.

Chapter 4 The OTC Network

4.1 The OTC Dealers

The OTC network stands for the liquidity between cryptocurrencies and fiat currencies. Considering the size of the crypto currency world so far, the second definition is actually more important under most of the circumstances. That's saying, a well functioned OTC network is essential to the stablecoin system and the entire ecosystem behind.

OTC dealers look for stable low risk profits in the way of charging handling fees.

The competition between dealers or even different fiat gateways will limit the profit margin, the overall income relies on the overall trading volume.

The basic functions of the OTC network are:

a. Provide fiat - USDE OTC service

b. Provide wholesale service to Issuer

c. Reserve a relatively large amount of USDE, create a buy and sell wall to help stabilizing stablecoin daily price.

4.2 The OTC Reward Mechanism

As a reward for OTC dealers to develop the network on the early stage, the system plans to implement a Proof of Property Reward Mechanism to encourage OTC dealers to prepare larger amounts of USDE reserve and develop their own customer networks. The PoP PIZZA reward will be distributed by a smart contract, the more USDE they hold and users they serve, the more rewards the dealers will receive. As the system grows, the revenue for the dealers is expected to raise to a more reasonable level. For this reason, the PoP mechanism will be always existing but also with a proper halving schedule to balance the interests.

Chapter 5 The Basic Logics of the Stability Mechanism

5.1 The Target Average of the Stablecoin Price

Every circulating USDE on the market would be given a nominal price of $1 when it was issued with collateral. Under most of the real world circumstance, we don't set the $1 as the target price; instead, we add an extra premium on top of the $1 nominal price.

The composition of the premium is complicated; mainly the expected hedging cost on the corresponding CDP and the present value of the

future income cash flow of the sold USDE. The hedging cost depends on the actual market condition, and the present value of the future income cash flow is based on various system parameters like the interest rates, the handling fees, the general CDP level, the general Collateralization Ratio level, the specific duration of the position, so on and so forth.

Target Price = Nominal Price + Premium.

The stability of the stablecoin is actually the stability of the Target Price. Since the Nominal Price is always pegged to $1, so the stability is actually the stability of the premium, and therefore the stability of the basket expectation of the premium parameters.

In the future version, the development team should come up with a nominal price adjustment plan, when more data is available, to allow the adjusted targeted average price to be closer to $1, so it would be easier for daily price counting.

5.2 The Premium Parameter Based Priced Regression Expectation

There are 4 typical **Premium Parameters** in the system that could influence the USDE Target Price:

5.2.1 Stability fee

The USDE that a user issues with the CDP are essentially a loan, and the stability fee is essentially an interest. In the early versions, users who issue USDE will only have to pay for the stability fee when they are going to close the position (or during a forced liquidation). The stability fee will be linear accumulated with time, instead of any compound growth.

In the future, as the system mechanism becomes more developed, the stability fee will be settled periodically. The specific duration of the period will be decided by the governance module. Stability fee is a big part of fixed costs of the USDE, a higher stability fee is expected to lead to a higher USDE price; and when the stability fee is lower, it lowers the USDE market price as well.

5.2.2 Collateralization Reward

The reward directly encourage the size and the duration of a CDP. Even though the growth of the general CDPs isn't necessarily linear related to the growth of the available USDE amount, it's still reasonable to

assume the potential positive correlation between them. The specific modeling requires more supporting data. When the time comes, the governance team will update the data and analysis results to the community.

5.2.3 Interest rate of the USDE Resource Pool

The USDE Resource Pool is designed to participate the auctions of the default collateral. Users could create an individual account with it and participate the auction or simply invest the pool and receive a fixed interest rate. In general, a higher interest rate will lead to a lower USDE supply, therefore raise the USDE price. Like many other parameters, the market dynamics will be much more complicated and the hypothesis requires more data to prove.

5.2.4 Risk Multiplier

Risk Multiplier is the square of the USDE market price. There are 3 basic premises of it. First, the amount of the Collateralization Rewards is positively related to the amount of the total collateral. And the second premise, the amount of the total collateral is positively related to the amount of the USDE supply. And the third, the amount of the USDE supply is negatively related to the USDE price. Therefore, if the USDE

price raises, then the Risk Multiplier and the CDP reward will raise exponentially, which lead to the increase of CDPs, therefore the increase of USDE supply, and eventually lower the USDE price.

The specific pricing models of the 4 parameters will be better shaped during the system beta version. As the system develops, more parameters will be come up to the stage to help supporting the stability of the system.

5.3 Speculation and Arbitrage

All markets on the world are under the influence of market sentiments. The speculation and arbitrage behaviors are an essential part of the stability and re-balance of the stablecoin price.

In the USDE system, USDE token holders will not only able to trade USDE around the target price in exchanges or with OTC dealers, but also directly buy and sell CDPs. Below are the possible scenarios.

First of all, as we mentioned previously that the birth price of a USDE in the smart contract is always pegged to $1. A rational person should foresee the price regression when it fluctuates too far away (e.g., more

than 2 sigma) from the target price. And hence a rational person would issue a reasonable amount of USDE (or just utilize what he already has) and sell to the market when the USDE price back to normal. And when the price goes way below the target price or even below the $1 baseline, which is quite unlikely, the person should collect more USDE and wait for the price pulls back to a reasonable level.

The other way of speculating is CDP trading, which will become available in one of the future version of the system. The basic equation of the CDP pricing is,

CDP price = collateral value - outstanding USDE debt.

According to the equation above, a higher USDE price will cause CDP to be cheaper. A person who considers the USDE price is too high and foresee the price to pull back could purchase CDPs from others with a lower than average price then wait for the regression.

Chapter 6 Systematic Risks

6.1 Volatility Risk

For users who manage to create their CDP account to issue USDE, the first problem they will face is the **volatility risk** derived from the

collateral they pledge. Users who pledge their crypto assets to the system still technically own the properties. In other words, users who perform pledge behaviors still expose themselves to the volatility risk. And because of the extra efforts it takes to retrieve the collateral, the volatility risk is actually magnified.

The most direct risk from volatility is the risk of liquidation, it includes:

1. Liquidation penalty - set to be X% of the collateral.
2. The price slippage incurred by the immediate market selling.

As we mentioned, the maintenance Collateralization Ratio is 175% when creating a CDP; at the same time, the minimum Collateralization Ratio is 150% - the bottom line that triggers liquidation. Users should utilize different methods to mitigate or hedge the volatility risk and avoid liquidation, for example:

6.1.1 Raise the Collateralization Ratio

A proper Collateralization Ratio is a key to avoid liquidation. And when the user do it by raising the amount of collateral instead of lowering the amount of USDE issued, it also means higher Collateral Reward from the system and higher profits if the market moves upward (especially if the user utilize the leverage function).

The drawback of this method is that when the market dramatically dives down, a position that's considered as sufficient under ordinary circumstances will be crashed easily. And then users will have to face the greater impact because of the greater exposure.

However, managing one's own account ratio and keep it well from liquidation is one of the most serious challenge to each USDE issuer. In the future, we will release more guideline articles to help users to decide proper Collateralization Ratios that suit themselves.

6.1.2 Hedging

Raising the Collateralization Ratio to against volatility is like raising and reinforcing levee of a periodically flooded great river. The higher the embankments are, the less likely it will breach. However, once the unexpected incidents happen, the damages it causes will also be significantly increased. For people with serious level of risk aversion, hedging is definitely the rational method.

Hedging, in short, is to open a short position in one of the exchanges with a value that's the same with the collateral pledged (less value if looking for a partial coverage), the tools of creating the short position could be future contracts or options.

In other words, the overall profit is not necessarily to be lower when hedging tools are properly used. Of course there will be basis risk, which means the market price of the assets could actually raise instead of dropping. In this case, the potential profits are actually eliminated by the hedging strategy - that is two sides of a coin. However, one who look forward to investments with stable incomes is better not to be seduced by speculative gains.

One of the most focus targets of USDE Stable System is to lower the cost of CDP hedging: both of the cost of education (learn how to) and the actual cost (insurance premium).

In the foreseeable future, users will see the hedging tools integrated inside of the CDP Management Platform with easy and convenient one-stop user experience.

6.1.3 Diversified portfolio

Different types of assets react differently when there comes a market crash. The system chose EOS as the development platform because of its efficiency, and therefore use it as the first and only acceptable

collateral in the first version of the system. Like many other major cryptocurrencies, EOS is known for its high volatility. In regarding with it, the system will introduce a diversified portfolio of cryptocurrencies in the future version.

The diversification of collateral will significantly lower the general risk level of the system and encourage more risk avert users to the PIZZA - USDE stablecoin system. The governance module is responsible for the decision making on the selection of the specific cryptocurrencies.

On the other hand, as mentioned, proper hedging makes volatile assets become stable. The truth is, a naked position is actually a different type of asset comparing to a covered position because their distinct risk exposure level, even though the collateral itself could be completely the same. So, it's fine to consider hedging, the #6.1.2 method, to be part of the #6.1.3 method, just a tricky way of thinking.

6.2 Cross Chain Gateway

To better utilize the great use cases and significant liquidity on EOS, the system will deploy a cross-chain gateway contract so users can pledge cryptocurrencies like BTC and issue a certain amount of USDE.

Like many other DPoS systems, this gateway is supposed to unit various exchanges as witnesses and eventually allows cross chain communications for different communities like BTC and ETH. The deployment of such gateway will not only allow USDE to be more financially stable, but also makes it to be accepted by way more potential users under different consensus.

During the actual operations, for example, the contract receives a non-EOS cryptocurrency from a user and issue a token with a nominal value that's exactly same with the actual price of the received cryptocurrency. The user can immediately pledge the token to the Issuer Contract to issue USDE. If the user transfers 1 BTC to the gateway contract, he will receive an EOS-BTC token; if BTC has a market price of $3000, the price feed for the token in the Issuer Contract will also be exactly $3000 when generating new USDE.

The governance module is responsible for the decision making on the selection of the specific cryptocurrencies.

On the other hand, as mentioned, a proper hedging makes volatile assets become stable. The truth is, a naked position is actually a different type of asset comparing to a covered position because their

distinct risk exposure level, even though the collateral itself could be completely the same. So, it's fine to consider hedging, the #2 method, to be part of the #3 method, just a tricky way of thinking.

6.3 Security Issues on EOS

Smart contracts on EOS are mutable, this is one of the major differences between EOS and ETH. Without reasonable rules and operations, this feature will allow the project team to change the codes easily, which makes the assets in the contracts exposed to great dangers. Such threat is doubtless catastrophic for a decentralized system.

Regarding the problem, the PIZZA team has invited professional auditing teams to arrange systematic security plan. One of the solutions is to authorize EOS Block Producers and third party auditing teams or multi-sig any contract upgrades. Therefore, a new contract will be deployed if and only if multiple trusted party audit the contract and reach an agreement.

6.4 Global Settlement

The last backup plan when the system is in a brink of collapse.

The reasons for the collapse include but are not limited to serious hacker attacks, collapse of crypto asset price, laws and regulations, etc,. While the Global Settlement becomes activated, the ordinary system mechanism will be locked. Depends on the specific claims and debts and the final price feeds, the remaining collateral will be distributed to users proportionally.

Chapter 7 The Governance Module

7.1 PIZZA Benefits

System income includes liquidation penalty, handling fee, and gain from the USDE Resource Pool.

On the early stage of the system, most of the system income will be accumulated and used as a tool for PIZZA holders to perform their system duties. The accumulated income will work along with the Genesis Fund of the system to respond to market emergencies: e.g., irrational volatility of USDE token, underwater collateral pool during a market crash, etc. After the primary accumulation is all set, the system will deduct necessary system maintenance costs (e.g., CPU cost) and distribute the rest of the income to PIZZA token holders as dividend. The system distributes dividend basing on the share of staked PIZZA

tokens (e.g., if there are in total 1000 tokens staked in the system, and a user staked 100 tokens, which is 10% of it. Then the user is entitled to 10% of the dividend).

As the system develops, PIZZA token will be gradually empowered within the system, such as handling fee deduction, more flexible CDP management, USDE investment account specials, etc.

7.2 PIZZA Rights

Other than dividend, PIZZA holders also stake tokens to acquire voting power, such as for economic parameters, governance direction, model construction, risk management plan, etc. Voting power is the foundation of the entire governance module. The PIZZA Council is responsible for the drafting and submission of governance proposals.

The PIZZA Council has 21 members; all token holders, either teams or individuals, are allowed to join the election and run for the council. The elected council members are responsible for the general affairs and decision makings of the system till new set of members are elected. The election will be continuously, but only 1 final counting in the last week

of each season (4 seasons 1 year, therefore each set of council members will be in charge of the governance module for 3 months).

7.3 More About the Voting Power Mechanism

PIZZA holders 1:1 acquire PIZZA Power (PZP) to vote for different proposals for each PIZZA they stake. Every time a voter votes for a proposal will consume corresponding amount of PZP.

For example: a user stakes 100 PIZZA and acquires 100 PZP. The user votes a proposal for 10 PZP, and 90 PZP left. The votes can be withdrawn at anytime, but the consumed PZP won't return back to the account. Assume the user votes 10 PZP on day 1 and 90 PZP on day 2, so 0 PZP left. Then his available PZP will be 0 from day 3 to day 21 unless more tokens are staked, and on day 22, the consumed 10 PZP on day 1 will be regenerated; on day 23, the consumed 90 PZP will also be regenerated, therefore the amount of available PZP will be 100 again.

Chapter 8 PIZZA Distribution

8.1 Total Supply

PIZZA Token Total Supply：1 Billion

8.1.2 Seed Round: 10%

Invited only. All participants are early participants of the industry, EOS ecosystem builders, influencers, or known investment institutes. They provide the PIZZA Project with necessary supports, such as resources and strategical advices.

8.1.3 Private Sell: 15%

Invited only. All participants are early participants of the industry. They provide the PIZZA Project with necessary supports, such as developing strength, fund for operation and community influences.

8.1.4 Community Donation: 25%

Raised by the community, it distributes PIZZA token to the community in the fairest way. The fund raised will be utilized to cover the cost of system operation such as running the smart contracts. The first stage donation will distribute 14.6% of the total token supply.

8.1.5 Team: 25%

Reward for team contribution. This part of tokens is locked in the first year, and starting in the second year, the tokens will be gradually unlocked with a linear curve.

8.1.6 Mining and Airdrop: 5%

1% for the first stage mining and 1% in the first airdrop.

8.1.7 Foundation: 20%

Reserved tokens for future developing and operation, and could possibly utilized in an open sell if the project is underfunded. This part of token may be used for voting and project governance.

8.2 Airdrop

The first snapshot is schedule to be on June 1, 14:59:59 (GMT); the actual airdrop on June 8. Token holders will receive 1 PIZZA Token for every 100 EOS in their account. More airdrops will be scheduled in the future.

8.3 Mining

From 05/01/2019 (Wed) to 05/24/2022 (Tue), a total amount of 10 millions PIZZA token will mined during the 160 weeks, which is roughly 3 years. Below is the details about this incentive plan.

8.3.1 Collateralization Reward

Amount of Collateralization Reward: 10,000,000 PIZZA Token, which is equivalent to 1% of the total supply.

Reward Cycle: the 160 weeks of Reward Cycle includes 4 phases, each shares 50%, 25%, 12.5% and 6.25% of the total reward pool, therefore 5 millions, 2.5 millions, 1.25 millions and 0.625 million of PIZZA reward. The 4 phases will in total accumulate 93.75% of the overall reward and has 6.25% left, this part of PIZZA reward will be left for the community to decide its specific usage when the time comes.

8.3.2   The Reward Calculation and Distribution

In each hour, the system will snapshot the CDPs (Collateralized Debt Positions) to acquire CDP data. Therefore, there will be 24 CDP snapshots each day, and in total 336 snapshots every 2 weeks. All reward calculation and distribution will be based on the collateral information collected in each snapshot. In the actual operation, the

system will calculate the reward for each individual account on a daily

basis, but it only distributes the reward every the other week (all users

share one reward distribution schedule).

8.3.3 Reward Formula

a. the total PIZZA reward in the bi-weekly period =the total reward

* the phase weight / the number of weeks in this phase * 2

b. the amount of PIZZA reward for each EOS in each snapshot =

the bi-weekly total PIZZA reward / 336 / the amount of EOS

collateral in the snapshot

c. the PIZZA receivable for a CDP holder in a snapshot = the

amount of PIZZA reward for each EOS in each snapshot * the

amount of EOS in the CDP in this snapshot

d. the receivable PIZZA reward in a bi-weekly period (336

snapshots) = $\displaystyle\sum_{i=1}^{336} Si$

Si: the amount of PIZZA reward the CDP holder receives in the # i snapshot.

* the first halving phase will be divided into 2 parts, each part shares

25% of the 10 millions PIZZA reward. This design encourages early

participants.

8.3.4 Example

Assuming during the second phase (2.5 millions PIZZA), one of the bi-weekly period contains 500 EOS the whole time, in which Bob and Alice each holds 100 EOS and 400 EOS. Since it's in the second phase, thus **the total PIZZA reward in the bi-weekly period = 10,000,000 * 25% / 40 * 2 = 125,000 PIZZA**

the amount of PIZZA reward for each EOS in each snapshot = **125,000 / 336 / 500 = 0.74405 PIZZA**

So in each snapshots, Bob, who locked 100EOS, will have 0.74405 PIZZA receivable, therefore after accumulate reward receivable in all 336 snapshots, he will have

74.405 * 336 = 25,000 PIZZA reward receivable

With the same formula, we find out Alice, who locked 400 EOS, will have 100,000 PIZZA reward receivable.

Then we assume Alice participates one entire bi-weekly period with 400 EOS, but Bob only participates in the last 3 hours, therefore 3

snapshots. So, in this bi-weekly period he will receive **0.74405 * 100 * 3 = 223.21 PIZZA.**

On the other hand, Alice will receive 0.74405 *** 400 * 3 = 892.86 PIZZA in the last 3 snapshots.**

But she is the person and only person who participates in the earlier 333 snapshots; therefore, she also receives **125,000 / 336 * 333 = 123883.93 PIZZA** for the 333 snapshots.

Disclaimer

This whitepaper represents current thinking of the PIZZA team and is subject to change without notice. Nothing should be interpreted as a statement of fact or promise to do anything. It is released in order to be a common ground for PIZZA and USDE understanding.