

Decentralized Finance: All-in-one DeFi protocol based on Ethereum smart contract and Binance smart chain

White paper v1

Abstract – The TOP Swap is developing the DeFi Blockchain . A blockchain specifically dedicated to decentralized financial applications (lending , Asset swap , Liquidity pool , Asset staking , yield farming , community reward governance through voting , and stablecoins) based on Binance smart chain (DeFi and Oracle) and Ethereum 2.0 smart contract . Top swap is a non -custodial , cross -chain compatible asset protocol . TOP swap ’ s long term DeFi vision is to increase inclusiveness and democratize access to investment assets (digital and traditional), and trading . The next level of defi is to create community governance for massive liquidity.

This whitepaper also introduces a digital lending and asset swap platform , TOP swap , with both a decentralized architecture and a decentralized governance process (governance token TOP Token). We intend to return the power of finance to the end user to promote financial inclusion and democratization . The TOP swap decentralized finance (DeFi) movement has introduced novel solutions in lending , exchanges , derivatives , payments, marketing making, and asset

Tokenization All of these innovative services are permissionless and open, meaning anyone with internet access can participate . This will push the boundaries of this new financial system to include as many users and assets as safely possible.

The TOP token will adopt an inflationary model to enhance staking incentives and will have liquidity mining programs to encourage usage of the exchange and stability of the pool.

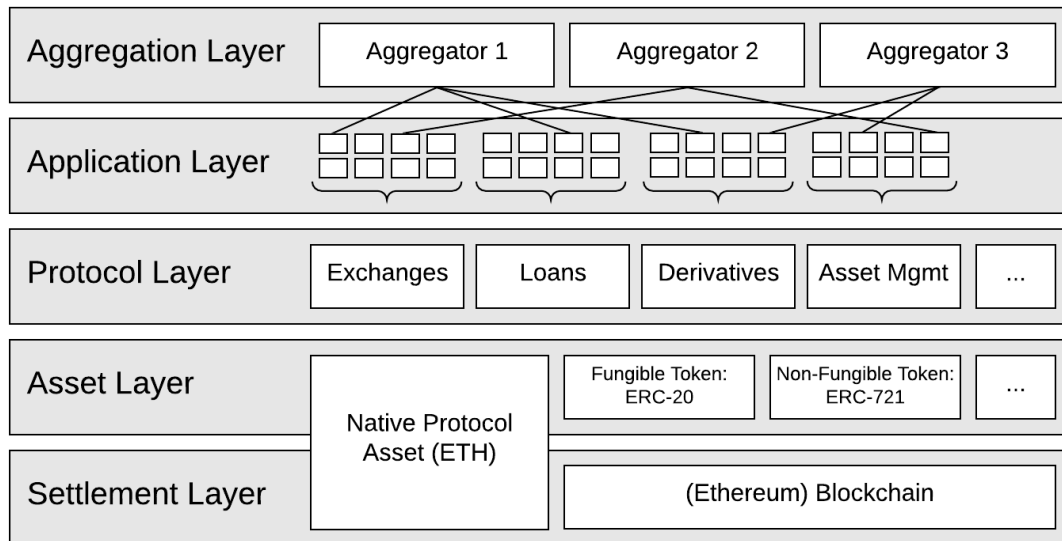
1 INTRODUCTION

Decentralized Finance (DeFi) refers to a shift from the more conventional, centralized financial systems towards a more peer-to-peer finance facilitated by innovative decentralized technologies built on the Ethereum blockchain. DeFi is essentially founded on open protocols and decentralized applications, whereby smart contracts are used to legitimize agreements. Decentralized Finance covers an array of financial applications and services such as stable coins, decentralized exchanges and wallets, lending and insurance platforms etc. Thus, an ecosystem underpinned by DeFi is the future of global financial transactions. An Ethereum based blockchain technology not only empowers users with more control over their assets but also significantly improves transparency, stabilization, and efficiencies to global finance. As of 2020, the value of capital locked in DeFi surpasses \$7 billion, thereby reflecting the pace of this fast growing industry. TOP Swap capitalizes the fast growing industry by offering state of the art Ethereum based DeFi services. Moreover, TOP Swap addresses the challenges associated with traditional financial services by providing innovative solutions using decentralized finance and decentralized governance. Furthermore, it aims to improve existing Ethereum based blockchain by resolving the issues pertaining to design inefficiencies.

2 AN INSIGHT INTO TOP SWAP

TOP Swap is a state of the art DeFi Blockchain technology company that focuses on creating Ethereum blockchain infrastructure and Binance Smart Chain (BSC) applications for a more open , transparent , efficient , unrestricted and innovative economy . TOP Swap primarily aims to promote financial inclusion and democratization by empowering the end user . This can be achieved due to the decentralized architecture and decentralized governance of TOP Swap. TOP Swap is able to achieve a competitive advantage over other blockchain technology companies by incorporating trust into its systems . In essence , it has brought about a ‘ Trust Revolution ’ , whereby its groundbreaking products are positioned to revolutionize and disrupt the financial services market . For instance , TOP Swap proposes that the staked capital on the non- ERC20 staking blockchains be collateralized into a Stable Coin, “ pUSD” , that is then issued on an Ethereum blockchain with a safe liquidation buffer. Similarly , users on the Ethereum blockchain can mint “ eUSD " by depositing their ERC20 stable coins into TOP’ s “ eUSD" liquidity pool. Therefore , this allows both “ pUSD ” and “ eUSD " users to borrow , lend and exchange “ pUSD ” / “ eUSD " freely , thereby creating a seamless liquidity for users with capital locked into various staking arrangements . Moreover , it essentially minimizes the volatility of the stable coin.

Figure 1



4 PRIMARY CHALLENGES

TOP Swap not only aims to provide innovative solutions to the challenges that are associated with traditional financial applications such as conventional borrowing and lending but also to the problems associated with existing DeFi products on the Ethereum network.

Challenges Associated with Traditional Financial Services

Traditionally, the financial market is centralized, whereby centralized financial institutions such as banks control assets. Therefore, these central authorities are primarily responsible for the regulation of the flow and supply of such currencies. The centralization of the financial market has led to an extremely high level of complexity.

Consequently, this leads to a significant level of risk. Unimpeded risk in conjunction with a lack of transparency amplifies the problem. For instance, if central banks increase the circulation of currency by printing more money to deal with a financial crisis and do not resolve the crisis, it may lead to extremely high inflation and consequently disrupt the economy. Moreover, borrowers (e.g. individuals, businesses etc.) and lenders (financial institutions such as banks) have varying levels of risk taking behavior. For instance, borrowers are usually risk seeking and prefer borrowing large sums of money as they believe they can easily pay back with interest. However, lenders are usually risk averse and consequently mitigate any risk by requiring borrowers to provide collateral, guarantor and credit history in order to secure a loan. Moreover, 'trust' is one of the most critical challenges associated with traditional financial services. It is extremely difficult to enforce trust in traditional lending. This is evident from issues associated with borrower default.

Challenges Associated with Existing DeFi Products on the Ethereum Network

Decentralized finance has recently gained a lot of traction as it poses a potential solution to the challenges associated with traditional financial services. Ethereum platform is revolutionizing DeFi innovation and is currently one of the most preferred DeFi platforms due its countless benefits. Financial activities on the Ethereum platform have exponentially grown in the past few years. Moreover, existing decentralized lending platforms with Ethereum blockchain implementation often fail to generate significant volume due design inefficiencies, thereby impose high friction costs on both borrowers and lenders. However, a large group of users have been unable to participate effectively or in more severe cases have been excluded from Ethereum based DeFi platforms. This group mainly comprises of users who have invested capital into digital assets that are external to the Ethereum ecosystem (non-ERC 20 digital assets), whereby they are either anticipating capital gains from the portfolio, or have assets staked into the respective staking ecosystems.

Problem Statement

In the business of lending, the conventional wisdom of a lender and lending platform is to protect capital and gain the highest yield from that capital. Hence, lenders are generally risk-averse. At the risk of oversimplifying things, most traditional financial institutions usually require all or a combination of collateral, guarantor, and credit history. That's not all; trust is the most critical problem as it is hard to enforce in traditional lending (an issue faced with borrower default). Existing Decentralized lending platforms with Ethereum blockchain implementation have failed to generate significant volume because of design inefficiencies which impose high friction costs on borrowers and lenders.

DeFi innovation is largely happening on Ethereum, underpinned by the major lending and borrowing platforms such as Compound and Aave, and to a large extent, powered by widely-adopted stablecoins (USDT, USDC, TUSD and DAI). This means that DeFi participants typically need a pool of stablecoin capital on the Ethereum network to participate in "yield farming", which arises from one or more of the following activities: (i) interest generated from lending and borrowing activities; (ii) provision of deposits into liquidity pools; and (iii) farming of DeFi project tokens. While this growth of DeFi on the Ethereum network is extremely exciting, a large group of users have been unable to participate effectively, or even been excluded, from Ethereum based DeFi participation.

These users are users who have capital invested into digital assets outside of the Ethereum ecosystem (non-ERC20 digital assets), and are either anticipating capital gains on this portfolio, or have these assets staked into the respective staking ecosystems.

5 REVOLUTIONARY AND INNOVATIVE DECENTRALIZED FINANCE(DeFi)

Decentralized finance utilizes Ethereum blockchain to increment monetary security and ease, open liquidity and development opportunities , and backing acoordinated and normalized financial framework.

Programmability .Exceptionally programmable smart contracts automate the execution and empower the formation of new financial instruments and digital resources.

Immutability . Tamper -proof data coordination across a blockchain 's decentralized structure increases security and auditability

Transparency. On the open Ethereum blockchain, each exchange is communicated to and checked by different clients on the system (note : Ethereum addresses are scrambled keys that are pseudo - unknown). This degree of transparency around exchange information takes into account rich data analysis as well as guarantees that organize action is accessible to any user . Ethereum and the DeFi conventions running on it are additionally worked with open source code that is accessible for anybody to view, review, and expand upon.

Self -Custody . By using Web 3 wallets like MetaMask to interact with permissionless financial applications and protocols , DeFi market participants always keep secure of their assets and control of their personal data.

Permissionless . Unlike traditional finance, DeFi is defined by its open, permissionless access : anyone with a crypto wallet and an Internet connection , regardless of their geography and often without any minimum amount of funds required , can access DeFi applications built on Ethereum.

Interoperability . Ethereum 's composable software stack ensures that DeFi protocols and applications are built to integrate and complement one another . With DeFi , developers and product teams have the flexibility to build on top of existing protocols , customize interfaces , and integrate third -party applications . For this reason, people often call DeFi protocols “ money legos.”

6 SOLUTIONS PROVIDED BY TOP SWAP

TOP SWAP is a market-leading blockchain technology company. From developer tools to enterprise solutions, TOP swap is building Ethereum blockchain infrastructure & BSC (Binance Smart Chain) and applications for new economic systems that are more open, efficient, and secure. We have arrived at a breakthrough in how we can build trust into all of our systems. We are at the beginning of the next revolution, the Trust Revolution. By utilizing cutting edge technologies, TOP swap and its various products are positioned to revolutionize financial services.

Pool liquidity

Liquidity mining and yield farming The rise in DeFi tokens will encourage “yield farming” —the act of using one or multiple DeFi protocols to generate as many returns as possible. Yield farming has become even more popular with the rise of so-called “Liquidity mining,” or earning a protocol’s newly minted native token in addition to regular returns.

Liquidity mining refers to a situation when a yield farmer contributes needed Liquidity to a specific coin or token and, in doing so, earns the rate of return, plus an extra unit of the protocol’s token.

TOP Pool is a universal liquidity pool that powers value accretion, value distribution, collateralization insurance, liquidation execution and cross-chain swaps for the TOP swap ecosystem. Staking rewards, yield farming rewards and fees generated (such as swap fees or liquidation fees) accrue into TOP Pool. At regular intervals, a percentage of the value accrued into TOP Pool shall be distributed to TOP token holders. Anyone who participates in the TOP swap ecosystem will receive a small amount of TOP every day. Users will be rewarded TOP for staking, issuing loans, depositing, collateral, and participating in Liquidity pools. Yield farming incentivizes users to both borrow and provide Liquidity.

Users are rewarded with TOP tokens based on their share of the total value and turnover in the platform. These incentives can be used to participate in different aspects of investments in the platform and also to increase capital to TOP swap hereby maximizing returns. For example, a user that owns a particular token can supply it to the pool, and earn interest without having to do anything other than contributing to the pool.

Platform users can also frictionlessly borrow from the protocol, using their stable coins or assets as collateral, for use anywhere in the ecosystem. By incentivizing both borrowers and lenders, it facilitates healthy demand and supply dynamics for TOP Swap. This will allow the app to thrive by attracting a strong user base both to borrow and to issue loans.

Cross-Chain Value Transfer

Users can directly swap into native tokens on the non-ERC20 blockchains by selling ERC20 stablecoins to pPool and receiving the same value of tokens on the other blockchains, without having to send their tokens to centralized exchanges.

Staking

As the Ethereum network transitions to a Proof of Stake consensus algorithm with Phase 0 of Ethereum 2.0, users will have the opportunity to stake their ETH and earn rewards, either as validators or through staking providers. Staking on Eth 2 is analogous to an interest-bearing savings account: stakers receive interest (rewards) for validating blocks on the Ethereum protocol.

TOP Token Staking

Staking of the TOP token is an important mechanism within the TOP swap ecosystem. It confers substantial benefits to users who stake their TOP tokens, including:
(i) value distribution from the TOP Pool; (ii) governance rights; and (iii) increased farming efficiency.

Stake for Ecosystem Governance

TOP holders holding 1% of TOP's total supply shall be eligible to raise a Proposal. TOP holders can cast their votes for each Proposal by staking, and the TOP staked for raising proposals and casting votes are returned 15 days after the end of each Proposal voting round.

Stake for Regular Value Distributions

Users who stake TOP token is eligible for rewards from the weekly TOP Pool distributions.

Stake to Increase Yield Farming Efficiency

The TOP token, when staked, empowers ecosystem participants engaged in liquidity farming in the TOP ecosystem with greater farming efficiency through a "Farming Power" mechanism.

Lending

TOP Lending Overview

TOP Lending is a decentralized pool-based lending protocol built on Binance Smart Chain and Ethereum 2.0. Users can earn interest on their digital assets (assets) by supplying supported assets into the protocol. We call these users lenders. Assets deposited by lenders will be transferred into a smart contract that aggregates total liquidity of each asset into a pooled fund, which is available for borrowers to borrow. Loans are not matched individually between lenders and borrowers, but are taken from the pooled fund. Interest lenders earn comes from interest that borrowers pay, distributed proportionately to the liquidity they provide. Once lenders supply assets into the protocol, these assets act as collateral, enabling lenders to also borrow any asset up to a certain limit. This means that any borrower has to first supply assets into the protocol as collateral before taking out any loan.

Lenders provide liquidity by depositing cryptocurrencies in a pool contract. Simultaneously, in the same contract, the pooled funds can be borrowed by placing a collateral. Loans do not need to be individually matched, instead they rely on the pooled funds, as well as the amounts borrowed and their collateral. This enables instant loans with characteristics based on the state of the pool. A simplified scheme of the protocol is presented in figure below.

Borrowing

Miners (Lenders and Borrowers)

Lenders and borrowers are miners for TOP Swap platform. Lenders provide assets for lending, they give up the opportunity cost of their financial assets and give borrowers the access to crypto assets. In return, lenders will get paid by the premium from the loan(s), and earn passive income as well. Furthermore, they will also get TOP tokens from the mechanism as an incentive to discount certain transaction fees in the future.

Borrowers use the borrowed assets to fund their projects and get reward in return, and they contribute the premium to the platform. In return, borrowers get the access to the digital assets and fund their projects.

Basic concepts

At the heart of a lending pool is the concept of reserve: every pool holds reserves in multiple currencies, with the total amount in Ethereum defined as total liquidity. A reserve accepts deposits from lenders. Users can borrow these funds, granted that they lock a greater value as collateral, which backs the borrow position.

Specific currencies in the pooled reserves can be configured as collateral or not for borrow positions , only low risk tokens should be considered . The amount one can borrow depends on the currencies deposited still available in the reserves.

Every reserve has a specific Loan-To-Value (LTV), calculated as the weighted average of the different LTVs of the currencies composing the collateral , where the weight for each LTV is the equivalent amount of the collateral in ETH.

Stable Coin

A stablecoin is any cryptocurrency that is pegged to a stable asset or basket of assets , such as fiat, gold, or other cryptocurrencies . Stablecoins were originally developed to reduce the volatile prices of cryptocurrency and make blockchains a viable payment solution . They are now implemented across the DeFi space for remittance payments , lending and borrowing platforms.

Not all stablecoins are created equal . Stablecoin adoption takes a long gestation period , and the issuance of a stablecoin does not imply that the global financial markets are willing to accept and use this stablecoin . MakerDAO , for example , took substantially longer to drive adoption for DAI, its stablecoin backed by Ethereum - based digital assets , compared to fiat-backed stablecoins such as USDT , USDC or TUSD . In this paper, we have assigned a tier rating for the stablecoins that currently exists within the crypto assets ecosystem:

Community Reward Governance

TOP token holders are the decision makers for TOP DEFI. The community can raise change proposals and shape the direction of TOP DEFI as the project progresses

The governance model envisioned is similar to corporate governance structure , where the TOP project team act as the operating directors to execute the business roadmap , and the community provide directives on the company ' s vision through voting on the platform

TOP swap introduces community governance allowing you to suggest , debate , and implement changes to TOP swap without relying on, or requiring , our team whatsoever through voting . In addition to being a standard ERC-20 asset, TOP (TOP swap token) allows the owner to delegate voting rights to the address of their choice ; the owner ' s wallet , another user , an application , or a DeFi expert. Anybody can participate in TOP swap governance by voting rights. The token also includes code to query an address ' historical voting weight , which is useful for building complex voting systems.

Voting on the platform will be done in a way where every TOP token is worth one (1) vote, and for a proposal to go through , the majority of the votes cast must be in favor . If there are more than two options, the one with the most votes wins.

As TOP swap continues to innovate in the DeFi space and build more TOP products, TOP token holders will be able to propose and decide upon key protocol parameters to all TOP products and how the products interoperate. TOP tokens will continue to be the primary tool to align incentives of community builders and supporters, creating a strong community of DeFi enthusiasts who will collectively help propel Alpha ecosystem forward.

7 USE CASES OF TOP SWAP ECOSYSTEM

TOP proposes that the staked capital on the non-ERC 20 staking blockchains be collateralized into a stablecoin, “pUSD”, which is issued on the Ethereum blockchain with a safe liquidation buffer. Similarly, users on the Ethereum blockchain can mint “eUSD” by depositing their ERC20 stablecoins into TOP’s eUSD liquidity pool. pUSD holders and eUSD holders can borrow, lend or exchange pUSD /eUSD freely, creating a seamless liquidity “on/off TOP” for users with capital locked into staking arrangements.

The collateral of the non-ERC 20 asset (pUSD) can be staked in an aggregator of staking nodes of the non-ERC20 blockchains, to earn staking rewards. Also the minted eUSD can be staked on in the aggregator nodes of the ERC 20 blockchain to generate staking rewards (ERC20 stablecoins) through yield farming.

TOP LABS provides the lending and borrowing platform for pUSD and eUSD holders to lend and borrow freely with each other. pUSD holders can borrow eUSD and withdraw liquid capital. eUSD holders can borrow pUSD to compound their yield farming of TOP tokens.

8. MOBILE WALLET

The main purpose of TOP swap DeFi wallet is to allow users to store their own funds with no reliance on a third party to hold their assets. Essentially, it leaves you in charge of your funds with the full freedom to do as you please.

The only person in charge of your funds is you, which is a pretty revolutionary concept when you consider that banks are ultimately in control of your money. TOP swap DeFi wallets which is built on web3 is arguably the safest options on the market.

The core components of TOP swap wallet include:

Non-custodial – Users are able to send and transfer funds with the knowledge that they are the only person who has access to those funds.

Key -based – TOP swap wallet have a unique key pair and the user is responsible for the safekeeping of their private keys. This is different from a centralized wallet where the platform may be able to help you recover your keys . Private keys are typically introduced through a 12 to 24 word seed phrase.

Compatibility – As mentioned earlier, it' s accessed by connec - tion to a web3 wallet . Mobile wallets are beginning to focus on compatibility , meaning that you can connect to DeFi applications without having to leave the app.

Accessibility – TOP swap wallets can hold a wide variety of virtual assets. Ethereum- specific DeFi walletsallows users to not only deposit ETH, but also other stablecoins and DeFi tokens

9. TOKEN ECONOMICS

TOP Token is a Governance token created on the BEP-20 Binance Smart Chain. TOP allows for access to the lending, borrowing, and Liquidity pool and platform governance purposes to its holders. TOP is earned by users for lending or borrowing assets. TOP is allocated to markets relative to the amount of interest accrued, meaning assets that generate the most interest will earn the most EARN per day. Its key features include:

- BEP-20 based token used within DeFi Ecosystem
- It will power future DeFi services and products
- Faster transaction times
- Quicker payment settlements during lending/borrowing and Liquidity EARN will be required for the following activities:
 - Starting and participating in custom lending and Liquidity pools
 - Confer holders the power to influence decisions concerning the core protocol
 - Used to govern important protocol decisions that can be voted or delegated on the DeFi Limited ecosystem