TimeChain Swap White Paper

Executive Summary

TimeChain Swap is a decentralized exchange that adopts the Automated Market Maker(AMM) model built on the Binance Smart Chain (BSC) due to its cheaper fees and faster transaction confirmation time, which enables users to access a variety of features like swapping tokens instantly.

TimeChain Swap offers a wide range of helpful services for users, they can try. It works as a decentralized exchange(DEX) that offers liquidity mining, yield farming and token transferring through the BSC and ETH network.

TimeChain Swap works by providing liquidity from different DEXs as well as DEX aggregators, meaning that it enables users to swap tokens at a better rate than they could find on any single DEX, at the same time.

TimeChain Swap (TCS) token is a BEP-20 token that is used as a native token through the whole parts of our solution. TCS Powers the TimeChain Swap ecosystem by its vast use cases including pay for swap tokens and payment for transaction fees as well as participating in token sales hosted on our Initial Dex Offering(IDO) platform. Providing liquidity for pools on TimeChain Swap also needs to use TCS.

Introduction

Most of the projects in the DeFi space probably offer the same features that users need to provide liquidity and earn tokens in exchange. Liquidity pools which are a collection of funds deposited into a smart contract are an essential part of the current DeFi ecosystem and AMM models to provide a liquid market more accessible. Although most projects have been built on the Ethereum network, many projects are being launched on the BSC network due to its cheaper fees and faster transaction confirmation time.

TimeChainSwap is a DeFi protocol running on the BSC network which allows users to swap between tokens issued on BSC as well as ETH, and earn rewards in order to provide liquidity to the specified pools.

TimeChain Swap seeks to provide the best rate across multi exchanges on the BSC and ETH ecosystems, all in one algorithm that finds the best rate automatically. The best rate that we provide would be an essential part for those who are interested in participating on-chain pricing algorithms to develop their application based on.

One of the other barriers to entry for users is current gas fees on the ETH network which is getting higher and higher. By leveraging BSC, it will decrease dramatically but it's still on the ETH network that we are going to make it simple and easy for our users.

To design a platform to serve the best solutions for all users, We eager to offer a better price on BSC and ETH networks for token swap, finding the best offer among DEXs on BSC and Ethereum networks, transfer user's tokens from one network to another network, reduce the gas fees using Optimus.

Optimus is designed specifically to facilitate bulk transactions with reduced gas consumption. Optimus is an On-Chain batch processing that increases scalability through bulk transfer processing rolled into a single transaction. Optimus bundles hundreds of transfers into a single transaction to decrease the gas consumption.

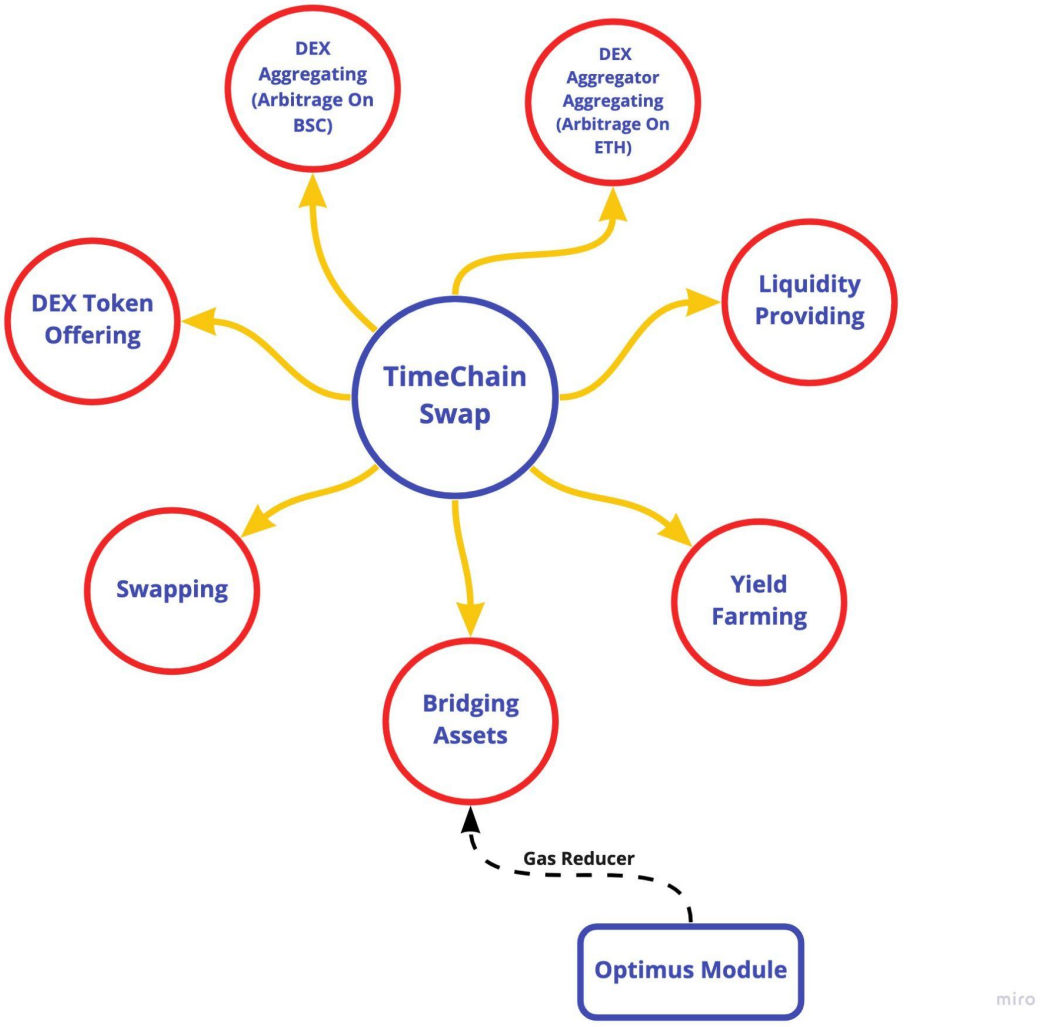

Fig. 1 TimeChain Swap Overview

Why TimeChain Swap?

We are a DEX which is tailored for the current market to find the best rate for token swap in a user-friendly interface for our users. We also provide an IDO platform to boost the DeFi ecosystem growth.

Our platform eliminates the need for everyday users of cryptocurrency space to access a lot of platforms, all in one platform with bringing the most liquid markets together in a proper time. This unique feature will enable users to seamlessly access better token swap rates they couldn't find on other DEXs.

Another big differentiator on our platform is Optimus. As one of the earliest DEX protocols supporting bulk sending transactions over the BSC and ETH network, it would enable users to transfer assets from Ethereum network to BSC and vice versa thanks to the Optimus feature.

Furthermore, the platform provides a service to build a bridge service cheap and fast leading to better access to the cross-chain liquidity for the TimeChain Swap token holders.

The TCS Architecture

TCS system architecture makes use of a microservice design pattern, incorporating messaging and task queues with full event logging. Backend calls to exchange API services will be used to find the optimum path for every trade pair so as to obtain the best possible price. This method will ensure underlying assets are always bought at the best possible rate.

TCS is a BEP-20 token based upon the BSC blockchain network. TCS tokens are directly tied to the whole process in our platform with a novel option which can be exercised via the smart contracts. TCS holders once start to participate in our liquidity pools, will receive a portion of transaction fees. To bootstrap liquidity of the TCS token, the TCS pairs will have more rewards than others.

We plan to start our platform based on offering optimal price service for each trading pair and aim to also further grow it with developments and updates. Once the TCS platform has been successfully completed, our team will be continuously working on our platform to set AMM pools up and utilize our Bridge service. The Core values of TCS system are in the components including TCS Swap, BSC & ETH DEX Aggregator, BSC/ETH Bridge.

Our platform employs an advanced algorithm that searches mostly used liquidity pools and keeps that off-chain to discover the most efficient swap paths to provide the most efficient trade pairs.

We also plan to offer an option for decreasing transaction gas fees with the Optimus module. Users who choose this option will pay less gas fee, almost reducing up to 50%.

You could find the TimeChain Swap architecture and its test result for a real transaction which was made by our platform.

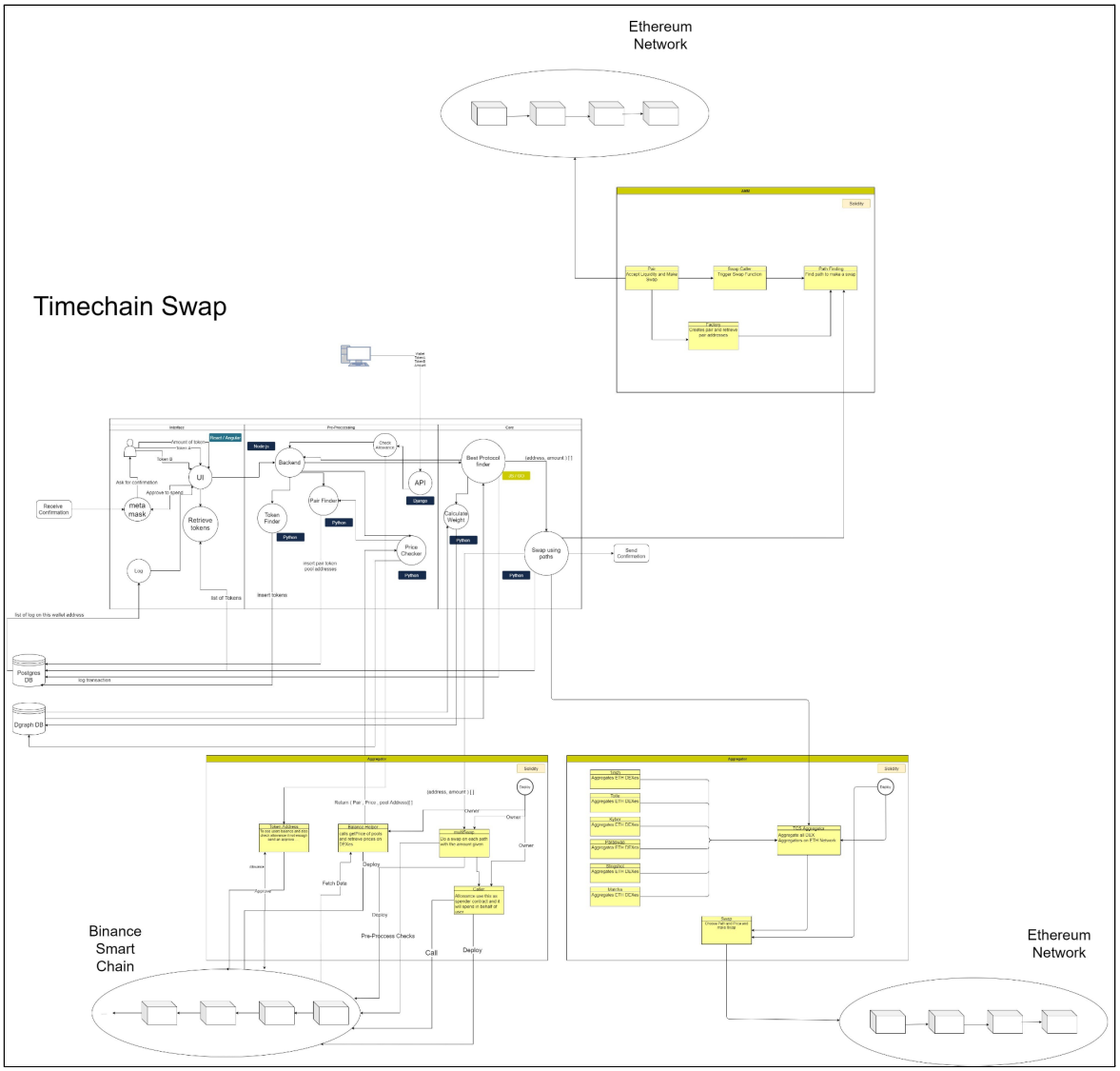

Fig. 2 Architectural Overview

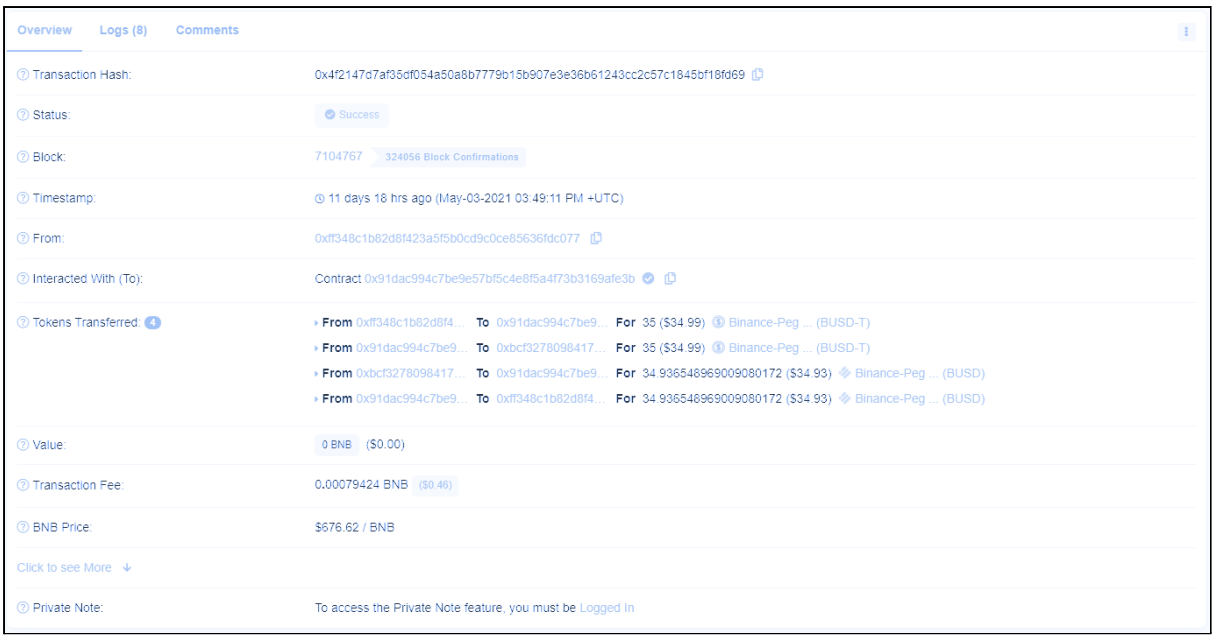

Fig. 3 Transaction Made By Our Platform

We have sent a swap request to the server and after the request confirmation, we made a swap on Pancake and Bakery platforms.

Since TCS runs on BSC, you can only have access to BEP-20 tokens liquidity pools. However, TimeChainSwap offers a cross-chain bridge service that allows users to convert any BEP-20 tokens into a ERC-20 wrapped token that enables them to access ERC-20 tokens liquidity as well as BEP-20 tokens.

At the first step, the conversions happen between ERC-20 and BEP-20 tokens. In addition, we already know that TCS holders are also entitled to a gas reduction using the Optimus module. One of the main supported BEP-20 liquidity pools is TCS stable coin pairs.

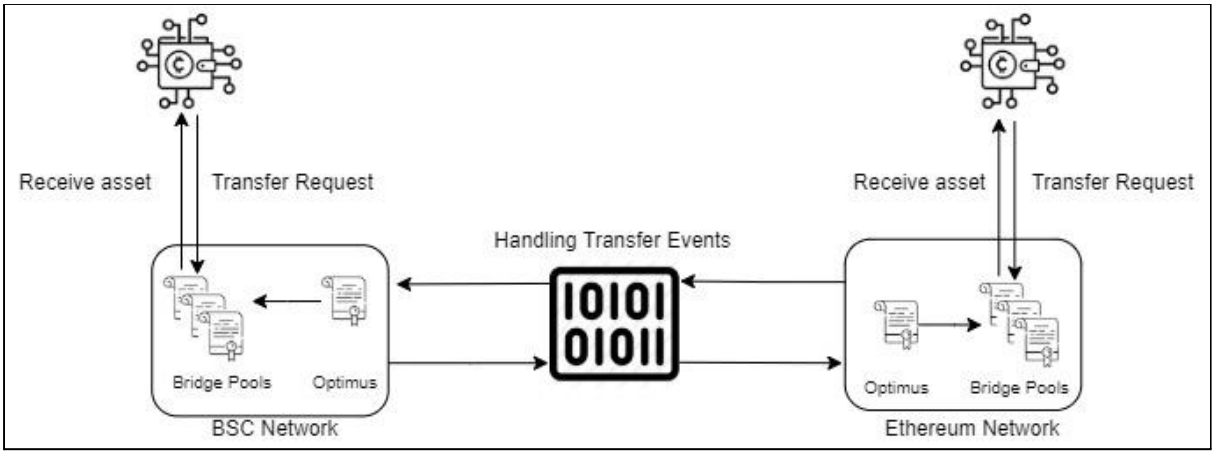

Fig. 4 Architectural Overview Of Bridge

When users want to send their tokens from a blockchain network to another one, they submit their requests by calling smart contract's function. They send tokens to the smart contracts(pools) and then smart contracts trigger an event that would be handled by an event handler off-chain module.

After that, the event handler will revoke a function from another network for sending a token to the requesting wallet address from the smart contract pools that are filled by liquidity providers who benefit 0.3% of transaction fees. Each pool contains just a token in it's balance, for example a pool handles USDT transferring requests and another one transfers BUSD tokens from one blockchain network to another network.

Developers have a linear time-lock and 10% of the total supply will go to funding development to ensure sustainable and rapid innovative development and will be released on a monthly rate. The time-lock contract can simply hold balances for specific addresses until a specific time or block number passed, then permit the addresses to withdraw. This allocation strategy allows the development team to continue supporting this protocol for the long-term and voluntarily choose this vesting schedule.

How TimeChain Swap works

In this section, we will talk about the core functionality that TimeChainSwap has to offer in detail.

DEX Aggregation

We plan to develop the best DEX aggregator that offers the best rate swapping on both BSC and ETH networks. To serve the best experience to our community, we will do the best to improve our platform as we grow.

TimechainSwap aggregates from all the major DEXs with the lowest slippage onto a single platform and offers the best exchange rates and the best liquidity sources on the market all in one platform. Our solution facilitates the cheapest and fastest swapping routes. The aggregator works by sourcing liquidity from different DEXs from BSC and ETH networks such as PancakeSwap, BakerySwap, 1inch, UniSwap etc.

Fig. 5 DEXs and DEX Aggregators That We Gathered

Our DEX aggregator also offers a non-custodial platform that allows users to trade from a BSC-based wallet.

Our platform offers better prices which are calculated after transaction fees are paid most of the time than PancakeSwap, Uniswap etc. TCS aggregator provides a gas-efficient routing algorithm and highly-optimized architecture to access the DeFi investment market that ensures the best rate that you can get.

Different aggregators have different performance in terms of pricing, response-time, gas consumption and revert rates. Low-value and large-value trade sizes are completely different in path finding algorithm. As trade sizes increase, TCS split trades to different sources to offer the best rate.

Below you can find an example of using TCS which is simulated one example of trade with $1K:

- **TimeChain Swap — $1.8**
- **1inch — $2.4**
- **PancakeSwap — 0.53$**
- **Uniswap — $43.6**

Reducing gas usage is one of our innovative solutions that we provide for our users via the Bridge module. In TCS, we will cut down transaction costs by gas consumption optimization. These optimizations will bring us the opportunity to be the most efficient aggregator in terms of gas consumption.

Routing algorithm:

Here is the path-finding algorithm that we use:

- Retrieve all pairs available in the DEXs and index them based on their reserve balances.
- We update pools list every day including all pairs from all DEXs and also, retrieve every single pair reserves, on demand.
- Create a graph of these reserves and apply weight on each pair on the graph by calculating the amount_out based on the amount_in.
- Calculate how many routes it is worth to go in-depth (each pair results in a transaction fee).
- Applying A* algorithm and create an array of paths that contains pairs and sort these paths based on their weight.
- Prune paths that have high transaction fee times based on their (amount_out/max amount_out).
- After these steps, we have paths that can be really efficient to swap tokens on.

- The next Step is calculating the portions of each path to make sure the amount_out is impacted least by the AMM algorithm.

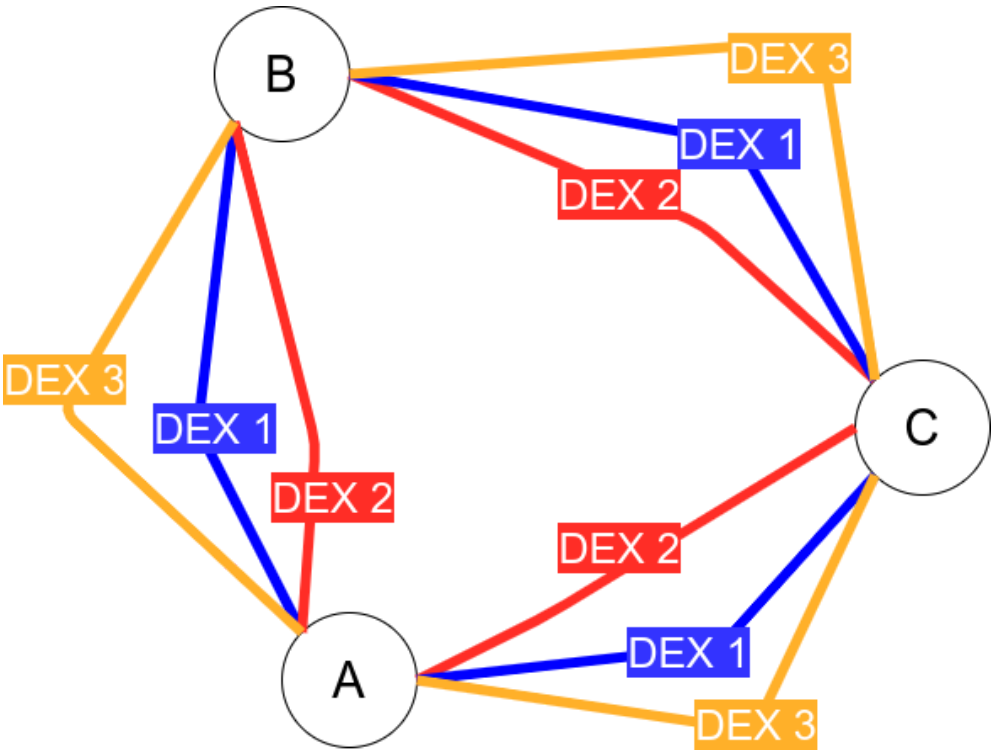

Fig. 6 Routing Sample Between DEXs

Assuming we have three tokens (A, B, C) and three DEXs (DEX1 , DEX2, DEX3)
As shown above, for each two token there is a DEX available to swap these two tokens (e.g. A and B Are connected via Three DEXs, DEX1 , DEX2 , DEX3)
There are also some alternative paths like (A to C and then to B). These alternative paths can help reduce price amounts which will be explained furthermore .

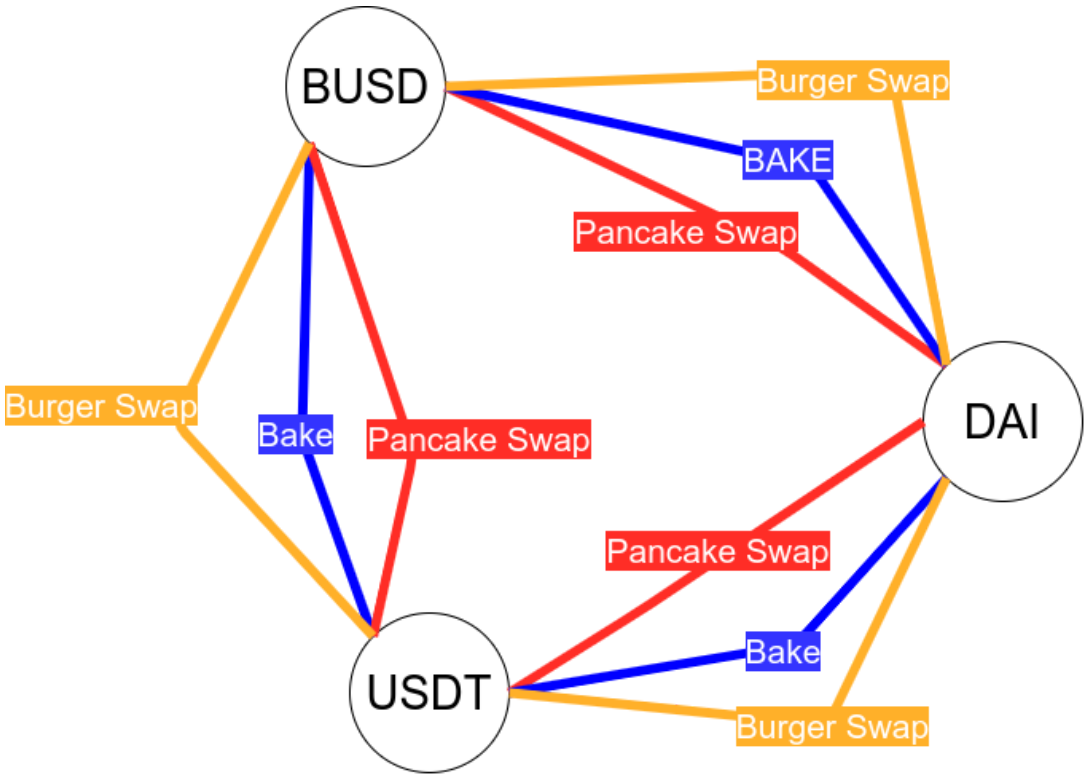

Fig. 7 Routing Between DEXs

This is the same example but with real data (but these are only three of many tokens available on the blockchain)

Note that, there is another advantage for our algorithm in comparison to the other DEX aggregators which can apply to decrease the price impact more by using arbitrage. Through BSC and ETH networks, there are lots of pools but only few of them have high reserves. By looking into all these pools and finding the pool with a high reserve and an unbalanced pool we will provide a better rate for our users.

By swap in those pools, the total amount_out will increase, since those pools will give out more tokens.

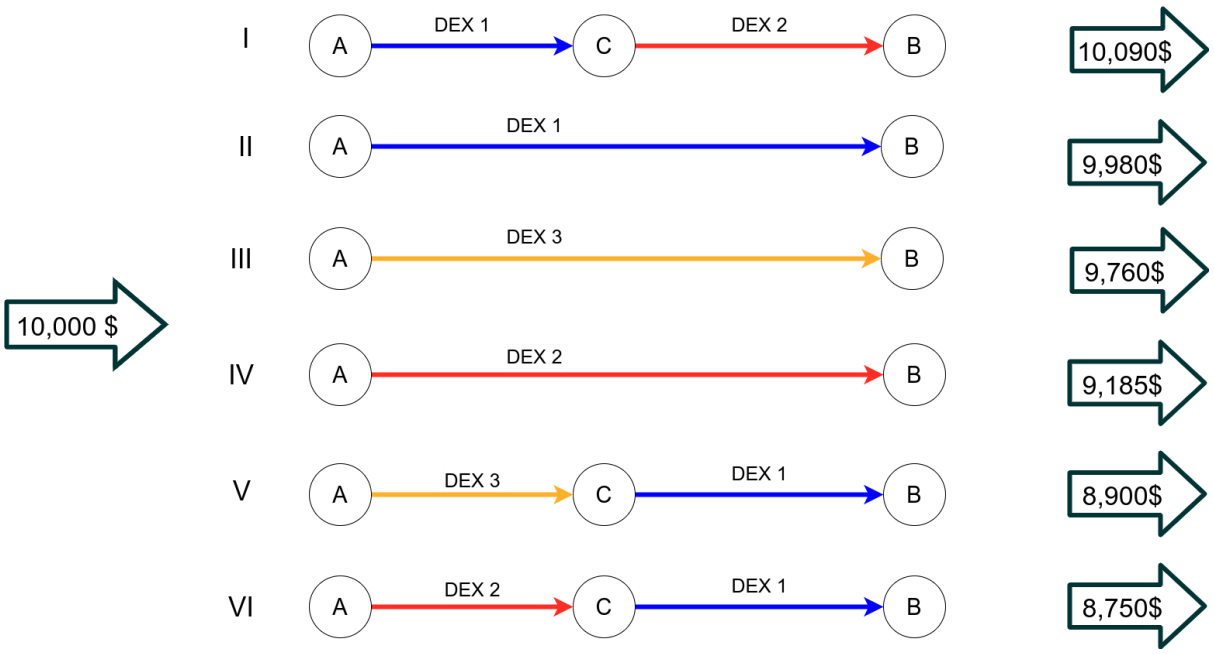

Fig. 8 Possible Routing Option Example

in the same example ,in order to find the optimal path through the thousands of paths available, we applied an A* algorithm (Each Path is considered as an edge and the price impact of that route is considered as weight) and with regards this, the predicted amount_out would be 10,000.

As you can see in the first path, the actual amount is more than the predicted amount. Sometimes pools have unbalanced reserves and it gives you higher amount out than you expect.

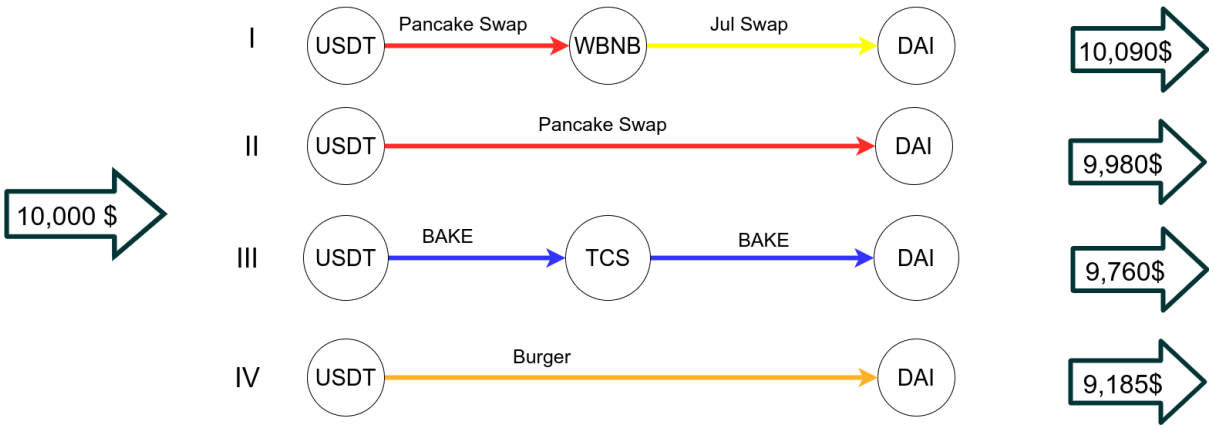

Fig. 9 Possible Routing Option

This is a more realistic example of some potential paths that can be available between two tokens(i.e. USDT , DAI in this example we have 10,000 USDT).

Distribution algorithm

- For every single trade on our platform with a large trade size, the algorithm will be seamlessly simulated between potential paths while the best allocation will be chosen. The simulation will be started with the bottleneck that is the smallest portion of the amount_in. After determining the smallest portion, it will continue to find the best corresponding path in terms of amount_out. The algorithm will simulate a swap and update path reserves to make a decision and the process will continue to find the path.
- After the simulation is completed, the algorithm puts all these possible paths in a list and returns a JSON file as an output.
- This JSON will include paths as well as corresponding pairs and the amount_in and the portion of each path. Due to the off-chain calculation, the actual changes for each pair is not available and its estimation is available to make a decision.
- We also use a linear learning model to predict the possible changes in reserves immediately for the pair, while maximizing the number of amount_out. The learning model will constantly train over a large data set of market data to update the parameters used in the model to maximize the profit and return for users.

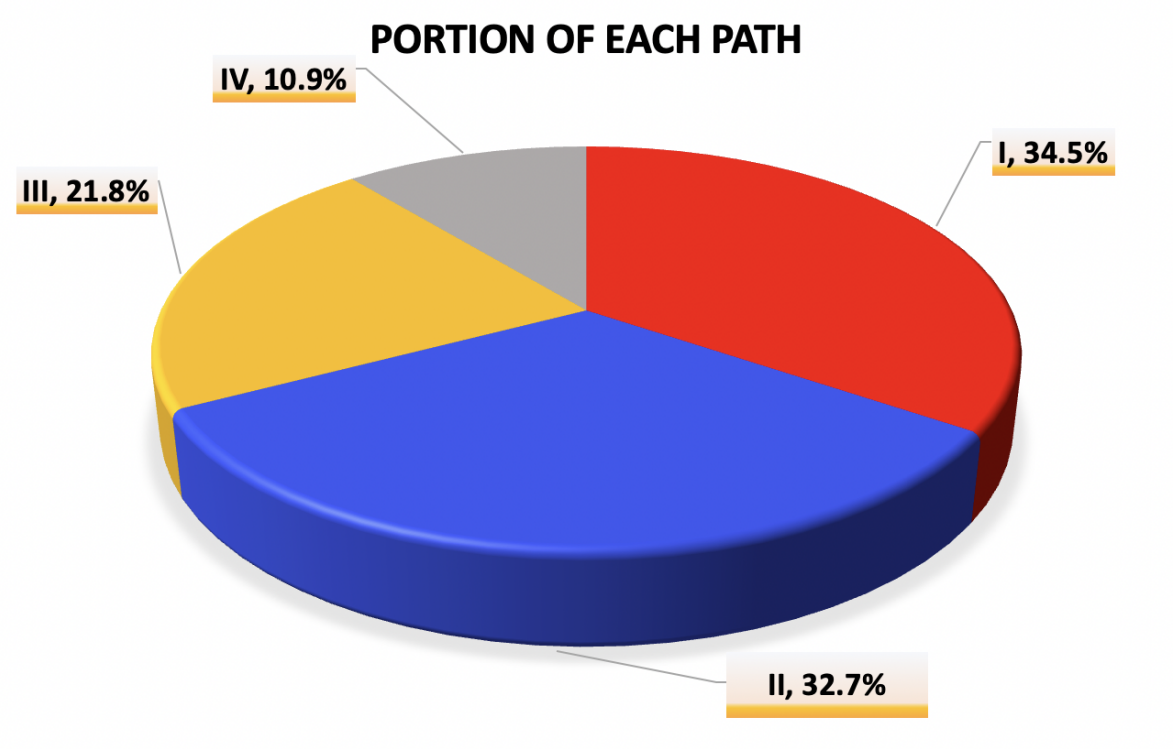

Fig. 10 Portion Of Each Path

Depicts that, we found four potential paths which are worth spending our initial money on. They are included ([USDT -> WBNB -> DAI] , [USDT -> DAI] , [USDT -> TCS -> DAI] , [USDT , DAI]). By applying the distributing algorithm we could spend these percent of our money on those given DEXs to have the maximum output.

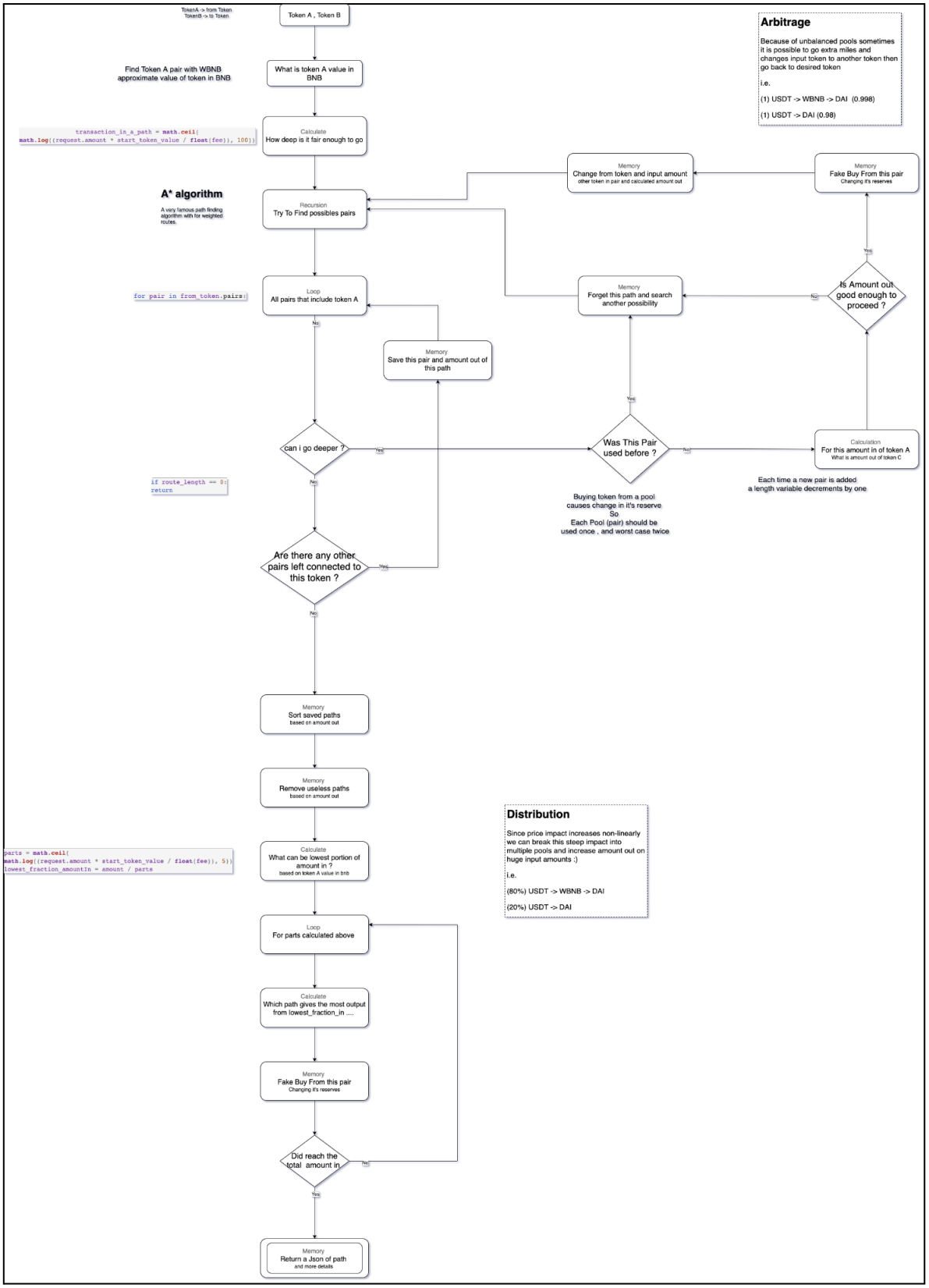

Fig. 11 Complete Flow Chart Of A* And Distribution Algorithm

Automated Market Maker (AMM)

Most of the current DeFi protocols share a similar characteristic to match buyers and sellers using AMM models. Since the liquidity providers deposit their assets into the pool, receiving TCS tokens in return, They can use those tokens to claim their share in a portion of the trading fees of that pool. With the TimechainSwap token, liquidity providers earn 0.30% in trading fees. TCS applies a 0.30% fee to all swap orders which all will be rewarded to the Liquidity Providers (LPs).

TCS uses an AMM model that relies on a mathematical formula to price assets instead of using an order book. AMM is the state of the DeFi ecosystem that brings more transparency and liquidity for participants. By enabling users to provide their assets as liquidity into the pool to get rewarded by a portion of trading made to the pool fees. Based on the underlying formula, AMM will use, the amount of receiving token that you asked will be the result of this formula rather than referring to an order book.

Liquidity Mining

The main advantage of an AMM system is that there will always be liquidity for use provided by participants. The TCS holders can provide liquidity by depositing their TCS token and other supported assets to the existing pools or create a new liquidity pool.

The liquidity of the pools is filled with other users' funds as a liquidity provider(LP). They deposit them into the pool, receiving LP tokens in return. They can use those tokens to reclaim their portion of the trading fees.

Many decentralized exchanges have peeb proposed, each with its own specific trading and pricing formula. These range from traditional order books to more complicated cases such as Uniswap which has its unique pricing algorithm relatively simple in both total trading volumes and total funds in each pair reserve.

AMM employs a formula to determine asset price algorithmically through a so-called conservation function that is the heart of our TCS platform for pricing.

- Uniswap V2 applies a conservation function with a constant-product invariant as below:

- The product of reserve quantity of token1, r1, and reserve quantity of token2, r2, stays constant with swapping:

  C = r1 * r2

Our conservation formula that TCS applies would be as below:

We should provide information about conservation formula + Slippage rate and price impact + Impermanent loss

conservation function determines asset price algorithmically in AMMs. it will be done by allowing the exchange rates to move along predefined trajectories which are conditioned upon the volume of available assets.

smart-contracts of pools assumes that the reserves of the two assets have equal value. TCS implements a conservation function with a constant-product invariant. The function must be concave, nonnegative, and nondecreasing. Conservation Function assumes below formula:

$$C\{A, B\} : A * B = k$$

A,B : reserve quantities

The difference between the spot price and the realized price of a trade is called slippage, that is because of asset price dictation and curve design of an AMM. exchange rates are resolute on a continuous curve. Trade size is the factor that encounters slippage conditions. Also, the pool amounts and conservation formula are other factors that impact slippage. Smaller liquidity pools lead to higher slippage as every trade will significantly impact the relative quantities of assets in the pool. We will set 0.5% slippage rate for the Swap platform and 1% for the DEX aggregator platform.

assets supplied by liquidity providers to a protocol could be affected by volatility risk. Trades alter the asset composition of a pool, as a result conservation function of the pool causes auto-updates the asset prices. Hence, the value of the entire pool changes. Depositing the same amount of liquidity in return for LP token(share) can result in less value with price movement. This effect is named “divergence loss” or “impermanent loss”. The phrase impermanent is because the depreciation of the pool value disappears and reappears all the time and is only realized when assets are actually taken out of the pool. Changes of prices in one asset affect all others in this pool because assets are bonded together in a pool.

Divergence Formula is like below:

$$D = \frac{\sqrt{1+p}}{1+\frac{p}{2}} - 1$$

Which p is token value change.

Price impact calculation is another important function in DEXs.We describe this section by an example. Assume we have X amount of BNB and we want to buy Y amount of TokenA. Price impact calculation of this swap is like below:

Price impact for buying Y amount of tokenA:

$$price\ impact\ on\ buying\ \ =\ \ (Yamount\ \ *\ \ 0.997)/current\ Y\ amount\ in\ pool$$

Bridge

The interoperability between different blockchain technologies plays a vital role in the current crypto space. It enables users to convert their assets into different network assets which enable users to use their assets in BSC network and ETH seamlessly.

Another unique feature of TimechainSwap is to leverage BSC to build a Bridge service cheap and fast leading to better access to the cross-chain liquidity for the TCS token holders. Thanks to the gas reduction module the bridge transaction fees will decrease for TCS holders.

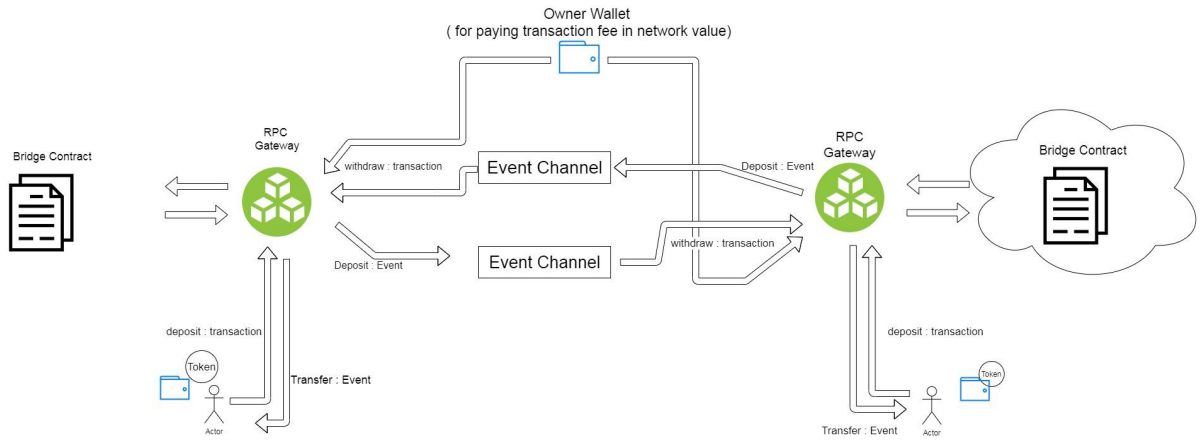

Fig. 12 Overview Of Bridge

To facilitate the adoption of TCS, we will also launch a Bridge module to make it possible for our users to trade on the ETH network. Through the bridge platform, participants will be able to move their ERC-20 & BEP-20 tokens instantly between both networks.

Using the ETH-BSC bridge, users can convert their BEP-20 supported tokens into an ERC-20 token. The supported tokens will extend gradually to provide a reasonable list of tokens in order to make it compatible with both network assets for our users.

As the DeFi ecosystem is growing, cross-bridging and interoperability plays a vital role in DEX aggregator platforms. We also will continue to support new networks by adopting them in our bridge module to increase interoperability.

We need to think about the Bridge backed pools

How does the bridge module work?

- Different networks can’t have access to each other. If you have an asset over the BSC network, it would not be accessible through the ETH network.Thanks to the wrapped coins and tokens which are already available by smart contracts we can solve this problem. Wrapping a coin or token is the way that you can convert assets between both networks. It will receive the asset that you want to convert from the native blockchain and will convert to the destination network asset.
- To do this, we will have a pair of smart contracts on each native blockchain with capability of token reserve.
- Two functions are considered including a deposit method to handle source calls and a withdrawal method to be revoked, and transfer the requested amount to the wallet address given by the user.
- The Event Channels server will listen to the deposit events emitting off-source chain and will transact a withdrawal on demand on behalf-of users.

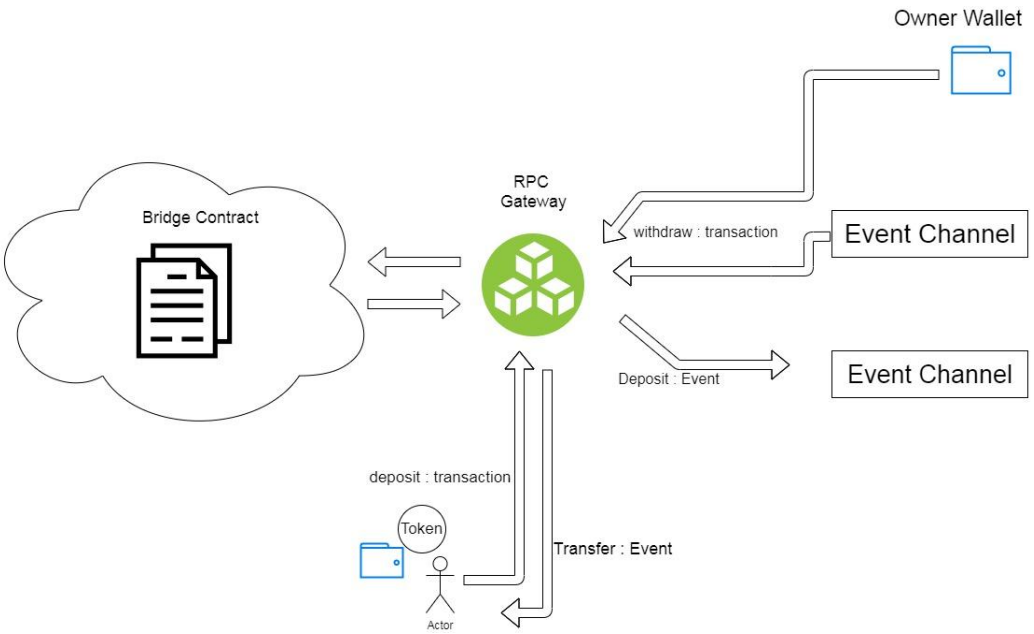

Fig. 13 Closer Image Of Server Listening Performance

- Event Channels will relay requesting events to the corresponding contract that runs over the other network.
- The contract will instantly transfer the amount to the given address and only a small transaction fee will be spent from the owner (contract owner) wallet.

To use TCS ETH_BSC bridge users need to follow the below instruction:

- The user will send a transaction to the deposit method of the bridge contract. The contract will check if the user gave it enough approval. Then the contract will safely transfer the requested amount into its own address reserving it.
- After this transaction is completed, the contract will emit a deposit event filling it with from address (user's wallet address on the source network), to address (wallet address on the destination network), amount of token, and token address.
- Event Channels, one for each path (i.e. from BSC to Etherum), will receive the deposit event, transact a call to withdrawal method on the contract which runs over the destination network.

- The contract will receive a transaction and if it has enough reserve, it will instantly transfer the asset to the address given on the event and emit a transfer event.
- Then the user will make sure about the receiving assets.

Optimus

Currently, token swaps are not cheap on DeFi ecosystem projects and it may discourage users from participating in these projects. High gas fees on these blockchain also triggered the trend of seeking networks with lower fees as well as fast transactions.

Optimus is an On-Chain batch processing that increases scalability through bulk transfer processing rolled into a single transaction. Optimus bundles hundreds of transfers into a single transaction to decrease the gas consumption. This feature allows us to send thousands of token transfers in an efficient way by batching them in groups. This unique feature also aims to save a significant amount of gas fees for end-users and community developers. This will finally allow us to take full advantage of our multi-pool path-finding to offer the best rate of trading for the TCS ecosystem with the lowest possible slippage rate.

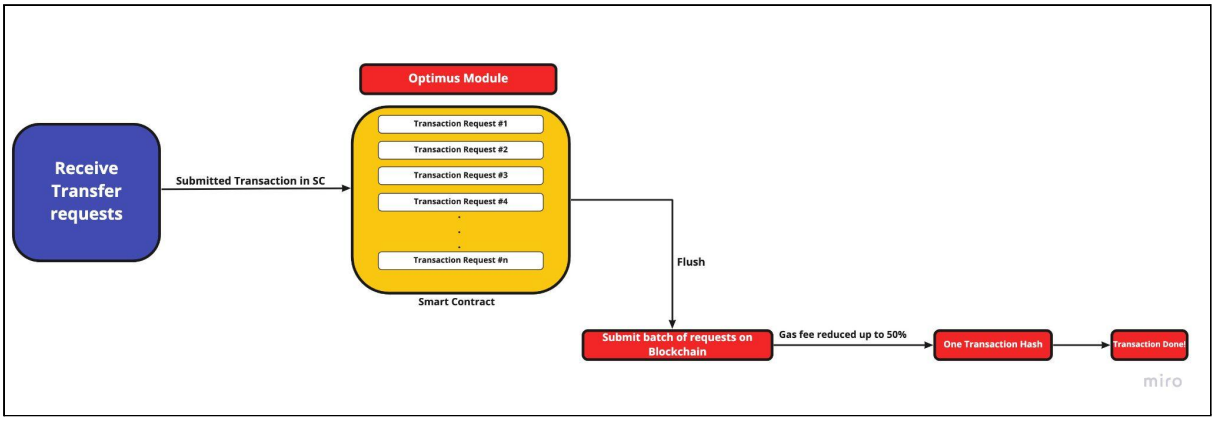

Fig. 14 Optimus Module Functionality

The main advantages of batching many transactions into a single transaction is efficiency which saves cost and time. Also users can save time when they are trying to send sequential transactions. User experience is an obvious example of another

advantage of using batch transactions to remove the need for calling both approve and transfer From on an ERC-20 and BEP-20 token transfers.

Networks	TX amount	Per TX Fee (Average)	TX Fee Before Optimus Module	TX Fee After Optimus Module
Binance (BNB)	**1060**	**0.000383**	**0.40598**	**0.18604153**
Ethereum (ETH)	**50**	**0.00286**	**0.225**	**0.1883622169**

Fig. 15 Optimus Module Transaction Proof Sample

Yield Farming

The inclusion of yield farming is another incentive for liquidity providers. Yield farming is the simple action of adding funds to a liquidity pool. This represents a new distribution scheme for recently launched tokens on our Initial Dex Offering (IDO) platform making it an opportunity for users to provide liquidity. In simpler words, the more funds that you add to a specific pool, the more chance for you to get an allocation for the new projects.

Yield farming is a way to generate rewards with cryptocurrency holdings. At TimeChain Swap, we use our farms to primarily incentivize users to provide liquidity for their favorite pools by rewarding them in TCS. Liquidity providers deposit their LP tokens in order to maximize earnings and reward with TCS. By moving tokens in and out of different protocols, profits can be maximized. Using TimeChain Swap, users can stake their TCS-LP tokens after providing liquidity to earn high APYs through our platform. The steps below is what happened when users wants to participate:

- Deposit tokens to TimeChain pools
- Receive LP tokens in exchange
- Deposit received LP tokens to farm pools
- Receive the TCS token as rewards

The simple formula for APY calculation is:

$$y = P * (1 + r/n)^{nt}$$

y = compound

P = staked balance

r = APR

n = compounding periods

t = time

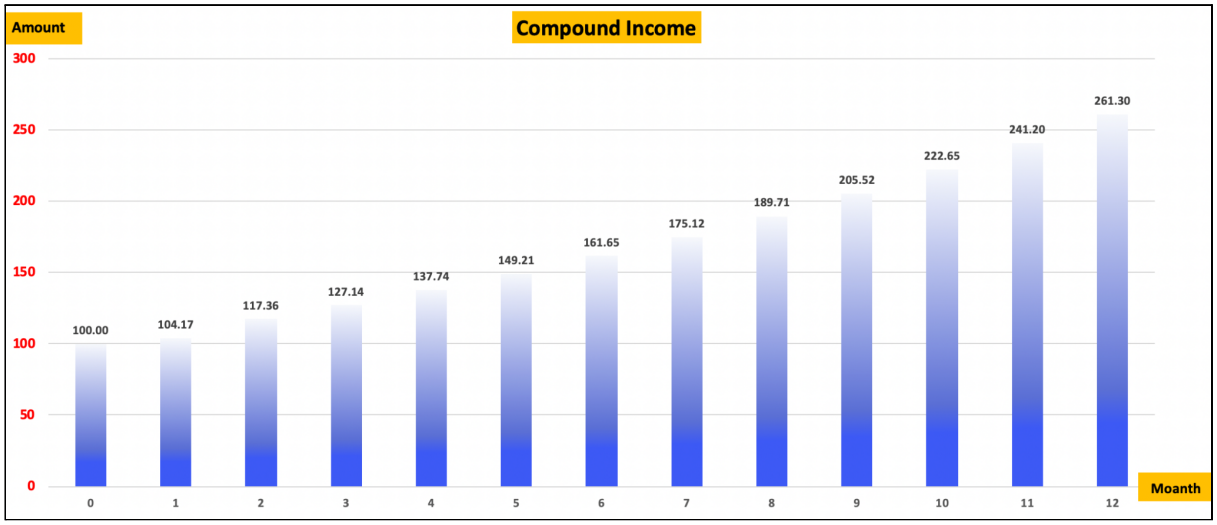

Fig. 16 An Example Of Yield Farming; APY Would Be 161.3% Versus 100% APR w/o Compounding.

Farmers will be rewarded by TCS tokens in a fair method based on an on-chain random process powered by Chainlink VRF(Verifiable Random Function) based on the following release schedule:

- First **Day** (approximately 1 day) through 30,000 blocks of BSC -2.375M TCS in total- Number of TCS per block will be determined by the random function.
- First **Week** (approximately 1 week) through 210,000 blocks of BSC -4.750M TCS in total
- First **Month** (approximately 1 month) through 900,000 blocks of BSC -9.500M TCS in total
- First **Year** (approximately 1 year) through 10,950,000 blocks of BSC -19M TCS in total
- Last **Year** (approximately 1 year) through 10,950,000 blocks of BSC -19M TCS in total

- These rewards will follow a linearly decreasing schedule over two years.
- The number of tokens will be rewarded is 38% of total supply.

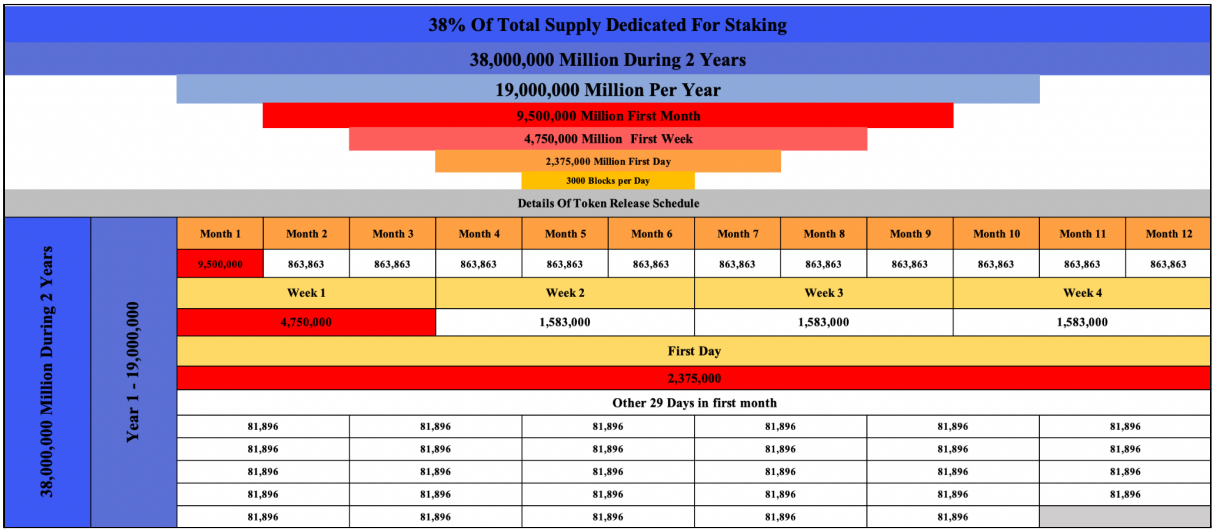

Fig. 17 Token Release Schedule

Initial DEX Offering

With the Explosion of DeFi in 2020, Initial DEX Offering(IDO)s increased in popularity due to their inexpensive way. The most demanding feature for such a platform is fast and cheap transactions.

The main feature of TCS which differs from the existing ones is the possibility of enabling both ETH and BSC token swaps, powered by Bridge module, which can provide faster and cheaper transactions while staying connected to the most liquidity pools over the ETH and BSC network.

IDO is already becoming a must-have feature of the decentralized finance ecosystem. IDO is one of the last steps in our journey to provide a decentralized and fair way to launch projects. TCS provides a robust environment for IDOs to take place, with an interesting reward schema for TCS holders, to enjoy the advantage of a fair launchpad platform. Among the innovations introduced by TCS, our IDO platform will use a unique whitelisting method to cut market manipulation which results in a fair and truly decentralized platform.

We don’t use whitelisting feature, we will use Chain Link powered VRF (Verifiable Random Function) which was announced recently to provide BSC developers access

to a tamper-proof , cost-efficient and a verifiably fair source of on-chain randomness, backed by cryptographic proofs.

IDO Features

- Fair and decentralized platform in the distribution of newly launched tokens.
- On-Chain RNG powered by Chainlink VRF to cut market manipulation securly.
- A wide range of available liquidity pools over the ETH and BSC networks.
- Transparent vesting thanks to our locking and TimeLock smart contract.
- Smart contract auditing

To participate in the TCS IDO platform, users must take TCS token on TimeChain Swap platform:

- Staking of TCS token on TimeChain Swap platform would be a prerequisite to participate in IDO.
- The minimum amount for staking to participate in IDO projects will be a dynamic method that is based on the amount of the token price and TCS token live price. For each project depending on how much is its initial price, the users need to stake the corresponding amount of TCS tokens to be eligible to participate in the IDO process. To participate in an IDO, you need to lock TCS tokens as much as you will get 1000 coin-age-scores (described below) that enables you to get rewarded by new tokens with a maximum amount equal to the current price of TCS token.
    - **1000 Score --> eligible to get tokens equal to 100*TCS(Current Price)**
- We are using a coin-age processing model to give TCS holders more gain for their loyalties. The more time that you have your TCS token in your account, the more probability that you will win in an IDO. The coin-age process is similar to the way a traditional bank account works. Let’s say that your account balance is $100 which you received today and the day after, you will receive another $100. After 5 days, the score that can claim is as below:
    - **Coin-age score = 5*100 + 4*100 = 900 dollar-days.**

- We are using a multi-level offering system in a fair IDO for our users and community and the VRF will randomly choose a particular number of token holders for winners to get rewarded by the new token.
    - Level-1 (1000 Coin-age Score)
        - For 34% of total offered tokens.
    - Level-2 (1000 to 10000 Coin-age Score)
        - For 33% of total offered tokens.
    - Level-3 (more than 10000 Coin-age Score)
        - For 33% of total offered tokens.
- The coin-age score for TCS holders will be doubled, through this methodology that we provide, the TCS holders are eligible for IDO allocations and they will have access to a double benefit system.
- In the same way, the yield farmers of our platform also will be eligible towards IDO allocations.

Tokenomics

Our main focus is to create a utility token with not only an initiative purpose, but strong tokenomics to go along with it on the BSC network.TimeChain Swap utility token is called TCS and it can be traded at any time and there are no expensive transaction fees. TCS tokens are directly tied to the TimeChain Swap platform with a novel liquidity providing option that can be exercised via the smart contract.

Token utilities

- Liquidity providing
- Yield farming
- Bridging
- Initial DEX Offering
- Gas Reduction

Token Specification

- Symbol: TCS
- Contract: 0x3eD7e4A56178bFDB94618e44c85cf7f66b6E4668
- Blockchain: Binance Smart Chain
- Token standard: BEP-20
- Decimals: 18
- Max Supply: 100,000,000

Token Distribution

- 10% for the Team: locked for 1 year and will be released every month
- 17% for the ecosystem: used for partners to build the TimechainSwap project and its ecosystem
- 20% for the Distribution: Distributed through OTC desks, exchanges and traders around the world to maximize decentralization.
- 15% for the Liquidity: provided to exchanges through market makers, traders and bots.
- 38% for the Staking: Dedicated to various projects to maximize yields.

Summary

TimeChain Swap is an exciting platform on Binance Smart Chain(BSC) with some innovative features. Despite its similarities to other platforms, TimeChain Swap offers unique features, such as the cross-chain bridge and one of the competitive DEX aggregator platforms with instant swap and the lowest rates on the market.
Also, as an investor, there are several investment opportunities including liquidity providing and farming. TimeChain Swap also provides initial DEX offering features for upcoming projects on BSC to facilitate the growth of the DeFi ecosystem.

TimeChain Swap RoadMap

Q2 2021:

What we have accomplished:

- **TimeChain Swap platform ideation**
- **Investigation on the most popular DEXs and DEX aggregators like:**
    - PancakeSwap
    - BakerySwap
    - BurgerSwap
    - StreetSwap
    - 1inch
    - Slingshot
    - Totle
    - ParaSwap

- **Deploying TimeChain Swap(TCS) BEP-20 token on Binance Smart Chain(BSC).**
- **Integrating with 3 decentralized exchanges (DEXs) for version1 on BSC network to find the best optimal path.**
    - Pancake swap
    - Bakery swap
    - Burger swap
- **Launching the TimeChain Swap landing page**
- **Launching on Bitrex and ..**

What we will accomplish:

- **Presaling and token distributing**
- **Listing on DEXs and other platforms**
- **Integrating with more DXEes for version 2 from BSC networks**
    - Apeswap
    - Reef.finance
    - Thugs(Street Swap)
    - DODO
    - Spartan
    - Value Liquidity pool
    - Swip Swap
    - JulSwap
    - Moon Swap
    - Ellipsis Finance

- **Acquiring best swap rate features**
- **Aggregating Ethereum DEX aggregators like:**
    - 1inch
    - Matcha
    - DEX.ag
    - Totle
    - ParaSwap
- **Ongoing UX/UI & Performance Improvements**
- **Marketing**
    - Demo Video
    - Google app placement campaigns
    - Content Creation
    - Press Release
    - Biweekly Investor Newsletters
    - Youtube Influencer Campaign
    - Timechain Ambassadors
    - Crypto E-book
    - Twitter & Instagram account
    - PR stunt
    - Paid Advertising

Q3 2021:

- **Developing Bridge Module** on BSC-ETH Networks and Cross-Chain Aggregation
- **Filling the Liquidity Pools up**
- **Implementing Swap based on AMM Model**
- **Implementing the gas reduction module(The Optimus)** on Swap and Bridge features which was designed by us.
- **TimeChain Swap Developer SDK and its documentation**
- **Developing user information dashboard**
- **Developing swap analytics**.
- **Adding More Liquidity Pools** to prepare the best rate swap in the market.

Q4 2021:

- **Farming** on our platform makes high APYs for our users, they can stake their TCS-LP tokens and get rewards from our Initial DEX offering (IDO).
- **Smart Contracts Audit**
- **Mobile app for android and iOS**

Other future plan:

- **Expanding Bridge to other networks**
- **Layer 2 projects**
- **Adding more networks to Cross-chain bridge**
- **Site development**
    - Homepage
    - Personal dashboard
    - Faster site
    - Mobile friendly
    - Navigation system

Team

Advisors

Partners

Contact

- **Business and Marketing TODOs should be completed in this doc.**