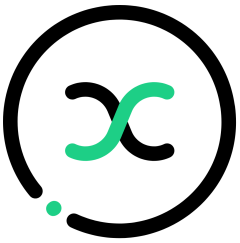

Open.so

The money market protocol ecosystem designed to transform decentralized financial services.

Version: 0.1.0

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Abstract

The recent resurgence of decentralised finance[herafter defi] has enabled millions across the world with a better access to capital, and a means to earn passive income. This however, has brought its own challenges, in the form of, high transaction costs & poor trade success rates, limited scalability, niche-use lending products that are sub-par to their centralised counterparts, & the unresolved issue of trade front-running. These issues ultimately yield an unsatisfactory experience, pushing the wider adoption farther into the future, for an otherwise fundamental application of blockchain technology. Here we introduce Open protocol, a suite of decentralised protocols & their implementation designed to transform the functional capabilities & the experience of decentralised financial organisations[DFO]. Open is building a multi-chain interoperable decentralized finance ecosystem capable of enabling near instant cross-chain swaps, under-collateralized loans upto 1:3 collateral-to-debt ratio, at predictive interest & yield rates.

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Open protocol

Mission

Open is on a mission to bridge the visible gap between centralised applications and what was previously thought to be possible with the decentralised systems. At Open, we believe, a truly decentralised system must enjoy both the fluidity of water, and the resilience of a Tardigrade.

Introduction

Open is a mesh of protocols, and their product implementations, designed to solve specific decentralised finance challenges. For example, defi lending in its current state is broken. Serves a niche use case, and is sub-par in comparison with the centralised services. Solution- An under-collateralized loan disbursal framework designed to enable borrowers with better access to liquidity at predictive interest rates.

The open protocol ecosystem is enabled by a synergic blend of a complex network of off-chain & on-chain technical infrastructure.

Open protocol is fueled by its native token OSO. OSO is built on the BEP-20 & ERC-20 token standards of the Binance smart chain, & Ethereum. Here we provide a list of developments, the majority of which would be launched during the first three quarters of 2021.

The Ecosystem

1. Open Lending.
2. Off-chain trade settlement[OTS] protocol.
3. Omniswap.
4. Decentralized identity verification[DIVE] protocol.
5. Open-chain.

Open Lending

Concept note

Open protocol encourages productive lending. Productive lending is when the money is borrowed to boost personal finances. When Open lends, it assumes that the borrowers use the funds productively and earn a profit so that they can pay the lender back and keep some extra earnings to themselves. When the loan is outstanding it is an asset for the Open and its depositors, while a liability (debt) for the borrower. When the loan is repaid, the assets and liabilities disappear, and the exchange is good for both the borrower and lender.

Open permits a collateral-to-debt ratio[hereafter CDR] of upto 1:3, i.e. a borrower can seek loan upto $300 usd against $100 usd collateral. CDR is simple formula calculated as,

$$CDR = C_{usd} \div L_{usd}$$

$CDR = Collateral\ to\ debt\ ratio$

$C_{usd} = Collateral\ value\ in\ US\ dollars.$

$L_{usd} = Loan\ value\ in\ US\ dollars.$

During the initial days of operation, Open protocol supports a select number of BEP20, & ERC20 tokens as base assets. These being ETH, BNB, LINK, USDC, UNI. This means, a user can deposit or borrow in these assets only. As the project progresses, we plan to expand support for additional tokens, and wrapped tokens. However, as we explain in the Omniswap section, a user can swap the deposited, or borrowed tokens to a token of their choice from the list of 24 tokens. The list will be released with the launch of Omniswaps. Open envisions to support only the tokens with adequate liquidity.

The Lending process

As with any financial system, a user must establish a relationship with the Open protocol inorder to use any of our services. This can be done by connecting a compatible wallet with Open's web application. A compatible wallet can store either ERC20, or BEP20, or tokens of tokens of both standards. We recommend Metamask as a wallet as it supports both the token standards. When the wallet is connected with Open's web application, the decentralized application[hereafter dapp] can detect any outstanding deposits or loans against the wallet address, and display it to the user. The web application serves as a home to all the products in the Open ecosystem. In this section, we will limit our discussion to Open lending. In Open lending, the user will be able to deposit the supported assets, earn annualized percentage yield in return, or borrow funds.

Depositor flow

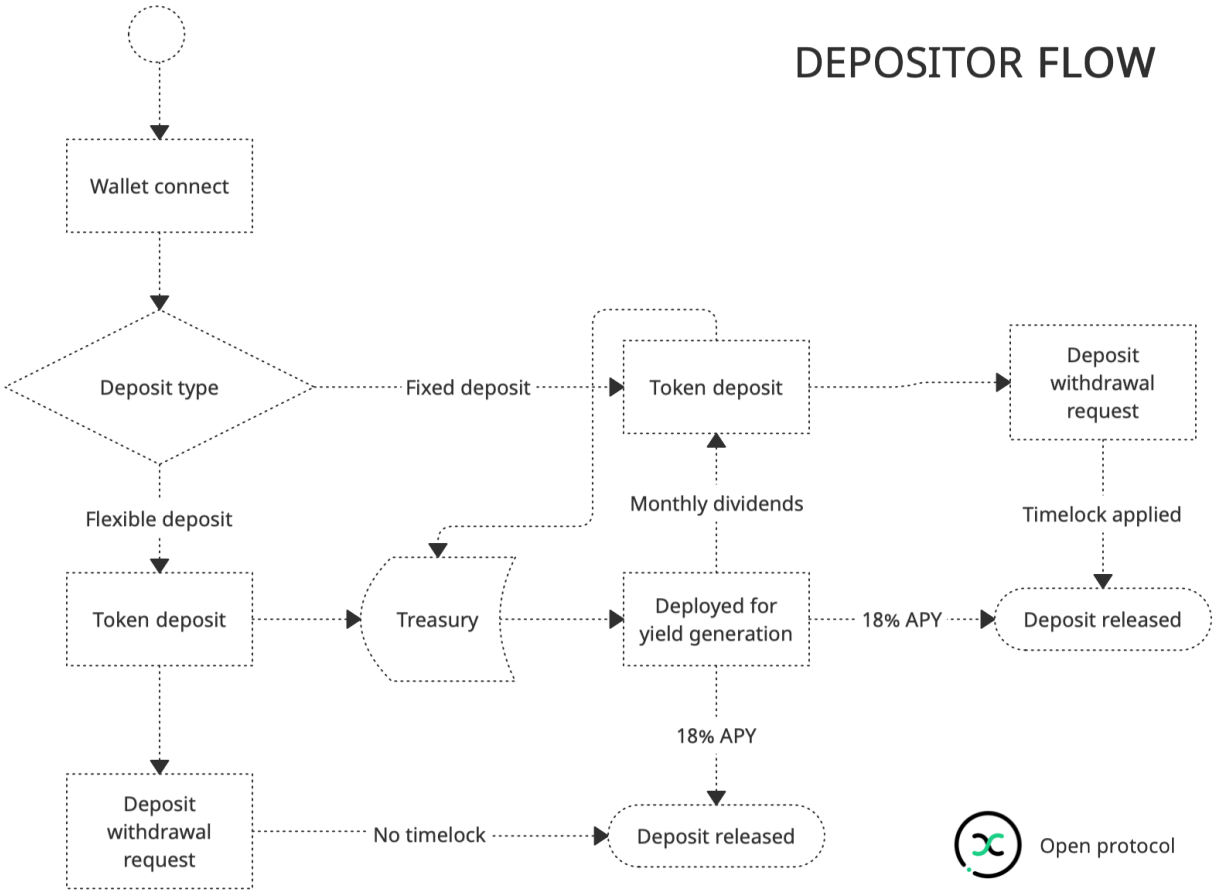
To make a deposit, the user must transfer the base tokens[1] supported by Open to the treasury contract. The treasury contract is the reserve contract storing 60% of the total liquidity at any given time. A user can make two kinds of deposits.

1. Fixed deposit.
2. Flexible deposit.

In the fixed type of deposit, a withdrawal time-lock of 172,800 BSC blocks(approximately 6 days) is applied. This means, a depositor can withdraw their deposits 172,800 blocks after a withdrawal request is placed. Fixed deposits help Open maintain a predictive state of inflows & outflows. As an incentive, the fixed depositors are rewarded with a second yield source, in the form of Dividends. A dividend is an excess yield an asset[token] might generate over a period of a month. is in addition to an annualized percentage

[1] ETH,BNB,LINK, USDC,UNI.

yield of 18% on their deposits. A fixed deposit in addition to the 18% APY, earns monthly dividends the asset might generate.
There is no withdrawal time-lock applied for the flexible deposits. A user can withdraw the underlying funds any time. Unlike fixed deposits, a flexible deposit does not earn dividends. A depositor with a flexible deposit earns an annualized percentage yield of 18% on the deposited funds. The apy for the deposits of both flexible & fixed types is in the same denomination as of the underlying(deposited) asset. Eg: A user with 100ETH as a deposit, will earn 18ETH as interest at the end of 12 months. This means, the depositor if kept the funds untouched over a period of 12 months, will see their balance increase to 118ETH.



To withdraw the deposit, the depositor places a withdrawal request on the web application. Based on the deposit type, a time-lock may be applied. During the withdrawal, the accrued interest is calculated, and notified to the user. A fixed deposit does not accrue any interest, between the period, a withdrawal request is placed and the withdrawal is processed. Any interest accrued in this timeframe will be utilised to meet the apy commitments. Any excess yield will be distributed to other fixed deposits as dividends.

Dividends

A second yield layer designed to reward the depositors opting for fixed deposits. Dividends offer a dynamic yield, dependent on how in demand the underlying token is. Open estimates to earn a yield of 1.5% - 2%

from the AUM[2] in a given month. Open only needs 1.5% monthly returns on an asset, to ensure a depositor is repaid an APY of 18%. It is impractical to assume Open can deploy 100% of the available assets into loans. To address this, the borrowers are charged a fixed 24% APR against the loan amount. The 6% yield difference between APY & APR provides a relief ceiling to the Open.

Borrower flow

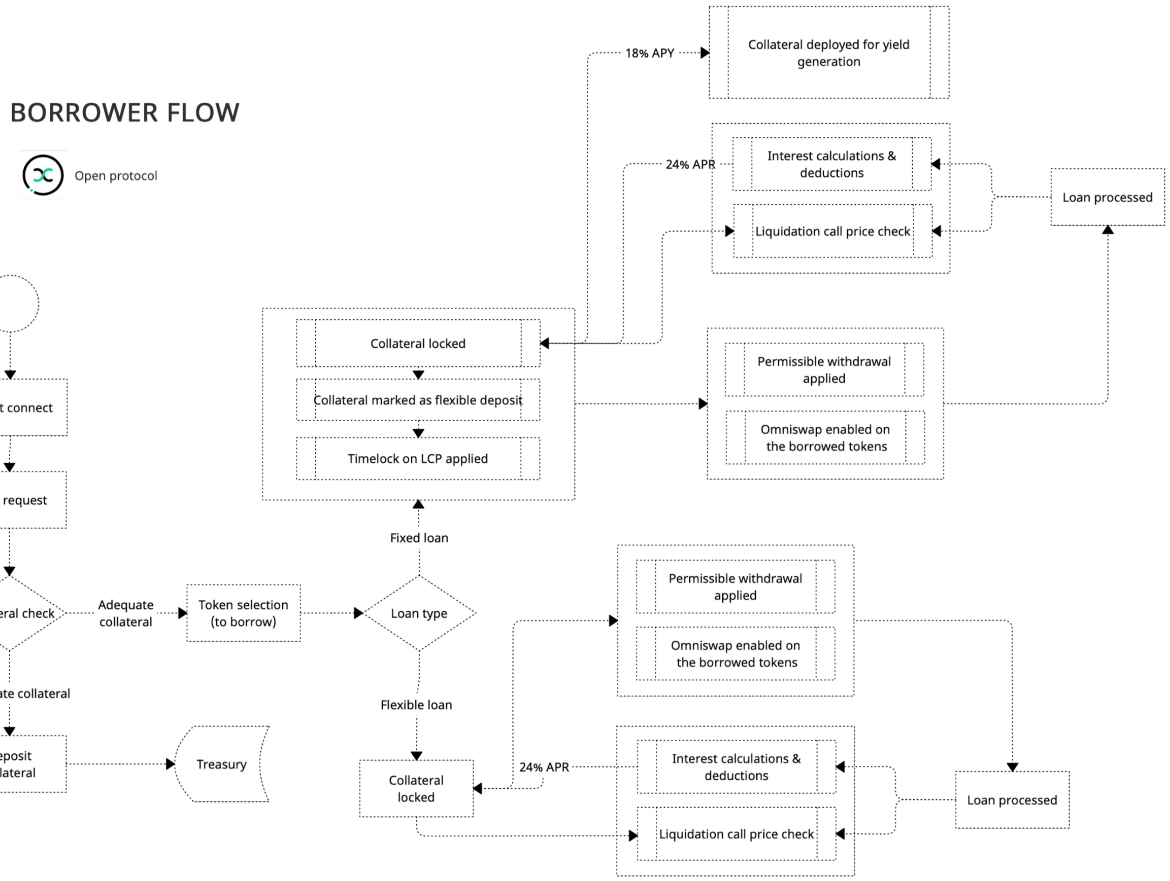
Similar to a depositor, a borrower must establish a relationship with the Open before a deposit is made, or a loan is sought. To achieve this, the loan seeker(borrower) connects a compatible wallet with Open's web application. A loan seeker can place a loan request, by selecting the intended token(s) to borrow, and the amount. A collateral check[3] is performed off-chain.The loan seeker is notified of the collateral inadequacy, in the event of one. The loan seeker in order to secure the loan, must ensure there is adequate collateral with respect to the CDR(collateral-to-debt ratio). The collateral similar to the deposits are stored in the treasury contract. The loan seeker can choose the desired loan type from the two options

1. Fixed loans
2. Flexible loans.

In the fixed loan type, a loan closure period[LCP] of 172,800 BSC blocks(approximately 6 days) is applied. The borrower can withdraw the collateral after 172,800 blocks. As an incentive, the collateral of the borrower with a fixed loan is regarded as a flexible deposit. This collateral enjoys the benefit of 18% annualized yield. Loan closure period is not applicable on flexible loans. A flexible loan can be closed anytime. A flexible loan does not earn yield as compared to a fixed loan.

[2] Assets under management

[3]An off-chain check to determine if the loan request is within the bounds of permitted CDR. If exceeded, the loan seeker is required to provide additional collateral, in order to secure the loan.



On Open, a borrower can swap the borrowed token(s) into another base token(s), or non-base token(s), and also partially withdraw the loan funds. To swap token(s), the borrower can make use of Omniswap[4], built on the Off-chain trade settlement protocol network.

The permissible withdrawal amount on a loan, is a determinant of the lesser USD value between the 70% of collateral, and 100% of the loan. For example: A user provided 1,000 BNB(token price, $50) as collateral, to borrow 5,000 LINK(token price, $10), and 50 ETH(coin price, $1,000). CDR in this case is 1:2 $(1000 * 50)/((5000 * 10) + (50 * 1000)) = 50000/100000 = 1/2$.
USD value of 70% collateral = $35,000
USD value of 100% loan = $100,000

In this example, the borrower can withdraw loan funds amounting to $35,000 in USD value.

To repay a debt, the borrower must have the deposit(s) in the same denomination as that of the borrowed token(s). The borrower can repay the debt partially, or at-once. If the loan is of fixed type, the loan closure period is applied even on the partial repayment.

Interest calculation

Open maintains a flat & predictive APR & APY. This mitigates the instability for both the borrowers and the depositors, risen from the dynamic interest rates determinant of the funds deployed. On Open, a

[4] A multi-chain near instant token swap product. See Omniswap section for more details.

borrower pays interest at an annualized percentage rate[APR] of 24%, while a depositor earns interest at an annualized percentage yield[APY] of 18% + dividends(for fixed deposits). The interest rates are revisited each quarter by the economist contract.

When a loan is in active state, the interest is deducted from the borrower's collateral every block. Similarly, the yield is credited to the deposits every block. This update is processed off-chain. During withdrawal, the yield accrued is added to the depositors' funds, before the funds release..

The payable interest is calculated in US dollar denomination against the borrowed assets. The borrowed tokens serve as the anchor for calculating interest rate deductions.

Below example explains the implementation methodology for calculating the Interest.

Eg: A user provided a collateral of 100ETH(coin price, $1,000) to borrow 10,000 LINK(token price $10). The 24% apr when determined to a block, amounts to $2.28 * 10^{-6}$%. This percentage when applied to the borrowed funds, equate to $\$0.002283105$ US dollars per bsc block. This is the deductible amount from the collateral provided by the borrower.

Continuing the above example on the apr calculation; we determine the interest rate per block in the event of variability change. i.e. change in the usd price of either or both of the collateral, and the borrowed token(s). Let us say, the price of LINK appreciates by 10% to $11 US dollars, while the price of ETH remained at $1,000 US dollars. The deductible interest per block in USD value now amounts to $0.002511415525114, or $2.511415525114 * 10^{-10}$% of the deposited ETH collateral, against the same $2.28 * 10^{-6}$% percentage interest per block. The deductible interest(in usd) per block is calculated by the formula -

$$I_{pb} = (2.28 \times 10^{-8}) \times \sum_{i=1}^{n} (T_{num} \times T_{usd})$$

$I_{pb} = Deductible\ interest\ per\ block.$

$T_{num} = Number\ of\ T-tokens\ borrowed$

$T_{usd} = USD\ price\ per\ T-token.$

Liquidation

A debt on Open, can be classified into one of the 3 categories

Debt category 1(DC1)	CDR ≥ 1	Collateral > Debt
Debt category 2(DC2)	0.5≤ CDR < 1	Loan is higher than the collateral, but less than 200% of the collateral value(in usd).

Debt category 3(DC3)	0.333 ≤ CDR < 0.5	Loan exceeds collateral by 200% in usd value, but is less than 300% of the collateral value(in usd).

[5]

Liquidation call

An early alert to notify the borrower that the collateral is nearing the liquidation price. A Liquidation call notification is accessible in the web application. Liquidation call is triggered at a price determined by the method

$$Lc = Lp + 0.03(Cusd)$$

$Lc = Liquidation\ call\ price(in\ usd)$
$Lp = Liquidation\ price(in\ usd)$
$Cusd = Collateral\ value(in\ usd)$

Liquidation price

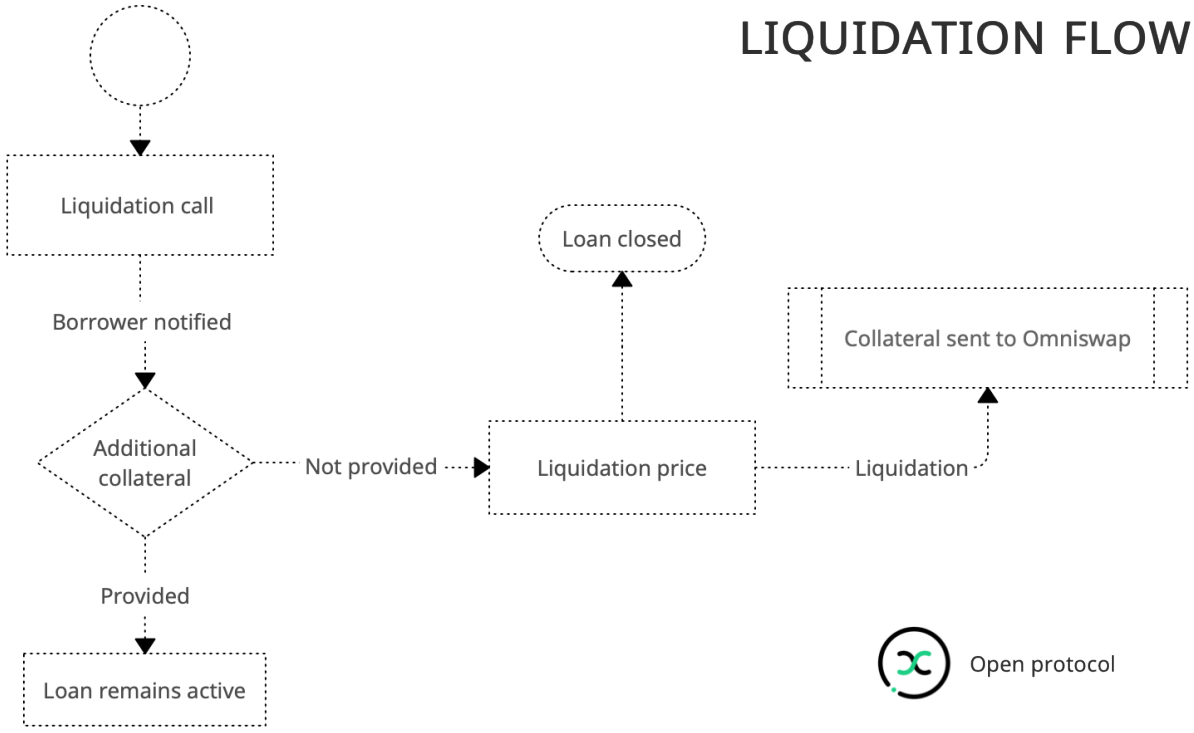
The price at which the collateral is liquidated. The category specific liquidation price is determined by the calculations mentioned in the below table. Loans are automatically liquidated by Open, when they reach liquidation price.

Loan category	CDR Range	Liquidation price formula
DC1	CDR ≥ 1	$Lp = Lusd + 0.06(Cusd)$
DC2	0.5≤ CDR < 1	$Lp = Lusd + 0.084(Cusd)$
DC3	0.333 ≤ CDR < 0.5	$Lp = Lusd + 0.108(Cusd)$

$Lp = Liquidation\ price(in\ usd)$; $Lusd = Loan\ value(in\ usd)$;
$Cusd = Collateral\ value(in\ usd)$.

The liquidation price appreciates by 2.4% of the collateral value as the debt category moves from DC1 to DC3.

[5] CDR = Collateral to debt ratio*



Benefits

A fixed loan is best suited for the long-term investors, and position traders, who may hold an asset expected to perform well over a period of a month to a year. A position trader can avoid sidelines, by leveraging Open's fixed loans, to earn yield on otherwise dormant funds. The trader can invest the borrowed funds into another asset most likely to yield better returns in a shorter span. With fixed loans, the borrower enjoys the below benefits.

1. Free-up the liquidity locked in an asset[for example: Bitcoin, Ethereum] to invest in other assets.
2. Earn an annualized yield of 18% on the dormant assets[deposited as collateral].
3. Secure any profits earned through the investment of the borrowed funds, to themselves.

A flexible loan is tailored for the day traders, swing traders & smaller investors. A flexible loan can be deemed as a source of the trading capital. This loan provides an opportunity to the borrower to continue holding a token, while freeing up trading capital to invest in other tokens, yield compound returns.

Deposits are designed to help a user convert the long-term investment hodl tokens into actively yield compounding secondary income streams, as compared to an alternative of storing on the centralised exchanges, or a wallet. Following an initial trial, Open will introduce support for the major cryptocurrencies such as Bitcoin, Monero, Polkadot through wrapped tokenization.

Off-chain trade settlement[OTS] protocol

Among the many challenges plaguing the on-chain decentralized financial services, the risk of front-running attacks, expensive transaction costs, high trade failure rates, & high-latency in trade

confirmations threaten the investor interest, service longevity and profitability of the decentralized finance.

We propose an Off-chain trade settlement[hereafter OTS] protocol layer as a solution. OTS protocol connects liquidity seeker(s)[hereafter, LS] with that of the liquidity provider(s)[hereafter, LP] autonomously, off-chain; facilitating multi-chain liquidity swaps, and trade settlements. To facilitate the autonomous exchange of tokens, an OTS participant must provide proof-of-funds. OTS is implemented on both Binance smart chain, and Ethereum. In the next section, we provide a functional overview of OTS protocol. OTS powers Omniswap, a multi-chain near instant token swap service.

OTS protocol participants

1. Liquidity seeker [LS].
2. Liquidity provider[LP].
3. Protocol enabler[Open].

To begin with, a liquidity seeker(LS) must set-up an escrow contract. An OTS escrow contract[OTSE] standard & template will be provided by the Open. Every LS prospect must implement the OTSE. The LS prospect can copy the contract code from the template standard, deploy the contract on BSC, or Ethereum network. The deployed contract is recognised as an Escrow contract. The escrow contract holds the tokens desired for the exchange, and provides a proof-of-funds. The escrow contract also implements msg.sender authentication for incoming token transfers, implements a receive & release function for autonomous token swaps, a liquidity exchange request function, a 2 block time-locked transfer function accessible only to the contract owner. A detailed escrow contract standard will be published in the days leading up to the OTS launch. Any Individual, or a decentralized financial service provider seeking liquidity must implement an escrow contract in lieu with the OTSE standard. After implementation, the prospect must submit the deployed contract for verification. The submitted contract is verified and audited by Open and its partner services. Once verified, contract address & the LS prospect details are updated in the OTS network registry[6]. The LS prospect is now a Liquidity seeker[LS].

A liquidity seeker can place a liquidity exchange(LE) request through a function call in the escrow contract. The function call emits two events Have, & Require. The Have event emits the data on the tokens the LS holds in the escrow contract, and intends to swap. The Require event emits the data on the tokens the LS requires in exchange to the tokens they possess. The Have event emit contains the data - uint256 tokenCode[7], uint256 msg.value, uint256 lsCode[8], bool proofOfFunds, address escrowContract. The Require event emit, provides the data - uint256 tokenCode, uint256 lsCode, address escrowContract. A token list, and their corresponding token codes will be provided by the Open protocol, on the launch of OTS protocol.

When a LE[9] request is placed, the back-end server listens to the events emitted from the escrow contract, places a liquidity availability check with the LP network via api. The participant LPs in response return the data on available liquidity, estimated average price to fulfill the LE request. Based on the available

[6] an access management contract. An escrow contract inherits & implements the access control permissions from the OTS registry contract

[7] tokenCode: A unique integer code assigned to a token. A tokenCode acts as a pointer to fetch the tokenDetails in the oracle contract.

[8] lsCode is a unique integer code provided to a liquidity seeker by the OTS. A combination of lsCode, escrow contract address enables other system participants to effectively identify a liquidity seeker.

[9] Liquidity exchange

information, the logic layer computes the optimum order distribution, such that the LS receives the best bargain. The server delegates the order fulfilment task to the LP(s) it deems best suited to fulfill the LE requirement. The server provides the LE delegated LP(s) & the LS, a transaction authorization hashcode, token amount to transfer(from the LP to the LS), LPcode of the authorised LP(s),token amount to receive(from the LS in exchange). The LS updates the escrow contract. The escrow contract uses this information to authenticate incoming token transfers, and release the tokens to the LP(s).

While fulfilling the LE request, the back-end calculates the number of tokens a LP must fulfill in consideration of the on-chain transaction costs.

$$T_{ls} = T_{lp} + tx_{cost}$$

$T_{ls} = Tokens\ available\ for\ exchange,\ offered\ by\ the\ liquidity\ seeker.$

$T_{lp} = Tokens\ transferred\ by\ the\ liquidity\ provider\ to\ the\ liquidity\ seeker.$

$tx_{cost} = transaction\ cost\ in\ T(lp)\ borne\ by\ the\ liquidity\ provider\ during\ LE\ fulfilment.$

Open will provide a registry contract for the escrow contracts in the OTS network to inherit necessary data on the access control, token details, network fees from the registry contract. Registry contract ensures all the network participants have access to the same data. The registry contract is upgradeable.

OTS implements an internal reputation management system. The delegation of the incoming LE requests to a LP is determined on the basis of reputation, fair-trade practices[10], available liquidity, & slippage. As OTS enables off-chain autonomous exchange of tokens, it can easily integrate with the centralised liquidity providers.

Why OTS?

OTS protocol eliminates the need for heavier business models that rely on the need for liquidity pools for every possible token pair, threat of trade front-running, or the expensive transaction fees risen from order-thinning across multiple decentralized exchanges, or liquidity pools.

For the sake of easier understanding, we have mentioned that an escrow contract acts as a provider for proof-of-funds. The contract name is not important, and may change by the time we launch OTS protocol. We recommend the protocol adopters refrain from making token transfers to the escrow contract, specific to the context of LE request. Instead, it is advised to store a portion of all the tokens in the escrow contract. In OTS, a transaction is processed off-chain in the gap, 2 consecutive blocks are mined. This mitigates the scope for trade front-running by a significant degree.

The LS participants in the OTS network enjoy zero network fees during the first 3 months of integration, or $1,000,000 USD gross swap volume is reached, whichever is earlier. After this period, the liquidity seekers pay 0.06% in the network fees, distributed between Open and the Liquidity providers in a 7:3 ratio.

[10] Not displaying any malicious intent to exploit an incoming LE request through trade front-running.

Omniswap

Omniswap, as the name suggests facilitates multi-chain token swaps. Omniswap is built on the off-chain trade settlement protocol pioneered by Open. Through Omni, a trader benefits from reduced transaction costs, better trade success rates, a trade latency improvement upto 70% over the existing services. The estimated average time for the swap request fulfilment is less than 3 blocks(approximately 9 to 45 seconds depending on the blockchain network(s) the swap is involved on).

Exchanging a token for another, on Omniswap is quite simple.

To begin with, the user must connect a compatible wallet with the Open's web application. This establishes a relationship between the user and the Open protocol. The user can navigate to the Omniswap product in application, and deposit the tokens intending to exchange. These tokens are deposited with the treasury. The user provides the token details required in exchange, placing the swap request. The treasury contract notifies the escrow contract to initiate the LE request. The LE request is fulfilled by the OTS network. The escrow contract receives the swapped tokens, marking the swap complete. The user can withdraw the swapped tokens from the escrow contract to the wallet of their choice.

Note that Omniswap catalyses the combined liquidity of the decentralised exchanges, centralised exchanges & the liquidity pools such as Uniswap, facilitated by the off-chain trade settlement protocol. Omniswap prioritises utilisation of Binance smart chain over Ethereum, for on-chain transactions to optimise network fees.

Explaining the use-case of Omniswap through an example - A user owning 10,000 ETH intends to convert the ETH into BNB. Trading 10,000 ETH is bound to impact the market adversely if traded on a single exchange, with a reciprocal effect on the slippage. To avoid this, the user lands on Omniswap, deposits 10,000 ETH, and places the swap request. The LE is fulfilled by the LPs on the OTS network, leaving the user with BNB coins equivalent to 10,000 ETH, with little to zero slippage.

At Open, we are constantly exploring radical solutions to make decentralised finance better. At present, we are developing proof of concepts for a few additional solutions that, we believe, will magnify the application of decentralized financial services as we know.

1. Decentralized identity verification[DIVE] protocol.
2. Open-chain.

Decentralized identity verification[DIVE]

DIVE protocol is a decentralised know-your-customer[KYC] protocol. An innovative solution enabling decentralised user verification. This protocol is necessary to permit decentralized financial systems process transactions of larger volume, while adhering to the AML[11] regulations worldwide. DIVE web application is built on the DIVE protocol. Storing images on-chain is expensive. As a result, DIVE web app stores the kyc data with decentralized file storage service providers such as IPFS[12].

[11] Anti-money laundering
[12]Interplanetary file system. Website - https://ipfs.io

DIVE implements machine learning & OCR[13] to autonomously verify a user's know-your-customer documents with the relevant government authorities off-chain, and store the documents on IPFS. Anyone can request the DIVE user data, off-chain and on-chain. To access the kyc data, a requester must have the authorization hashcode, and an authentication token. The authentication token is generated when a requester registers on the DIVE. The authorization hashcode is provided by the user to the requester on the requester's website, or mobile application. A requester can be anyone, including centralised exchanges. To generate an authorization hashcode, the user selects the requester from the available list, and the documents that user intends to share.

Requesters can integrate DIVE on their decentralised and centralised financial services as a cheaper alternative to the expensive outsourcing that costs north of 30¢ per verification. The requesters can request KYC data on-chain by placing a request with the DIVE smart contract, and off-chain, through an api. In both the cases, the data is transferred to the requester off-chain. Agnostic to the success or failure of a request, DND updates on-chain after every request.

Smart contracts today, enable a whole array of possibilities for anyone building a decentralised application. However, it is also well-known that network congestion is a common occurrence. For Open protocol to truly fulfil its mission, it needs to reduce external dependencies that may threaten its sustenance. For this reason, and being mindful of the need for decentralised finance specific blockchain, Open will design and launch is native blockchain, Open-chain, a next generation purpose-specific blockchain network designed to cater the needs of decentralised financial markets at scale.

Summary

1. Open protocol's native token is multi-chain interoperable. It lives on Binance smart chain, and Ethereum network.
2. Intelligent oracles and OSO token catalyse multi-chain interoperability. A user can swap any ERC20 token with that of BEP20 token and vice-versa from the day of launch of Omniswap.
3. Open lending facilitates loans upto 300% of the collateral.
4. Like traditional financial institutions, Open maintains a predictive interest rate. On open, a depositor earns 18% APY. The interest rates are revised every quarter, and any basis point adjustment requirements are made.

[13] Optical character recognition

5. Off-chain trade settlement protocol addresses some of the pertinent challenges faced by the present day decentralised services through off-chain trade routing.
6. OTS network layer resides on BSC & Ethereum. In future, it can be easily scaled to cater to additional blockchain networks such as Tron, Hyperledger.
7. Omniswap built on OTS[14] protocol, will be the first real-world application built on the OTS protocol.
8. Decentralized identity verifications provide a unique method in which a user can store the KYC data at one place, and provide hashcode based access to the requesters such as centralised exchanges, credit providers.
9. Open-chain is a next generation purpose-specific high through-put blockchain network designed to cater the needs of decentralised financial markets at scale.

Glossary

1. Collateral: A token(s) deposited by a borrower as a security deposit in-order to secure a loan.
2. Base token: Primary tokens supported by Open lending. ETH, LINK, BNB, USDC, UNI.
3. Oracle-service: Enabler of off-chain live data to the blockchain.
4. CDR: Collateral to debt ratio, is the proportion of collateral provided by a borrower against the loan amount. CDR relies on US dollars as a base currency to determine the ratio. For example: A user with the collateral of 100ETH, at a current ETH price of $1,000 can borrow funds of utmost $300,000 in USD value.
5. Depositor aka maker: A user who provides liquidity to the Open ecosystem through deposits.
6. Borrower aka taker: A user who borrows assets from the open lending product by providing a collateral in the range of 1:1 to 1:3 collateral to debt proportion.
7. APR: An annual percentage rate (APR) is the annual rate charged on the collateral against the borrowed amount.
8. APY: An annual percentage yield (APY) is the annualized rate of interest earned against the deposits. APY compounds gains on the interests earned by automatically considering the interests as additional deposits.
9. Collateral-check: An off-chain verification performed to determine if the loan seeker has adequate collateral.
10. LCP: Loan closure period. The time duration between the loan repayment and the collateral release.

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