



## wandxdapp &gt; WandX whitepaper

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# WANDX - ERC20 TOKEN PRODUCTS USING SMART CONTRACTS

## 1. Executive summary

As consumer appetite in various classes of assets have grown over the last half of the 20th century, methods to derisk a purchaser from speculative activity has evolved. An ideal example of the need for this derisking is the tulip mania that overtook modern day Netherlands in the 17th century. Similarly, purchasers of wine, paintings, property and stamps, are vexed with the question of how to ensure that pure speculation does not negatively affect the price of the asset that they are buying. Purchasers of cryptocurrencies face the same problem.

WandX seeks to establish an infrastructure for decentralized creation and trade of ERC20 Tokens built on the Ethereum blockchain. The pilot application allows users to create combinations of ERC20 Tokens (known as a Basket of Tokens) and trade the Basket by way of a single transaction.

## 2. Problem statement

Some of the problems that the WandX platform aims to solve are:

- How can users solve the problem that the price of any single ERC20 Token is higher than it ought to be, on account of speculation?
- How can users purchase multiple ERC20 Tokens in a single transaction?
- How can users not lose money even if there is a fall in the price of a single ERC20 Token?
- How can users increase the liquidity of single ERC20 tokens?
- How can users create and trade digital assets (such as loyalty points) recorded on a blockchain?

Many of these problems are currently being solved by centralized cryptocurrency exchanges and crypto-asset management platforms. Though popular and easy to use, many centralized exchanges and asset management platforms face problems with data security. They provide a centralized platform for blockchain assets, which by definition are meant to be decentralized. Other challenges faced by centralized exchanges and platforms include low liquidity thresholds and longer waiting periods for users to withdraw their funds from these exchanges.

### 3. Solution

WandX aims to solve the above problem by providing a decentralized platform that enables the creation and trade of Baskets of ERC20 Tokens through smart contracts.

- Users can trade in Baskets of ERC20 Tokens.  
Users can acquire multiple ERC20 Tokens with a single transaction. The WandX platform does not hold private keys or any Tokens.
- Innovative solutions to sell an ERC20 Token or Basket that is borrowed are being developed on WandX.
- WandX provides tools to create tokens that can be backed by a digital asset such as loyalty points, and these tokens can be traded on our platform. We are experimenting with a larger number of trades happening off-chain, and only record the trades happening on-chain.

Some of the ERC20 Token instruments that can be created on WandX are as follows:

**Baskets of ERC20 Tokens:** These are combinations of ERC20 Tokens can be created with a single transaction. Users can create a basket of ERC20 Tokens; this Basket has an associated price which is determined by the underlying ERC20 Tokens in the Basket. Creation and Trade of this Basket happens by way of smart contracts.

**Issue Crypto-assets:** WandX would enable a user to record his/her digital asset(s) on the blockchain through a user friendly front-end for creating tokens on Ethereum. These tokens would then represent ownership of crypto-asset(s) such as loyalty points

which could be transacted with other users. Such transactions, along with the decentralized exchange, could be used to create markets for any crypto-asset.

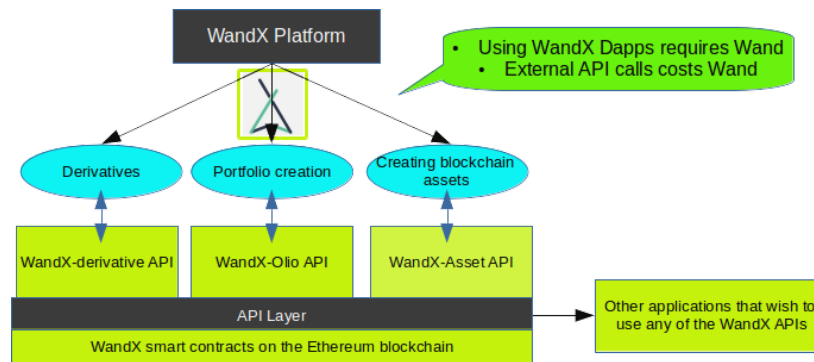
## 4. Identity

Although anonymity or pseudonymity is welcome in certain cases, in the WandX business model it would benefit the network as well as the users to reveal their identities or parts of their identities. This would be done through integration with identification platforms such as uPort and Civic. WandX enables solving the information asymmetry problem using the transparency of the blockchain, but still retaining the business model and working economics of creating liquidity of ERC20 Tokens.

## 5. Technology

From a technology standpoint, WandX is built on the Ethereum blockchain because of its smart contracting capabilities, large network of miners and users, and a large number of tokens already having been issued on Ethereum. Our initial product will be based on creation of baskets of ERC20 tokens on Ethereum. We have six types of contracts - data storage (d-gen), functionality enabler (f-gen), trade enabler (t-gen), settlement enabler (s-gen), rating enabler (r-gen), and analytics enabler (a-gen). Together they create a holistic ecosystem to create, trade, view, and settle contracts. Issuers create the ERC20 Token instruments, market makers and buyers purchase these instruments, sellers close the loop and thus all the players together create the market for the instrument. Using the f-gen, the issuer creates the product, the d-gen stores the product, the t-gen and s-gen are responsible for

decentralized trade of the product through smart contracts. The r-gen is optional, and can be used only by certain users to rate products.



[Figure 1. WandX platform architecture]

## 6. Incentivization

Users of each of the gen modules are incentivized to contribute to the platform. Incentives of different players on the WandX platform are slightly different depending on the value they bring to the platform. All the incentives are distributed using the Wand token which is based on Ether. The underlying value of this Dapp will be in its applications to create, trade and settle instruments based on ERC20 Tokens. The Token sale will distribute the Wand tokens among the public, after which bounty programs will be conducted to incentivize each player in the platform.

**Market maker:** Market makers are marketing partners. Their role is a combination of acting as an issuer and as a seller. They create a market for products that they think will sell based on their real-world experience in various industries. For example, if they think that a certain basket of five ERC20 Tokens has shown good returns in the past two years, they would create and trade this basket on WandX. They would receive Wand for its creation, and they can specify their trading fees when they sell the basket.

**Developers:** Benevolent developers are always welcome! Developers can greatly contribute to the Beta version of the platform by identifying bugs and suggesting features, and better yet creating and pushing the fix.

**Hackathons:** Virtual hackathons will be held once during the Beta phase.

**Issuer:** Issuers are basically creators of the ERC20 Token products.

**Sellers:** Using the d-gen, f-gen, and the t-gen, sellers will enhance the liquidity of the various products. Sellers are the other side of the contract, and help with price discovery of the basket or asset.

**Buyers:** Buyers will use the t-gen to trade in the products given below.

- **Baskets:** These baskets can be traded on the API and smart contract structure built on WandX.
- **Bilateral Contracts:** Two parties could create a bilateral contract whose settlement would be done by the s-gen automatically. This would be a contract which is executed by the EVM.

A month after our Token launch, we will introduce bounties for each player in the platform, and for each type of product that can be created.



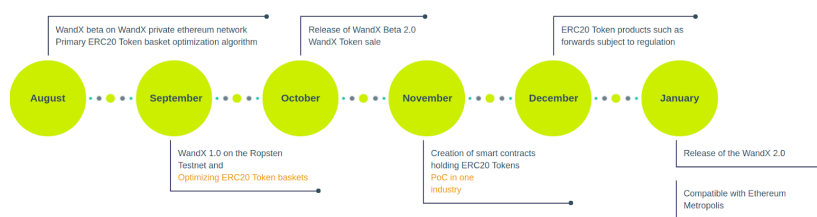
[Figure 2. WandX platform users and modules]

## 7. Governance

The point of creating this system of decentralized ERC20 Token contract settlement on Ethereum is to allow the system to develop trust amongst different players. However, adherence to the type of contracts on the platform can be further enforced using standardized accounts available on the platform.

Since this platform is developed on the Ethereum blockchain, the single source of truth of the creation, trade and settlement of the products is based on the blockchain. Integrations of uPort and other identity platforms will serve to increase trust in the system.

## 8. Timeline



[Figure 3. Roadmap of WandX development and feature addition for the next 6 months.]

## 9. Competitor Landscape

**Decentralized exchanges:** 0x project, Etherdelta

**Centralized exchanges:** Kraken, Coinbase, Shapeshift

**Centralized digital assets trading:** Kraken, Poloniex, Prism (by shapeshift)

**Decentralized digital assets trading:** Dcorp (Not released as per the time of writing this), EtherOpt (Beta)

Our biggest differentiator is that we are creating the entire infrastructure for decentralized creation and trade of any ERC20 Token instrument. Managers can create baskets of ERC20 Tokens or programmes to diversify such holdings, as well as define rules for trading these baskets.

Digital assets such as loyalty points can also be traded on WandX. There are no automated market makers or price discovery mechanisms, it is an open market to the gamut of users who would participate and benefit from this decentralized platform.

## 10. Technology integrations

### 10.1 Data from other blockchains and oracles

Using applications such as Oraclize, Streamr, and IPFS, we are in the process of creating the backend for d-gen and f-gen to connect and retrieve information from other blockchains as well as different web APIs. The users can use these third party applications to retrieve data which acts as an impartial oracle, required when blockchains have to interact with data on the web. These features (or suitable alternatives) would release on WandX 2.0.

### 10.2 IoT



In the not so distant future, we shall see machines interacting with each other through blockchains. We're building towards this future. Transactions between IoT machines ought to be permissible within our architecture.

### 10.3 Other platforms

After the release of WandX 1.0, we intend to add an API which could possibly be used in platforms such as Gnosis. To verify the identity of different players, we plan to integrate with identity verification systems such as uPort. This could be used to verify users' credentials, past transactions, trustworthiness and to minimise potential loss.

### 10.4 Analytics engines

We are working on integrating analytics tools such as R. This could be used to generate statistical models on the ERC20 products .



[Figure 4. Different technology integrations into WandX]

## 11. Legal considerations

The legal and regulatory environment around token generation events, cryptocurrencies and crypto-exchanges are in a state of flux. Our ability to operate legally in the jurisdictions that we operate in are subject to these legal and regulatory changes. As such, we anticipate initiating a continuous channel of discussion with regulators and to modify our roadmap and plans depending on these discussions.

The legal considerations of using the WandX platform is tied to the regulations around cryptocurrencies in your respective countries. Please read our terms of use, privacy policy requirements and consult with a legal expert in your jurisdiction before using the WandX application or taking part in our token sale.

Each phased plan of implementation will involve a continuous channel of communication with our lawyers, with regulators (including but not limited to the Monetary Authority of Singapore, the Securities & Exchange Commission of the United States and the Reserve Bank of India). Should either our lawyers or applicable regulators raise any issue in respect of the implementation of this roadmap, we will remodel this roadmap or obtain appropriate approvals.

YOU ARE ASSUMING THE RISK THAT A REGULATOR WILL IMPOSE REGULATORY RESTRICTIONS ON WANDX. WANDX WILL NOT BE LIABLE TO YOU FOR ANY DIRECT OR INDIRECT LOSSES ATTRIBUTABLE TO A LEGAL OR REGULATORY EVENT DESCRIBED ABOVE.

## 12. Development Roadmap

**Pilot:** Create, trade, and settle a Basket of ERC20 Tokens. For example, you could create a Basket of five ERC20 tokens in a given proportion. This Basket can be

traded with buyers who don't want to go into the trouble of buying five separate ERC20 Tokens. A trading fee and a creation fee can be specified at the time of creation. The buyer can then choose to liquidate his Basket and get the underlying cryptocurrencies into his wallet.

**Beta:** We will release our Beta by 16th September onto the Ethereum blockchain.

**Token sale:** We are launching our Token sale on 27th October. Further details are available in the Token sale section of the Whitepaper.

**WandX 1.0:** WandX 1.0 will go live on the Ethereum mainnet on 20th November.

**Pilot across industries:** We aim to be a truly decentralized platform for the creation and trading of baskets of ERC20 Tokens. We believe in building great products, but also in creating trustworthy brands. We plan to pilot our platform on a private Ethereum network in the telecom sector and carbon credit trading sector. For applications in industries as highlighted here, we will create a private network whose transactions will be pegged to the main-net to reduce transaction time and transaction costs.

**P2P contracts for digital assets:** In November, we will launch the P2P traded baskets and digital assets market on WandX.

**WandX 2.0:** This releases in Jan 2018. WandX 2.0 will be the platform to create and trade any ERC20 Token instrument.

## 13. Marketing and sales strategy

Our strategy is aimed toward onboarding a gamut of user types. We want our users to use our platform as a tool to understand and explore crypto assets, as a method to create crypto-assets, and to reduce the risk of fluctuations in the value of crypto assets.

### 13.1 Online strategy

- Ads: Google and Facebook ads.
- Social media: Use social media (Reddit, Twitter, and Facebook) to spread the word.
- Other media: Use medium, Blogs, YouTube videos, Github, our Slack channel, Reddit, and Telegram to inform users about our updates and new features.
- Videos: Create YouTube videos for instructions on how to use our platform.

### 13.2 Offline strategy

- Crypto Partners: Partnerships with various players to make it easy for fast onboarding.
- Industry Partners: Partner with industry experts and fintech startups who can use WandX to improve efficiencies in their processes. This would be to integrate off-chain transactions with on-chain settlements.
- Use cases: Create pilot programs of use cases.
- Sale bounty: Give out bounties for those who are willing to be our sales partners to identify and engage with potential clients.
- Advisors: We have a large team of advisors in the fields of statistics, data analytics, and markets.

## 14. Token Sale

We are launching the Wand token through a Token sale on 27th October. The Wand token will be used in the WandX platform for transacting with any of the WandX

APIs. The first WandX API will be the Olio basket trading application. This application allows users to create and trade in a basket of ERC20 tokens. The latest details of our token sale page will be updated on our site. Users must closely read the Terms and Conditions before contribution.

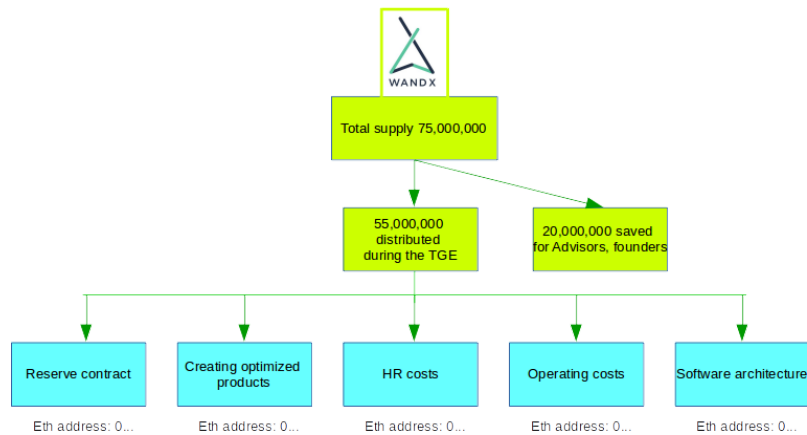
### **14.1 Why launch a new token instead of just using Ether?**

- Governance: Governance over updates to the software which is separate from the Ethereum ecosystem.
- Incentives: Incentive programs for various users, bounties for bug identification, and promoting the use of all the modules of our platform.
- Future development: If we decide to integrate the tokens created on other blockchains as well (such as Tezos and NEO), we would need to be able to introduce protocols such as the COMIT protocol for interaction between the blockchains. It would be more secure and more efficient to do this if we have our own token.
- Contracts for baskets of crypto assets: Collateral and margin can be posted in terms of a common Token whose movement is not directly dependent on Ether.
- Developing the WandX protocol: The Wand token will be used to access any application on the WandX platform. The functionality in all applications is enabled by APIs. When external applications use any of the WandX APIs, they will be charged a certain fee in Wand; to use any of the applications on WandX, users will have to transact using Wand.
- Use cases: To pilot the WandX protocol in the use cases mentioned here.

- Token sale contribution: The uniqueness of a Token sale is that it allows you to gather potential users of your platform.

## 14.2. Rules for the Token sale

1. A total of 75,000,000 tokens will be created by the WandX team. For the Token sale, 55,000,000 will be distributed, with the founding and advising team retaining the rest of the tokens.
2. There will be a minimum gas limit of 300,000. Users can participate using Metamask, MyEtherWallet, Parity, or Mist wallets. For participating in the Token sale, we will integrate Civic and uPort as identity management.
3. We aim to raise 12500ETH (ether) over a period of 4 weeks. We will end the token sale either when the 12500ETH is raised or when the 4 weeks is up, whichever comes first.
4. Users can send ether to our contract address which will be displayed 2 hours before the start of the Token sale. Ether must be sent through MyEtherWallet, Mist, Parity or Metamask. Do not send Ether through exchanges such as Jaxx, Kraken, or others as your Ether may be stolen.
5. The funds raised during the Token sale will be used for hiring, operation costs, and for technology development.
6. Start date - October 27th 2pm GMT; End date - November 21st 7:30pm GMT.
7. Tokens accepted - ETH.



[Figure 5. Description of how the ether received during the Token sale will be used]

### 14.3. Pre-Token sale

#### 14.3.1 Why launch a pre-Token sale?

- Gauge market sentiment – We would like to gauge market sentiment for a decentralized basket of crypto assets trading application such as ours.
- Marketing – In the six weeks till the end of our Token sale, we want to step up our PR and marketing campaign for our platform.
- Fast track mainnet release – We would like to release WandX onto the mainnet soon after our token sale, hence we will use part of the funds to stress test our basket trading application APIs.

#### 14.3.2 Time:

- Start date and time – October 9th 2pm GMT.
- End date and time – October 12th 7:30pm GMT.

*Update: Since the whitelisted users exceeded 500ETH of contribution, a pre-sale was not done.*

#### 14.3.3 Tokens:

- 5.2% of the total supply of Wand will be available for the Pre-Token sale.
- Pre-Token sale + Token sale = 12500ETH.

- Pre-Token sale = 530ETH.
- Total Supply = 75 million Wand.
- Supply offered for the pre-Token sale + Token sale = 55 million Wand.
- Supply offered for the Token sale = 51500000.
- Supply offered for the pre-Token sale = 3500000.
- Tokens accepted for the pre-Token sale = ETH.
- Minimum Ether required to participate in the Pre-Token sale = 1ETH.
- Remaining Supply after pre-Token sale + Token sale = 20 million Wand.
- This remaining 20 million Wand supply will be reserved for advisers, founders, and offered as a Seasonal Token Offering during the release of WandX 2.0.

Stage	ETH/Time period	Bonus	Wand
Early investors	250	50.00%	1ETH = 5688Wand
Pre-sale whitelist	300	30.00%	1ETH = 4929Wand
Token sale whitelist 1	10 days	18.00%	1ETH = 4475Wand
Token sale whitelist 2	8 days	12.00%	1ETH = 4247Wand
Token sale whitelist 3	6 days	6.00%	1ETH = 4019Wand
Token sale	4 days	0.00%	1ETH = 3792Wand
Total supply			Total Wand sold + 30% of total sold
Remaining 30%			Advisors + founders + Token offering after WandX 2.0

[Token sale process]

#### 14.3.5 How to participate:

Send your Ether only through MyEtherWallet, Mist Wallet, Parity Wallet, Metamask to the address mentioned on the Token sale page at 2pm GMT on October 8th for pre-sale and 2pm GMT on October 27th for Token sale. Do not send Ether through exchanges such as Poloniex or through wallets such as the Jaxx wallet, since your ether could be misplaced.

Please read the terms and conditions before participating in our pre-Token sale and our Token sale.

#### 14.4 WandX protocol and the Wand token



The Wand tokens are utility Tokens in the WandX application. They act as a loyalty points scheme in retail. Users are incentivized to create and trade in ERC20 Token baskets, hence every time a creation or trade occurs, users get a small amount of Wand tokens added to their address. The Ethereum blockchain protocol token (which is Ether) allows users to use Ether in the Ethereum world computer; the filecoin/storj/sia protocol token allows users to use tokens for file storage; pending regulatory approval, the WandX protocol would ensure clearing of ERC20 Token baskets based contracts. These contracts could be a number of Token products or baskets or variations on these products or baskets that are used to cater to users with different reward/risk appetites. Hence each of the modules at WandX are in the form of an API, both for security reasons as well as to enable users to clear contracts on other platforms using our APIs. The WandX protocol token is a means to an end - create decentralized markets for any ERC20 Token instrument/product.

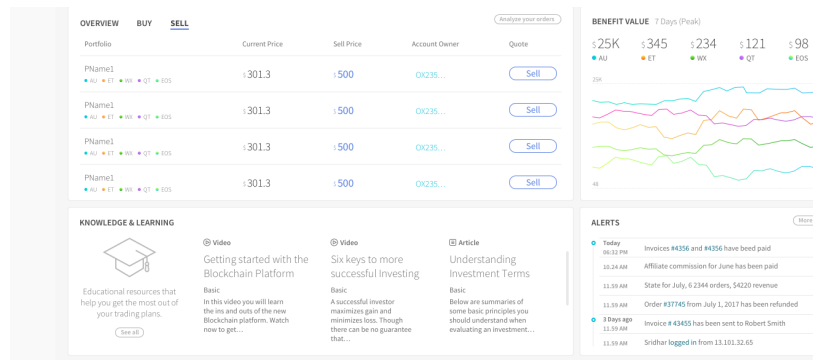
## 15. System architecture

### 15.1 Core platform

- **Data storage:** Data on all trades conducted will be stored on the IPFS/Swarm. However, our pilot will be designed to store data in our servers. This pilot is to verify contract creation, trade and settlement. The next pilot will verify data storage, retrieval and pushing data back to the IPFS/Swarm.
- **Methods:** Variations of baskets of ERC20 Tokens will be available as well as the ability to record current crypto-assets on the Ethereum blockchain. Users can create, trade, and settle these products

using the front-end, which connects to our smart contract architecture.

- **Permissions:** Users can set permissions on the contracts that they create. Permissions help build an additional layer of trust in the system.
- **Contract creators:** These are functionalities provided to the users to create their products. These directly link to smart contracts at the backend, hence any product that the user creates is in essence a smart contract on the Ethereum blockchain.
- **Connecting to other platforms:** We will eventually provide APIs to retrieve data from our platform for use in markets such as Gnosis. We would also integrate crypto-assets recorded on other blockchains through protocols such as the COMIT protocol, but this would only happen after the release of WandX 2.0 since we are experimenting with the stability of such protocols for mainstream use.
- **Off-chain capabilities:** We are working on technology to create most transactions off-chain in order to prevent clogging of the Ethereum network. In the real world trades happen in microseconds, which we can enable either through pegged blockchains, lightning networks, or state channels through integration of socket.io and Whisper.



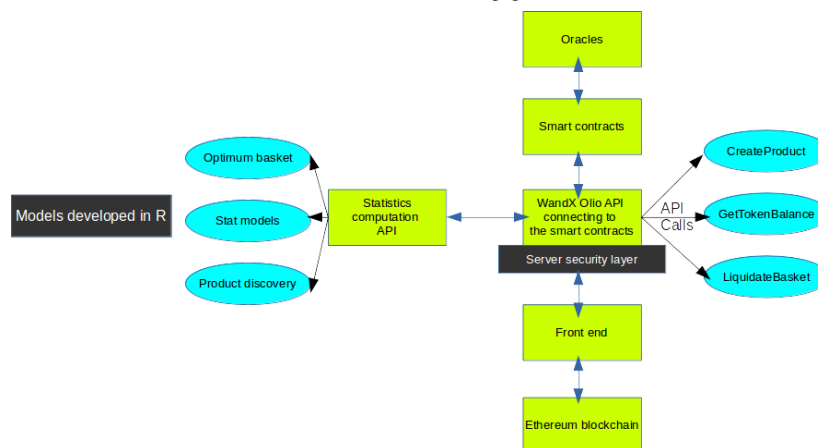
[Figure 6. Front end design of WandX]

## 15.2 WandX Beta (Olio basket trading application)

Our Beta product enables users to trade in a basket of ERC20 tokens on Ethereum. There are three main features of Olio - Create basket, buy a basket, sell a basket. The basic principles in designing Olio is to keep all transactions on-chain while all other computations and non-token transfer transactions off-chain.

### 15.2.1 WandX-Olio API

In order to realize the creation of the WandX protocol for decentralized ERC20 Token instruments, starting with the Olio basket trading application, WandX is creating APIs for all future Dapps on WandX. Each API will contain all functionality available on the Dapp, and the API will act as a bridge between the front-end Dapp and the Ethereum smart contracts. In addition to the protocol, the API would add a security layer for the platform as well as an additional business model for external API calls.



[Figure 7. WandX-Olio architecture]

### 15.2.2 Create baskets

Users can create a basket of ERC20 tokens (known as a basket from now on) which can then be traded with other users. For our Beta product, we will enable creation of baskets from the top 20 ERC20 tokens. Users can select the percentages of each ERC20 token in the basket. If the user has the coins in his wallet, the basket is immediately created. If not, the user is redirected to an exchange.

### 15.2.3 Buy baskets

Users can quote bid prices for basket that they want to own. For the first two weeks, users can quote prices in Ether, and then they can quote prices in only Wand tokens. All bids have an expiry date and time; when sellers accept a bid, the basket along with the underlying coins is transferred to the buyer and the seller receives Ether.

### 15.2.4 Sell baskets

Users who own a basket can quote an ask price when they want to sell it. For the first two weeks they may quote in Ether, following which period they would quote in Wand. When a buyer accepts the ask price, the basket is transferred and Ether/Wand is transferred to

the seller. If the seller wants to liquidate the basket and get the underlying coins, he activates the liquidate contract through the Dapp and the Wand-Olio API, after which they receive the underlying coins in their address.

#### 15.2.5 On-chain

- All transactions that happen on-chain are through the WandX-Olio API. The API integrates the Dapp with the smart contracts, hence improving security of the platform and providing an additional business model for future use of the APIs.
- Creating baskets: Creation of baskets by users is done through the WandX-Olio API.
- Buy/sell baskets: Accepting Bid and Ask prices calls functions from the API which execute the smart contract code.
- Liquidate baskets: Liquidation is the process of getting the underlying coins into your address. This event again calls the smart contract through the Olio API.
- Recording changes in the order book: Any change in ownership of a basket is also recorded on the WandX order book contract.
- Use of WandX Token sale revenue: The revenue gained from the WandX Token sale will be used as mentioned on our token sale page. Addresses are assigned for operational costs, hiring, and basket creation. Users can see how the revenue is used by seeing the consumption of tokens in each of these addresses.

#### 15.2.6 Off-chain

- Order book listing: Listing the basket available to buy/sell will be done off-chain. Keeping the list on-

chain would be very expensive because of gas costs due to change in contract state.

- Bid/Ask quotes: Listing of bid/ask quotes is done off-chain, with only the accepted quote being moved to the blockchain through the API and smart contract.

## 16. Risk and compliance

- Token sale: The ETH address to which you will have to send your ETH during the token sale will be on the date of the Token sale.
- Terms and conditions: Before participating in our Dapp or token sale, users will have to accept the terms and conditions and privacy policy of our platform, login through civic, enter their Ethereum address.

## 17. Advantages of WandX

- Automated decentralized contracts: There's no middleman to guarantee the obligation of smart contracts on WandX; this process is automated. WandX provides an easy, automated, decentralised method of creation and exchanging tokens. This would help in providing more liquidity to the contracts and the tradability of tokens.
- Cryptocurrency and blockchain based products: Create, sell, buy, rate cryptocurrency based products like AUG+GNO+BNT = product 1. This product 1 invests in all three cryptocurrencies to reduce risk of any untoward fluctuation in the price of any single cryptocurrency. You can create variations of these products to support certain blockchain based products and receive

consideration for the support through terms in the contract.

- Identity management: Accounts will be linked to uPort and other identity management software to guarantee your trustworthiness. If the person does not adhere to the terms of a contract, that information will be available to the entire network, and they will cease to trade with that person.
- Liquidity: The blockchain provides a single source of truth, but also enables the liquidity of cryptocurrencies in the market. We have inbuilt functions that can reduce or eliminate fluctuations of the market or, at worst, make them more predictable.
- Integration with IoT (optional): An IoT sensor could be attached to goods traded on our exchange to verify the validity of the transaction, which would connect with the blockchain.

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