

0x is a project focused on building a permissionless protocol to facilitate trading of ERC20 tokens via the Ethereum blockchain.

The project uses a combination of off-chain transaction relayers and Ethereum based smart contracts to provide an open order book and decentralized exchange. 0x provides the underlying infrastructure that allows for the creation of decentralized exchanges or integration into other blockchain based networks.

Project Overview

Name	0x
Issuer	0x LLC
Category	Platform token
Sector	Decentralized exchange
Sale Start	08/15/2017
Sale End	08/18/2017

Token Overview

Name	0x
Symbol	ZRX
Type	ERC20 token
Initial Distribution	500,000,000
Current Supply	518,918,540
Max Supply	1,000,000,000
Emission Type	Fixed Supply

Resource Links

- [Website](#)
- [GitHub](#)
- [Twitter](#)
- [Slack](#)
- [Reddit](#)
- [Medium](#)
- [Whitepaper](#)

Project Background

0x is building a decentralized exchange for the Ethereum blockchain. The team envisions this protocol as a way to facilitate permissionless transfers of value across the Ethereum blockchain. Initially, the project will focus on the exchange of ERC20 with plans to build capabilities to allow for the exchange of any Ethereum based asset.

Decentralized exchanges have the potential to offer advantages over centralized systems such as real-time settlement, reduced counterparty risk, censorship-resistant transactions, and transparent technology. 0x is not managing a decentralized exchange itself but is instead building the infrastructure to enable the creation of these platforms.

Unlike earlier decentralized exchanges 0x does not use on-chain order books, but instead uses "relayers" to manage order books through off-chain messaging. The team believes this reduces costs related to updating orders and offers a faster process. Transactions are settled on the blockchain based on quotes from the off-chain messaging service.

Integration of the 0x protocol will happen through two primary methods. First, partners will integrate the technology to power various services, such as marketplaces in District0x or prediction markets in Augur. Second, users can create decentralized exchanges that facilitate the swapping of ERC20 tokens. This includes services like Radar, The Ocean, and Paradex. The goal is to create a venue for decentralized exchange with an open protocol supporting as many relayers as possible. So a sufficiently sized pool of liquidity can be aggregated for the efficient trading of tokens amongst participants.

Technology

0x relies on focuses on seamlessly integrating transactions initiated off-chain via state channels with formal on chain settlement to the Ethereum blockchain. Relayers maintain the off-chain order book that helps to match buyers and sellers but they never take custody of assets. Instead, assets are swapped directly between buyers and sellers, point to point, to ensure their security. Relayers receive compensation, in 0x (ZRX) tokens, for hosting the order book based on the fee schedule that they set.

Transactions are enabled by a series of smart contracts that receive instructions from the taker (the user that is trading against a quote) of an asset based on the quote from a maker (the user that added a quote to the order book). The order is executed on the blockchain by transferring assets between the maker and taker accounts.

In addition to the order book system maintained by relayers, assets can be exchanged through any messaging system as long as they are formatted to flow into the smart contract system correctly. The proper format is maintained in a token registry, which is a smart contract storing the list of ERC20 tokens available for exchange. Metadata stored for each token includes name, symbol, contract address, and the number of decimal places needed to represent a token's smallest unit (used to determine exchange rates).

The registry serves as the official on-chain reference for settlement of transactions used by market participants to confirm the token addresses and exchange rates trades will settle at once executed. Going forward the team plans to introduce governance mechanisms that will give ZRX token holders oversight of the registry and allow for future upgrades to the network.

Because the relayer system resides outside of Ethereum's main chain one of the primary concerns the team is looking to proactively address is the potential for front-running. Theoretically, when transactions are delivered to the Ethereum main chain an order could be front run by adding extra gas to a transaction that could allow a user to have their transaction filled first.

The team has indicated a number of ideas on how to tackle the problem and are engaging in targeted experimentation to identify the most promising solution(s).

Distribution

0x completed a token sale on Aug. 16, 2017, after raising \$24 million in ether (ETH). The sale was planned to extend to Aug. 18, but ended after the purchase cap was reached in the first 24 hours. A total of 1 billion 0x tokens were created, with 50% of total supply (500 million ZRX) allocated to participants in the token sale.

The project retained 15% of supply (150 million ZRX) for ongoing expenses and allocated another 15% to a developer fund to help grow the 0x ecosystem. The remaining tokens were split among the team, which received 10% of supply (100 million ZRX) with a four year vesting schedule, and initial advisors and investors, which also received 10%.

The 0x team used the sale as an opportunity to demonstrate its relayer network by using them to distribute tokens to participants based on the terms of sale stored in the Ethereum based smart contract.

Team

Will Warren

Co-founder & CEO

- Previously applied physics at Los Alamos National Laboratory

Amir Bandeali

Co-founder & CTO

- Previously fixed income trader at DRW

Alex Xu

Director of Operations

- Previously digital marketing at Google and vendor management at Amazon

Advisors

Fred Ehrsam

Co-founder of Coinbase

Olaf Carlson-Wee

Founder of Polychain Capital

Joey Krug

Co-CIO at Pantera Capital

Linda Xie

Co-founder of Scalar Capital

Investors

Blockchain Capital

Polychain Capital

Pantera Capital

Additional Resources

- [Multicoïn: 0x Analysis and Valuation](#)
- [List of 0x Integrators](#)
- [Blog: Governance in 0x Protocol](#)

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