



A Comprehensive Research Paper to Data Token Pool Share Vesting & Liquidity Withdrawals

Moritz F.

Data Whale

Table of Contents

Introduction: The Decentralized Data Economy 3

Ocean Protocol’s New Asset Class: Data Tokens 4

The Data Token Value / Usability..... 5

Current Challenges: Data Assets 5

Data Whale Initial Data Offering Vesting Proposal 7

Conclusion 8

References 8

Introduction: The Decentralized Data Economy

The Economist (2017) highlights that the world's most valuable resource is no longer oil, but data. Our world produces data at rapid speed, set to reach 180 Zettabytes (1 Zettabyte = 1 trillion Gigabytes) by the year 2025 (Patrizio, 2018). Arguably, it is difficult to imagine how a data economy could work, as there are several trust-, privacy- and security-layers involved. However, consumers are mostly unconcerned by giving up their data in return for using complimentary services, such as Facebook or Google. Every time a consumer agrees to company terms & conditions on the internet, it usually involves agreeing to sharing data at some level. Cambridge-Analytica, among other data scandals, prove how our data is monetized by a select few organizations for profit. The global data market-capitalization is valued at up to 5 trillion US\$ or more and is growing in a fast paced. It comes to no surprise that this valuation is captured by limited global corporations, growing a bigger data monopoly every day.

The need for an industry revolution is evident, where data owners receive the necessary incentives to treat data as a trust-less asset that should be unlocked and monetized, creating incremental organizational value and new profit streams. An example for this approach is the Goldcorp challenge, where a near-bankrupt North American Gold Mining Business published a 400MB dataset of geological mining locations to receive crowdsourced analyses of new drilling sites against a 'finder's fee' to the participating data scientists. Against all recommendations, Goldcorp took the chance to make their business data, collected over a timeframe of 50 years, publicly available. In return, Goldcorp received data analyses from all over the world and were able to identify 110 new drilling sites, resulting in a transformation of the business that is worth more than 10 billion US\$ today.

The example of Goldcorp can teach companies a valuable lesson on how data should be treated moving forward: an asset to the business that helps to internally optimize processes, but also generate additional external revenue streams and create value from external stakeholders. A decentralized data economy, powered by blockchain technology and implemented by Ocean Protocol, solves the use-case of transparent and safe data monetization, which is further discussed in the following research paper.

Ocean Protocol's New Asset Class: Data Tokens

Ocean Protocol's vision is to become the underlying framework for data monetization with the help of blockchain technology. Ocean Protocol's native currency, \$OCEAN, acts as the medium of exchange and liquidity to trade data as an asset class. This is achieved with the help of blockchain tokens, more specifically Data Tokens. In a nutshell, Ocean Protocol's technology and Data Token Marketplace makes it possible for data owners to create a unique token for their data with a fixed supply. This process is called 'Initial Data Offering', bearing similarities to 'Initial Public Offerings' (IPOs), where common stock is issued representing ownership in company infrastructure. Similar to IPOs, an Initial Data Offering is the process of launching Data Tokens to the public market, an openly tradeable financial investment vehicle that represents ownership in a data asset. Though Data Tokens will likely be used for speculative purposes, they also serve a far more important purpose: data exchange. As blockchains record every transaction safely and transparently, data owners have the possibility to track how their data has been accessed and by whom. In order to access and 'consume' data, data buyers need to purchase at least 1 Data Token of the corresponding data asset that they wish to access. This Data Token can then be sent to the data publisher's wallet in a purchase transaction, revealing the encrypted access link to the data, which can then be used by the data buyer.

To encourage the adoption of the Data Token asset class, Ocean Protocol's technology is already deployed on a multitude of blockchains, such as Ethereum, Binance Smart Chain and Polygon Matic. Whilst \$OCEAN is the underlying medium of exchange to create Data Tokens and provide liquidity to their trading pools, Data Tokens are the currency to trade and transact data. As with any financial market, Data Tokens are required to be a 'liquid' asset, in order to be traded in large quantities. For this, Ocean Protocol deploys the approach of Automated-Market-Makers (AMMs), where stakeholders can provide liquidity in \$OCEAN to the trading pools of their preferred Data Tokens, making them available to trade at all times. Liquidity provision also signals whether a dataset is trustworthy or not, as liquidity providers would prefer to stake their \$OCEAN on a dataset that is backed by a quality dataset, in the hope that its token will be traded often. Traders are required to pay a trading fee (i.e., swap fee) for every trade, which is then distributed among the liquidity providers and increasing their \$OCEAN stake passively. The following chapters provide a detailed recommendation for data publishers on how to manage their liquidity and Data Token liquidity pools.

The Data Token Value / Usability

Since launch of the Ocean Marketplace, the Data Whale team has closely monitored the behavior and relation between data providers, stakeholders and data users. Due to the speculative nature of Data Tokens and liquidity pools, it is imperative to provide the appropriate incentives to all entities, which guarantee long-term success of the Data Token. Based on our use case of the “Data Whale Ocean Marketplace Directory & Pool Ratings (TREP-36)” dataset, which boasts 6.5M US\$+ in total transactions, we identified the following requirements.

- Regular updates to the dataset improve the intrinsic value of the data and encourage data buyers to conduct a purchase. In turn, this will justify price increase, due to greater data value and potentially greater demand for the dataset.
- The more use-cases a dataset can present, the greater its possibility to attract data buyers. Inherently, the Data Token may increase in price based on the number of buyers that are interested.
- When staking \$OCEAN as an Automated-Market-Maker (AMM) to a Data Token liquidity pool, data quality, usability and number of data sales should remain the most crucial decision- making factors for providing liquidity.

Current Challenges: Data Assets

The following analysis of the Ocean Protocol Marketplace’s current challenges provide a deeper understanding of potential risks when transacting within a decentralized data economy as a data publisher, stakeholder or buyer.

- Data publishers are providing access to datasets on the Ocean Marketplace that lack usability. Data quality cannot be reviewed prior to the purchase and due to a lack of liquidity across most Data Tokens, the quality control and verification is practically non-existent. There are tools that provide greater insights to each of the Data Tokens, such as RugPull-Index (www.rugpullindex.com) and also Data Whale’s Marketplace Directory (<https://market.oceanprotocol.com/asset/did:op:fcB47f5781F14Ed7E032BD395113b84C897aA23f>).

- Most data publishers are not updating their dataset. This could result in a negative sentiment, withdrawal of liquidity and minimize the data use-case.
- Speculative behaviors by liquidity providers (AMMs), providing \$OCEAN to the Data Token pool for a very short period of time. Their incentive to maintain their \$OCEAN stake in the pool is decreased, as greater returns can be achieved by adding liquidity early and withdrawing it when the pool's value increases.
- Traders aiming to trade Data Tokens against \$OCEAN are at greater risk to extreme volatility in the Data Token price, as the assets' liquidity pools are rather illiquid.
- Generally, there is a minimal incentive of tokenizing data for data publishers, due to a lack of data buyers, who are the main revenue-driver for data publishers on the Ocean Protocol Marketplace. Milat & Siebert (2021) provided a structured research to onboard more data consumers in their article "Go-To Market Analysis for Data Markets & Data Brokers on Ocean Protocol".

Therefore, data publishers, liquidity provider, Data Token traders and data consumers are required to identify the below scenarios before engaging with this new asset class.

- **Dormant Dataset:** Liquidity and price will most likely not grow, as the data is not updated and therefore liquidity providers or data users do not find value in the dataset.
- **Pump & Dump Dataset:** Should the pool liquidity grow exponentially at the beginning of an Initial Data Offering, regardless of data value, it can be assumed that this is due to a short-term, speculative nature caused by liquidity providers.
- **High Liquidity Value / Low Usability Dataset:** Should the dataset prove a low usability or appeal to a small target audience, but has a high liquidity value, the long-term success of the Data Token remains questionable, as the data publisher has limited incentive to maintain the dataset in-line with its value growth, due to lack of revenues from data buyers.

Based on the above analysis, it can be concluded that it is important to incentivize data publishers, traders, liquidity providers and traders equally. At its core, data sales are an important indicator to determine the long-term success of a pool, because growth in demand leads to increased trades, purchases and therefore greater incentive to provide liquidity, which also results in an increased token price and higher financial incentives for all participants.

Data Whale Initial Data Offering Vesting Proposal

Our proposed Data Token vesting schedule may vary based on the use case and value of the Initial Data Offering (“IDO”) and needs to be thoroughly analyzed on a case-to-case basis, whilst keeping in mind the benefit of data users and data owners, traders or publishers. Based on the above research, we assume that the below proposal encourages long-term value and incentive for our stakeholders.

Data Whale’s purpose is to provide transparent and safe staking opportunities. We believe that transparency is an important decision-making factor for stakeholders. Therefore, please go through the below terms and conditions carefully, before staking \$OCEAN to our liquidity pools. Our proposal does not represent financial advice and all of our transactions will be announced publicly.

Data Whale can inject additional liquidity to the Data Token pool at any time, either using its owned Data Tokens or by adding fresh capital in the form of \$OCEAN tokens. For every Initial Data Offering launched by Data Whale, the following Data Token vesting guidelines apply, unless stated otherwise in the stakeholders’ brief.

CONDITION 1: Publisher’s pool shares are above 100

Data Whale reserves the right to withdraw all pool shares above 100 at once, but never more than 10% of the entire liquidity of the Data Token pool per week.

CONDITION 2: Publisher’s pool shares are between 75 – 99.99

Data Whale may withdraw a maximum of 5% of its owned pool shares per week.

CONDITION 3: Publisher’s pool shares are between 35 – 74.99

Data Whale may withdraw a maximum of 3% of its owned pool shares per week.

CONDITION 4: Publisher’s pool shares are between 0 – 34.99

Data Whale may not withdraw any pool shares, unless the dataset is retired.

Data Whale reserves the right to participate in its own Data Token buy-backs. Data Whale may also decide to sell Data Tokens that have been received from buy-backs or data sales in its treasury at any time on the open market without restrictions.

Conclusion

Our Data Token vesting proposal, which was derived from our use-case “Ocean Marketplace Directory & Pool Ratings”, may be used by data publishers to balance the incentives and interests of all stakeholders on the Ocean Protocol Marketplace. This research has been written with our best intentions and merely represents a theoretical process that is yet to be tested.

Data Whale’s objective is to support a long-term growth of a decentralized data economy and strengthen the value proposition of Data Tokens, a new blockchain asset class unlocking the world’s most valuable resource: data.

This research does not provide financial advice and the proposed vesting guidelines may be adjusted at any time, whilst noticing the best of interests of all stakeholders. For questions, please reach out to info@datawhale.online.

References

The Economist. (2017, May 06). The world's most valuable resource is no longer oil, but data. Retrieved August 01, 2021, from <https://www.economist.com/leaders/2017/05/06/the-worlds-most-valuable-resource-is-no-longer-oil-but-data>

Patrizio, A. (2018, December 03). IDC: Expect 175 zettabytes of data worldwide by 2025. Retrieved August 01, 2021, from <https://www.networkworld.com/article/3325397/idc-expect-175-zettabytes-of-data-worldwide-by-2025.html>

Williams, M. (2019, March 25). History of Challenges: The Goldcorp Challenge. Retrieved August 01, 2021, from <https://www.herox.com/blog/408-history-of-challenges-the-goldcorp-challenge>

Milat, S., & Siebert, M. (2021, July 19). Go to market analysis for data markets & data brokers on ocean protocol. Retrieved August 01, 2021, from <https://bit.ly/3j8h99r>