

Hacking Open the Open Data Economy, Ocean style

@oceanprotocol
Trent McConaghy

The Token Economy Is Opening Up Money

**Opaque, Power
Concentrated**

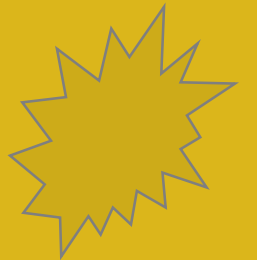
**Transparent,
Permissionless**

Money

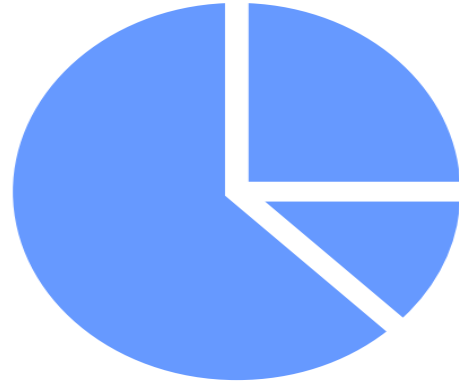
**Shadow Money
Economy**
The Fed, Banks



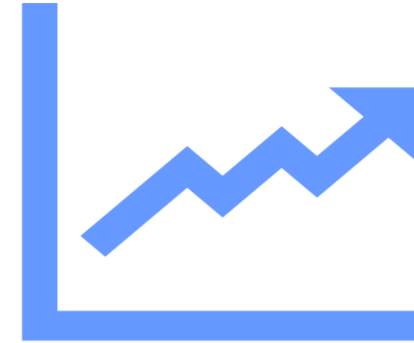
**Token
Economy**
BTC, ETH, .*



World Bank: “Digital Economy is a Data Driven Economy”



In 2016, the global Digital Economy was worth \$11.5 trillion, 15.5% of the world's GDP.

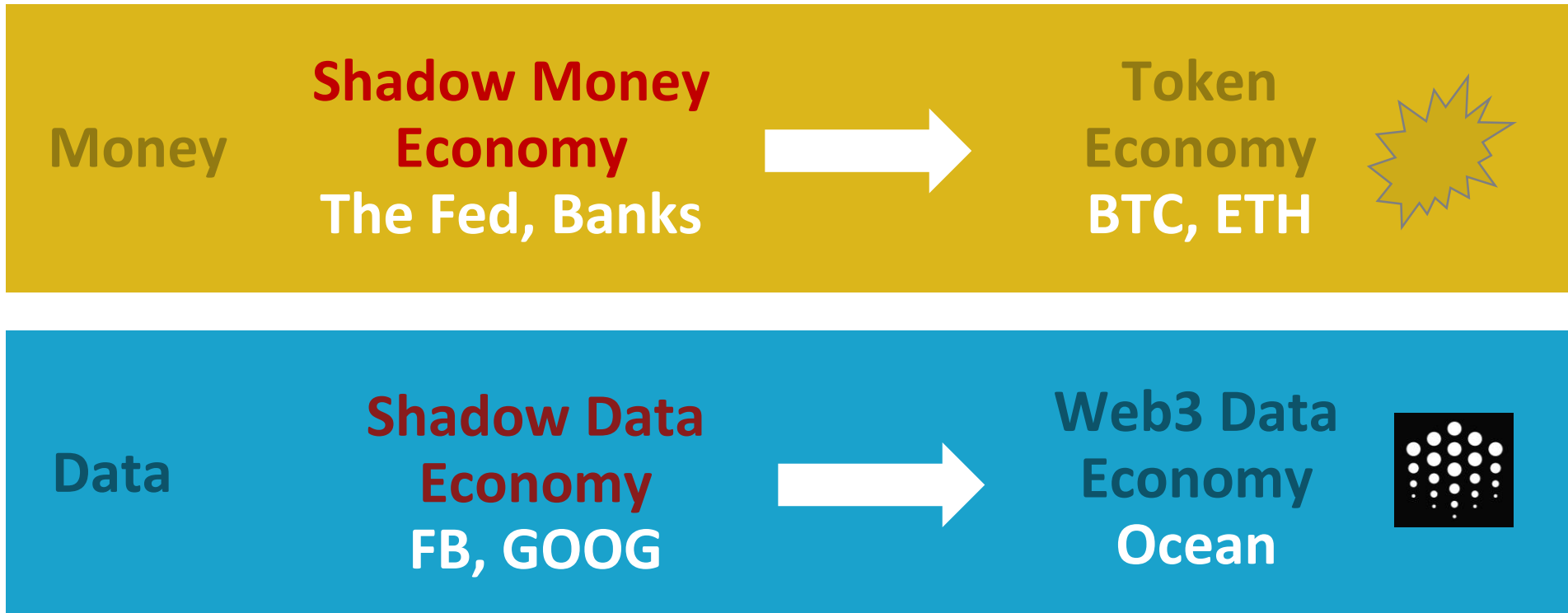


It is expected to reach 25% of the world's GDP in less than a decade.

Just as We Opened Money, Let's Open Data (While Maintaining Privacy)

**Opaque, Power
Concentrated**

**Transparent,
Permissionless**





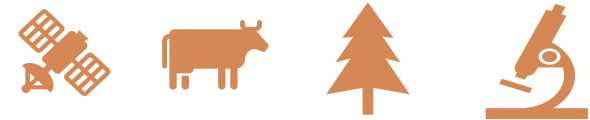
About Ocean

Ocean makes it easy to build data commons + data marketplaces

Enterprises, govts, NGOs
With data & compute



Analysts & Data scientists
With problems to solve



Data market

DM

DM

DM

DM

Data commons

Analytics &
data science tools

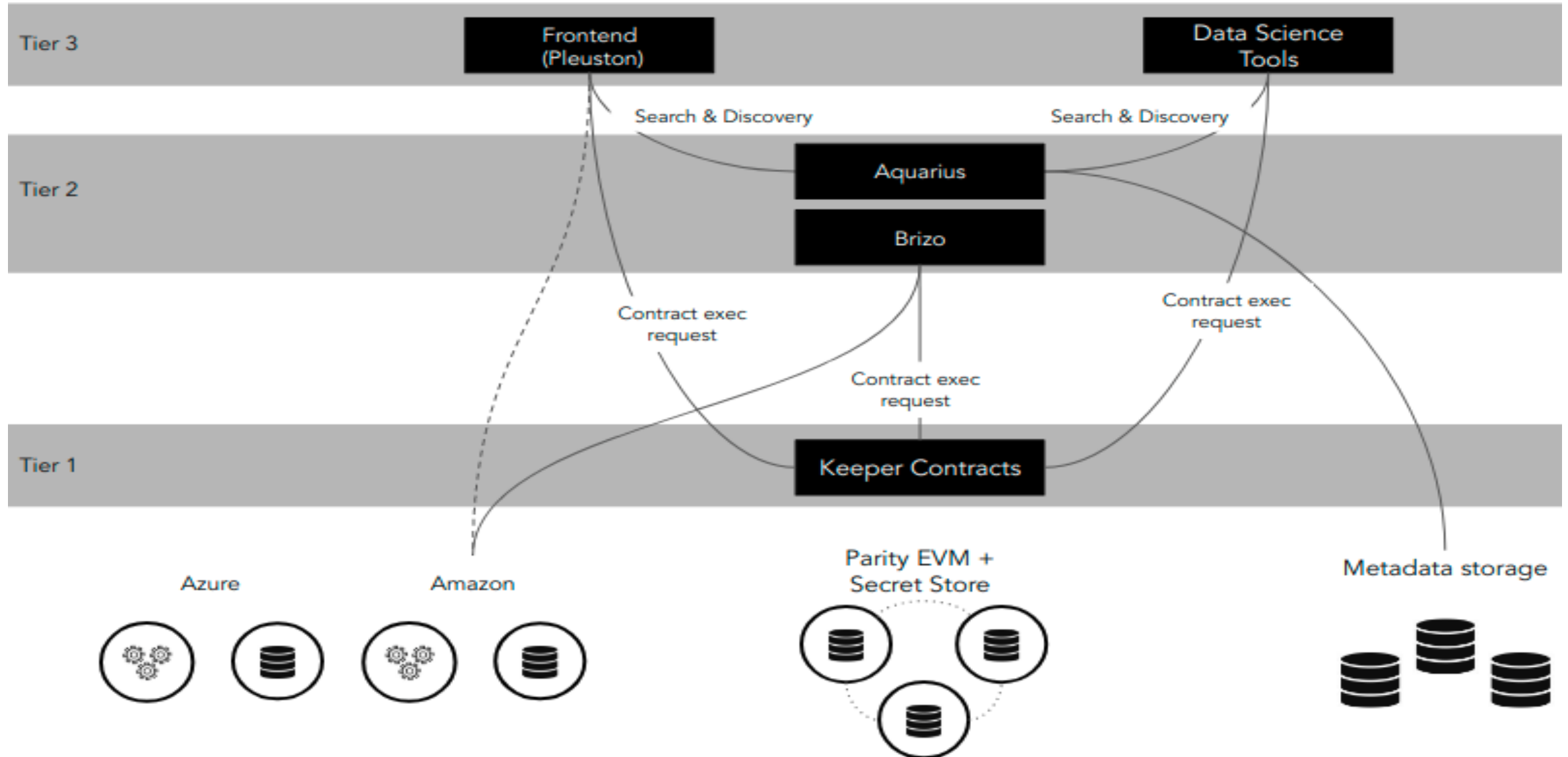


Substrate for data economy



Ocean is like Øx, but for *data* not tokens

The heart is data *access control*

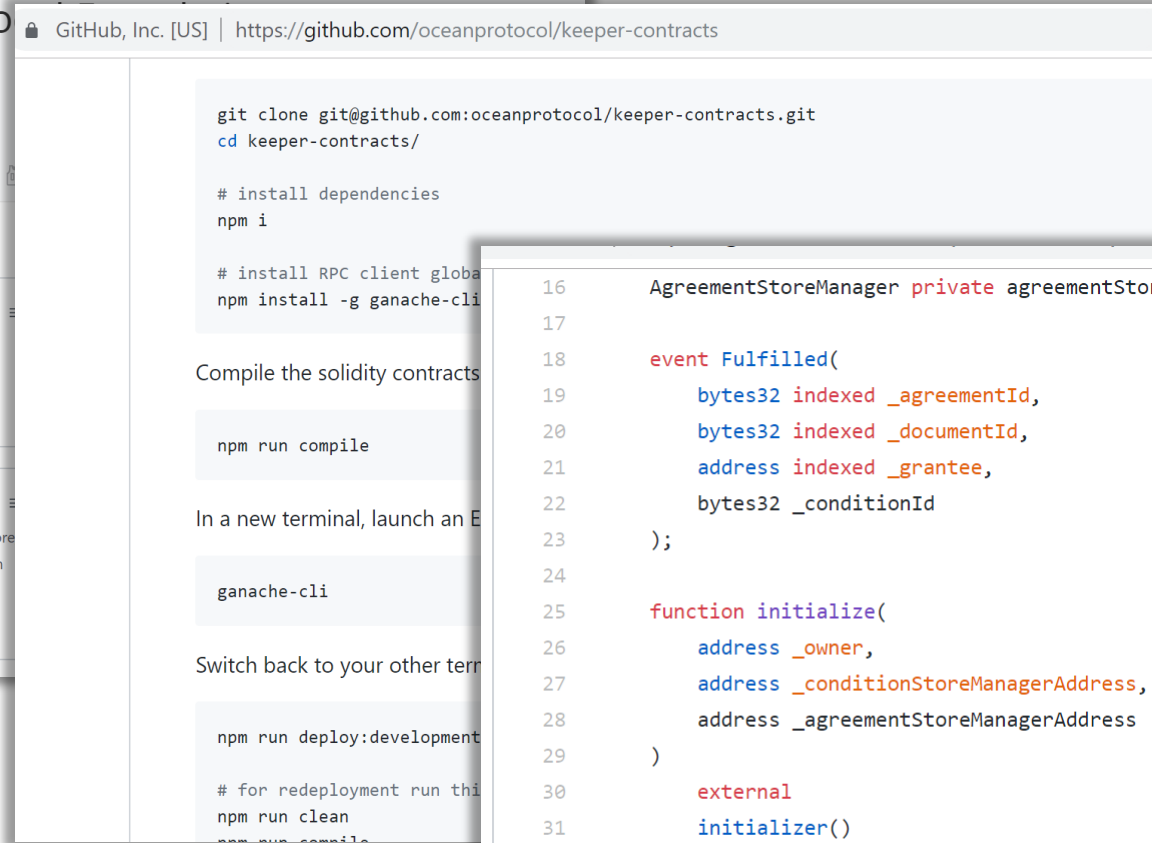
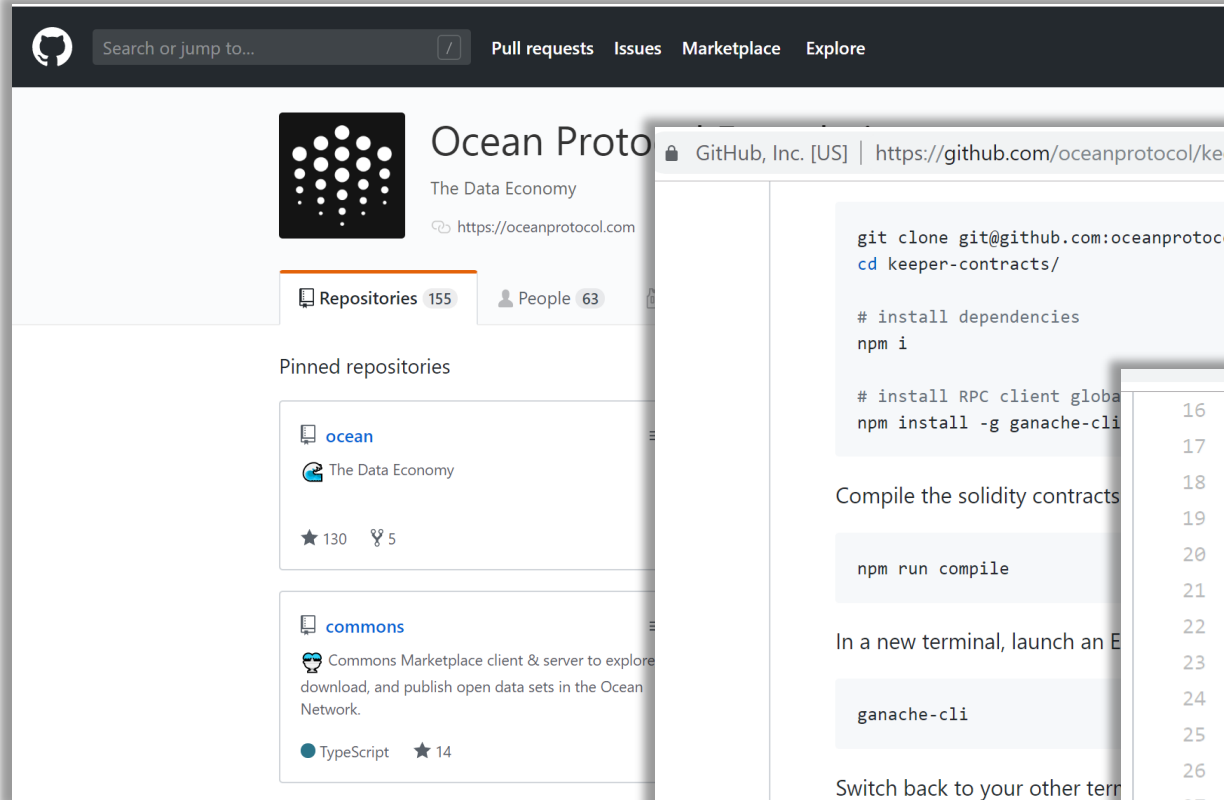


On Ocean Tech

- Public EVM network, running Parity POA
 - But with access control on data itself
 - (Roadmap to Permissionless)
- TokenBridge to Ethereum mainnet
- **“Squid” = SDKs in Python, JS, Java. REST API (alpha)**

All Ocean Code is Open

github.com/oceanprotocol



Ocean Commons: Open Data on an Open Substrate

commons.oceanprotocol.com



[Channels](#)

[Publish](#)

[History](#)

[Faucet](#)

[About](#)



Commons

A marketplace to find and publish open data sets in the Ocean Network.

 e.g. shapes of plants

SEARCH

Featured Channel

AI For Good



Ocean MantaRay: Data Science on Hosted Jupyter Notebooks

datascience.oceanprotocol.com

The screenshot displays the Ocean MantaRay Jupyter Notebook interface. On the left, a sidebar contains a file explorer with a table of files and folders. The main area is divided into two panes: a 'Launcher' pane on the left and a 'Notebook' pane on the right. The 'Launcher' pane shows a list of files and folders, including a folder named 'mantaray_jupyter'. The 'Notebook' pane shows a Jupyter Notebook interface with a 'Python 3' kernel selected. The interface includes a top menu bar with options like File, Edit, View, Run, Kernel, Hub, Tabs, Settings, and Help. The background of the interface features a dark theme with a network graph visualization.

Manta Ray
Data Science powered by Ocean Protocol

The Manta Ray notebooks provide a guided tour of Ocean Protocol in an interactive Jupyter Notebook environment. You can run these notebooks on your own pre-configured JupyterLab instance or on a public instance. Notebooks are stored on GitHub and can be accessed via the GitHub account.

This project is in alpha! Feel free to report bugs or suggest features in our [Gitter channel](#). Notebooks and Notebook instances may be purged.

Name	Last Modified
mantaray_jupyter	seconds ago

Launcher

Notebook

Python 3

Console

Python 3

Other

Terminal

Text File

Ocean Will Transform Data Custody

- “Not your keys, not your data”
- Data custody is now in the hands of the data owner
- Each govt entity, each company, each individual has a “data wallet”.
 - We can use existing token wallet infrastructure.
 - Therefore inherit the benefits of token wallets
- Data custody = like token custody (sw wallets, hw wallets, etc)
- Transfer data access = like transferring tokens
- Data security = like token security (bank-grade by default)

Documentation:

docs.oceanprotocol.com



Ocean Protocol Documentation

Learn about the components of the Ocean Protocol software stack,
and how to run or use the components relevant to you.

Core Concepts

Understand the fundamentals
of Ocean Protocol.

[Learn More →](#)

Setup Guides

Setting up the Ocean Protocol
components.

[Learn More →](#)

Tutorials

Browse tutorials for most
common setup and
development use-cases.

[Learn More →](#)



Example: Quickly build a React App

docs.oceanprotocol.co/tutorials/react-setup/

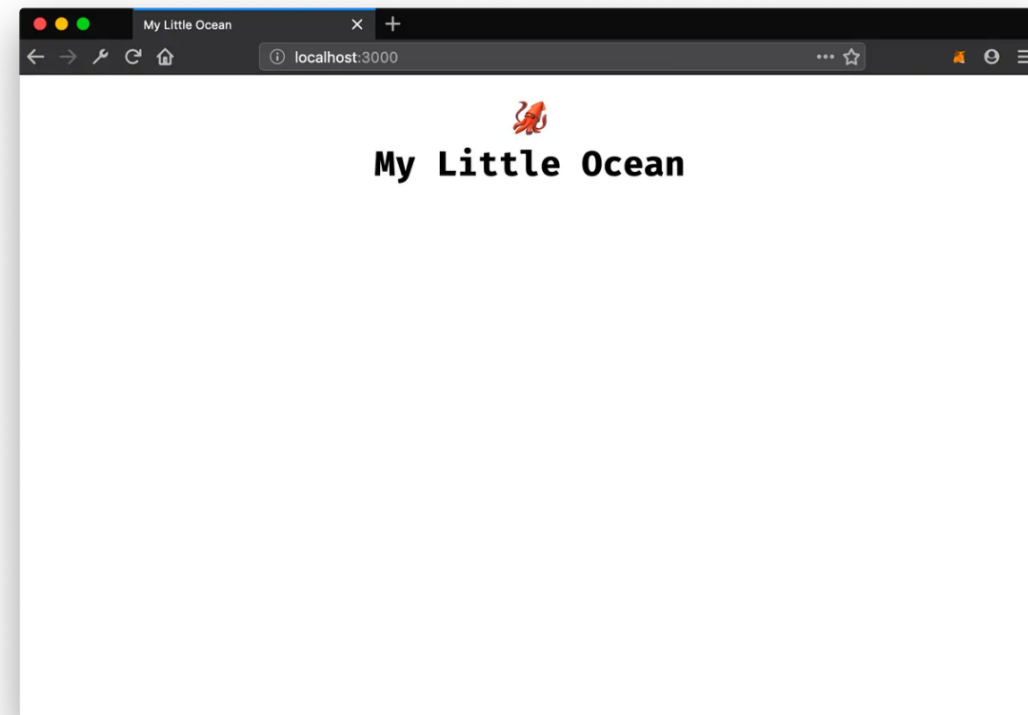
Create a new folder `src/` and within that a `index.js` file with the following content as our base, where we already import `squid-js` and `web3.js`:

```
import React, { Component } from 'react'
import ReactDOM from 'react-dom'
import { Ocean } from '@oceanprotocol/squid'
import Web3 from 'web3'

class App extends Component {
  render() {
    return (
      <div
        style={{ fontFamily: '"Fira Code", monospace', textAlign: 'center' }}
      >
        <h1>
          <span role="img" aria-label="squid">
            🐙
          </span>
          <br /> My Little Ocean
        </h1>

      </div>
    )
  }
}

ReactDOM.render(<App />, document.getElementById('root'))
```

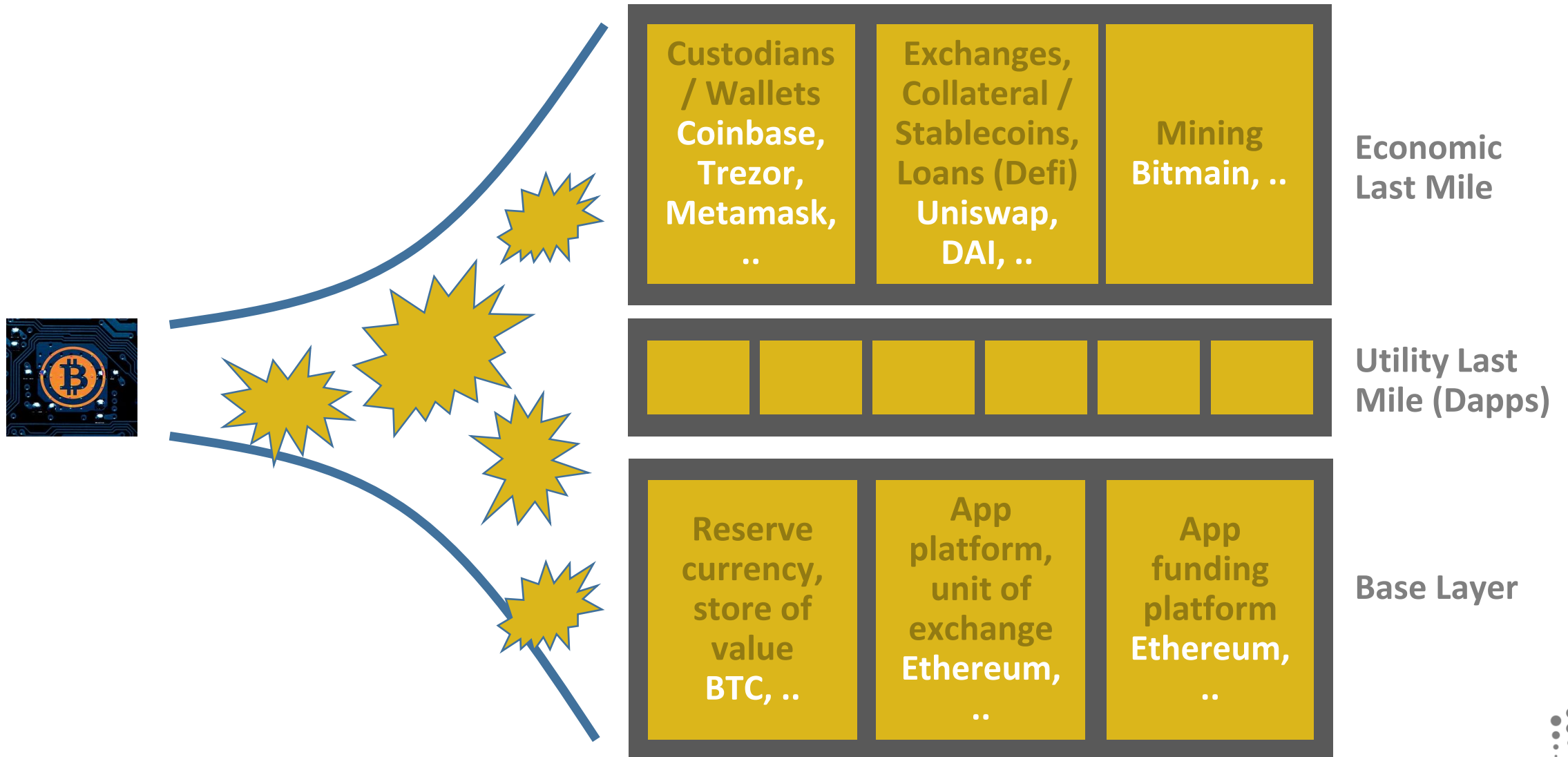


Initial React App



Opportunities

What does the Token Economy look like?



Q: What will the data economy look like?

A: \approx The Token Economy

Token Economy

Data Economy

Economic
Last Mile

Custodians
/ Wallets
Coinbase,
Trezor,
Metamask

Exchanges,
Collateral /
Stablecoins,
Loans (Defi)
Uniswap,
DAI, ..

Mining
Bitmain, ..

Custodians
/ Wallets

Dec. Data
Exchanges,
Data as
Collateral,
Loans

Mining:
Service
networks

Utility Last
Mile (Dapps)



Base Layer

Reserve
currency,
store of
value
BTC

App
platform,
unit of
exchange
Ethereum/
ETH, ..

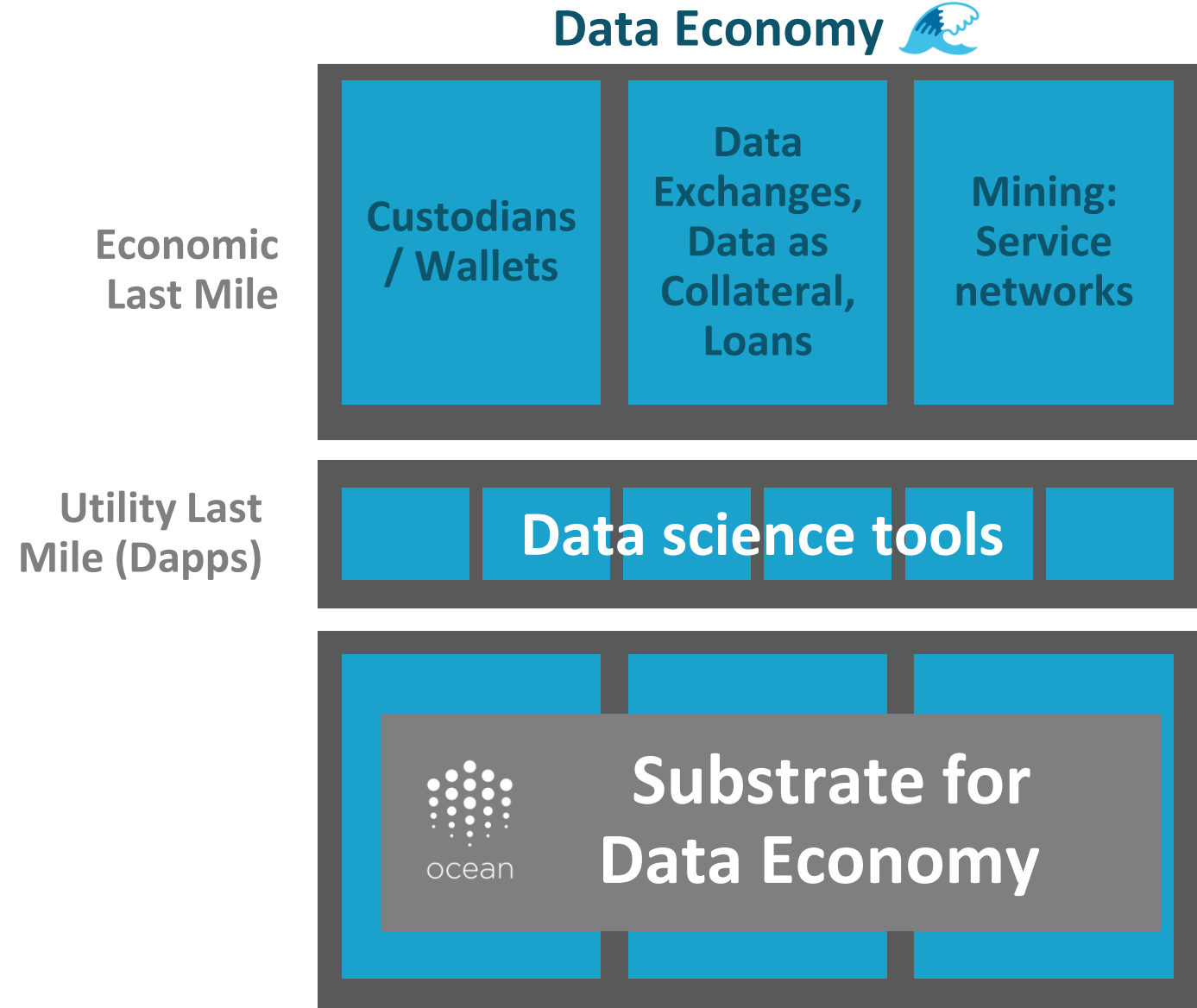
App
funding
platform
Ethereum

Reserve
currency,
store of
value

Data/asset
platform,
unit of
exchange

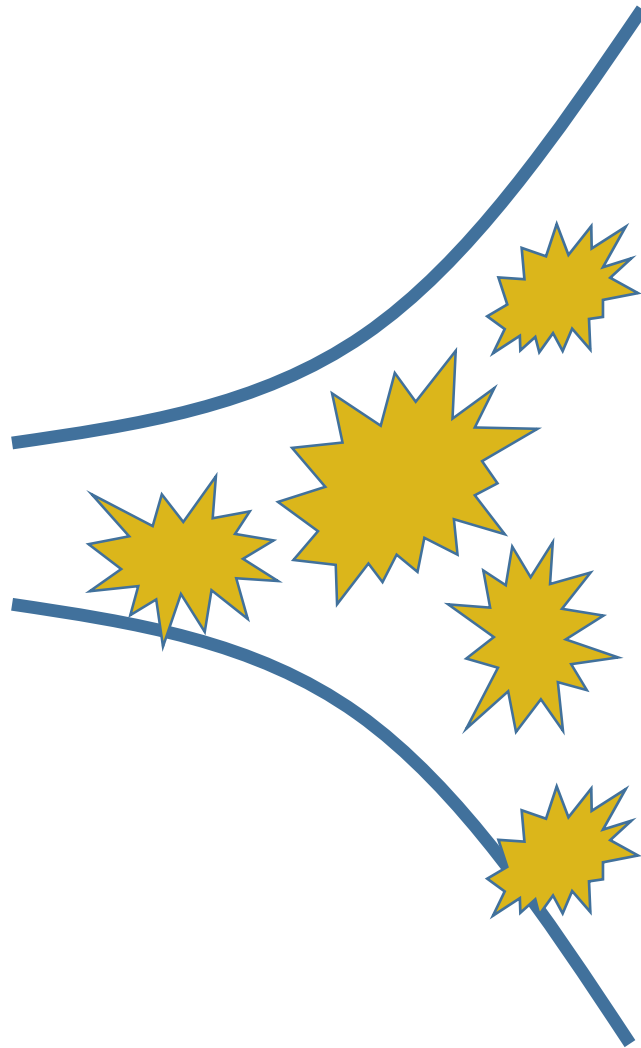
Data/asset
funding
platform

Ocean is the Substrate for the Data Economy



The Data Economy has myriad opportunities

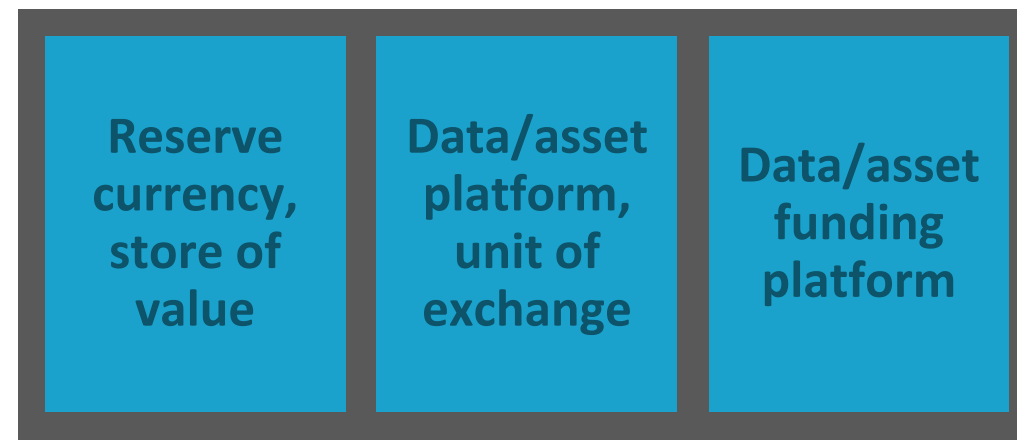
Data Economy 



Economic Last Mile



Utility Last Mile (Dapps)



Base Layer

Opportunities in dapps (Analytics & data science tools)

Data Economy

Economic
Last Mile

Custodians
/ Wallets

Data
Exchanges,
Data as
Collateral,
Loans

Mining:
Service
networks

Utility
Last Mile
(Dapps)

Data science tools

Base Layer

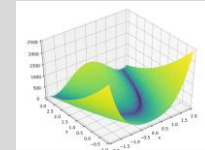
Reserve
currency,
store of
value

Data/asset
platform,
unit of
exchange

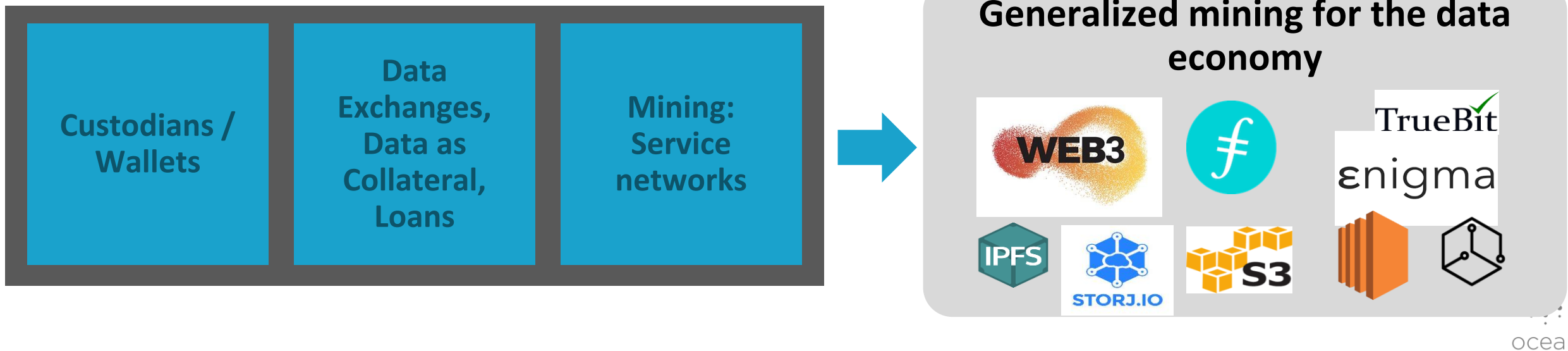
Data/asset
funding
platform



++capabilities for users:
Buy/sell services via wallets
Way more data
Data/compute provenance

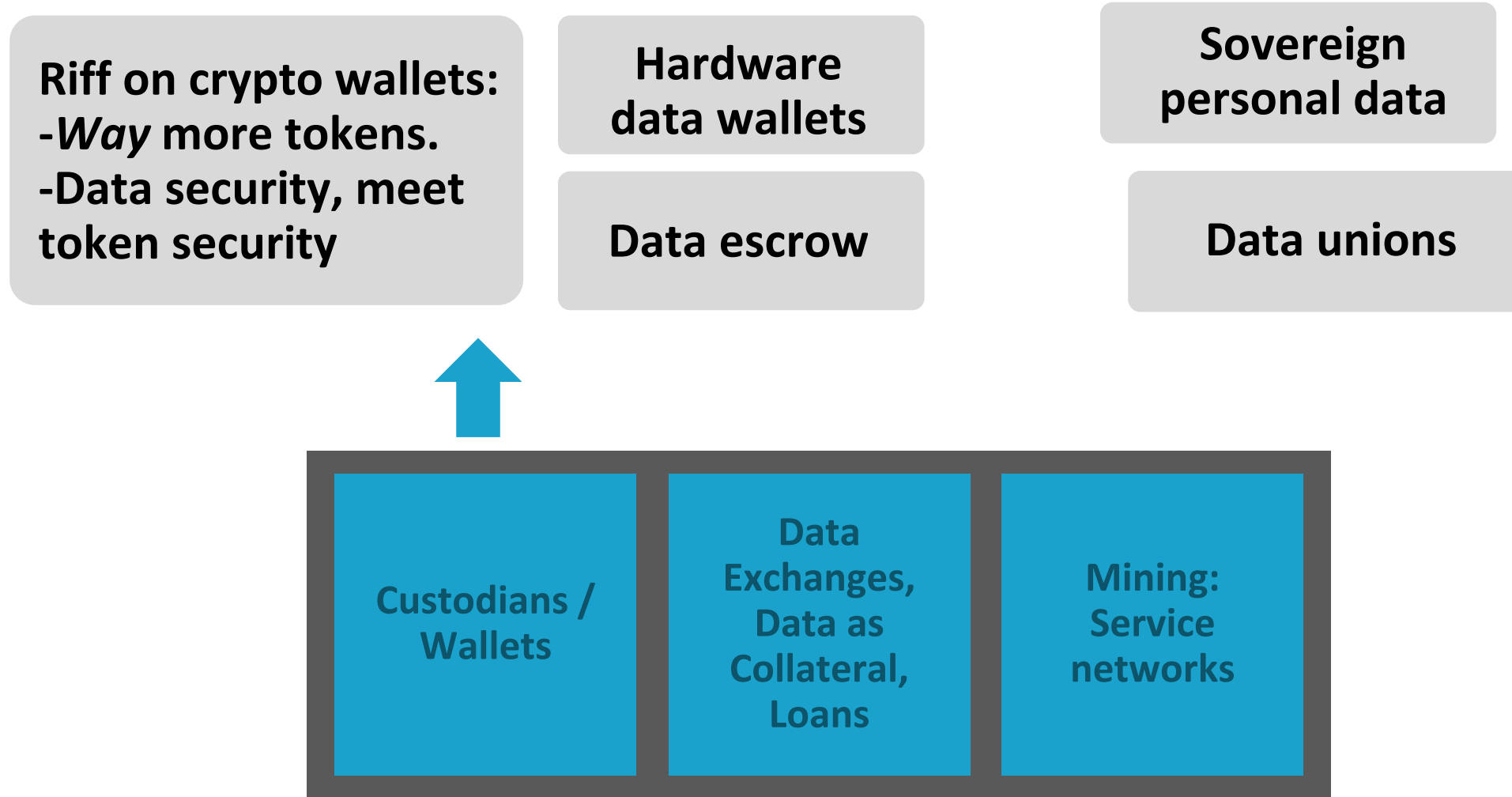


Opportunities in last financial mile 1/3: Mining = Integrations with Data & Compute Services



Opportunities in last financial mile 2/3:

Data custody



Opportunities in last financial mile 3/3:

Data * DeFi

Non-custodial data
exchanges

Long-tail data tokens
(1M datasets)

Automated data
market makers

Pricing data with
bonding curves

Data-backed
stablecoins

Borrowing data
Loaning data

ICO'ing
datasets

Data
insurance

Data DAOs to
govern data

Custodians /
Wallets

Data
Exchanges,
Data as
Collateral,
Loans

Mining:
Service
networks

An underwater photograph featuring a dense field of sea anemones with long, translucent, pinkish-orange tentacles. Several clownfish, characterized by their orange bodies and white stripes, are swimming among the anemones. The scene is illuminated with a strong blue light, creating a deep-sea atmosphere. The text "Opportunities 2: Data Economy Challenge" is overlaid in the center in a white, sans-serif font.

Opportunities 2: Data Economy Challenge



PROTOCOL COMMUNITY DEVELOPERS CHALLENGE MORE ▾

TIMELINE & TRACKS JUDGES PRIZES FAQ MEETUPS

Data Economy Challenge

3.4 Million Ocean Tokens. 3 Inspiring Tracks. Global Community Participation. Build the New Data Economy with us!

REGISTER NOW

SUBMIT ENTRY

The challenge has started! You can still register, or submit your entry now.

Tracks & Prizes

[TIMELINE & TRACKS](#)[JUDGES](#)[PRIZES](#)[FAQ](#)[MEETUPS](#)

Track 1 Data Marketplaces

Build a data marketplace and grow the decentralized data ecosystem.

🏆 1. place	333,000 OCEAN + 2K EUR
🏆 2. place	270,000 OCEAN
🏆 3. place	165,000 OCEAN

+ Bonus Rewards



Track 2 Network Integrations

Create data science tools & services to unlock value from data.

🏆 1. place	333,000 OCEAN + 2K EUR
🏆 2. place	270,000 OCEAN
🏆 3. place	165,000 OCEAN

+ Bonus Rewards



Track 3 Wild Card

Unleash your unbounded creativity and surprise us with your own entry.

🏆 1. place	333,000 OCEAN + 2K EUR
🏆 2. place	270,000 OCEAN
🏆 3. place	165,000 OCEAN

+ Bonus Rewards

Tracks & Prizes

[TIMELINE & TRACKS](#)[JUDGES](#)[PRIZES](#)[FAQ](#)[MEETUPS](#)

Track 1 Data Marketplaces

Build a data marketplace and grow the decentralized data ecosystem.

- 1. place 333,000 OCEAN + 2K EUR
- 2. place 270,000 OCEAN
- 3. place 165,000 OCEAN

+ Bonus Rewards



Track 2 Network Integrations

Create data science tools & services to unlock value from data.

- 1. place 333,000 OCEAN + 2K EUR
- 2. place 270,000 OCEAN
- 3. place 165,000 OCEAN

+ Bonus Rewards



Track 3 Wild Card

Unleash your unbounded creativity and surprise us with your own entry.

- 1. place 333,000 OCEAN + 2K EUR
- 2. place 270,000 OCEAN
- 3. place 165,000 OCEAN

+ Bonus Rewards

What type of data marketplace could you build?

Fork an existing token exchange, twist it for data exchange

Fork Ocean Commons, add a killer feature

Marketplace for supply chain data

Marketplace for energy data

**Bundle datasets into dataset portfolios
(Set Protocol * Ocean)**

Market with built-in data exploration

Marketplace for synthetic data

Price data with channel auctions

Price data with bonding curves

Marketplace with DAO-driven data labeling

**Marketplace for low-liquidity datasets
Via e.g. n-token automated market maker
(think Balancer)**

Getting started on marketplaces

- **Docs: Quickstart**

<https://docs.oceanprotocol.com/setup/quickstart/>

- **Docs: Set Up a Marketplace**

<https://docs.oceanprotocol.com/setup/marketplace/>

- **Tutorial: Ocean React App**

<https://docs.oceanprotocol.com/tutorials/react-setup/>

- **Commons Marketplace**

<https://github.com/oceanprotocol/commons>

Tracks & Prizes

[TIMELINE & TRACKS](#)[JUDGES](#)[PRIZES](#)[FAQ](#)[MEETUPS](#)

Track 1

Data Marketplaces

Build a data marketplace and grow the decentralized data ecosystem.

- 🏆 1. place 333,000 OCEAN + 2K EUR
- 🏆 2. place 270,000 OCEAN
- 🏆 3. place 165,000 OCEAN

+ Bonus Rewards



Track 2

Network Integrations

Create data science tools & services to unlock value from data.

- 🏆 1. place 333,000 OCEAN + 2K EUR
- 🏆 2. place 270,000 OCEAN
- 🏆 3. place 165,000 OCEAN

+ Bonus Rewards



Track 3

Wild Card

Unleash your unbounded creativity and surprise us with your own entry.

- 🏆 1. place 333,000 OCEAN + 2K EUR
- 🏆 2. place 270,000 OCEAN
- 🏆 3. place 165,000 OCEAN

+ Bonus Rewards

What type of integration could you build?

Integrate to TensorFlow to
-consume training data
-supply AI models as data

Integrate into
OpenML and its
20,000 datasets

Integrate Iota's data
market as datafeed

Integrate fetch.ai
algorithm results as
data

Integrate into Azure ML
Studio
(IDE for AI modeling)

Integrate Chainlink
on Ocean mainnet
(start with OP's
prototype)

Integrate SEED
bots as data

Fork
MantaRay,
add asset
search

Make Ocean
data available
directly in scikit
learn

Use OrbitDB for
metadata store
(in Aquarius)

Integrate Ethereum
Swarm, Storj, Sia,
Filecoin beta

Getting started on integrations

- **Docs: Jupyter Notebooks**
<https://docs.oceanprotocol.com/tutorials/jupyter-notebooks/>
- **Blog: Project Manta Ray — Data Science powered by OP**
<https://blog.oceanprotocol.com/project-manta-ray-data-science-powered-by-ocean-protocol-535c54089b0f>
- **GitHub: mantaray**
<https://github.com/oceanprotocol/mantaray>
- **GitHub: mantaray_utilities**
https://github.com/oceanprotocol/mantaray_utilities
- **Docs: Set up Azure Storage**
<https://docs.oceanprotocol.com/tutorials/azure-for-brizo/>

Tracks & Prizes

[TIMELINE & TRACKS](#)[JUDGES](#)[PRIZES](#)[FAQ](#)[MEETUPS](#)

Track 1 Data Marketplaces

Build a data marketplace and grow the decentralized data ecosystem.

- 🏆 1. place 333,000 OCEAN + 2K EUR
- 🏆 2. place 270,000 OCEAN
- 🏆 3. place 165,000 OCEAN

+ Bonus Rewards



Track 2 Network Integrations

Create data science tools & services to unlock value from data.

- 🏆 1. place 333,000 OCEAN + 2K EUR
- 🏆 2. place 270,000 OCEAN
- 🏆 3. place 165,000 OCEAN

+ Bonus Rewards



Track 3 Wild Card

Unleash your unbounded creativity and surprise us with your own entry.

- 🏆 1. place 333,000 OCEAN + 2K EUR
- 🏆 2. place 270,000 OCEAN
- 🏆 3. place 165,000 OCEAN

+ Bonus Rewards

What sort of Wild Card could you build?

A Data Wallet

E.g. take an Ocean dataset and wrap with NFT; then integrate with an NFT wallet

Data as collateral

E.g. demonstrate datasets could fit in multi-collateral DAI

An **ArtDAO**, e.g. extend Simondlr's Artonomous

Limited-Edition Fungible Data Assets

E.g. take an NFT-ized dataset, and wrap it with a simple ERC20 contract.

An Ocean **block explorer with integrated dataset visualization** e.g. with Metabase

Continuously Fungible Data Assets

E.g. take an NFT-ized dataset, and wrap it with a bonding curve ("make re-fungible").

On-chain evolution of EVM bytecode

The background of the slide features several jellyfish of different species, including a large, translucent one in the upper left and a smaller, more colorful one in the lower right. They are set against a deep blue background with some purple highlights.

Conclusion

The Token Economy Opened Money. The Data Economy Opens Data (Retaining Privacy)

**Opaque, Power
Concentrated**

**Transparent,
Permissionless**



Come build the Data Economy on Ocean:)

docs.oceanprotocol.com

These slides, with links, at trent.st/content/o/d

