

# Open Delivery Platform v1

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## ABSTRACT

The Open Delivery Platform (ODP) is a free and open source system that allows easy creation of 'customer ordering apps' without central server systems. Compared to cloud or server based systems, ODP relies on IPFS and distributed public network systems like 'Crust Network', 'Storj' and 'Filecoin' for decentralized data storage and an EVM blockchain to mint ERC721 Tokens and persist 'content addresses' and 'store names'.

## 1 INTRODUCTION

A NFT (non-fungible token) is a unique digital identifier that cannot be copied, substituted, or subdivided, that is recorded in a blockchain, and that is used to certify authenticity and ownership (as of a specific digital asset and specific rights

relating to it). An NFT can be used for a variety of purposes. From in-game items, representation of real estate, to even a JPEG image of a rock. In our case, an NFT represents ownership of the online store itself, which includes the brand name (similar to domain names) and content addresses (IPFS CIDs).

The IPFS is a distributed system for storing and accessing files, websites, applications, and data. And since the release of JS-IPFS (an implementation of the IPFS protocol entirely in javascript) it is possible to run and interact with the IPFS network entirely from the browser, using client-side code only, without requiring a server.

The OrbitDB is a serverless, distributed, peer-to-peer database. OrbitDB uses IPFS as its data storage and IPFS Pubsub to automatically sync databases with peers.

Once we have all the necessary tools to develop decentralized apps, our core team started the project with private seed funding to start the project's development and launch.

## 2 TODAY'S CHALLENGES & PROBLEMS

We believe that the 'online orders app' space today faces several problems and challenges that mainly affect end consumers and retailers:

- It is not accessible to everyone, not even to the services offered for free. Most require government-issued documents and permits to run their store. And it can be stopped if the platform deems it necessary or a government request.
- Merchants are suffocated with high fees charged by marketplaces. What drives demand for whitelabel apps.
- Companies that develop whitelabel apps are suffocated by the marketplaces themselves, which now offer similar services for "free".
- Merchants end up not owning their own online stores, depending entirely on marketplaces and services offered "for free" by platforms financed by marketplaces and interested parties.
- Total lack of privacy, because in any "free" service, you are the product (or your data). Since these services that are offered free of charge have relevant costs to keep up and running.

We believe that we can solve many of these problems using decentralized infrastructure and technologies that allow us to deliver APPs with similar functionality at no relevant cost to keep up and running, in addition to delivering true ownership of the online store to the merchant, once that the NFT is the store's publishing medium.

## 3 SOLUTION - OPEN DELIVERY PLATFORM

We present a solution that works directly from the browser, allowing, through an intuitive interface, the creation of your own online ordering app with all the mechanics taking place in the browser (client-side), from registration to the generation of the CustomerApp.

### 3.1 ODP - MANAGER APPLICATION

The ODP manager application, powered by Typescript and Angular, is where the merchant can receive and track customer orders, create and update their product catalog and customize, generate and publish the customer ordering App.

The screenshot shows a web interface titled "Publish the Order App". It includes a sidebar with icons for home, list, add, and details. The main content area has a heading "Publish the Order App" and a sub-heading "Please check the desired publishing options below and click 'Generate and Publish'". Below this, there is a section for app configuration with a circular icon placeholder labeled "Sushik" and a link "icon.update". To the right of the icon are input fields for "App Name" (containing "SushiApp") and "Short Name" (containing "Sushi"). A link "show more options" is visible below the "Short Name" field. A blue button labeled "Generate and Publish" is positioned below the input fields. Below this section is a heading "Mint or Update your NFT" followed by an input field for "ODP STORE NAME" containing "sushi\_app". A green status message "name available" is shown below the input field. A grey button labeled "Mint NFT" is to the right of the input field. Below the "Mint NFT" button is a text instruction: "Please generate the 'ODP-Customer Order App' before proceeding". At the bottom, there is a section titled "Last known publications" with a table showing a single entry: "Publication (2022-10-19T17:15:35)" and "ODP Store Link:".

### 3.1.1 RECEIVE AND TRACK ORDERS

Our implementation is backend agnostic. During the registration of your store you can specify the way to receive orders. It is possible to receive orders through a Encrypted P2P channel (a OrbitDB Append-only Log), through an HTTPS endpoint or even through Whatsapp Messenger.

### 3.1.2 ADMIN PRODUCT CATALOG

We use IndexedDB (a low-level API for client-side storage of significant amounts of structured data, including files/blobs) to store product catalog, brand and customer app personalization data. During administration through ManagerApp, there is no interaction with any server and no app usage data is collected.

### 3.1.3 GENERATE AND PUBLISH THE CUSTOMER APP

To generate the application, ManagerApp will check the data registered by the merchant, compile it into JSON files in a directory structure and submit it to the IPFS network using js-ipfs or ipfs-http-client, obtaining a CID (or content identifier, a label used to point to material in IPFS). Then to publish the APP, the ManagerApp will request interaction with our smart-contract, using the store name and current CID.

### 3.1.4 USING IPFS GATEWAYS

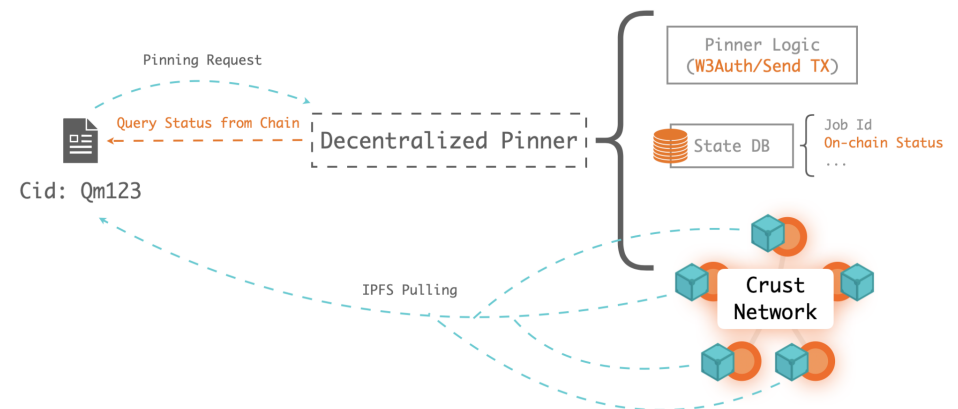
ManagerApp lets you use js-ipfs and ipfs-http-client with whatever gateway you want. You can run your own IPFS node and gateway. IPFSW3Auth Gateways are also supported (official CrustNetwork gateways are listed by default in the application).

### 3.1.5 PINNING IPFS DATA

The IPFS is an excellent distributed network for providing permanence but persisting data on the network requires some effort, as storage is a finite resource.

When using js-ipfs, your own gateway like ipfs-desktop or even ipfs-companion, your store data will be available on the IPFS network as long as you keep the managerApp window open (or ipfs-desktop running).

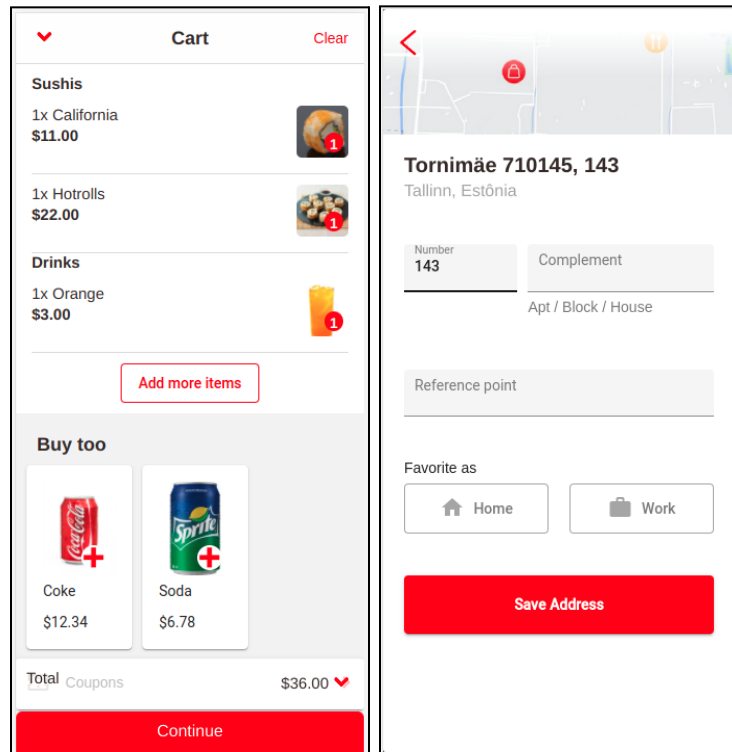
When using an IPFSW3AuthPin such as one from CrustNetwork, your store data will be available on the IPFS network for the duration of the PIN (default on CrustNetwork is 6 months).



Of course, you can also PIN it in any external service provider, such as PINATA or INFURA.

### 3.2 ODP - CUSTOMER APPLICATION

The customer application generated through ManagerApp is a progressive web application (PWA) where store customers can consult the product catalog and place orders.



#### 3.2.1 INSTALLABLE PROGRESSIVE WEB APP

The app is installable and behaves like any app downloaded from PlayStore or AppStore, adding a quick launch icon on the smartphone's home screen and launching with its own borderless window (not the default browser window). And like any PWA, it caches data through the service-worker, allowing for a smooth transition between app screens.

#### 3.2.2 HIGH AVAILABILITY

As the CustomerApp needs to run on any device with minimal requirements, it mainly relies on public IPFS gateways. It has fallback functionality, trying to get the data from another gateway in the list in case of failures, providing high availability and making the application difficult to be attacked by hackers as it does not have a central server, all application data comes from the IPFS network.

#### 3.2.3 ORDERS CHANNEL

The CustomerApp can send orders through various ways, such as through Whatsapp Messenger, or even its own HTTPS endpoint following Abrasel's OpenDelivery standard (<https://www.opendelivery.com.br>).

#### 3.2.4 P2P ORDERS CHANNEL

Although it is possible to use several ways of sending customer orders, the standard way is using the P2P channel, since it is not necessary to have a server to receive requests. CustomerApp establishes P2P communication with ManagerApp allowing instant data exchange between them.

### 3.3 ODP - SMART CONTRACTS

ODP smart contracts are responsible for publishing the APPs generated in ManagerApp, managing the resources and governance of DAO.

#### 3.3.1 ODP STORE TOKEN

This is the smart contract responsible for issuing new NFTs, burning NFTs and also updating the CID of its metadata. These are public methods that can be executed by anyone.

And even the DAO governance has no power to burn NFTs created by anyone in our public smart contract. But it has parameters like 'price to issue token', 'price to update token metadata' and 'minimum staking to issue token' which can only be changed by DAO's governance smart contract.

### 3.3.2 ODP STAKEHOLDER TOKEN

The smart contract responsible for issuing the ODP stakeholder tokens.

Stakeholders can use these tokens to create proposals on the DAO, vote on proposals, delegate their votes to a voter, participate in staking programs and freely trade it on the market.

### 3.3.2 ODP GOVERNOR

It is the governance smart contract of the ODP, which owns the 'Store Token' and 'Stakeholder Token' smart contracts after they are instantiated.

It's basically the OpenZeppelin implementation of the Governor smart contract.

Stakeholders can use the GUI tool like <https://tally.xyz> to create, evaluate and vote on proposals and track DAO's treasury.

## 4 ECONOMIC DESIGN

The goal of ODP economic design is to keep the interests of all participants increase in the same direction as the value growth of the ODP system. On the one hand, it is essential to protect the rights and benefits of all participants; on the other hand, it is also necessary to maintain the stability of the ODP system.

### 4.1 FEE FOR CREATING AND UPDATING NFTS

As defined by the DAO Governance Smart Contract, the fee to be charged can be any amount, including ZERO. However, once any amount is defined by the DAO governance, this amount charged will be forwarded to a DAO resource allocation system.

### 4.2 RESOURCE ALLOCATION SYSTEM

The resource allocation system is responsible for performing token exchanges and resource allocation according to predefined rules.

#### 4.2.1 AUTO SWAPPING

Each value entry in our smart contract will be exchanged for tokens predefined in allocation rules using UniswapV3.SwapRouter.

#### 4.2.2 ALLOCATION

Values will be allocated according to the predefined rules:

- 20% - Buyback and Burn
- 05% - NFT Burn Incentives Vault
  - 100% - USD Stablecoins
- 05% - Promotional Campaigns Vault
  - 100% - USD Stablecoins
- 10% - Decentralized Storage Inputs Vault
  - 60% - Storage Incentive Coins (Storj, Filecoin and Crust Network)
  - 40% - USD Stablecoins
- 20% - Platform Development Vault
  - 80% - USD Stablecoins

- 10% - WBTC
- 05% - WETH
- 05% - MATIC
- 35% - ODP Treasure Vault
  - 60% - USD Stablecoins
  - 10% - MATIC
  - 10% - UNI
  - 10% - WETH
  - 10% - WBTC
- 5% - Return ODPT for voting power

#### 4.3 BUYBACK AND BURN

Part of the fees (predefined by the allocation rules, 20% by default) are intended to buy back 'Stakeholders Tokens' and burn them immediately.

#### 4.4 NFT BURN INCENTIVES

Even the DAO governance smart contract may have no power to burn NFTs created by anyone in our public smart contract. To encourage the burning of stores that are no longer active, by burning a store the user wins a ticket to compete for the BURN INCENTIVES VAULT prize.

#### 4.5 LISTING ORDER IN OUR MARKETPLACE

The NFTs created in our public smart contract are free to be traded on any marketplace or directly between people. But we deliver the best experience in our own marketplace specially designed for 'NFT- online stores'. Our marketplace will by default order the listing of stores according to visitor location and token metadata update date. This way, we encourage

merchants to frequently update their NFT to appear at the top of the listing.

## 5 TOKENOMICS

The ODPT (Stakeholders Token) is a utility token representing the value of our DAO.

### 5.1 TOKEN FUNCTIONS

In the Open Delivery Platform, the ODPT token mainly has the following functions:

- Used to pay minting or updating fees for NFTs (yes, our smart contract allows you to pay this fee in MATIC, but internally it is automatically converted to ODPT).
- Used to purchase resource services (like CrustPin).
- Staking - lock your tokens in our staking vault and receive ODPT rewards and fee discounts.
- Create proposals in our DAO governance.
- Vote on proposals.
- Delegate votes to a voter.
- Used to store CID and store name.

### 5.2 MINT AND BURN

All 100,000,000 ODPTs are minted at once in the initial token generation event and distributed as described in section 5.3. Token burns occur when no one is drawn to win the BURN INCENTIVES VAULT PRIZE, when a new NFT is minted or updated (as described in section 4). In addition, there can be burns of ODPTs from the treasury through proposals in the DAO's governance smart contract.

### 5.3 TOKEN DISTRIBUTION

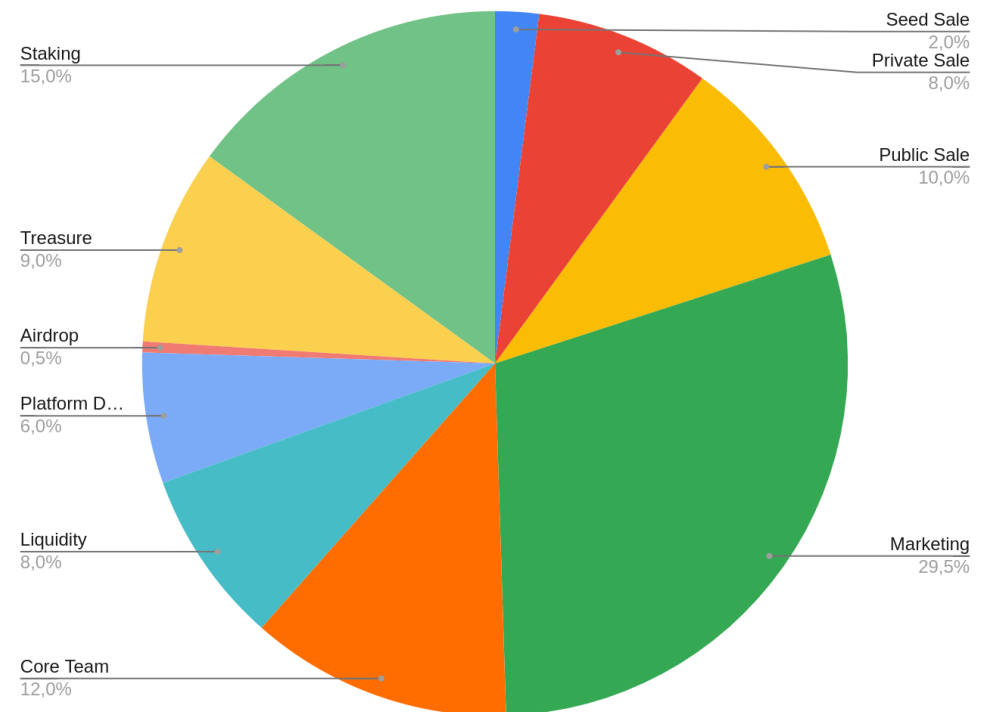
From total, 9.6% tokens unlocked at TGE, 44.5% vested for 4 years, 20% vested for 2 years, 25.4% vested for 12 months and 0.5% locked for 12 months.

- **Private Seed 2%**
  - Token sales to friends and angel investors to raise capital for launch. A cliff period of 3 months. Vested for 12 months.
- **Private Sale 8%**
  - Token sales to whitelisted investors. Vested for 12 months.
- **Public Sale 10%**
  - Token sales to anyone. Vested for 12 months.
- **Marketing 29.5%**
  - Will be distributed to the team over 4 years.
- **Core Team 12%**
  - Will be distributed to the team over 2 years.
- **Liquidity 8%**
  - 100% Unlocked at TGE. Will be used to add liquidity on decentralized exchange.
- **Platform Development 6%**
  - 10% Unlocked at TGE. 90% Vested for 12 months.
- **Early Adopters Airdrop (NFT Owners) 0.5%**
  - Will be used to distribute tokens a year later to early adopters wallets with NFTs who have recently updated metadata. A cliff period of 12 months.
- **Treasure 9%**

- Will be used for initial decentralized storage and operational costs. 10% Unlocked at TGE. Vested for 2 years.

- **Staking 15%**

- Will be used to reward OPDTs staking. Vested for 4 years.



### 5.3 TOKEN VALUE

ODPT is a utility token, its value depends on the use of the Open Delivery Platform and the value it delivers to its users. In addition, external events (such as problems in the blockchain

used) and decisions made by the DAO governance through votes can also affect its value, such as the burning of tokens or price changes for creating and updating NFTs.

## 6 REFERENCES

*JS IPFS*, <https://js.ipfs.tech/>. Accessed 20 October 2022.

“Content addressing and CIDs.” *IPFS Docs*,  
<https://docs.ipfs.tech/concepts/content-addressing/>.  
Accessed 20 October 2022.

“Governance.” *OpenZeppelin Docs*,  
<https://docs.openzeppelin.com/contracts/4.x/api/governance#Governor>. Accessed 20 October 2022.

“IndexedDB API - Web APIs | MDN.” *MDN Web Docs*, 5  
October 2022,  
[https://developer.mozilla.org/en-US/docs/Web/API/IndexedDB\\_API](https://developer.mozilla.org/en-US/docs/Web/API/IndexedDB_API). Accessed 20 October 2022.

“IPFS W3Auth Gateway · Crust Wiki.” *Crust Wiki*,  
<https://wiki.crust.network/docs/en/buildIPFSWeb3AuthGW>. Accessed 20 October 2022.

“IPFS W3Auth Pinning Service · Crust Wiki.” *Crust Wiki*,  
<https://wiki.crust.network/docs/en/buildIPFSW3AuthPin>.  
Accessed 20 October 2022.

“NFT Definition & Meaning.” *Merriam-Webster*,  
<https://www.merriam-webster.com/dictionary/NFT>.  
Accessed 20 October 2022.

“orbitdb/orbit-db: Peer-to-Peer Databases for the  
Decentralized Web.” *GitHub*,  
<https://github.com/orbitdb/orbit-db>. Accessed 20  
October 2022.

“What is IPFS?” *IPFS Docs*,  
<https://docs.ipfs.tech/concepts/what-is-ipfs/>. Accessed  
20 October 2022.