district0x Network

White Paper v0.1
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A collective of decentralized marketplaces and communities.
Powered by Ethereum, Aragon, and IPFS.

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Abstract

In this paper, we present district0x Network, a collective of decentralized marketplaces and communities, hereafter referred to as districts.

Districts exist as decentralized autonomous organizations on the district0x Network, built upon a standard open source framework comprised of Ethereum smart contracts and front-end libraries, hereafter referred to as d0xINFRA.
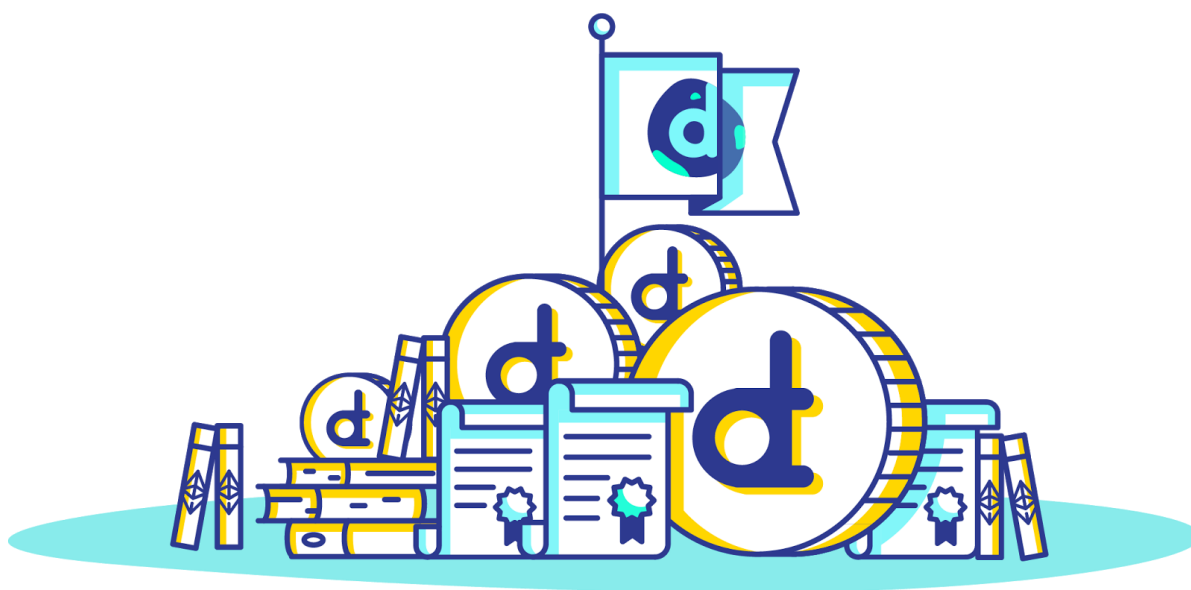
d0xINFRA provides districts with the core functionalities required to operate an online market or community. Namely, the ability for users to post listings, filter and search through listings, rank peers and amass reputation, and send invoices and collect payments. The d0xINFRA framework is designed to be open and extendable, allowing districts to be customized and granted additional functionality through the use of auxiliary modules.

We also introduce the district0x Network Token as a means of facilitating open participation and coordination on the network. The district0x Network Token can be used to signal what districts should be built and deployed by the district0x Project team and can be staked to gain access to voting rights in any district on the district0x Network. Voting rights are utilized to come to a consensus on everything ranging from a district's branding and design decisions, to what functionality is added to the district via auxiliary modules, to the appropriate settings for any adjustable parameters of these modules, to the means in which any revenue collected by a district is to be distributed, and beyond.

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Introduction

In recent years, the economic powers of decentralization have materialized. Uber has disintermediated transportation and achieved a valuation of $69B[1]. Airbnb has made similar disruptions in the lodging sector, giving them a value of $31B[2] by most recent measures. Entrenched conglomerates are being uprooted by upstarts who realize that value is in the network effect of their users, rather than the cost of physical assets they own or expend.

While customers of these services have enjoyed lower prices and better user experiences relative to those available in the past, they are still subject to higher costs than they would be without for-profit third-parties extracting fees and they have little say over the evolution of these platforms. Despite business models relying upon sustaining massive user bases that allow them to operate at scale, users have no means of participating in the value creation reaped from their use of these centrally controlled platforms. Until recent advancements in trustless network design, network participants had few reliable means for self-organizing without a centralized party.

The advent and subsequent development of the Ethereum protocol has opened the door for experimentation in decentralized organizational structures and the distribution of governance rights to a network's participants. Projects such as Aragon, Boardroom, Colony, and Giveth are actively working to harness the powers of Ethereum for these purposes, building platforms that enable non-technical users to create and administrate decentralized organizations. These tools allow for new means of group coordination through economic incentives, making it possible to disintermediate marketplaces and communities and to allocate voting rights to their participants. In short, citizens of the internet can now build and control the platforms they frequent every day.

Utilizing the aforementioned technologies, the district0x Project will facilitate the operation and governing of marketplaces and communities as decentralized autonomous organizations. The district0x Project will enable the recreation of many of the internet's most popular applications and services while eliminating rent-seeking and the relinquishment of decisions and personal data to third-parties.

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[1] https://www.recode.net/2017/5/25/15686886/ride-hail-valuation-investment-uber-didi-lyft
[2] https://www.wsj.com/articles/airbnb-valued-at-31-billion-after-new-funding-round-1489086240

Districts

The district0x Network is comprised of districts. Districts are marketplaces and communities that exist as decentralized autonomous organizations built upon the d0xINFRA framework.

At the core of every district are the components necessary to operate a market or bulletin board application. All districts provide the following baseline functionalities:

- Posting and listings
- Search and filtering
- Ranking and reputation
- Payments and invoicing

These capabilities are tied together and made accessible to users via list, thumbnail, and gallery-style user interfaces, popularized by online services such as Craigslist and Reddit.

Ethlance

Launched on the Ethereum MainNet in January 2017, Ethlance is a freelance job market and will be the first district on the district0x Network.

Ethlance allows users to create an employer/employee profile, list and apply for open positions, rank and provide feedback for employers/employees, and to send/receive invoices. Ethlance does not charge any service fees, and users pay only the necessary cost of gas to broadcast their profiles, posts, messages, feedback, and invoices to the Ethereum network.

Ethlance's code is completely open-source at github.com/district0x/ethlance. Ethlance's front-end source files are written in Clojurescript and served via IPFS. Ethlance's backend logic is governed by 14 smart contracts deployed on the Ethereum MainNet (Appendix A).

Since its launch, over 300 users have created a profile and more than 100 open positions have been listed. Projects such as Status, Aragon, Colony, WeTrust, [Rex](Rex), JAAK, and Giveth are amongst those currently hiring via Ethlance.

As the original district, Ethlance serves as an experimental sandbox for the creation and refinement of the d0xINFRA framework and will be developed in perpetuity alongside other districts deployed by the district0x Project team.

ENS Bazaar

Currently under development, the second district to be deployed to the district0x Network will be ENS Bazaar, a peer-to-peer marketplace for the exchange of names registered via the Ethereum Name Service. ENS Bazaar intends to provide an easily discoverable registry of ENS names that have been made available for purchase by their owners.

Amongst available options, owners will be able to choose to open customized auctions or list their names for sale at fixed prices. Sellers will have the option of setting their prices in ETH or any ERC20 token.

ENS Bazaar will also allow for the trading of subdomains, enabling the exchange of usernames in decentralized applications such as Status and organization names in the Aragon Network Company Registry.

Meme Factory

Inspired by the work of Simon de la Rouviere and his [Curation Markets](#) design, the third district to be deployed to the district0x Network is Meme Factory. Meme Factory will allow users to mint their own tokenized memes and offer them for sale immediately.

Meme Factory will provide an interface for the creation of provably rare digital assets on the Ethereum blockchain which can be immediately posted to a bulletin board-style marketplace for exchange.

Future district0x Project Districts

Following the launch of Meme Factory, the district0x Project team intends to continue to introduce new districts to the district0x Network. Immediately upon distribution, district0x Network Token holders will be able to signal which districts they would like to see built and deployed to the network next by the district0x Project team.

Signaling will initially be facilitated through a customized implementation of [CarbonVote](#), eventually transitioning to a pure voting mechanism after Aragon's deployment to the Ethereum MainNet. While utilizing the CarbonVote implementation for signaling, members of the district0x Slack community will be able to propose suggestions for future districts to be added to the list of district options for signaling.
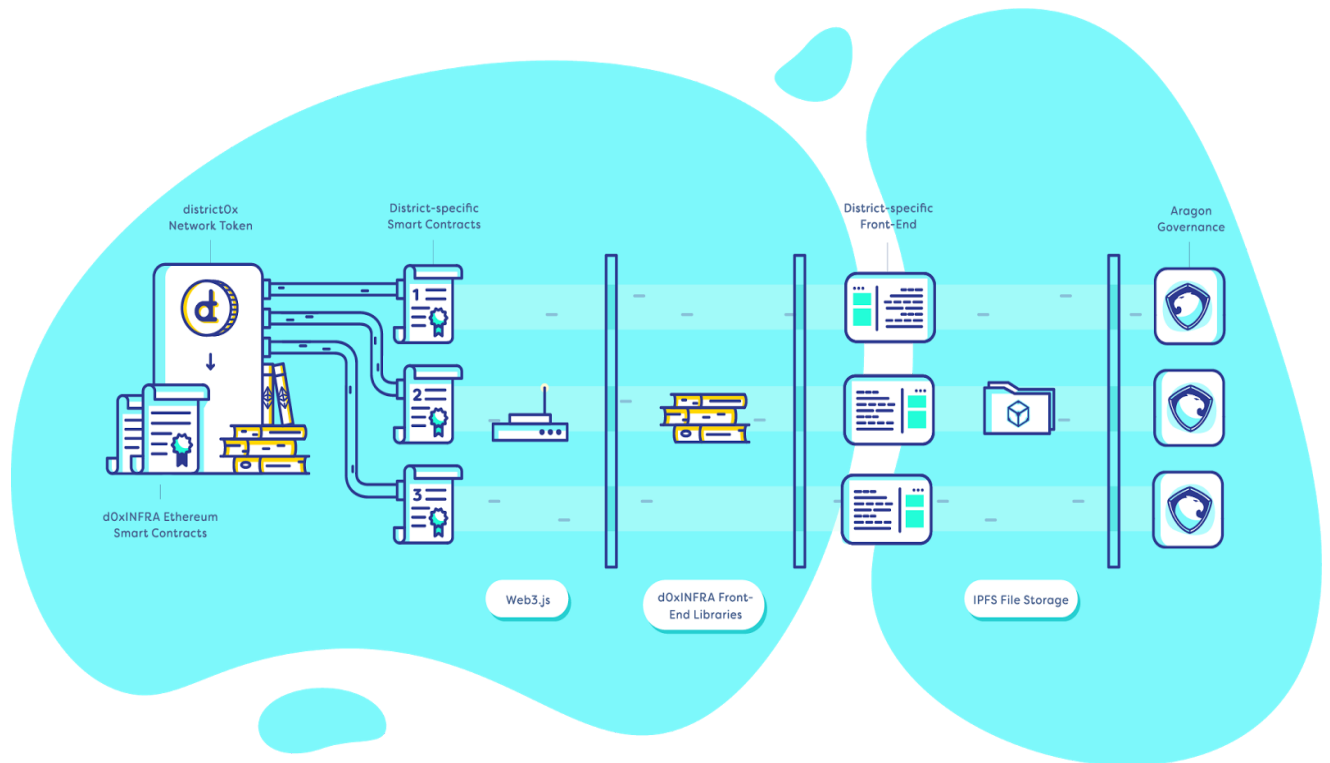
District Creation Platform

The district0x Network will ultimately be comprised of global marketplaces and hyperlocal communities alike. The district creation platform will provide users with an easy to use interface to design and deploy their own districts to the district0x Network.

The district creation platform will provide a way to customize the parameters of the smart contracts powering a district and will offer numerous UI options to support a wide variety of markets and communities. The district creation interface will feature an auxiliary module directory, similar to the [Apple App Store](#), to allow for the easy discovery of plugins that extend the functionality and utility of districts.

d0xINFRA

d0xINFRA is an open source framework comprised of Ethereum smart contracts and front-end libraries that govern the deployment of new districts to the network and provide their baseline functionalities.

Each district's backend logic will be controlled by a combination of d0xINFRA contracts shared by all districts on the network and a set of district-specific contracts. Similarly, for the front-end, districts will share reusable components where possible, primarily 'under-the-hood' front-end logic, while still allowing for broad visual UI diversity.

The district0x Network seeks to be home to a vast array of markets and communities. In accordance with this vision, d0xINFRA has been designed as an open and extendable modular system that allows districts to implement unique features and enhanced functionality via the plug-in of auxiliary modules (covered in the following section).

Auxiliary Modules

To allow for the development and deployment of new features, functionality, and revenue generating mechanisms to districts, districts can be customized and extended through the use of auxiliary modules.
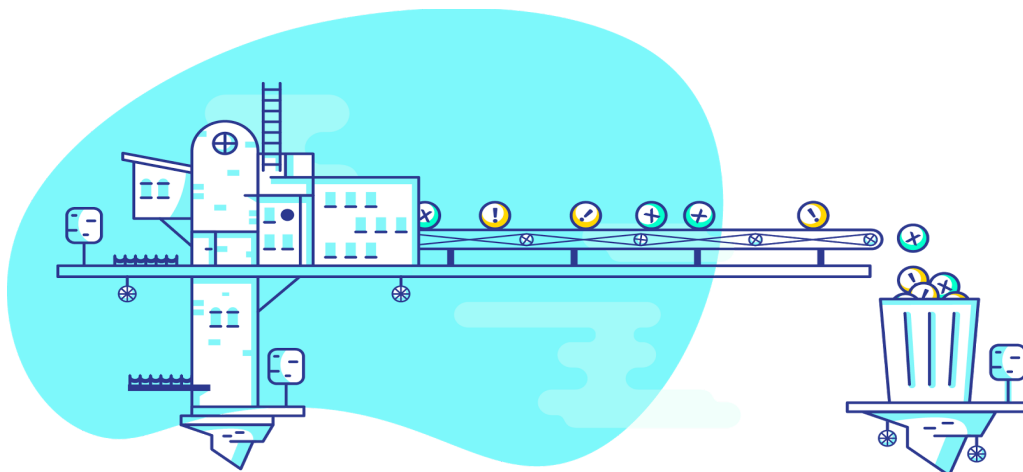
An example of an auxiliary module that can enhance the user experience of a district is a moderation mechanism that allows for the flagging and takedown of spam, malicious links, or explicit content.

An example of an auxiliary module that could potentially generate revenue for a district, is one which provides a mechanism for users to bid on premium placement of their listings, similar to Google AdWords. Winning bids would be sent to the district's governance pool. The participants in a district ultimately determine how funds in their governance pool are to be allocated via their voting processes.

Another example of a potential revenue generating auxiliary module, is one which allows for the optional insurance of proposals on the platform. One could imagine a third-party service deploying a module to offer financial guarantees on arrangements between users of the platform in exchange for a fee.

Districts will decide on a district by district basis what auxiliary modules are implemented via their governance processes.

Third parties are encouraged to develop and contribute auxiliary modules to district0x. They are incentivized to do so via the ability to charge districts fees for usage rights.

Governance by Aragon

Launched in 2017, Aragon is an operating system for decentralized autonomous organizations. Aragon provides an easy to use interface for creating, administering, and governing virtual entities.

Aragon allows for user-friendly management of the basic components of an entity such as voting-share distribution, role assignments, fundraising, and accounting. The behavior of an Aragon entity can be customized by changing its bylaws.

The creation of a district on the district0x Network will trigger the creation of a corresponding entity on the Aragon Network, via which all of the district's governance activities will occur. The creator of the district receives the initial voting share in its respective Aragon entity.

Voting shares can be used to partake in the processes that determine the qualities of a district ranging from their design, to their functionality, to their accepted codes of conduct, to the way revenue generated by a district is utilized or distributed.

Aragon entities created for districts will come preconfigured with a suggested set of bylaws and parameters, but district participants can vote to change these as they see fit.

district0x Network Token

To provide all internet citizens with an opportunity to freely join and contribute to any district, to align incentives across all of a district's participants, and to implement coordinated decision-making mechanisms to the district0x Network, we introduce the district0x Network Token (DNT).

District-Specific Governance Utility

The district0x Network Token is a staking token which allows holders to directly participate in the governance of any district on the district0x Network by staking their DNT to the districts of their choice.

Upon staking DNT to a district via the district0x Network Token Staking module, participants will receive voting shares in the respective district's Aragon entity, which they will retain for the duration of the time their tokens remained staked. Voting shares in districts are dispensed at a 1:1 ratio relative to the amount of DNT a participant chooses to stake to a district. The frequency of voting periods for a given district are defined in their respective bylaws.

Participants are free to exit a district at any time, so long as they do not have votes cast in an open vote, by un-staking their district0x Network Tokens. If a participant has cast votes in an open vote, they are free to exit the district as soon as the voting period closes. Voting shares are immediately forfeited and retired upon the un-staking of DNT from a district. After being un-staked, DNT can immediately be staked to other districts.

The creation of a district mints 1 district0x Network Token that is automatically staked to the district on behalf of the creator. This grants the creator initial control over the district, as the owner of the initial voting share in the district's Aragon entity. To prevent the abuse of this continuous minting mechanism, the initial DNT staked to newly created districts cannot be un-staked.

Unless specified in the bylaws of a district, there are no restrictions on the % of a district's voting rights that a participant can acquire and possess at any given time.

district0x Project Governance Utility

The district0x Network Token will also be used to govern aspects of the district0x Project at large.

Upon distribution, district0x Network Token holders can utilize their DNT to signal for which districts they would like the district0x Project team to build and deploy next to the district0x Network.

Gradually, additional district0x Project-wide governance utility will be introduced to the district0x Network Token, experimenting with different capabilities to allow adequate time for testing and refinement before committing to a permanent design for implementation.

Before the current district0x Project roadmap will be considered complete, governance of the project will be turned over entirely to district0x Network Token holders.

district0x Network Token Distribution

The district0x Genesis Contract will mint a total of 1,000,000,000 district0x Network Tokens.

Thereafter, district0x Network Tokens will be minted in perpetuity exclusively via the district creation module. The district creation process mints 1 district0x Network Token for every new district created on the network. Tokens minted by this mechanism may never be un-staked or transferred.

The 1,000,000,000 district0x Network Tokens minted by the district0x Genesis Contract will be distributed across a series of up to 3 potential contribution periods, beginning with Contribution Period v0.1 on July 18th, 2017. The district0x Genesis Contract will allocate the minted district0x Network Tokens as follows:

- 600,000,000 = Distributed to participants in Contribution Period v0.1
- 140,000,000 = Reserved for potential Contribution Period v0.2
- 40,000,000 = Reserved for potential Contribution Period v0.3
- 200,000,000 = Distributed to Founders (vest over the course of 2 years)
- 15,000,000 = Distributed to Advisors (vest over the course of 2 years)
- 5,000,000 = Distributed to Early Contributors (vest over the course of 6 months)

DNT tokens minted for allocation to founders, advisors, and early contributors are subject to a vesting schedule. Founder and advisor tokens are allocated over a 24-month vesting period, with a 6-month cliff. Early contributor tokens are allocated over a 6-month vesting period, with a 3-month cliff.

Contribution Period v0.1

Contribution Period v0.1 is currently scheduled to begin on July 18th, 2017 at 3:00 PM UTC with a minimum total contribution target of $2M.

Contribution Period v0.1 will run for a period of 14 days, or in the event the soft cap of $10M is reached, until 48 hours after the soft cap has been reached.

A total of 600,000,000 district0x Network Tokens will be divided and distributed across all participants. Within 14 days of the close of Contribution Period v0.1, participants will

receive an allocation proportional to the amount they contribute relative to the total amount contributed.

To protect against receiving an unnecessary amount of contributions, the district0x Genesis Contract will make use of a Security Cap which will be triggered and immediately close the sale in the event contributions exceed $50M.

Contribution Periods v0.2 and v0.3

A total of 180,000,000 district0x Network Tokens will be reserved to ensure the continued efforts of the district0x Project, in the event that additional contributions are needed to fulfill the district0x Project roadmap.

Contribution Periods v0.2 and v0.3 are subject to occur only after both the completion of the key milestones cited on the district0x roadmap (outlined in the following section) and 18 months have passed since the previous Contribution Period event.

Contribution Periods v0.2 and v0.3 will not occur if additional funding is not necessary to complete the project's remaining roadmap items.

To ensure that we adhere to the aforementioned policies, Contribution Periods v0.2 and v0.3 can only be executed upon approval from a 4/6 multisig. In addition to the Founders (Matus Lestan and Joe Urgo), the following individuals from the Ethereum community have been selected to serve as keyholders:

- Jarrad Hope - Co-founder at Status
- Jorge Izquierdo - Co-founder at Aragon
- George Li - Co-founder at WeTrust
- Nadav Hollander - Founder at Dharma Protocol

Roadmap

Prior to Contribution Period v0.1

- Release final draft of white paper
- Audit district0x contribution period v0.1 contract

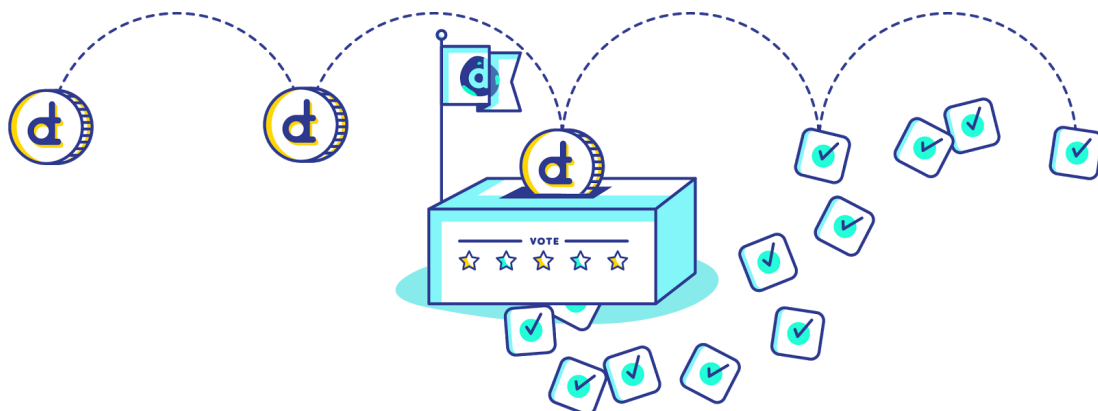## Prior to potential Contribution Period v0.2

- Deploy d0xINFRA
- Migrate Ethlance to d0xINFRA
- Deploy ENS Bazaar to district0x Network
- Deploy Meme Factory to district0x Network

Prior to potential Contribution Period v0.3

- Enable district extendability via auxiliary modules
- Deploy 5 additional districts to district0x Network
- Deploy district0x Network Token Staking module
- Deploy Aragon Governance module

Following potential Contribution Period v0.3

- Deploy district creation platform
- Deploy district registry
- Deploy auxiliary module registry
- Handover governance of the district0x Project to district0x Network Token holder
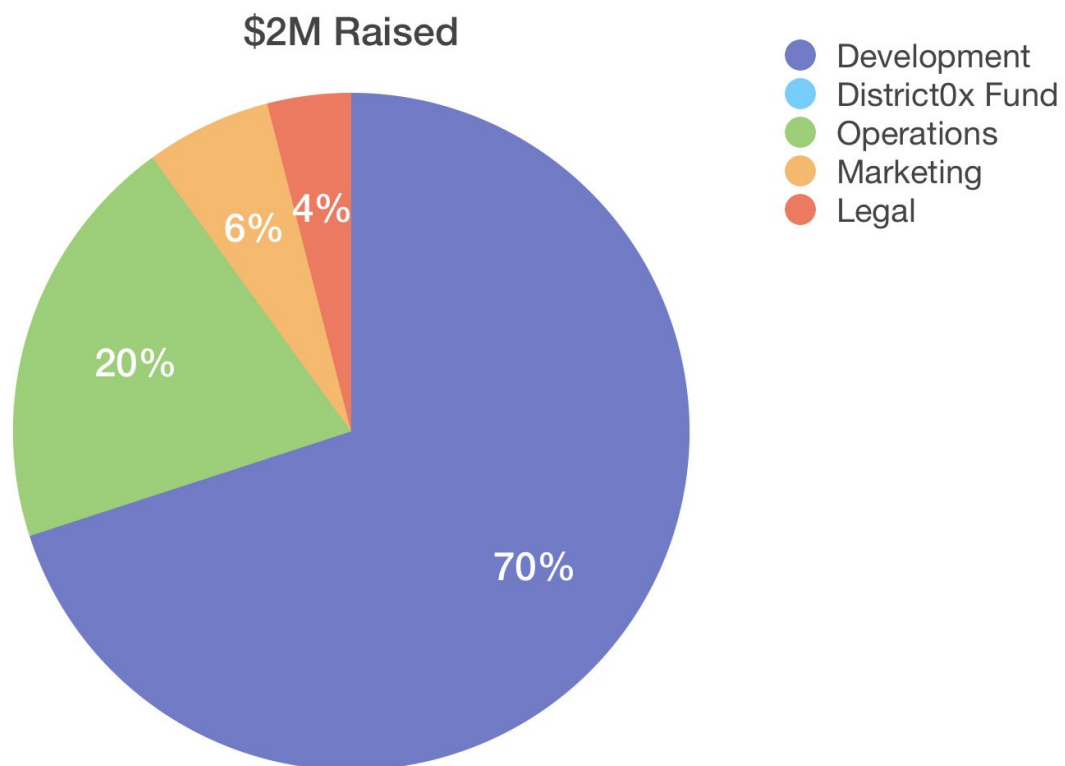
Projected Use of Contributions

Contributions received during Contribution Period v0.1 will be used exclusively for the development and expansion of the district0x Network. Below we provide our projected use of contributions in 3 different potential total contribution scenarios.
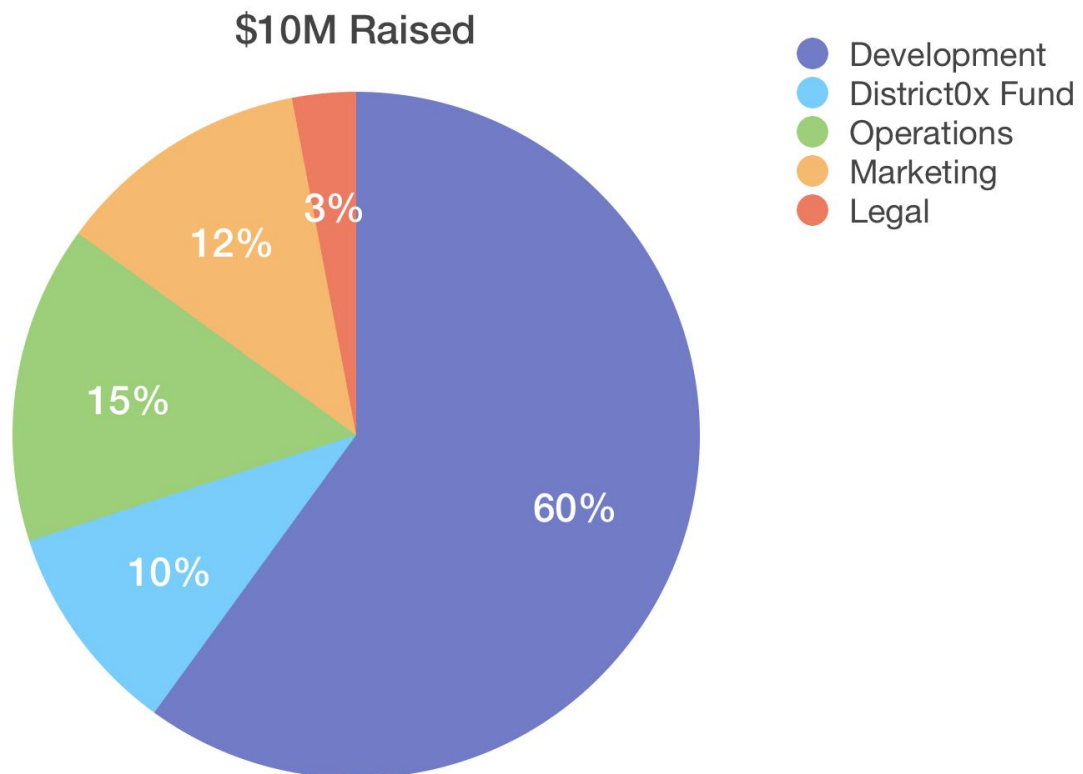
Minimum Contributions Received

If contributions meet or minimally exceed our minimum funding targets, we anticipate the vast majority of contributions being deployed to fund the development of the d0xINFRA framework, ENS Bazaar, Meme Factory, the district0x Network Token staking module, and the Aragon governance module.
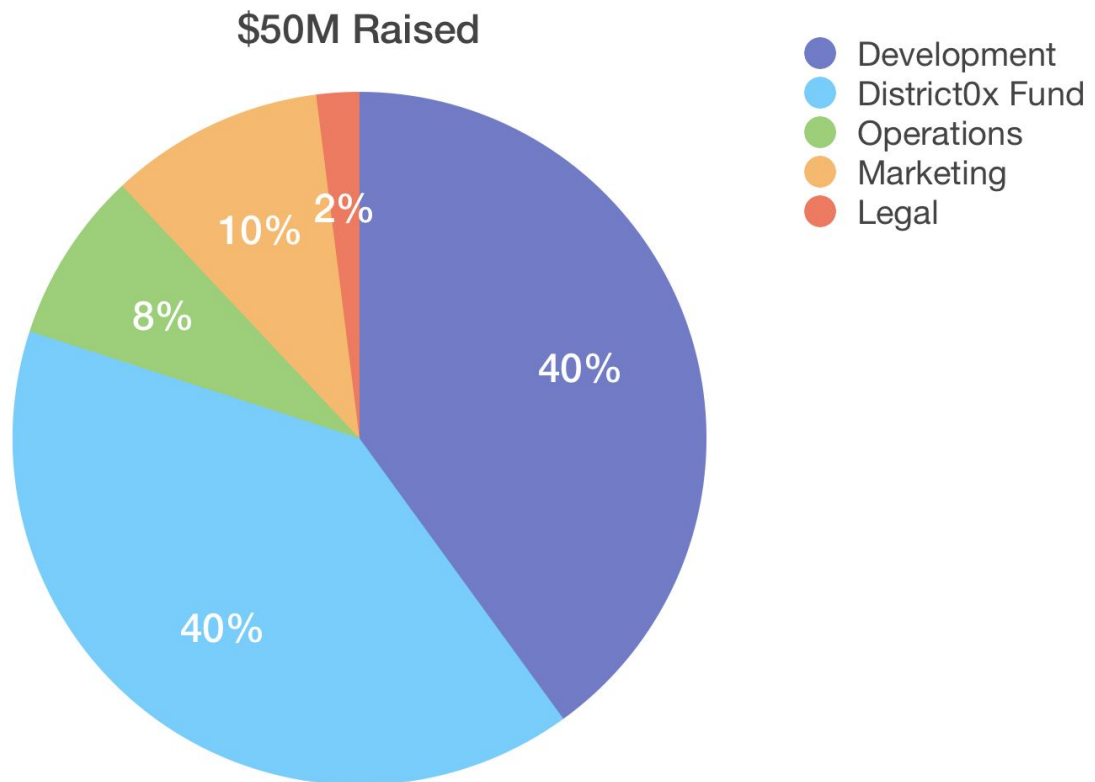
$2M Raised

Legend:
- Development
- District0x Fund
- Operations
- Marketing
- Legal

Pie chart values: 70%, 20%, 6%, 4%

Moderate Contributions Received

In the event that total contributions received meets the Contribution Period v0.1 Soft Cap target of $10M, the district0x Project team will explore the creation of the district0x Fund. The district0x Fund would be established for the purpose of supporting projects and developers building on the district0x Network.

$10M Raised

- Development — 60%
- District0x Fund — 10%
- Operations — 15%
- Marketing — 12%
- Legal — 3%

Maximum Contributions Received

In the event that total contributions reach the Contribution Period v0.1 Security Cap of $50M, we anticipate using a sizable portion of contributions received to aggressively fund the expansion of the number of districts deployed on the district0x Network and the breadth of auxiliary modules available to district creators.

$50M Raised

- ● Development
- ● District0x Fund
- ● Operations
- ● Marketing
- ● Legal

40%
40%
8%
10%
2%

Development Expenses

Contributions allocated for development expenses will be utilized to cover costs associated with the refinement of d0xINFRA, the deployment of new districts to the district0x Network, the creation of auxiliary modules, improvements to districts developed in-house, security audits, and the launch of the district creation platform.

Operational Expenses

Contributions allocated for operational expenses will cover any costs associated with accounting, business development, community management, education, people operations, recruiting, support, and any other administrative tasks.

Marketing Expenses

Contributions allocated for marketing expenses will cover any costs associated with the promotion of the district0x Project, the district0x Network, districts on the district0x Network, the d0xINFRA framework, and the district0x Fund.

Legal Expenses

Contributions allocated for legal expenses will cover any legal costs associated with the establishment and operation of the district0x Project entity, the establishment and operation of entities selected as service providers by the district0x Project, and any unforeseen legal costs necessary to resolve matters that could pose a threat to the continued efforts of the district0x Project.

The district0x Fund

In the event that the Contribution Period v0.1 Soft Cap is reached, the district0x Project will seek to establish a fund to support the development of new projects on the district0x Network and the creation of new auxiliary modules that enhance the functionality and utility of the district0x Project.

The district0x Fund's primary purpose is to advance and add value to the district0x Project ecosystem. The district0x Fund would look to incentivize developers to build their projects as districts, providing startup capital to talented teams leveraging the district0x Network for compelling use cases.

The district0x Fund will be established as an Aragon Network Jurisdiction entity, granting limited voting rights to all district0x Network Token holders. Efforts will be made to democratize investment decisions without sacrificing speed of execution.

Management of Contributions

As an Ethereum-based project, the long-term viability and utility of the district0x Network is directly correlated to the continued development of the Ethereum protocol and growth of its user base. Given such, after hedging 2 years worth of runway into USD, we intend to pay all wages to service providers in ETH, to pay all possible expenses with ETH, and to hold all idle funds in ETH in a multisig wallet indefinitely.

Understanding that the price of ETH relative to fiat currencies can be highly volatile, we have left the door open to additional contribution periods in the event that further funding becomes necessary for the completion of the district0x Project roadmap due to a sustained decline in ETH/USD prices.

In the event that ETH continues to appreciate vs USD and excess contributions remain upon the completion of the district0x Project roadmap, options will be explored to return ETH to district0x Network Token holders.

Transparency Policy

As a community-centric project, we believe operational transparency is paramount. The following steps will be taken to ensure that district0x Network Token holders will have access to an adequate amount of information about the progression of the district0x Project and the usage of contributions received from supporters. The links below will be live before the start of Contribution Period v0.1.

Financial Disclosures

- The multisig wallet in which contributions are held will always be publicly displayed at transparency.district0x.io
- Quarterly updates on our financial position and usage of contributions will be made publicly available at transparency.district0x.io

Service Provider Disclosures

- Public work profile links (LinkedIn, GitHub) for all service providers presently contracted by the district0x Project will be accessible at team.district0x.io
- All wages paid to service providers presently contracted by the district0x Project will be publicly accessible from transparency.district0x.io
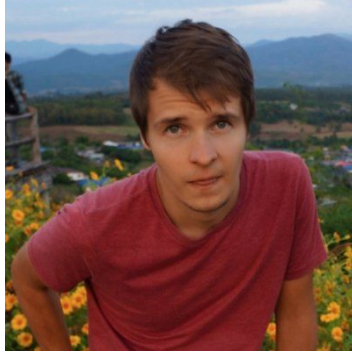
Development Disclosures

- Bi-weekly development updates will be published to blog.district0x.io
- A link to the current district0x Project roadmap will always be publicly accessible at transparency.district0x.io
- A link to the district0x Project's GitHub repository will always be publicly accessible at transparency.district0x.io

Contact Information

- A link to a public district0x Project chat client (Slack, Gitter, or similar platform) will always be publicly accessible at team.district0x.io
- The district0x Project team's email address will always be displayed at team.district0x.io
- The email address of all district0x Project team board members will always be displayed at team.district0x.io

Team

Matus Lestan
Co-founder - Lead Developer

Developed Ethlance as a first district. Matus is a lifelong developer with strong passion for decentralisation. Previously worked as a freelance developer for 8 years. Matus is now known for pushing Clojure-Ethereum ecosystem forward by many open source contributions.

Joe Urgo
Co-founder - Strategy and Operations

Founder/CEO at Sourcerers, Joe is a curious explorer of decentralized business models and token-enabled governance structures. Previously Joe worked as an Operations Manager at Coinbase, a Derivatives Trader at Three Arrows Capital, and a Professional Poker Player.

Advisors

Luis Cuende
Co-founder at Aragon

Carl Bennett
Co-founder at Status

Jake Brukhman
Co-founder at CoinFund

Appendix

Appendix A

Ethlance's backend logic is governed by 14 smart contracts deployed on the Ethereum MainNet:

- EthlanceViews - 0x1f286cB2EB7AE530FD85FD6EcE2e17d4f60D8DaA
- EthlanceUser - 0x27d233fa6032e848a016092d70493b2a5f13a95f
- EthlanceMessage - 0xf94aa98bde7589719f1f08c6fb032debd0d7e9e6
- EthlanceConfig - 0xe7d8d05f8328ea5b8fba5a77d4e4172487264bda
- EthlanceContract - 0x8F24AF20ad202C77686B771AD3dBc6b1fe28dDdD
- EthlanceSponsor - 0xb9f7d3b60ec29bd73fd66428f140ed5b0e1ef6ec
- EthlanceInvoice - 0x78f1072964d7f110e06670c229794afbdce7e474
- EthlanceSearchJobs - 0x9e2f85eea233047e527039681ad84448c8926690
- EthlanceFeedback - 0x2249713725c8a4a070a61de0bdce6b1081014185
- EthlanceSponsorWallet - 0xc80d2cb06ce606395178692de07ea9da1f873aa3
- EthlanceUser2 - 0x42c3e6bf6e47ad3d6cbb0b966c44e9331e96dd3e
- EthlanceDB - 0x5371a8d8d8a86c76de935821ad1a3e9b908cfced
- EthlanceJob - 0xB9E80ce5A7CbbA0Aab685797F6585AD1f3c90028
- EthlanceSearchFreelancers - 0x43386ad7af76ca5384bc06ae0c74e230f32744ee

Appendix B

A special thanks to the following community members for their feedback and continued support of the district0x Project:

- Alexander Khoriaty
- Carl Bennetts
- Jarrad Hope
- Luis Cuende
- Jorge Izquierdo
- Jake Vartanian
- Jake Brukhman
- Max Mersch
- Simon de la Rouviere
- George Li
- Nadav Hollander
- Stephen King
- Jorge Mielgo
- Griff Green
- Phil Kurtland
- Alexander Chopan
- Alex Maslar
- Christina De Paris
- Tatu Kärki
- Chase Cole