

# Paideia: A Web 3 DAO Management Software Suite

*Note: This is a working document. A final version will be released as a PDF with the Paideia branding. You have been invited to read this early version of the document, so please understand the formatting is not complete.*

**Abstract.** Blockchain technologies and cryptocurrencies are experiencing exponential growth. Within a decade, the market will transform from singular emerging technologies, such as smart contracts, into a mature ecosystem. Growth on this scale needs management. A new type of cooperative organization has arisen to meet this management challenge, decentralized autonomous organizations (DAOs). DAOs use blockchains and its tokens to allow decentralized groups to operate transparently, with less bureaucracy and cost. But, the software that supports these capabilities is limited or does not exist yet. Paideia is a DAO management toolset built on the Ergo blockchain. Paideia makes it easy for anyone to create a DAO, manage proposals and voting, and spend from a treasury. Ergo provides unique technical capabilities for DAO management software not available on other blockchains, such as treasuries with spending conditions and multiple signatures. These unique capabilities can be combined with other DAO software features to support many use cases: existing DAOs, startups, investment groups, fundraising organizations, social clubs and others. The more capable DAO software becomes, the more sophisticated the types of social organization it will enable. Paideia aims to push the development of DAO software in new directions: governance and tokenomics pre-sets, member reputation scores, staking and liquidity options, and in other ways. With the right software and blockchain as a service functionality, DAOs will flourish. They will be a key social organization leveraging blockchains to solve real-world problems.

## Introduction

Paideia is a web 3 software suite of DAO management tools which allows anyone to create a DAO, distribute tokens, discuss proposals, and participate in the democratic process required to manage a shared treasury. It is an important project because it brings useful functionality to one of the most fair-released and well-designed blockchains available: Ergo. Ergo is decentralized, has strong security and privacy systems in place, and is constantly evolving. It already supports several novel technologies which are not found on other blockchains.

Paideia will empower new projects and co-operatives to start up quickly and allow them to raise funds and leverage them with fewer roadblocks than other similar toolsets, in a fair and secure way. In addition, the tools will help various other groups share funding; software development teams, game guilds, startups, and investment groups will be able to allocate funds with full transparency to all members, and control the distribution of decision making power.

## Why Blockchain

Blockchain is a relatively new technology that is giving rise to new forms of social organization previously not possible. Utilizing cryptocurrency technologies offers an algorithm-based

mechanism for governance. By moving transaction logic for governance decisions to an immutable blockchain, some level of corruption can be mitigated. Decisions can be secured by smart contracts, rather than by placing trust in individuals.

Specific benefits of Blockchain applied to DAO governance are:

1. Physical decentralization of data, eliminating the risks of single point failure and many forms of Cyber attacks.
2. The distributed ledger naturally allows for easy to disclose and transparent information.
3. The peer to peer and append-only transactions linked to previous transactions provides a reduction of bureaucracy, discretionary power, and corruption.
4. It provides cost savings over archaic forms of governance thanks to the elimination of middle-person costs or risk of data entry errors.

## The Ergo Advantage

We believe a DAO should exist on a blockchain with a strong foundation and fundamentals. A DAO should be inexpensive to operate, simple to use, and secure and decentralized. It should resist government intervention and be accessible to anyone in the world, regardless of prohibitive local laws or social status. Without these features, a DAO can be manipulated by those who don't agree with the DAO's intentions. Certain individuals can be blocked from participating, based on their perceived caste, or some other trivial social status, or an arbitrary law that may be in place to protect the interests of the ultra-wealthy. If a DAO exists on a blockchain that does not have 100% up-time, the treasury could be inaccessible. If the blockchain doesn't have strong fundamentals, and resistance to manipulation, or has an insecure protocol, then actors with bad intent can manipulate the activities of the DAO or extract funds through malicious means.

Ergo meets these criteria in various ways:

- The PoW protocol Ergo utilizes is well tested to be secure and to decentralize control.
- It was fair launched, with no pre-mine, meaning there are no concentrations of power
- The protocol has 100% up-time
- It is inexpensive to operate; there are no gas fees like on EVM-based blockchains
- It provides technology such as NIPoPoWs, which allow users to run light clients. A DAO member can interact with smart contracts using their own node on their own device, even a cellphone. Light clients on other blockchains do not allow full node access, and in some cases have blocked users based on geo location. [citation 14]
- There are built in security features which are more robust than Bitcoin's, called Sigma protocols. [[https://ergoplatform.org/en/blog/2020\\_03\\_16\\_ergo\\_sigma/](https://ergoplatform.org/en/blog/2020_03_16_ergo_sigma/)]
- It is built on the UTXO model, which has far superior security assurances when compared to the accounting model of EVM chains. Smart contract behavior can be tested with more certainty, and transaction behavior is known before the user submits. There are far fewer surprises on a UTXO blockchain.

Due to these advantages, we feel that Ergo is the appropriate choice to launch DAO management software. However, Paideia will never be designed to be exclusive to Ergo, and will accept many other currencies in the future, though it will be built on Ergo first and always strive to follow the fundamental philosophies therein.

To learn more about the philosophies behind Ergo, [read the Ergo Manifesto](#).

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# Executive Summary

People have been struggling with governance for centuries. We are often selfish creatures, but our success as a species is based on the fact that we can cooperate to achieve common goals. One of the difficulties is that wealth generated from these shared endeavors is not always distributed equitably amongst the individuals involved.

With distributed systems, corruption, censorship, theft, and other pitfalls can prevent each stakeholder from getting their fair share of the proceeds. Blockchain has stepped in to disrupt financial markets by decentralizing control of asset storage, distribution, and remittance, but there is still room to take it another step further.

People need a fair, secure, corruption and censorship resistant way to manage shared funds. One technology in particular, Ergo, has several security advantages over other blockchains, but these are at the base-layer, and there are no tools available to utilize those advantages.

The Solution: Paideia, an Ergo-based DAO management toolset. Paideia will make it easy for anyone to initiate and manage shared treasuries through voting. The platform will provide a robust UI, backed by secure smart contracts that handle on-chain vote tallies, and will automate fund distribution.

Paideia is for anyone who needs to manage a treasury as a group. Some examples of entities that will benefit from Paideia include:

- DAOs
- Startups
- Developer teams
- Projects looking to raise funds
- Investment groups that pool their resources
- P2E gaming guilds
- Anyone else leveraging a shared treasury to create or do something

## Business Model

Paideia will generate revenue through blockchain as a service solutions. Initiating a DAO, distributing tokens, and upgrading to more complicated services will impose minor fees. All fees will be low enough that they will not have a noticeable impact on the user's experience with the system, but high enough to cover expenses and fund continued development and growth. Fees will be shared between the Paideia DAO treasury and Paideia token holders who stake on the platform.

# Disclaimer

As of the date of publication, this document does not constitute advice nor a recommendation by the Paideia team, its officers, directors, managers, employees, agents, advisers or consultants, or any other person to any recipient of this document on the merits of purchasing, otherwise acquiring, or holding Paideia Tokens or any other cryptocurrency or token. The purchase and holding of cryptocurrencies and tokens carries substantial risks and may involve special risks that could lead to a loss of all or a substantial portion of any money invested. Do not purchase tokens unless you are prepared to lose the entire amount allocated to the purchase. Paideia Tokens, if and when they are created and made available, should not be acquired for speculative or investment purposes with the expectation of making a profit or immediate re-sale. They should be acquired only if you fully understand the intended functionality of the Paideia Tokens, and you intend to use the Paideia Tokens for those purposes only, and it is legal for you to do so. No promises of future utility or performance or value are or will be made with respect to Paideia Tokens, including no promise any Paideia networks will be launched, no promise of inherent value, no promise of any payments, and no guarantee that Paideia Tokens will hold any particular value. Paideia Tokens are not designed and will not be structured or sold as securities. Paideia Tokens will hold no rights and confer no interests in the equity of the Paideia business or any future Paideia platform. Paideia Tokens are designed and intended for future use on the public Ergo platform for the purposes of governance and staking to support the continued use of the platform.

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# Quick Facts

Project Type: DAO Toolset

Token name: Paideia

Blockchain: Ergo

TGE: April 1

Governance: Optimistic DAO, quadratic voting

Total token supply: 200M

Planned Products: Governance, Voting, Treasury Management, Token Issuance, Staking, Decentralized IDs

Benefits: Decentralized governance, censorship resistance, trustless, fair

# Corporate Summary

## Mission

Our mission is to give people the power, knowledge, and motivation to change the way they govern and participate in democratic organizations. We will help people experiment with different methods of governance and work together to create a better future, whatever they envision.

Using our tools, individuals who don't have fair access to financial systems may take control and compete in a society that is imbalanced and stacked against them, without needing the approval of the wealthy or elite. Anyone who wants to engage in a democratic organization with a shared financial treasury can do so using Paideia.

The tools we create will allow anyone to initiate and manage a DAO with no prior knowledge or experience, empowering groups of individuals to pool their wealth and put it toward a common aim.

Through Paideia, DAOs will be able to:

- Distribute governance tokens
- Raise funds
- Manage their treasury
- Track member reputation
- Provide liquidity
- Initiate and manage staking contracts
- Create proposals on expenditures or governance
- Have a forum for stakeholders to discuss all ideas and proposals
- Easily deploy their funds to achieve their goals
- Experiment with different types of automated algorithmic democratic processes

## Values

Our core values include:

- Maintain open and transparent communication with the community.
- Behave in a trustworthy way at all times
- Provide equitable access to anyone on the globe, regardless of class, wealth, upbringing, or any other irrelevant metric.
- Provide education and empowerment.
- Create safe, trustworthy smart-contracts that cannot be tampered with by any malicious actors.
- Give communities a space to communicate and share ideas.

## Management Team

Paideia is an internal Ergopad project, and thus the Ergopad management team will handle executive roles in the beginning. As the project evolves, the Paideia DAO will transition into a fully self-governing entity, and any management roles that remain will be filled by qualified individuals. These decisions will be made by DAO votes, to maintain decentralized governance of the project.

## Governance

The DAO structure behind Paideia will be in the form of optimistic governance, with an executive team that can initiate proposals. Token holders will be able to challenge proposals within the given time-frame, and in the event of a challenge, all token holders will be able to vote to determine if the proposal passes or fails.

This form of governance allows the DAO to grow with agility, giving trusted executives the ability to act with focus, and not be bogged down by an unnecessary voting process for every single decision. Executives will be prevented from making selfish or unfair choices since stakeholders will always have the opportunity to challenge their proposals and force a vote.

Any DAO created on Paideia will be able to use this system if they so choose.

# Market Analysis

## The Cryptocurrency Market

The cryptocurrency market has been growing since the first bitcoin block was mined. Though there have been ups and downs in price, adoption is ever increasing, and there are no signs that this is slowing down. With institutional investors coming on board in the West, and heavy adoption across emerging markets, crypto appears to have a strong future.

As of 2021, there was an estimated global crypto ownership of 3.9%, with more than 300M users.<sup>3</sup> By the end of that same year, the total market cap had reached a high of \$2.5T, closing out at \$2.0T.<sup>4</sup> Some reports from 2020 estimated a CAGR between 11.1% and 30% over the next several years, though their estimations seem to have been too conservative based on today's numbers.<sup>5, 6</sup>

Chainalysis states that by the end of Q2 2021, global crypto adoption had grown by over 2300% since Q3 2019, and over 881% in one year.<sup>2</sup> The reasons for increased adoption differ depending on geographic location.

*In emerging markets, many turn to cryptocurrency to preserve their savings in the face of currency devaluation, send and receive remittances, and carry out business transactions; in North America, Western Europe, and Eastern Asia, by contrast, adoption over the last year has been driven largely by institutional investment.<sup>2</sup>*

Owners Demographics as of early 2021 were as follows: <sup>3</sup>

- 79% male, 21% female
- 58% are aged under 34
- 82% have a Bachelor's degree or higher
- 36% have an annual income over US\$100k

Walmart is getting into the space, Google has created a blockchain division, the U.S. government is starting to get serious about the digital dollar. All of this points to the fact that this is a nascent technology that will be as ubiquitous as the Internet, probably within a decade. Paideia intends to be ahead of that growth curve.

## Ergo Potential Market Growth

### Number of wallets growth on Ergo

Cardano grew from just over 100k wallets to just under 1M in 2021<sup>1</sup>, without any defi, and no smart contract support until Q4. Ergo reached 100k wallets in Q1 of 2022<sup>9</sup>, and has a functional DEX called [ErgoDex](#). On one single day, the official Ergo wallet had 13000 downloads<sup>10</sup>. A similar growth trajectory would indicate an exponential increase in use and investment in Ergo in

2022. One explanation for the Cardano growth was total assets locked for staking rewards. Ergo, being a PoW chain, doesn't have staking at the protocol level, but as of the release of this document, Ergopad staking has been the first staking contract available on the Ergo blockchain, and more will follow now that the code is available and open source, adding to the TVL in this ecosystem.

## Market cap growth potential compared to other chains

We compare Ergo's market cap to other DeFi capable blockchains and try to make fair comparisons of those chain's advantages and disadvantages when compared to Ergo. This is an exercise to demonstrate the future growth potential of Ergo as a blockchain. It can illustrate the potential market value that Paideia will have access to (and be a part of creating, by offering project launch tools).

At the time of writing, Ergo has a market cap of \$166M, significantly lower than any blockchains compared in the table below. Ergo has all the same functionalities, plus more, which indicate enormous potential in market share growth. If Ergo were to capture even 1% of Ethereum's market share, that would place it at a market cap of \$3.15B, which is an 18x growth in price.

## Why is Ergo not there yet?

Until recently, Ergo's DeFi was in its infancy, but is now growing rapidly. Ergo's first dApp connector wallet was released in February 2022. With this functionality, the Ergo ecosystem has grown, and several dApps have appeared to take advantage. Ergo has more than one NFT marketplace now, a functional dex and more on the way, staking, yield farming coming in Q3, cross-chain bridges that don't require third party custody, working metaverse projects and NFT-based games, and many more dApps just around the corner including an online casino where the users can be both the gambler and stake their funds as the house.

## Ergo vs Others Blockchains

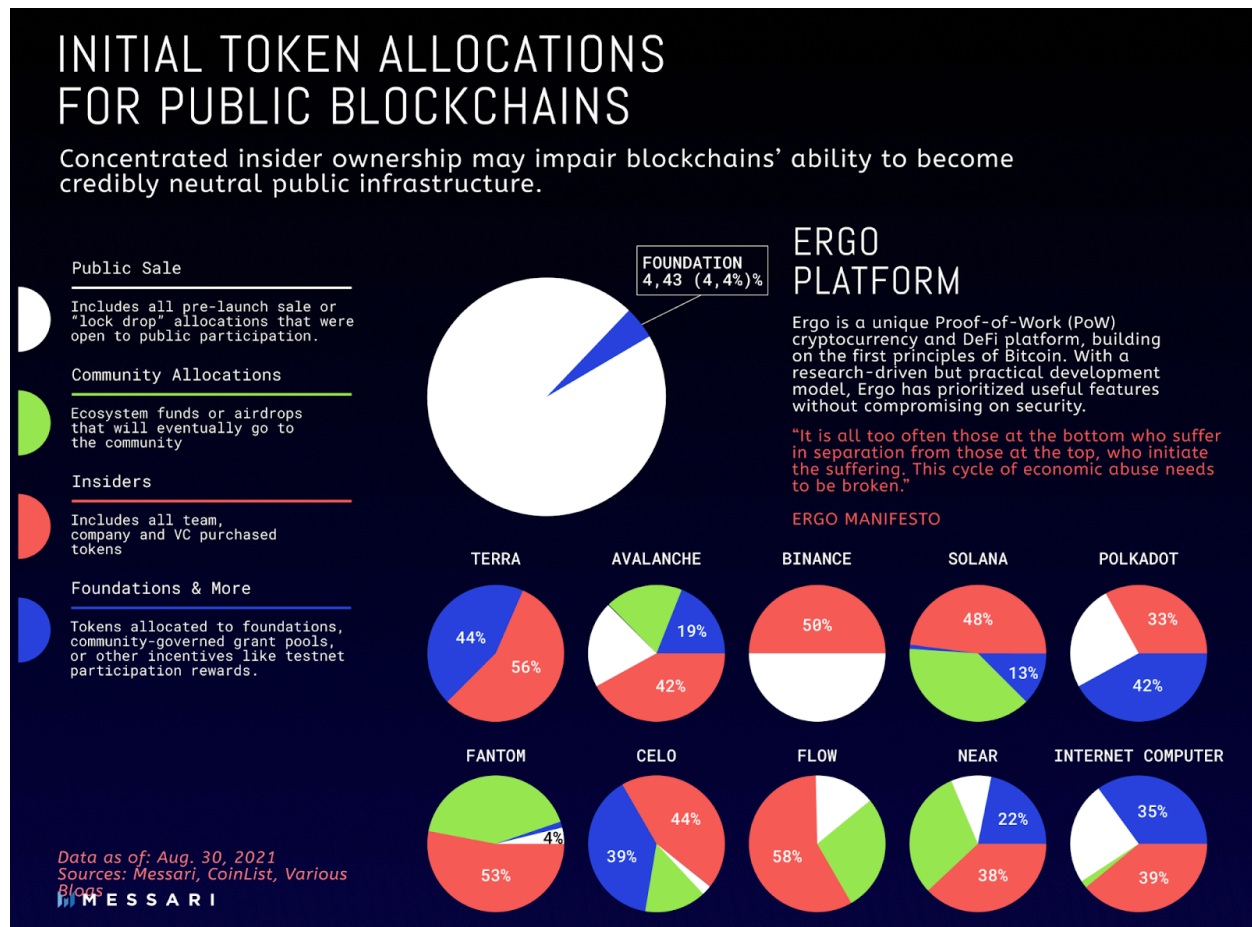
Name	Market Cap	Disadvantages	How does Ergo do it	Advantages over Ergo
Ethereum	\$315B	<ul style="list-style-type: none"><li>- High gas fees make smart-contracts not useful</li><li>- The accounting model poses significant security risks. Unanticipated exploits happen all the time.</li></ul>	<ul style="list-style-type: none"><li>- No gas fees. Even at \$100B valuation, tx fees would be \$1.1 USD</li><li>- eUTXO model allows all transactions to be simulated and confirmed to work as anticipated, before submitting to the blockchain</li></ul>	<ul style="list-style-type: none"><li>- First mover advantage</li><li>- DeFi is more mature at this moment</li></ul>

Binance Smart Chain	\$62B	<ul style="list-style-type: none"> <li>- Essentially the cheaper, more centralized Eth. All the same disadvantages, just with a lower gas fee, at a cost of centralization. Validators chosen by Binance.</li> </ul>	<ul style="list-style-type: none"> <li>- Decentralized</li> <li>- Validation via PoW</li> </ul>	<ul style="list-style-type: none"> <li>- First mover advantage</li> </ul>
Cardano	\$33B	<ul style="list-style-type: none"> <li>- Haskell is sometimes considered inaccessible, or built for academics</li> <li>- Proof of stake doesn't have an economic tether. Impossible to fair-launch PoS. Must buy tokens off other holders, can't generate yourself like PoW</li> <li>- DeFi is not working as well on Cardano yet as it does on Ergo (It's catching up quickly, though)</li> </ul>	<ul style="list-style-type: none"> <li>- Ergo is built on Scala, which is used by Twitter, Netflix, and AirBNB. More accessible and more devs in the industry</li> <li>- PoW has economic mechanisms similar to the supply of Gold, loosely tethering the value to the cost of generating new coins.</li> <li>- DeFi works well with decentralized off-chain bots</li> <li>- PoW offers security guarantees that PoS cannot</li> </ul>	<ul style="list-style-type: none"> <li>- PoS is considered better for the environment</li> </ul>
Solana	\$31B	<ul style="list-style-type: none"> <li>- Network has reliability issues and has actually gone down more than once</li> <li>- Completely centralized and VC backed/owned. More than 50% of tokens owned by insiders.</li> <li>- PoS with insider selected validators</li> <li>- Runs EVM so has all the same disadvantages of Eth</li> </ul>	<ul style="list-style-type: none"> <li>- Network is decentralized and runs itself</li> <li>- 4% of overall distribution reserved for Ergo Foundation. Fair launched with no VCs</li> <li>- PoW with miners consisting of anyone who can run a GPU mine.</li> <li>- Runs Ergoscript. No gas fees, low tx fees. Security audits are a lot easier and more predictable on eUTXO</li> </ul>	<ul style="list-style-type: none"> <li>- Hype</li> </ul>

There are other competitors which are developing DeFi, but none of them have the same fair launch and decentralization as Ergo. Many claim to be faster, but this always comes at a cost, either to security or decentralization. If you run a blockchain that is centralized, it negates the purpose of crypto, which is to avoid third party control entirely. If you launch a PoS network, the

coins must be sold or given to specific individuals. There is no way to fair-launch a PoS currency.

The following chart illustrates just how centralized some competitor blockchains are.



In terms of speed, the Ergo Foundation and other development teams are actively working on Layer 2 solutions to be built on top of Ergo which will allow for fast transaction speeds in situations where this is beneficial, along with many other important functions that a side-chain can perform. The Ergodex uses off-chain decentralized bots to process and submit transactions, allowing full DeFi functionality on an eUTXO-based blockchain. Ergopad has created their own fulfillment bots, making access to smart contracts fast and easy for the end user.

Ergo can do everything other blockchains do, but offers better underlying tech that, when properly utilized, adds an extra layer of security that users will not need to think about. Ergo is beginning to capture market share by offering more secure, auditable DeFi functionality, with no gas fees. Users who value these features on a PoW-backed blockchain will migrate quickly as Ethereum moves to PoS.

## Developer code updates

Ergo developers are far more active than the average. Stack, a crypto investment analysis platform, tracks the github repos of hundreds of blockchain projects. Ergo devs pushed 2,877 commits in the past year, vs. an average of 928 across the projects that Stack tracks. [11](#)

## User Base

Cryptocurrency has broad market segments, as anyone who has access to a cell phone or computer can use crypto in some way in their day-to-day lives. Some of the market segments include day-traders, long-term investors, miners, developers, gamers, shopkeepers (someone who sells goods or services for crypto), and fund managers.

The platform will be marketed not just to developers, but also to individuals who are less technically minded but who want to create an organization. Paideia will be designed so that the end-user does not need to know how the blockchain works or why it was chosen as the underlying technology behind the platform.

## Primary Users

The primary user of Paideia who will create a DAO will be someone looking to launch a crypto project, and raise funds from the community to aid in the development of that project. Often this will be someone who has some development experience, but that's not necessarily always true. The typical user will likely be entrepreneurial, and will be focused on marketing and building their project. If they needed to focus on writing code to manage their DAO and distribute their tokens, it would take time away from their own project.

The Paideia toolset will remove this barrier to entry, allowing users to focus on marketing and developing their products. The removal of these pain points will be Paideia's greatest selling feature. In addition, creators and entrepreneurs will appreciate the low fees, as starting a comparable project using Ethereum based DAO toolsets costs upwards of \$1500 in gas fees before you even distribute the tokens.

The primary user who will vote and discuss proposals in Paideia will be crypto speculators of any kind, whether they are long-term investors or day-traders or anything in between, if they are interested in investing in a project that launches with a DAO behind it, they will be the primary target user for Paideia. These users will appreciate the ability to discuss proposals directly on the platform, and the ease of submitting votes to the blockchain with minimal fees.

## Secondary Users

In addition to these primary users, we have identified some secondary users that will be able to take advantage of Paideia's tools:



Organizations of any kind that want to share governance with a group, including people who haven't used blockchain before, if the barriers to entry remain low. For example, a hobby club that wants to rent a collective space could pool their funds using the Paideia toolset and vote on expenditures.

Startups that have VC funding and need a simple way to manage it could submit their funds and create a voting token for the executive team, allowing different directors to propose fund uses. For example, a marketing director could request some funds for a marketing campaign, outlining all the details, and this could be voted on by the approved directors. Then, the funds would be released and the invoices could be shared directly on the Paideia platform.

Developer groups that need to share raised funds could use the toolset to manage their funds, making a proposal for things like hosting services, software purchases necessary for group development, etc.

Projects that want to kickstart funding from the community, and potentially need a tool to discover the fair market price could use Paideia's interactive token offering system where price discovery would take place based on market demand.

Investment groups that want to pool resources to invest in higher staking tiers or meet minimum investment requirements that they cannot meet as individuals could use the toolset to send funds to those blockchain projects, ensuring all stakeholders received their fair dues. The proposals could reserve funds and pay out based on smart contracts. This would mean the group would not need to rely on an individual to manage a shared wallet, and would prevent any individual from taking the pooled funds for themselves.

P2E gaming guilds could pool resources to buy an expensive character or upgrade in a game. If they work shifts to earn funds, they could manage the distribution of those resources with the Paideia platform.

## Competitive Advantage

A full S.W.C.D.UX.O Analysis (Strengths, Weaknesses, Content, Design, UX and Opportunities) was done on two competitors: Aragon (which had two separate DAO management dApps, both at <https://aragon.org/>), and Daostack (<https://daostack.io/>). The UX team has analyzed this data and has addressed all the opportunities outlined in the report while building the UX for Paideia.

The advantages of using Ergo over other blockchains as a base for this toolset have been outlined in detail in previous sections of this document. The main advantages that Ergo has over Ethereum are the lack of gas fees, and the more secure eUTXO model. Over Solana and other PoS chains advantages include less centralization (no hand-picked validators), 100% up-time, and a fair distribution model that doesn't require purchase from other holders.

	Paideia	Squads <a href="https://sqds.io/">https://sqds.io/</a>	Aragon <a href="https://aragon.org/">https://aragon.org/</a>	Daostack <a href="https://daostack.io/">https://daostack.io/</a>
Governance structures	3	1	2	1
Voting Mechanisms	5	1	2	1
Token Issuance Methods	4	1	1	1

## Customer Acquisition

### Community

Paideia will utilize various social platforms such as Twitter, Telegram, and Discord, to expand our community, creating a space for people to learn from one another and get the latest info about the project. Community updates, tutorials, and AMAs will be shared. The team will share consistent blog posts on Medium and the Paideia website outlining the development progress.

### Strategic Partners

Current strategic partners include:

- The Ergo Foundation
- ErgoDEX
- Ergo-Lend
- Azorus
- ErgoGames.io

There are more partnerships planned which help build cross-chain platforms to allow DAOs on Paideia to hold not just Ergo-based assets, but others as well.

Paideia will not be seeking VC funding, in favor of a fair and broad distribution among the community. Paideia is backed by the community, and the community will have an opportunity to influence the direction of the project via voting.

## Marketing

It is important to market Paideia outside the Ergo community, in order to capture a larger audience. The purpose of these tools is to allow anyone to create a DAO, whether or not they are familiar with Ergo, or blockchain in general. There will also be cross-chain functionality added in the future.

In order to increase community outreach, Paideia will be advertised through different platforms using various marketing strategies. The focus is on advertising our project through blockchain related blogs for each region with a broad scope of article types, focused on different market segments beyond just the technical-minded crypto enthusiast. Furthermore, we will be working with influencers for the mass adoption of Paideia, to help bring awareness and encourage entrepreneurs to consider using the toolset.

Our marketing campaign will also include giveaways, bounties, contests, AMA's, as well as participation and collaborations with other projects. Platforms such as Twitter, Reddit, Medium, YouTube will be used to spread awareness of the use case of our project. On the other side, every project that makes use of our tools will have a space to share their project information, and there are plans to increase the community outreach tools built directly into the Paideia toolset.

We will continue to make use of community feedback through social media and surveys in order to get familiar with the thoughts and ideas of the people who use Paideia. Ongoing surveys and market research will be conducted, and the data will help grow the project in a direction that's useful to the users.

## Product Market Fit

Problem	Solution
Ethereum gas fees make simple tasks extremely costly	Ergo network has no gas fees and very low transaction fees
The wealthy have more votes in many DAO systems, which means they will always vote for proposals that benefit them over others. This gets worse over time as wealth is accumulated faster due to these decisions.	Paideia offers voting mechanisms which attempt to mitigate the wealth advantage, such as quadratic voting and optimistic governance. In quadratic voting, a calculation weighs votes from smaller wallets higher per token than a single vote cast by a larger wallet.
Inability for non technical users to form a DAO.	Paideia allows for users from any background to create and manage a DAO. This means that they don't need to have any developers on their team. Funds can be shared by any group

	of people as long as they can use an Ergo wallet.
Lack of trust between the investors and project teams.	Paideia is providing tools such as transparent vesting or locking contracts, which can build a trust-based bridge between investors and builders. Transparent fundraising, tokenomics, and vesting schedules, all secured by audited smart contracts will prevent rug-pulls and allow investors to have a say in financial decisions.
Sometimes staking tiers can be out of reach for some investors, or they are unable to invest due to some arbitrary minimum investment.	Paideia is offering tools that allow investors to pool their funds, and the smart contracts ensure that no individual can take those funds for themselves. The treasury wallet can interact with any smart contract that an individual's wallet can.
Some entrepreneurs cannot launch their projects due to a lack of resources such as money, connections, or an inability to write the necessary code to interact with the blockchain. They still may have a good idea, and would be able to execute if there were fewer barriers.	We empower entrepreneurs by providing them tools and opportunities to start building their project. Paideia has fundraising tools that make it easy to share the idea and see if there is community interest.
Lack of knowledge among the community	Paideia will create educational videos and documentation to help new users learn about the software available and the blockchain in general.
With many projects, tokens are distributed manually, which leaves room for error or manipulation, schedule changes, and lack of transparency.	The toolset will provide a tokenomics process that is locked in at the outset. Tokens will be distributed through smart contract secured vesting periods and emission schedules that cannot be changed after the fact.

# Feature Sheet

## Basic Features

- Governance Management: choose the style of governance and create the necessary tokens to share voting rights
- Proposals: Those with the appropriate rights can create proposals to change DAO features and settings, or spend funds
- Voting: the voting structure can be selected from available options, and each proposal can be voted on by token holders
- Token creation/issuance: all tokens can be generated by the platform and distributed using the optional mechanisms (direct sale FCFS, interactive token offering a.k.a. dutch auction, airdrops)
- Tokenomics generation: you can control how many tokens are distributed or withheld for specific groups, what their vesting schedules will be, and generate graphs and tables to share with users
- Staking tools: if you want to allow users to stake their tokens, Paideia can provide a space to do so
- User reputation: users can give validation information, build a reputation, and get bonuses for using the platform
- DAO customisation: upload a logo, choose from color themes, and select how your DAO is presented to the world.
- Treasury management: allowing proposals which include staking the treasury, providing liquidity to earn LP revenue, and other smart contract interactions can be done through the DAO management panel like any other proposal

## Record Keeping

- DAO decisions must be tracked and summarized
- Graphs will display expenditures, potential ROI per proposal when possible
- Some proposals can have milestones tracked on chain and execution tracking. This would be required for things like the refundable ICO feature.

## Proposal pre-sets

- Payouts: add or import csv for payee details. Run your payroll or pay to a group in erg or any erg token, based on DAO decisions.
- Automated Recurring Payouts: Schedule payouts at a predefined time, select to pay in token value or sigUSD worth. This contract can be voted in place by DAO members, then canceled by dao proposals as well.
- Yield Management: Options to earn interest by providing liquidity or other treasury management options which can be proposed to the DAO.

- Token Buyback option - the dao can vote to buy back tokens at specific market rates on specific DEXs.

## Governance structures

When users initiate a DAO, they will be asked to choose from some structural pre-sets. DAOs can encounter issues with scalability and resilience, and there are different approaches to solve these problems.

Highest resilience is not very scalable. The extreme example is an absolute majority voting mechanism: every member must vote on every decision, and at least 51% in favor would be a passing outcome. Requiring too much attention from a large number of DAO members makes the system unscalable which is why organizations typically become less effective at decision making as they grow. Having everyone vote on every decision is slow and doesn't always follow a logical path or vision. As a DAO grows in size (number of agents), and scope (which comes with more fund allocation decisions), the DAO decision-making system must scale to allow for a higher number of effective decisions in a given period of time.

The problem is, focusing only on scalability is not very resilient. When very few members get to represent the larger majority's decisions, there is a high chance those decisions won't align well with the opinion of the majority. Requiring too little input from the majority creates a potential for a lack of resiliency to faulty decisions.

Since not everyone can give their full attention to every vote, scalable resilience is when the DAO decisions closely resemble the global opinion of all members, but where votes do not require attention from everyone. To try and find balance between these trade-offs, Paideia will offer various governance structures.

When Paideia is first released, the two options will be either standard voting with quorum, or an optimistic governance model.

### Optimistic Governance

Optimistic governance is a system where only whitelisted individuals can create proposals, and all proposals will be passed by default unless challenged by token holders. If a proposal is challenged, there will be a vote available to all DAO members to determine whether the proposal passes or not.

### Holographic Consensus

Originally proposed by Ralph C. Merkle, this form of governance attempts to eliminate several of the known drawbacks found in the modern democratic voting process.<sup>[13](#)</sup> Because this system is

significantly more complex than the others, it will not be offered in the first iteration of Paideia, but will be added later as the details are worked out.

Holographic consensus connects a prediction market to the democratic process, and rather than having individuals vote on proposals, it allows them to rate their satisfaction with the decisions based on how they feel those decisions affect their individual welfare.

The system can be rather complicated to explain, and thus is beyond the scope of this document. A future document explaining Holographic Consensus will be produced and shared with the community prior to this functionality being added to the Paideia platform.

## Voting Mechanisms

### Token-based quorum voting

The default voting system will be token-based quorum voting. A quorum means a minimum number of available votes are required to pass. IE if a quorum is set to 50%, and there are 100 total votes, then at least 50 votes must be cast or the proposal automatically fails. Once the quorum threshold is reached, the decision with the most votes wins.

This type of voting mechanism can be difficult to get right, because if you reduce the quorum percentage to increase scalability, requiring fewer voters to pass proposals, resiliency is reduced by making it too easy to push through malevolent or just ill-conceived proposals. Paideia will have balanced default values, but DAOs can adjust these through proposals after inception if they find their settings aren't working well.

### Quadratic voting

Quadratic voting uses a calculation to optimize voting power so that if 10 donors donate \$1 each, that will count for more than if 1 voter donated \$10. This works well for DAOs to prevent wealthy whales from controlling all the decisions.

*"[The] number of contributors matters more than [the] amount funded. This pushes power to the edges, away from whales & other central power brokers, [which] creates more democracy in public goods funding decisions! 🍷" <sup>12</sup>*

Quadratic voting is a setting that can be chosen at DAO initiation, or added later through a proposal.

### Single choice voting

Voters can allocate their entire voting power to one choice. This is the default and typical voting mechanism.

## Additional Voting systems

### Approval voting

Voters may select multiple choices, and their voting power is spread equally between each choice. This may not be included since votes will typically be a binary decision.

### Ranked choice voting (IRV)

In IRV, voters rank their favorite option as first choice and then indicate their second and additional back-up choices in order of preference. Votes are counted in a series of rounds to ensure that as few votes as possible are wasted.

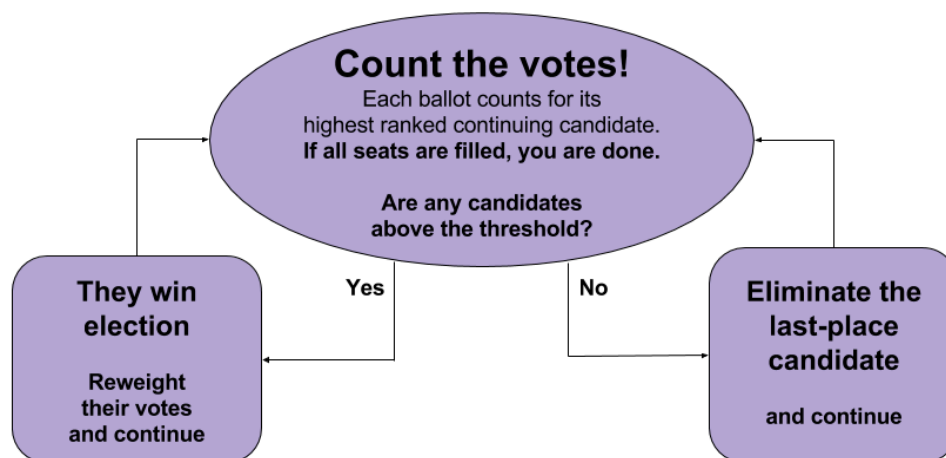
In each round, one of two things happen: either a winner is found, in which case all votes in excess of the requirement to win will be redistributed to each voter's second choice, or no winner is found and the lowest voted candidate is removed, in which case those voter's votes are redistributed to the next choice on their list.

The *election threshold* (how many votes required for victory) is determined mathematically based on the guarantee that that candidate can't lose.

*Eg: three candidates to be elected would make the winning threshold 25%, since if one candidate had more than 25% of the vote, it's impossible for three other candidates to get more votes than them, because that would add up to more than 100% of the votes. With four candidates, it's 20%, and 17% for 5, and so on.*

Any candidates that exceed the election threshold will be elected that round. Any votes above that threshold go to the totals of the next candidate on those voter's lists.

If no candidate has more votes than that threshold, the one with the fewest votes is removed and the next candidate on those voter's lists is used in the next round of counting.





## Weighted voting

Each voter may choose how to spread voting power across any number of choices. This voting method was first introduced by Float Protocol with <https://scattershot.page> (a fork of Snapshot).

## Token Issuance Mechanisms

There are multiple ways to raise funds and issue tokens in the crypto space. We propose to allow DAOs the option of using various pre-built tools to issue tokens to the community.

DAO managers will also be able to design their tokenomics on the platform. They can use a form to determine what tokens are distributed through private or public presales, how many are airdropped, if some are reserved for staking rewards. They can also reserve some for various treasury allocations, team tokens, or advisor issuances. Each category can be set up with a different vesting schedule, and then Paideia will generate graphs and tables to outline the tokenomics structure in a visual way.

Once the tokenomics have been determined, a DAO management team can choose to release the tokens in various ways:

### Direct Sale (FCFS)

This mechanism uses a signup form where users will pledge to donate to the project in exchange for tokens. Once approved, a contribution form will be available and users will be able to send specific cryptocurrencies in exchange for issued tokens. The DAO can determine the vesting period and other parameters.

### Interactive Token Offerings

Similar to a “Dutch Auction,” this method will allow users to set a min and max market cap that they are willing to purchase tokens for. Using an algorithm, price will be determined once equilibrium is reached, and those that bid the highest will have the first opportunity to acquire tokens at the determined value. This will be modeled after the IICO dApp created by Truebit.

<https://medium.com/truebit/exploring-the-iico-interactive-dapp-337e1d09fffe>

<https://people.cs.uchicago.edu/~deutsch/papers/ico.pdf>

### Airdrops

A DAO can provide funds to any number of users through airdrops. The list can be added manually or a .csv file can be uploaded.

## Refundable ICO

This will give DAOs the option of allowing refunds. There can be different parameters such as time-frame, milestones, etc.

One example would be a DAO that is formed to build some software. Deliverables can be determined before-hand with quarterly milestones, and each quarter the DAO is issued the appropriate funds. If a token holder does not feel the DAO is meeting their obligations, they will have an option to refund the remainder of their tokens for the initial purchase price.

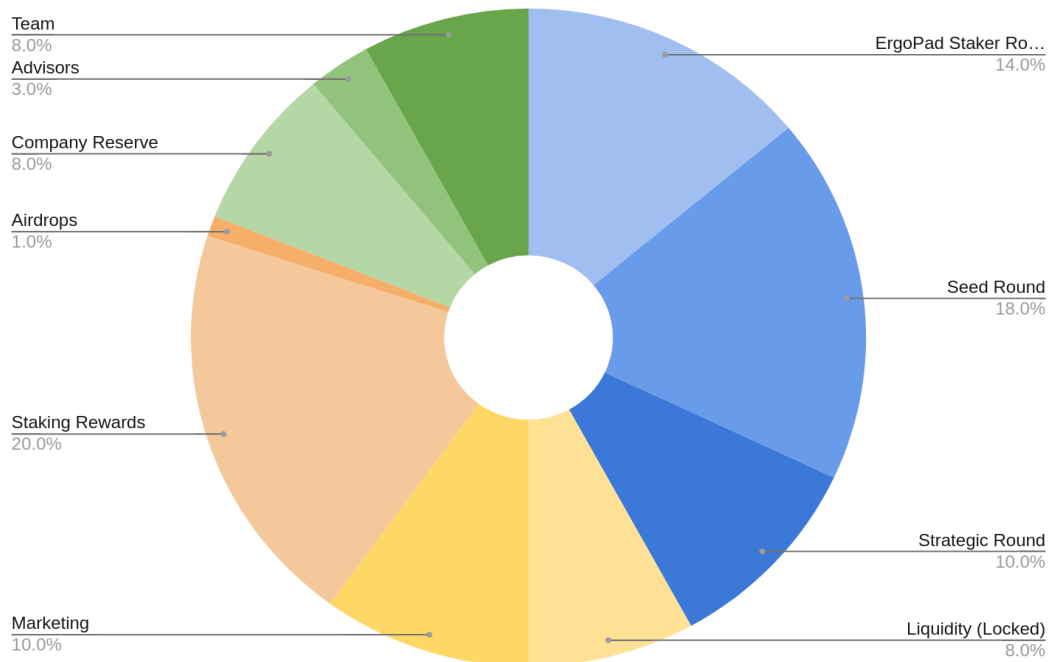
This would have the effect of self correcting prices on the open market. For example, if a token was sold for 10 cents, and the market value has dropped to 9 cents on decentralized exchanges, most users will opt to refund their tokens. The ones that choose to rebuy at the lower rate of 9 cents for an arbitrage opportunity will push the price up until it reaches parity with the initial purchase price of 10 cents.

If the DAO is truly failing at its obligations, users will not buy back in, regardless of arbitrage opportunity. If the DAO is succeeding, the price will balance out and the DAO will be able to continue their work.

# Tokenomics

This project will have a token for the IDO. It can be spent on the platform features, where you will get a discount over spending Erg. Generating a DAO and using the features will come with an associated fee shared with the Paideia DAO and Paideia token stakers. This is a community run and community built project. All development will be open source and anyone can contribute to the code-base. There will be a max supply of 200M Paideia tokens distributed as follows:

Name	Number of Tokens	% of Total Supply	TGE Issuance (%)	Emission Frequency	1st Emission Date (MONTHS from TGE)	Emission Length (MONTHS)
ErgoPad Stakers	28,000,000	14%	0%	Daily	0	12
Seed Round	36,000,000	18%	0%	Daily	0	9
Strategic Round	20,000,000	10%	0%	Daily	0	6
Liquidity (Locked)	16,000,000	8%	100%	-	0	0
Marketing	20,000,000	10%	50%	Monthly	1	24
Staking Rewards	40,000,000	20%	0%	Daily	0	48
Airdrops	2,000,000	1%	100%	-	0	0
DAO Reserve	16,000,000	8%	10%	Quarterly	0	16
Advisors	6,000,000	3%	5%	Monthly	3	6
Team	16,000,000	8%	5%	Monthly	6	12



The chart displays the cumulative revenue for five categories over a 24-month period. The categories are stacked from bottom to top: Other (yellow), Entertainment (blue), Media (light blue), Technology (green), and Consumer Goods (orange). The total revenue grows from approximately 30,000,000 in month 0 to nearly 180,000,000 by month 24. The Technology and Entertainment categories show the most significant growth, while the Other category remains relatively flat.

Month	Other	Entertainment	Media	Technology	Consumer Goods	Total
0	15,000,000	10,000,000	5,000,000	0	0	30,000,000
1	15,000,000	15,000,000	10,000,000	5,000,000	0	45,000,000
2	15,000,000	20,000,000	15,000,000	10,000,000	0	60,000,000
3	15,000,000	25,000,000	20,000,000	15,000,000	0	75,000,000
4	15,000,000	30,000,000	25,000,000	20,000,000	0	90,000,000
5	15,000,000	35,000,000	30,000,000	25,000,000	0	105,000,000
6	15,000,000	40,000,000	35,000,000	30,000,000	0	120,000,000
7	15,000,000	45,000,000	40,000,000	35,000,000	0	135,000,000
8	15,000,000	50,000,000	45,000,000	40,000,000	0	150,000,000
9	15,000,000	55,000,000	50,000,000	45,000,000	0	160,000,000
10	15,000,000	60,000,000	55,000,000	50,000,000	0	170,000,000
11	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000
12	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000
13	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000
14	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000
15	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000
16	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000
17	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000
18	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000
19	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000
20	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000
21	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000
22	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000
23	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000
24	15,000,000	65,000,000	60,000,000	55,000,000	0	175,000,000



# Project Roadmap

## 2022

### Q1

- Begin UX development, producing prototypes to show the community - **Completed**
- Complete the white paper - **Completed**
- Create social media accounts, and begin community outreach - **Completed**
- Fund-raise rounds - **Completed**
- Begin work on smart contracts and project back-end code - **Completed**
- Begin work on front-end along-side the UX team - **Completed**

### Q2

- Continue work on front-end code and start launching alpha testing of some features with the back-end team
- TGE and IDO - **Completed**
- Staking begins - **Completed**

### Q3

- Front-end and back-end team working together to continue adding features and testing
- Some beta tests may be available to public at this time
- Cross-chain functionality begins development

### Q4

- Begin releasing production versions to the public and adding new features
- Add more complex forms of governance and token launch options. Begin to fully realize the vision outlined in this whitepaper

## 2023 & beyond

- Fully implement cross-chain functionality
- Create side-chain and stand-alone DAO management tools outside of the Paideia website
- Utilize funds where possible and explore outreach programs in areas that will benefit most from crypto governance solutions
- Establish a not-for-profit foundation that can educate and empower people in developing nations using the Paideia toolset

# References

1. Cardano Blockchain Insights. (n.d.). Google Data Studio.  
<https://datastudio.google.com/reporting/3136c55b-635e-4f46-8e4b-b8ab54f2d460/page/r2LQC>
2. The Chainalysis 2021 Geography of Cryptocurrency Report. (2021, October). Chainalysis.  
<https://go.chainalysis.com/2021-geography-of-crypto.html>
3. Global Cryptocurrency Ownership Data 2021. (2021, October 14). TripleA.  
<https://triple-a.io/crypto-ownership/>
4. 2021 Yearly Cryptocurrency Report. (2022, January 13). CoinGecko.  
<https://www.coingecko.com/buzz/2021-yearly-cryptocurrency-report>
5. Factors, F. (2021, April 12). At 30% CAGR, CryptoCurrency Market Cap Size Value Surges to Record \$5,190.62 Million by 2026, Says Facts & Factors. GlobeNewswire News Room.  
<https://www.globenewswire.com/news-release/2021/04/12/2208331/0/en/At-30-CAGR-CryptoCurrency-Market-Cap-Size-Value-Surges-to-Record-5-190-62-Million-by-2026-Says-Facts-Factors.html>
6. Fortune Business Insights. (2021, October 25). Cryptocurrency Market Rising at a CAGR of 11.1% to Reach USD 1902.5 Million by 2028. GlobeNewswire News Room.  
<https://www.globenewswire.com/news-release/2021/10/25/2319609/0/en/Cryptocurrency-Market-Rising-at-a-CAGR-of-11-1-to-Rreach-USD-1902-5-Million-by-2028.html>
7. Non-Interactive Proofs of Proof-of-Work. (n.d.). NIPoPoWs. <https://nipopows.com/>
8. Wikipedia contributors. (2022, January 10). Paideia. Wikipedia.  
<https://en.wikipedia.org/wiki/Paideia>
9. ErgoWatch. (n.d.). Ergo Watch. Retrieved January 28, 2022, from  
<https://ergo.watch/metrics/addresses>
10. Ergo Platform. (2022, January 20). The Ergo Android Wallet had 13000 downloads yesterday. Twitter. <https://mobile.twitter.com/ergoplatformorg/status/1484198999930384388>
11. Should you invest in Ergo? (2022, February 8). Stack. <https://stack.money/asset/ergo>
12. WTF is Quadratic Funding? (n.d.). QF.Gitcoin.Co. <https://wtfisqf.com/>
13. Merkle, R. C. (2021, March). DAOs, Democracy and Governance.  
<http://merkle.com/papers/DAOdemocracyDraft.pdf>
14. Nelson. MetaMask, Infura Block 'Certain Areas' Amid Crypto Sanctions Fury.  
<https://www.coindesk.com/policy/2022/03/03/metamask-infura-block-certain-areas-amid-crypto-sanctions-fury/>
15. *Building Ergo: Sigma protocols*. (2020, March 15). Ergo Platform.  
[https://ergoplatform.org/en/blog/2020\\_03\\_16\\_ergo\\_sigma/](https://ergoplatform.org/en/blog/2020_03_16_ergo_sigma/)