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, and discuss 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 aren't 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; dev 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

Blockchains are a 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 and provides a more secure and cost effective approach to manage cross entity trust that mitigates some level of corruption by moving transaction logic to an immutable blockchain.

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 middlemen costs or risk of data entry errors.

The Ergo Advantage

When building a DAO, it should exist on a blockchain with a strong foundation and fundamentals, be inexpensive to operate, be simple to use, and be secure and decentralized. It should resist government intervention and be accessible to anyone in the world, regardless of prohibitive local laws or social status. We feel that Ergo satisfies those criteria and we feel building this software on Ergo first is the appropriate choice. Paideia will never be designed to be exclusive to Ergo, and will accept many other currencies in the future, however it will be built on Ergo first and always strive to follow the fundamental philosophies therein.

Ergo does not have expensive gas fees like Ethereum. It is fair launched, highly decentralized, and based on the original UTXO model of Bitcoin.

Ergo offers technological advantages over other blockchains such as NIPoPoWs, soft forks for code-base changes, and an efficient, ASIC resistant proof of work algorithm. It avoids cloning the EVM and solidity code, and rather uses a well-conceived Scala-based programming language called Ergoscript, which provides a much safer and more robust platform for dApp development.

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

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Executive Summary

Humans 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 are smart enough to work together to achieve a common aim. One of the difficulties is that wealth generated from these shared endeavors is not always distributed fairly amongst the individuals involved.

With distributed systems, there is always the chance of corruption, censorship, theft, and other pitfalls that prevent each stakeholder from getting their fair share of the spoils. Blockchain has stepped in to disrupt the financial markets and offer some level of respite, but it comes with its own set of problems, especially when it comes to cooperation.

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

The Solution: Paideia, an Ergo-based DAO management toolset that makes it easy for anyone to initiate and manage on-chain voting and shared treasuries by providing a robust UI and well-conceived smart contracts that significantly reduce barrier to entry and access to the advantages blockchain, and Ergo specifically, provide.

Paideia is for anyone who needs to manage a treasury as a group, in a fair way that is resistant to corruption. 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

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Quick Facts

Project Type: DAO Toolset
Token name: Paideia
Ticker: PAI
Blockchain: Ergo
TGE: April 1
Governance: Optimistic DAO, quadratic voting
Total token supply: 200M
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 societies. 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.

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 can distribute governance tokens, raise funds, manage their treasury, create proposals on expenditures or governance, have a forum for stakeholders to discuss all ideas and proposals, and easily deploy their funds to achieve their goals.

Values

Our core values include:
- Providing fair voting mechanisms.
- Providing education and empowerment.
- Creating safe, censorship resistant smart-contract-based decentralized systems which people can trust to manage their funds.
- Giving communities a space to communicate and share ideas.
- Providing access to anyone on the globe, regardless of class, wealth, upbringing, or any other irrelevant metric.

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 steadily 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.[3] By the end of that same year, the total market cap had reached a high of $2.5T, closing out at $2.0T. [4] 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. [5, 6]

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.[2] 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.*[2]

Owners Demographics as of early 2021 were as follows: [3]
- 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, and will market to users that are less technical minded, and want to participate in the space without learning to write code.

Ergo Potential Market Growth

Number of wallets growth on Ergo

Cardano grew from just over 100k wallets to just under 1M in 2021[1], without any defi, and no smart contract support until Q4. Ergo has just reached 100k wallets in Q1 of 2022[9], and has a functional DEX called ErgoDex. On one day, the official wallet had 13000 downloads[10]. 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, and 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.
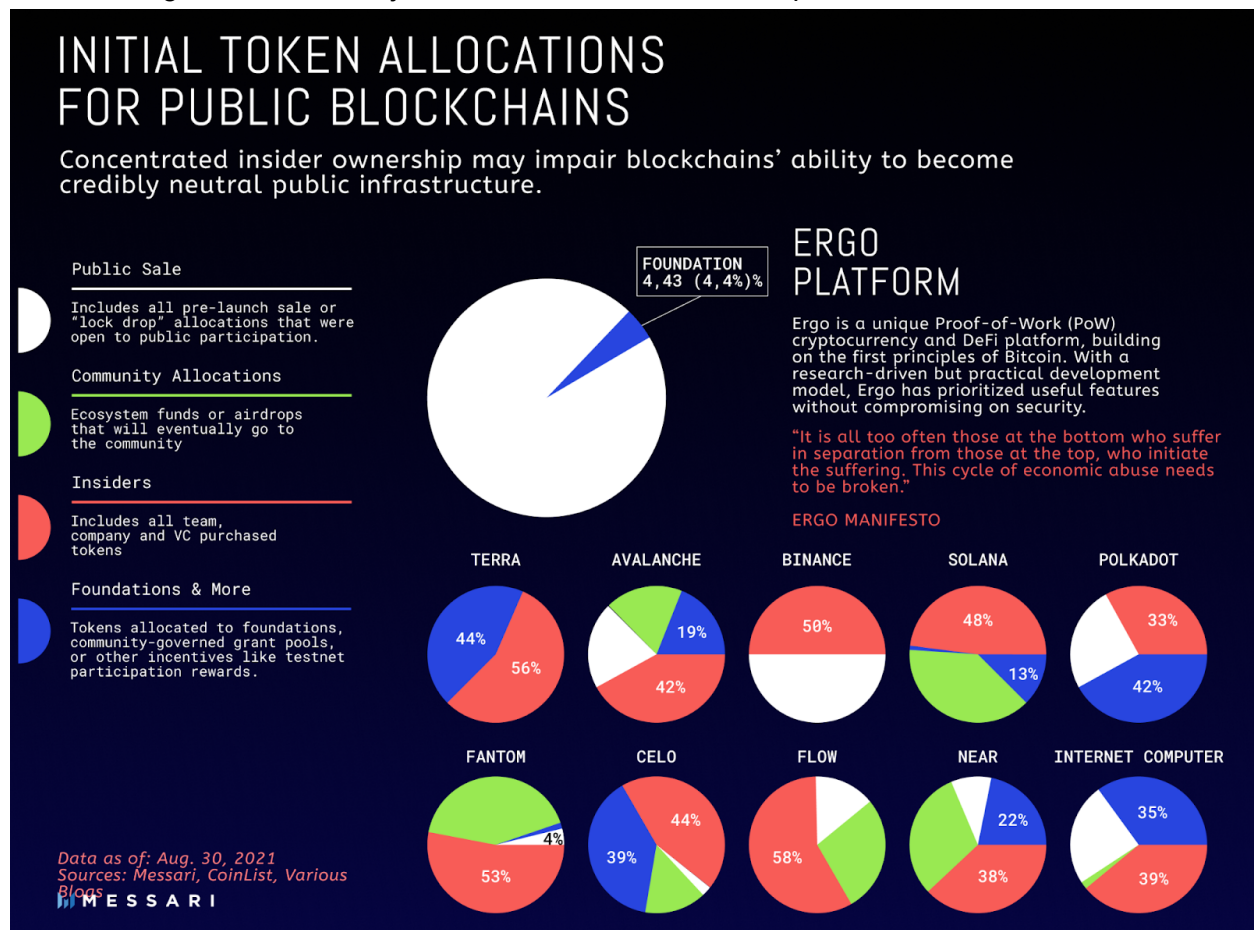
Ergo's defi is in its infancy, but is growing rapidly. Ergo also has not had any dApp connector wallets until February 2022. As the functionality improves, users will begin to flood in, since Ergo has many built-in advantages that will become available to them.

Name	Market Cap	Disadvantages	How does Ergo do it	Advantages over Ergo
Ethereum	$315B	- High gas fees make smart-contracts not useful - Accounting model poses significant security risks. Unanticipated exploits happen all the time.	- No gas fees. Even at $100B valuation, tx fees would be $1.1 USD - eUTXO model allows all transactions to be simulated and confirmed to work as anticipated, before submitting to the blockchain	- First mover advantage - Defi is significantly more mature at this moment
Binance Smart Chain	$62B	- 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.		- First mover advantage

Cardano	$33B	- Haskell is sometimes considered inaccessible, or built for academics - Proof of stake doesn't have an economic tether.	- Ergo is built on Scala, which is used by Twitter, Netflix, and AirBNB. More accessible and more devs in the industry - PoW has economic mechanisms similar to the supply of Gold, loosely tethering the value to the cost of generating new coins.	- PoS is better for the environment
Solana	$31B	- Network has reliability issues and has actually gone down more than once - Completely centralized and VC backed/owned. More than 50% of tokens owned by insiders. - PoS with insider selected validators - Runs EVM so has all the same disadvantages of Eth	- Network is decentralized and runs itself - 4% of overall distribution reserved for Ergo Foundation. Fair launched with no VCs - PoW with miners consisting of anyone who can run a GPU mine. - Runs Ergoscript. No gas fees, low tx fees. Security audits are a lot easier and more predictable on eUTXO	- Hype - Having money behind it means some things are developed quickly

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.

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

INITIAL TOKEN ALLOCATIONS FOR PUBLIC BLOCKCHAINS

Concentrated insider ownership may impair blockchains' ability to become credibly neutral public infrastructure.

Public Sale
Includes all pre-launch sale or "lock drop" allocations that were open to public participation.

Community Allocations
Ecosystem funds or airdrops that will eventually go to the community

Insiders
Includes all team, company and VC purchased tokens

Foundations & More
Tokens allocated to foundations, community-governed grant pools, or other incentives like testnet participation rewards.

FOUNDATION 4,43 (4,4%)%

ERGO PLATFORM

Ergo is a unique Proof-of-Work (PoW) cryptocurrency and DeFi platform, building on the first principles of Bitcoin. With a research-driven but practical development model, Ergo has prioritized useful features without compromising on security.

"It is all too often those at the bottom who suffer in separation from those at the top, who initiate the suffering. This cycle of economic abuse needs to be broken."

ERGO MANIFESTO

TERRA 44% 56%
AVALANCHE 19% 42%
BINANCE 50%
SOLANA 48% 13%
POLKADOT 33% 42%

FANTOM 53% 4%
CELO 44% 39%
FLOW 58%
NEAR 22% 38%
INTERNET COMPUTER 35% 39%

Data as of: Aug. 30, 2021
Sources: Messari, CoinList, Various Blogs

MESSARI

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.

Ergo can do everything other chains do, but offers better underlying tech that, when properly utilized, will be considered more useful than competitors. Ethereum was an excellent proof of concept for using smart contracts on top of blockchain, but when Ergo begins to capture that market share by offering more secure, auditable defi functionality, users will begin to choose it as the better alternative.

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]

Our Clients

Cryptocurrency has broad market segments, as anyone on the planet 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.

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 likely be more interested in marketing and designing their product than figuring out how to manage their funds and how to collect them in a decentralized way. The Paideia toolset will remove those barriers, allowing users to focus on marketing and developing their products. The removal of these pain points will be Paideias greatest selling feature. These creators will appreciate the low fees, as starting a comparable project using Ethereum based DAO toolsets costs upwards of $1500 in gas fees alone.

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 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.

Dev 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. The dutch auction style activity would mean that the team wouldn't need to make assumptions about what their product is worth, and could determine price with decentralized algorithms.

Investment groups that want to pool resources to invest in higher staking tiers or meet minimum investment requirements that they can't 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, so that there is no single point of failure making fund decisions or potentially not distributing funds fairly.

P2E gaming guilds that want to work as a team to advance in crypto games could use the tools to buy better items in game, allowing them to work shifts or work as a team and use their combined resources as a competitive advantage.

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 will refer to 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 eUTXO model; and over Solana and other PoS chains is the decentralized PoW consensus which provides better security, decentralization, and 100% up-time.

	Paideia	Squads https://sqds.io/	Aragon https://aragon.org/	Daostack https://daostack.io/
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 to expand our community, creating a space for people to learn from one another and get the latest info about the project. We'll share community updates and tutorials such as AMA's, inviting community members to discuss the project with the team. We'll share a bi-weekly video update, and we will keep the community informed through consistent blog posts explaining our progress.

Strategic Partners

Our strategic partners include the Ergo Foundation, who will help audit smart contracts, and Ergodex, who provides a platform to trade tokens. There will be other strategic partners 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, since we're more looking for a fair and broad distribution among our community, to prevent any "whales" or unfair tokenomics. 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 they know or care about Ergo or not.

In order to increase community outreach, Paideia will be advertised through different platforms using various marketing strategies. We're focusing on advertising our project through crypto related blogs for each region with a broad scope of article types, focused on different market segments beyond just the technical-minded or 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 aggressively 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'll 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, to evolve and include functionality that will be useful beyond what was initially determined in the beginning. Ongoing

surveys and market research will be conducted, and the data will help grow the project in a direction that's useful to our 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 more. This creates an environment that worsens over time as more decisions are passed which benefit those with a financial advantage.	Paideia offers voting mechanisms which attempt to mitigate the wealth advantage, such as quadratic voting and optimistic governance. In quadratic voting, a calculation weights votes from smaller wallets higher per token than a single vote from 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 the 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 one individual can take those funds for themselves. The treasury wallet can interact with any smart contract that an individual's wallet can.
Some entrepreneurs can't 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, but 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	There is no reason or expectation that every investor has to bring up knowledge about smart contracts or the technology behind their investment. Paideia will create educational videos, documentation, and other ways in which people can learn about the software available and the blockchain in general.
With many projects, tokens are distributed manually and sometimes they aren't sent on schedule, or the schedule changes.	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 can't 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 aka 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.[13] 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! 🦄"* [12]

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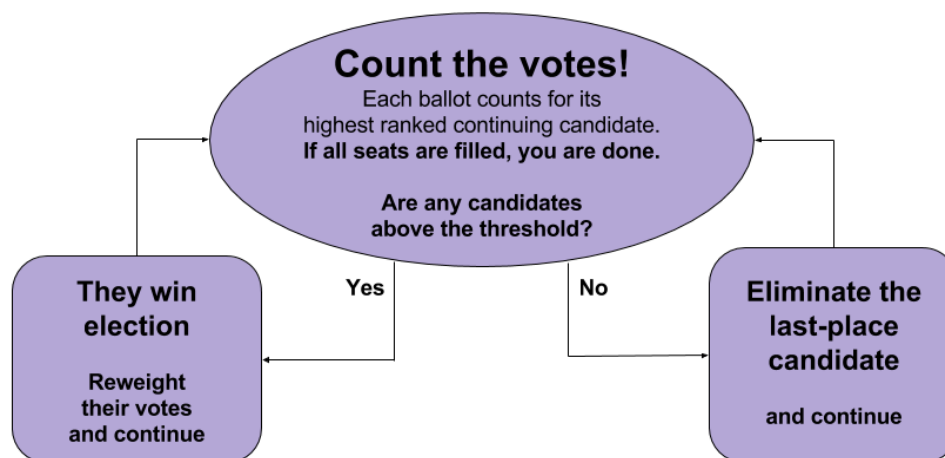
In each round, one of two things happen: either a winner is found, in which case all votes in excess of the requirement to win will be redistributed to each voter's second choice, or no winner is found and the lowest voted candidate is removed, in which case those voter's votes are redistributed to the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

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/~teutsch/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.
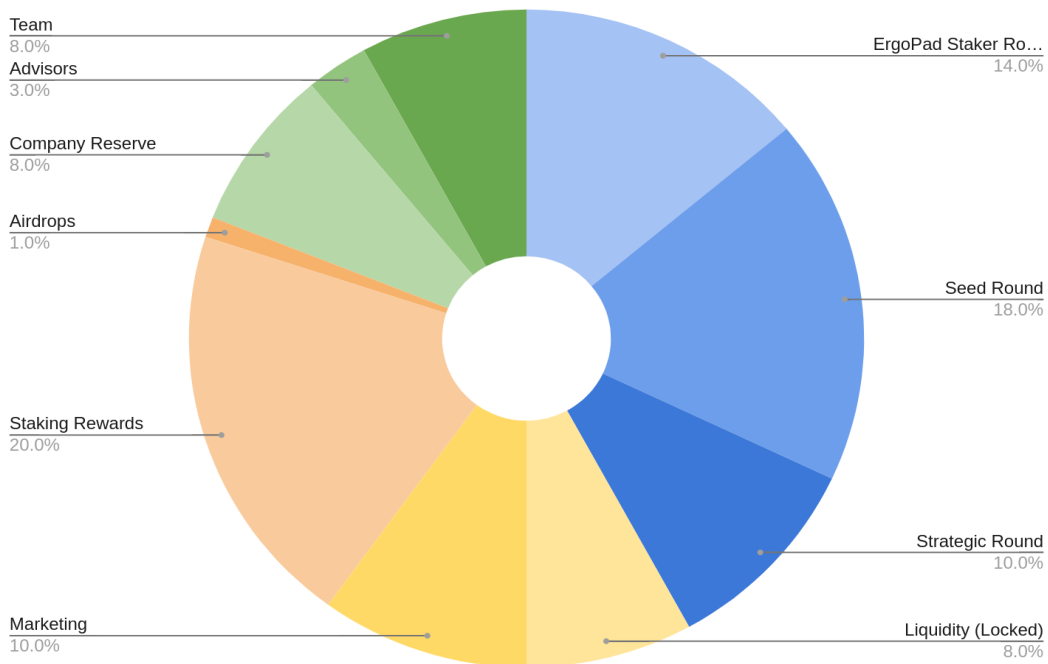
This would have the effect of self correcting prices on the open market. For example, if a token was sold for 10 cents, and the market value has dropped to 9 cents on decentralized exchanges, most users will opt to refund their tokens. The ones that choose to rebuy at the lower rate of 9 cents for an 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.
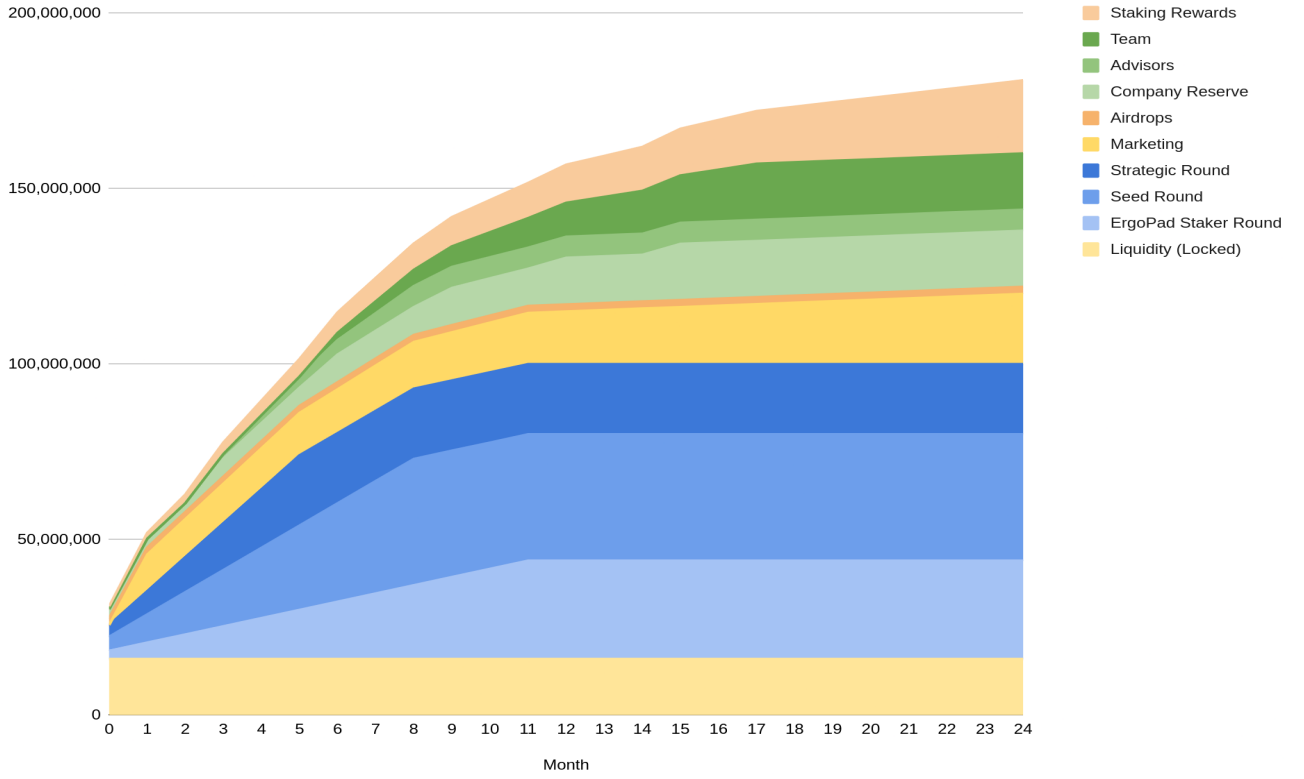
Tokenomics

This project will have a token for the IDO. Token can be spent on the platform features, where you'll 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
Company 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

Team 8.0%
Advisors 3.0%
Company Reserve 8.0%
Airdrops 1.0%
Staking Rewards 20.0%
Marketing 10.0%
ErgoPad Staker Ro… 14.0%
Seed Round 18.0%
Strategic Round 10.0%
Liquidity (Locked) 8.0%

Emission after 2 years

Project Roadmap

2022

Q1

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

Q2

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

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-CryptoCu
   rrency-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-Reach-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