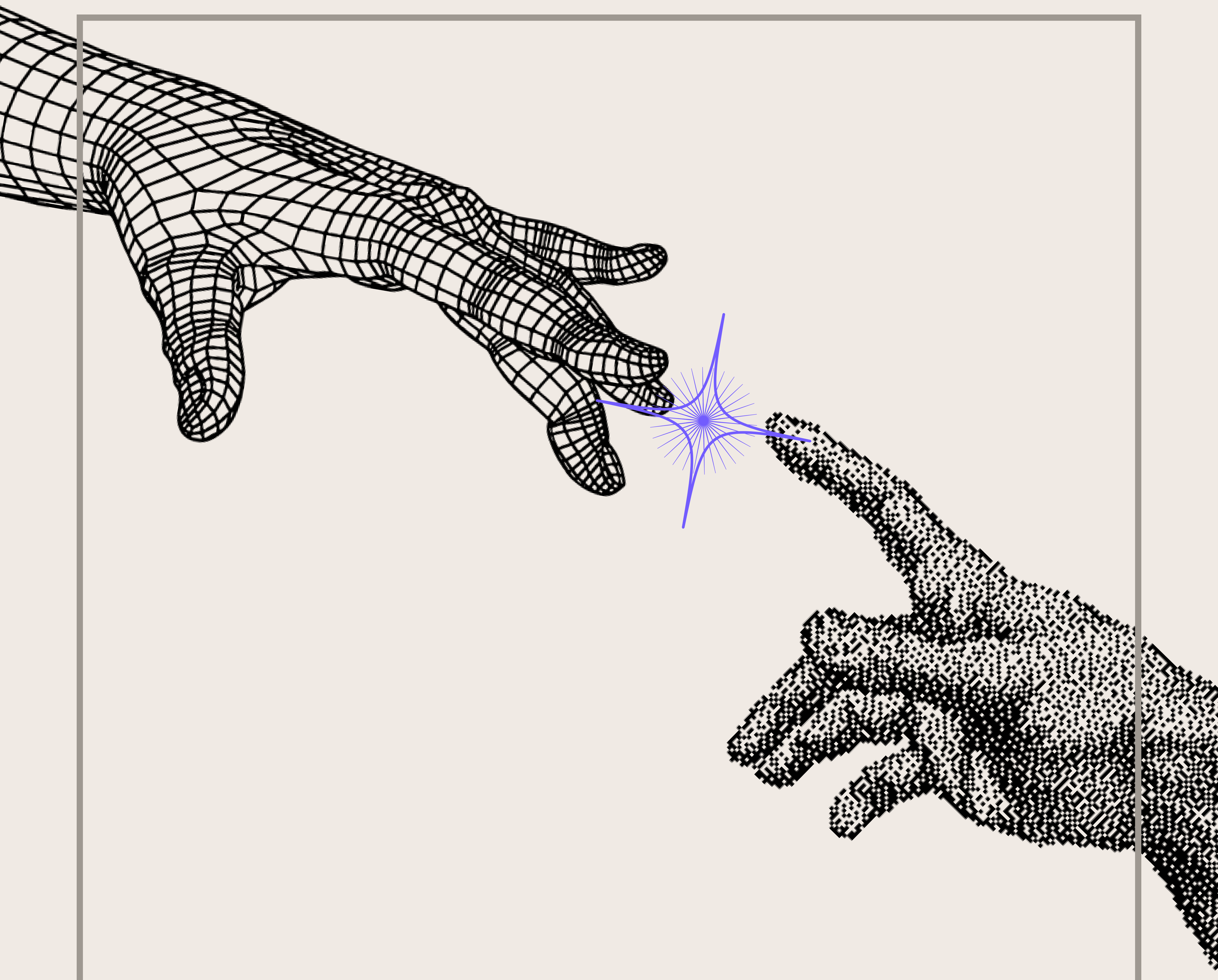
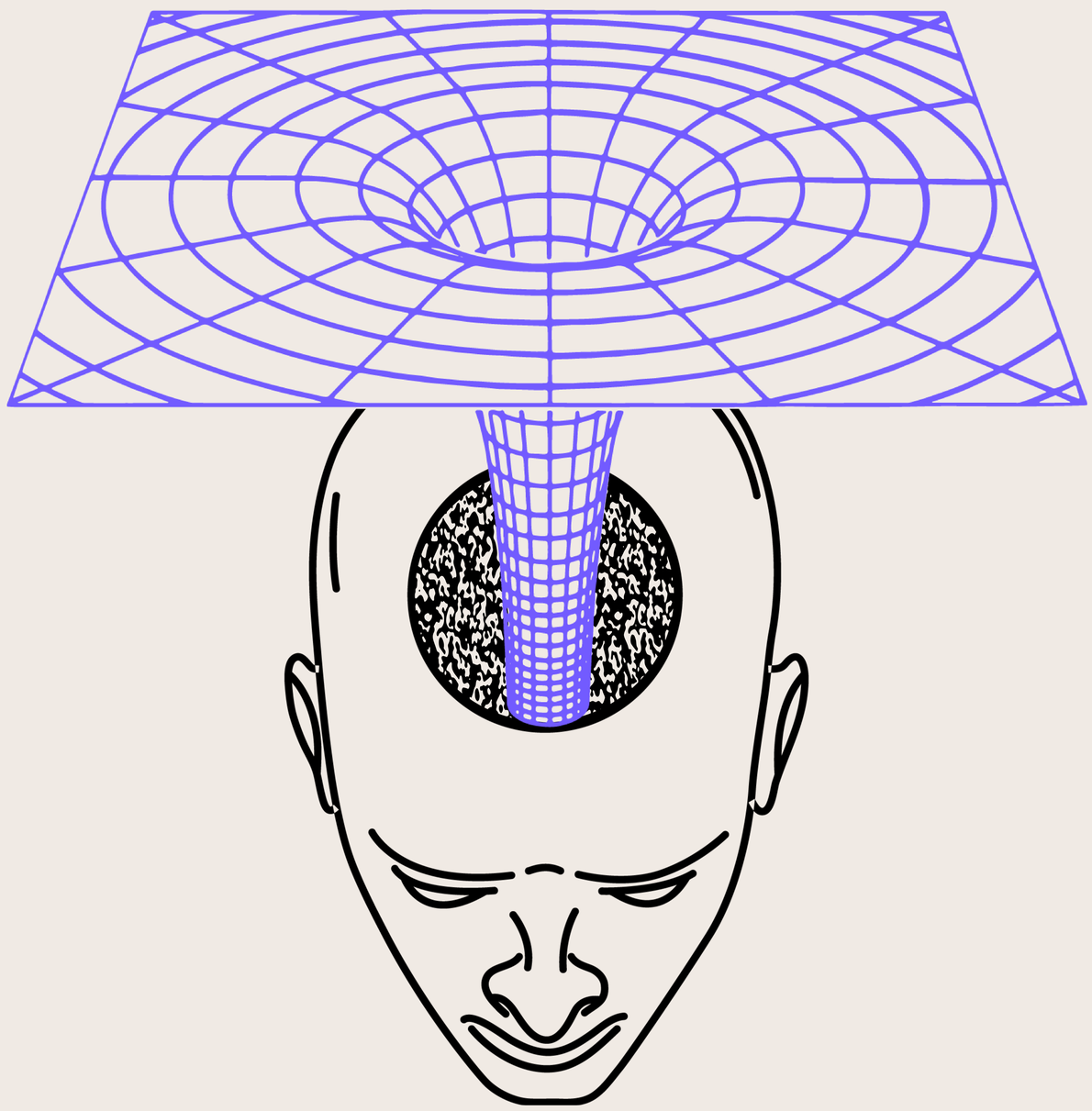


The Modern Guide to Digital Governance

THE MODERN GUIDE TO DIGITAL GOVERNANCE



“From chaos, patterns emerge,
and from patterns come insight.”

Brian Collins

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EDITOR'S PRELUDE

READER'S GUIDE

The Modern Guide to Digital Governance approaches the DAO story from a high level. A full exploration & analysis of decentralized autonomous organizations requires an amalgamation of thousands of research texts, conversations, & case studies which do not lend themselves to a compact medium of printed pages. Nevertheless, this guide features annotations & definitions throughout to provide the reader with the optionality to explore subjects deeper and obtain additional context.

***The Modern Guide to Digital Governance* is written with two audiences in mind:**

1. ***The Uninitiated Reader*** looking to take their first step into the DAO ecosystem. Maybe you were gifted this guide by a colleague, friend, or family member who won't stop talking about DAOs, or you stumbled across this guide in your search for DAO wisdom. This guide is for you.
2. ***The DAO Connoisseur*** searching for an encapsulation of the DAO movement from its humble beginnings to its current state in 2024. This guide is a time capsule designed for your intellectual & aesthetic enjoyment.

LEGEND ↴

- ☻ Definitions
- ❋ Citation
- ❦ Additional Readings

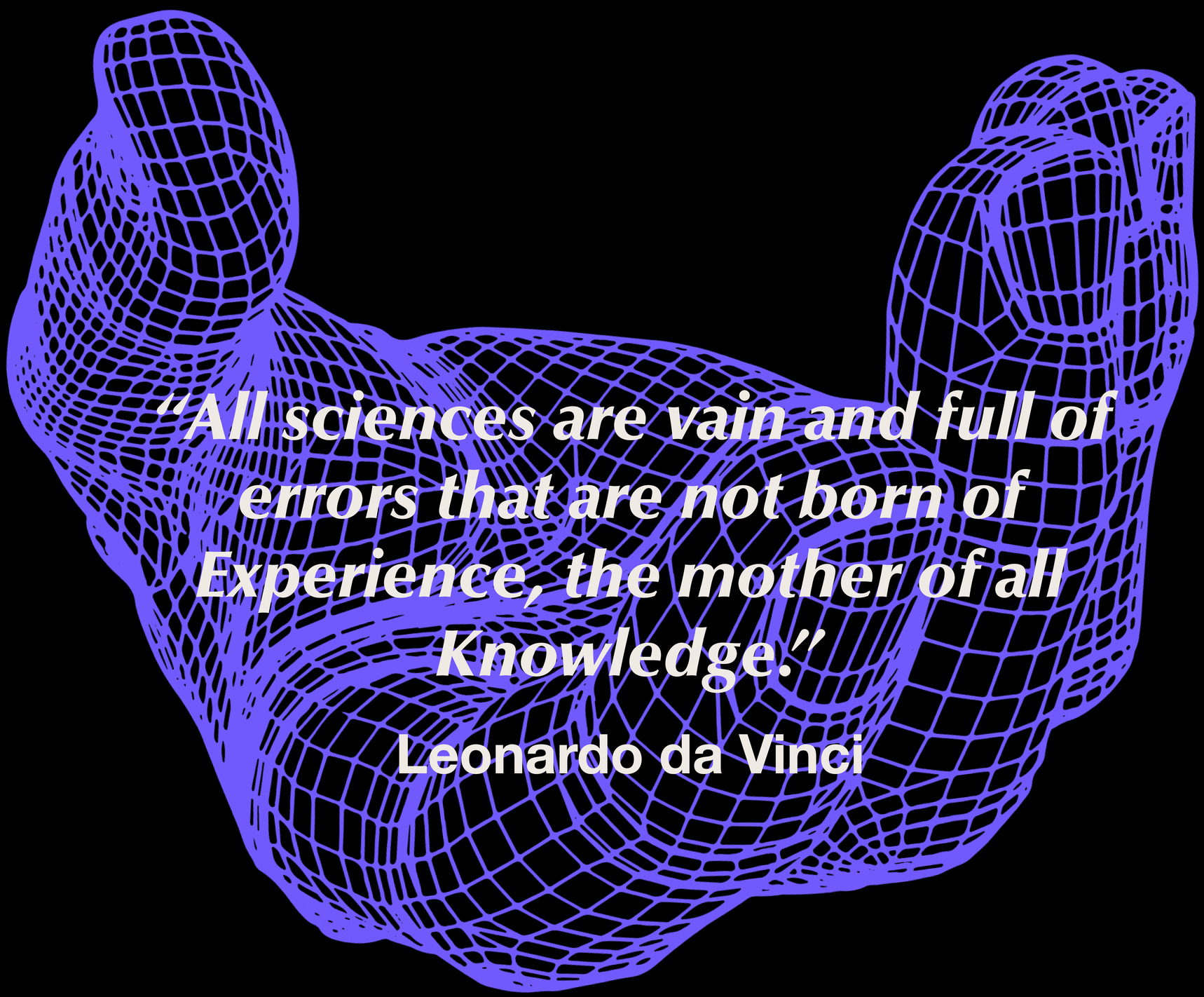
Annotations, definitions, & sources are located in the printed glossary on page 53.

This guide fails to cover every minute detail of the DAO story but provides the resources & framework for the reader to dive deeper if desired. Without further adieu, we present *The Modern Guide to Digital Governance.*

with love,
Tommy & Ellie

DISCLAIMER

At the time of publication, this guide is originally written, funded, & edited by employees of Tally, a DAO governance platform. This guide is not intended as financial, legal, or investment advice and should not be construed as such.



"All sciences are vain and full of errors that are not born of Experience, the mother of all Knowledge."

Leonardo da Vinci

PART I

GENESIS:

(noun) an origin, creation, or beginning

The reader's enjoyment of this guide is positively correlated with understanding the current vernacular in the DAO ecosystem.

This guide annotates technical language, events, and concepts requiring extra context. Annotations reference corresponding entries in the glossary at the end of the guide.

Essential terms are listed below

Definitions

Decentralized Autonomous Organizaiton (DAO): A system using blockchain technology to distribute decision-making, management, and entity ownership.

Smart Contract: A transaction protocol intended to automatically execute, control or document events and actions according to the terms of a contract. Smart contracts reduce the need for trusted intermediators, minimize arbitration costs and fraud losses, and prevent malicious or accidental exceptions.

Governor: A smart contract that contains all the logic and primitives which allows the deployment and operation of onchain voting protocols. Governor powers DAOs. (Created by Open Zeppelin & Compound Finance).

Offchain: Data that is stored or a process that is implemented and executed outside of any blockchain system.

Onchain: A transaction that is carried out on a blockchain network from start to finish.

Hyperscale: A system or technology architecture's ability to scale as demand for resources gets added to it; infrastructure that scales to the whole internet without relying on a third-party.

Ethereum: A decentralized blockchain with smart contract functionality. The blockchain DAOs originated & majority currently operate on, either directly on Ethereum or on a Layer 2.

Ethereum Virtual Machine (EVM): A decentralized computing environment which executes smart contracts on the Ethereum blockchain.

Layer 1 (L1): A Layer 1 blockchain is the base layer of a blockchain network, responsible for the fundamental protocol, security, and consensus mechanisms. It serves as the main structure upon which other technologies and applications, such as decentralized applications (dApps) and Layer 2 solutions, are built and operate. Examples: Ethereum, Solana

Layer 2 (L2): A Layer 2 blockchain refers to network protocols layered on top of a Layer 1 solution (for DAOs: Ethereum). Layer 2 protocols use the Ethereum blockchain for network and security infrastructure, but are more flexible in their ability to scale transaction processing and overall throughput on the network.

Token: Digital assets used to represent ownership and membership in a DAO. Most DAO tokens are transferable; mentions of non-transferable tokens will be annotated throughout the guide.

Treasury: A reserve of funds managed by a decentralized autonomous organization; used for operations and initiatives.

Delegation: The act of transferring token voting rights to a member of the DAO. Trusting someone with your voting power.

Execution: The process of executing transactions or smart contracts directly on the blockchain.

Gas: The fee required to successfully conduct a transaction or execute a contract on the Ethereum blockchain platform.

Multisig: Short for "multi-signature"; a security feature requiring multiple private keys to authorize a transaction, enhancing security & allowing groups to control a shared treasury.

Proto-DAO: An early-stage or experimental decentralized organization that is in the process of becoming fully autonomous and decentralized.

Wallet: A digital tool used to store, send, and receive cryptocurrencies securely.

Multichain: Cryptocurrencies and blockchain technologies which operate across multiple blockchain networks.

Financialization: The process of transforming non-financial assets, services, or activities into financial instruments or economic value.

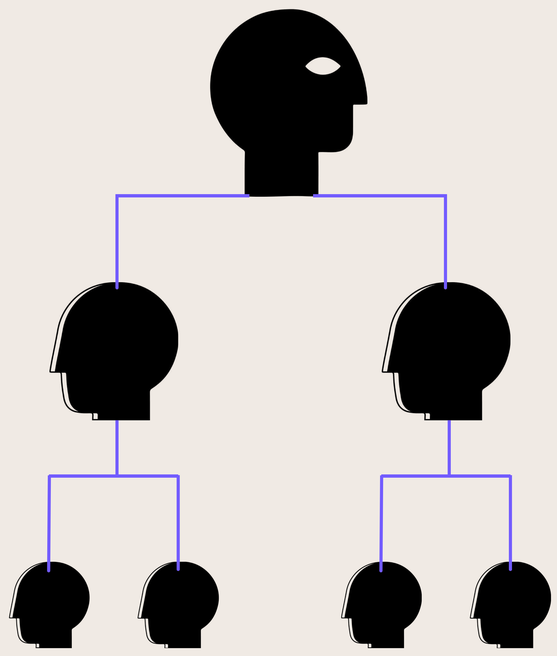
Decentralized Finance (DeFi): A financial system built on blockchain technology that operates without traditional intermediaries like banks.

Airdrop: The distribution of free cryptocurrency tokens to a large number of wallet addresses, usually as a way to seed a DAO community.

GOVERNANCE STRUCTURES

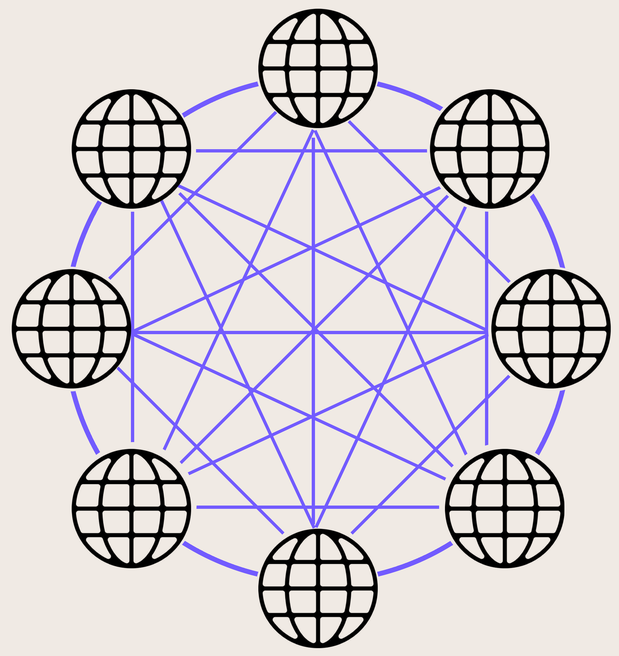
This guide requires a basic understanding of the differences between centralized & decentralized organizational structures. Digital governance is a feature of the journey to solve the deficiencies of centralized organizations with decentralized solutions. A brief overview of each provides the necessary context for the subsequent texts. For an exhaustive analysis of centralized v. decentralized organizations read *The Inverted Organization (DRC)*❀

CENTRALIZED



Centralized organizational structures concentrate decision-making power and authority at the top levels of an organization, typically involving senior management or a central headquarters. This structure allows for uniform policy implementation and streamlined decision-making across the entire organization, ensuring consistency and alignment with central goals.

DECENTRALIZED



Decentralized organizational structures distribute decision-making authority and operational control across various levels or divisions within the organization, often closer to front-line operations and local markets. This approach empowers lower-level managers and employees, enhances responsiveness to local conditions, and fosters innovation by allowing more autonomy and flexibility in day-to-day operations.

“It is not sensible to define an organizational model solely based on the technology it employs. Just as we do not define centralized entities by their use of centralized systems, we should not define DAOs merely as organizations that utilize blockchain technology. The definition should extend beyond the technological framework.”

The Inverted Organization (DRC) ❀

DAOs are the latest implementation of decentralized organizational structures and digital governance is its most effective tool. This guide does not aim to minimize the its centralized counterpart but provide a high-level analysis of the DAO ecosystem, its origins, its current state, and where DAOs are headed.

Centralized

Type: Corporations, Foundations, Governmental Bodies

Value Alignment: Wealth accrues to select stakeholders

Benefits: Faster execution, clear chain of command, focused vision, streamlined communication

Flaws: Slower decision-making & bottlenecks, reduced employee autonomy, disproportionate value accrual

Decentralized

Type: DAOs: protocols, shared treasuries, group chats, heterarchies, proto-DAOs

Value Alignment: Wealth accrues to all organization members

Benefits: Adaptability, efficient knowledge transfer, employee empowerment, reduced managerial load, decision-making speed

Flaws: Fragmentation, increased cost risks, value alignment controls, execution speed, performance assessment

Regardless of structure, humanity & its hubris remains the greatest challenge. DAOs do not extrapolate human error but offer a better opportunity to escape human corruption by prioritizing shared values, genuine connection, and accountability.

It is important to remember DAOs aren’t for everything. DAOs are a new form of human organization; they are flawed but ultimately aim to increase the collective good.

The History of Decentralized Autonomous Organizations

ERC-20 Token Standard 2015

The ERC-20 token standard is a pivotal component in the Ethereum ecosystem, serving as the technical standard used for all smart contracts on the Ethereum blockchain for issuing tokens. When this guide references governance tokens, assume it is referring to ERC-20 tokens unless stated otherwise.

Before ERC-20, there was no standardized approach to creating tokens on the Ethereum blockchain. Lack of standardization meant that each new token implemented its own versions of basic functionalities like transferring tokens, checking balances, etc. This created compatibility issues as each token required its own unique code to interact with wallets and exchanges.

The ERC-20 standard specifies several functions that a token contract must implement to create uniformity across the ecosystem. The standard is a cornerstone of the Ethereum ecosystem.

ERC-721 (non-fungible token standard), tokenize, financialization of governance

Gnosis Safe Multisigs 2017

Multisig, short for multi-signature, refers to a digital wallet or contract setup that requires multiple approvals from designated participants to execute a transaction. The system enhances security by distributing the power to transact across several parties, minimizing the risk of theft or unauthorized access due to a single point of failure.

Multisigs cater to the needs of teams and organizations which require shared control of assets. It has evolved to include more advanced features to focus on providing a comprehensive platform for managing digital assets securely.

The technlogical concept pre-dates its implementation on the Ethereum blockchain, but was released by Gnosis Safe for EVM participants in 2017.

Multisig documentation

The DAO 2016

Launched in April 2016 on Ethereum, The DAO was designed to operate as a fully automated venture capital fund without the need for conventional management structures or a typical board of directors.

In June 2016, an attacker exploited a flaw in the smart contract to siphon off approximately one-third of The DAO's funds through a "recursive call" exploit, where the attacker repeatedly withdrew funds before the original transaction was registered as complete. The attack severely undermined confidence in The DAO and exacerbated the risks of code-based governance systems where automated contracts control significant financial resources without robust security checks. Additionally, The DAO faced several regulatory uncertainties about its legal status and the securities nature of its tokens.

The aftermath of The DAO's collapse had far-reaching consequences for the Ethereum community, leading to a controversial decision to hard fork the Ethereum blockchain to restore the stolen funds to their owners, effectively reversing the theft. This decision resulted in a split, creating two separate blockchains: Ethereum (ETH) and Ethereum Classic (ETC).

Understanding The DAO is essential context in understanding how & why the digital governance ecosystem has evolved & coalesced around values of security, open-source building, & credible neutrality.

The DAO started it all.

Maker DAO 2017

MakerDAO is a decentralized autonomous organization on the Ethereum blockchain that manages the Maker Protocol, which issues DAI, a stablecoin soft-pegged to the US dollar. The protocol is governed by holders of its governance token, $MKR, who vote on various aspects of the system's operation and risk management. MakerDAO aims to reduce volatility in the crypto markets and provide a stable, decentralized currency that does not rely on traditional banks or fiat currencies.

MakerDAO's impact lies in its blend of technological innovation, community-led governance, and financial integration, making it a critical entity in the advancement and adoption of DAOs.

Note: The Maker Protocol launched in 2014; however, its governance framework launched in 2017.

MakerDAO

THE ONCHAIN THESIS

Onchain governance ensures that all decisions, proposals, and votes are recorded on the blockchain, making them publicly accessible and immutable. This prevents any single entity from having undue influence or control over the decision-making process and ensures that all members of the DAO have an equal say in its governance. Additionally, onchain governance leverages the security and trustlessness of the blockchain, eliminating the need for intermediaries and reducing the risk of fraud or manipulation. This is crucial for maintaining the integrity and credibility of the DAO and for fostering trust among its members.

Transparency: All decisions, proposals, and votes are publicly recorded on the blockchain.

Immutability: Once recorded, the data cannot be altered or deleted.

Security: The blockchain's decentralized nature and cryptographic security measures reduce the risk of fraud or manipulation.

Trustlessness: There is no need to trust a central authority or intermediary, as the blockchain enforces the rules and executes decisions automatically.

“Onchain governance aligns with the core principles of decentralization and transparency.”

Moreover, onchain governance promotes broader participation and inclusivity by allowing any token holder, regardless of their location or the size of their holdings, to participate in the decision-making process.

This democratization of governance helps to ensure that the interests of all stakeholders are considered and that decisions are made in the best interests of the entire community. Additionally, onchain governance enables the automation of certain administrative tasks, such as the distribution of rewards or the execution of approved proposals, reducing the need for manual intervention and minimizing the risk of human error.

Inclusivity: Any token holder can participate in the decision-making process, regardless of their location or the size of their holdings.

Automation: Certain administrative tasks can be automated, reducing the need for manual intervention and minimizing the risk of human error.

Moloch & Rage Quit 2019

MolochDAO is a decentralized autonomous organization (DAO) created with the primary goal of funding Ethereum infrastructure and related public goods. It was launched in February 2019 by Ameen Soleimani and other Ethereum community members. The name "Moloch" refers to an ancient god associated with sacrifice, symbolizing the "coordination failures" and "inefficient sacrifices" that the project aims to overcome within the Ethereum development community.

The structure of MolochDAO is designed to be minimalistic and focuses on addressing the "free rider" problem where individuals benefit from resources they do not pay for. This is tackled through a unique funding mechanism where members can propose grants for projects, and voting is conducted by all members. Importantly, it incorporates mechanisms like the "rage quit" option, allowing members to withdraw their funds if they disagree with the decisions being made, promoting transparency and alignment among its participants.

MolochDAO has inspired the creation of several other DAOs by providing a framework for collaborative investment and decision-making in a trustless environment, emphasizing simplicity and community governance.

Aragon/DAOstack 2016-2017

Aragon & DAOstack are early attempts are reigniting DAO growth after the failure of The DAO.

DAOstack is another platform for decentralized governance that allows the creation, management, and governance of DAOs, but with a particular emphasis on scalability and interoperable components.

Aragon is a platform built on the Ethereum blockchain that allows users to create and manage decentralized autonomous organizations (DAOs). The Aragon project provides tools and interfaces designed to make the creation and management of decentralized organizations accessible and straightforward.

The projects differ slightly in their approach and underlying philosophies. Aragon focuses more on the user-friendly creation and management of DAOs with a broad set of organizational tools, while DAOstack emphasizes scalable, collaborative decision-making processes and integrates prediction markets to manage DAO governance efficiently.

Compound & Governor Alpha 2020

The creation of the "Governor" protocol is closely linked to Compound Finance, a leading decentralized finance (DeFi) platform on the Ethereum blockchain. Compound introduced its governance system, which included the Governor contract, as part of its move toward decentralization in April 2020. This governance system is designed to allow COMP token holders—the platform's governance token—to propose, vote on, and implement changes to the protocol without requiring direct intervention from the Compound team.

The Governor protocol, often referred to as "Governor Alpha" or later iterations like "Governor Bravo," is essentially a set of smart contracts that facilitates decentralized governance. It allows COMP token holders to suggest, debate, and vote on various upgrades or changes to the protocol, such as adjustments to interest rate models or adding new collateral types. This framework has been influential, setting a precedent for other DeFi projects aiming to achieve similar levels of decentralization and community-driven governance. The Governor model emphasizes the importance of community involvement and democratization in managing and evolving DeFi platforms.

Nouns DAO 2021

Nouns DAO is a distinctive and innovative decentralized autonomous organization focused on generating unique NFTs called "Nouns" which are auctioned off every 24 hours. Ownership of a Noun not only confers the right to vote within the DAO but also a share in the governance of the collective's substantial treasury built from the proceeds of Noun auctions. The funds are used to finance projects that aim to promote and expand the Nouns ecosystem, determined through a community-led governance process. This structure not only fosters ongoing participation and investment by aligning incentives between Noun holders and the broader ecosystem but also highlights a novel use of NFTs and DAOs in community governance and project funding.

ENS DAO + Constitution 2021

The Ethereum Name Service (ENS) DAO was launched on November 8, 2021, marking a significant step toward decentralized governance for the ENS protocol. ENS is a blockchain-based service that allows users to assign human-readable names to Ethereum addresses and other blockchain resources, simplifying the user experience in the Ethereum ecosystem.

The launch of the ENS DAO was accompanied by the distribution of the ENS governance token, which was allocated to .eth domain holders and contributors to the ENS ecosystem. This governance token enables holders to participate in decision-making processes regarding key aspects of the ENS protocol, such as fee structures, treasury management, and protocol upgrades.

Uniswap DAO Launch 2020

The Uniswap DAO was launched in September 2020 following the release of the UNI governance token. This marked a significant move towards decentralization for Uniswap, a leading decentralized finance and automated market maker platform. The launch enabled UNI token holders to participate in governance decisions, including protocol changes and the usage of the community treasury.

Vitalik on DAOs 2022

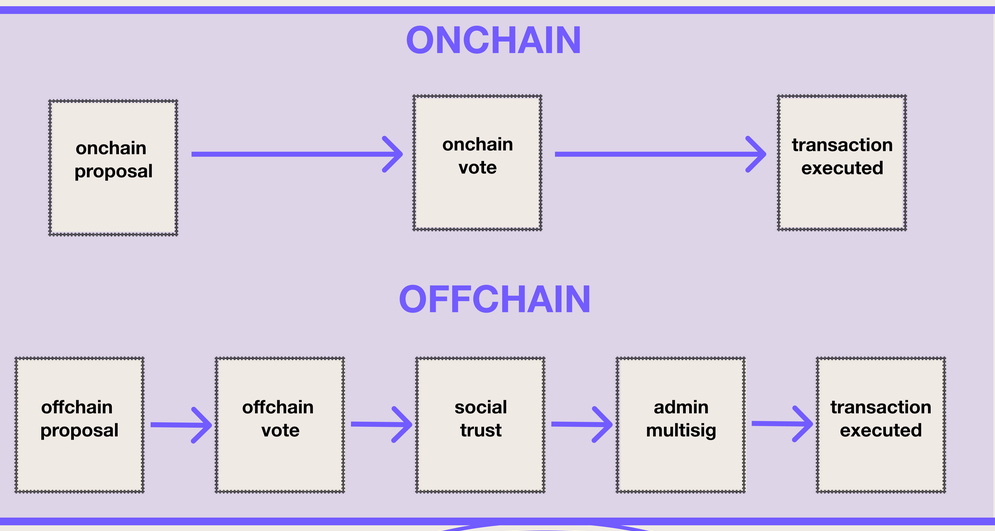
Vitalik Buterin, co-founder of Ethereum, writes extensively on DAOs in his article *DAOs are Not Corporations: Where Decentralization in Autonomous Organizations Matters.* The article marks a key moment in DAO history as the need for decentralization champions became increasingly evident. As mentioned in earlier pages, DAOs often struggle with attempting to solve centralized problems with decentralized solutions whereas the system is best designed to reinvent the dynamic and operate accordingly.

“Recently, there has been a lot of discourse around the idea that highly decentralized DAOs do not work, and DAO governance should start to more closely resemble that of traditional corporations in order to remain competitive. The argument is always similar: highly decentralized governance is inefficient, and traditional corporate governance structures with boards, CEOs and the like evolved over hundreds of years to optimize for the goal of making good decisions and delivering value to shareholders in a changing world. DAO idealists are naive to assume that egalitarian ideals of decentralization can outperform this, when attempts to do this in the traditional corporate sector have had marginal success at best. This post will argue why this position is often wrong, and offer a different and more detailed perspective about where different kinds of decentralization are important. In particular, I will focus on three types of situations where decentralization is important.”

DAOs are not corporations: where decentralization in autonomous organizations matters by Vitalik Buterin

GOVERNOR

Governor Alpha is the original governance contract implemented by Compound Finance. The Governor framework set the stage for an explosion in DAO growth by creating a standard for onchain governance & enabling a modular building environment for future upgrades. The initial Governor contract can be broken into three essential features:



Proposal Mechanism: COMP token holders can create proposals for changes or upgrades to the protocol. A proposal must receive a minimum amount of COMP tokens in support (delegated to the proposer) to move forward—initially set at 1% of the total COMP supply.

Voting Process: Once a proposal is submitted, it enters a voting period where COMP holders can vote for or against the proposal. Voting power is proportional to the number of COMP tokens held or delegated.

Timelock: If a proposal passes, the actions specified within it are not executed immediately. Instead, they are queued in a Timelock contract for a set period (initially two days), providing a buffer for review and preparation before the changes take effect.

Governor Bravo is the second iteration of the Governor contract. Bravo addresses the limitations of Alpha and enhances the capabilities of the governance framework.

OpenZeppelin

Key Improvements:

1. **Vote Delegation:** Governor Bravo expands on the vote delegation feature, making it more flexible. It allows users to delegate their voting power not just for all future proposals but for specific proposals as well, enabling more granular control over governance participation.

2. **Voting Options:** Unlike Governor Alpha, which only allowed voting for or against proposals, Governor Bravo introduces the option to abstain from voting on a proposal. This allows participants to signal neutrality or indecision without affecting the overall vote count.

3. **Proposal Cancellation:** Governor Bravo gives the governance administrator, usually a multisig or DAO, the ability to cancel proposals. This is particularly useful in managing proposals that are identified as malicious, spam, or otherwise harmful after they have been submitted.

4. **Improved Transparency and Accessibility:** The interface and user experience are enhanced to make governance more accessible and understandable for participants. This includes better tracking and display of proposals and voting activities.

5. **Upgradeability:** Governor Bravo is designed with upgradeability in mind, allowing the governance system itself to be upgraded through community consensus if future improvements or changes are needed.

EXPANSION

2020-PRESENT

Going Hyperscale: Why Modularity is Key

Hyperscale infrastructure demands technology & architectural design capable of scaling extremely rapidly to handle large volumes of data and high levels of traffic. If DAOs wish to scale AND maintain decentralized functions its governance foundation must be modular, battle tested, & technically sound.

Governor is developed with hyperscale operations in mind. The framework offers enhanced flexibility and adaptability, allowing for easy updates or changes without impacting the entire system. This approach facilitates scalability and customization, as new modules can be added or modified to meet evolving needs. Modularity also simplifies implementation and maintenance, with specialized teams managing distinct components, which aids in efficient development and troubleshooting. Additionally, it improves risk management by isolating failures to specific modules, thereby minimizing their impact on the overall system.

Governor or Bust

The positive downstream effects of Open Zeppelin & Compound Finance's development considerations cannot be overstated. Governor is the industry standard Governance framework. It is the silent god-engine of the DAO ecosystem. Secure, transparent, decentralized, open-source, flexible, and customizable. Organizations need concrete standards & the ecosystem has naturally coalesced around the Governor framework.

Governoring the Future

Voting by Signature: Enables offline voting through signed messages, increasing participation by allowing votes without transaction fees.

More Flexible Delegation: Offers improved and more granular delegation capabilities, including the ability to delegate voting power to different addresses for different proposals.

Proposal Cancellation: The administrator (a multisig wallet or another DAO) can cancel proposals, adding a layer of security against potentially malicious or harmful proposals.

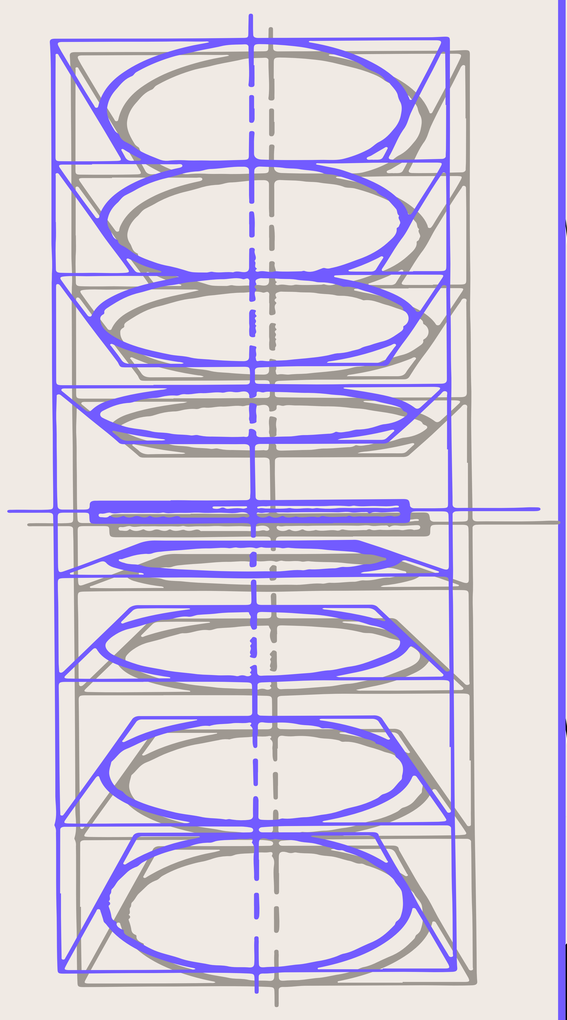
Governor Charlie: An example of further iteration that some projects might adopt (not specifically from Compound), which typically includes additional customizations specific to the needs of those projects, such as integrated treasury management, more complex proposal thresholds, or tailored voting periods.

Modular and Extensible Designs: Various DAOs and DeFi projects have developed their own versions of the Governor contract, tailoring the governance model to fit their specific requirements. This includes modifications to handle large numbers of voters, different types of voting systems (quadratic voting, conviction voting, etc.), and integration with other DeFi protocols or cross-chain functionality.

Security Enhancements: Ongoing updates often focus on improving the security of governance actions, such as better handling of edge cases in vote counting, improving guardrails against governance attacks (like flash loan attacks), and ensuring that the actions proposed are securely executed.

Interoperability Features: Newer versions and variants of Governor contracts sometimes include features aimed at improving interoperability with different blockchains or within multi-chain ecosystems, facilitating broader and more inclusive governance frameworks.These upgrades demonstrate a continuous effort to refine DAO governance mechanisms, making them more secure, accessible, and adaptable to the diverse needs of the DeFi community. Each upgrade generally aims to enhance participation, improve security measures, and increase the flexibility and resilience of decentralized governance systems.

Governor is currently maintained by OpenZeppelin. Visit the OpenZeppelin Governor hub to dive deep into the technical implementation of the Governor framework.



This guide exclusively covers digital governance built on the Governor tech stack. Governor is a modular system that allows different requirements to be accommodated by writing small modules using Solidity inheritance, meaning it can be built ad infinitum. The vast majority of onchain DAOs choose the Governor stack as their foundation. Governor is the industry standard: open-source, battle-tested, and trusted by the pros.

Why Governance is Successful

“As a guiding star, web3 applications could aim to introduce value in relations which have been historically denied it, such as labor and environment, rather than creating new financialized relations. In this context, for DAOs with the mission of economic value creation, a token becomes a useful mechanism on three fronts:

a. Bootstrapping Funding
b. Distributing Governance Rights
c. Aligning Ecosystem of DAOs

Tokenization introduces a powerful cultural norm into early stage organizations: the expectation of transparent co-ownership of its assets from the start. The tension between more traditional corporate structures that pay dividends and DAOs persists (17). Because most DAOs represent governance rights through a token, in some sense tokens have the ability to Trojan horse principles of cooperatives directly into highly financialized spaces. These are two important sides of, quite literally, one coin, and for this reason, tokenization should not be dismissed. Tokens may be one key to unlock the ownership economy, but to reach a more equitable version of this future, we must participate in crafting the culture around token distribution, mediation, and governance now. This becomes important because, unlike shares in cooperatives, many tokens that double as governance rights can be sold on secondary markets. While this makes the conditions for entrance into an organization easier, DAOs can learn from cooperatives’ emphasis on long termism, through establishing more cultural patterns around token vesting, limited transferability, or more experimental mechanisms.”

from A Pre-History of DAOs (KEI)

Vitalik’s Article on Moving Beyond Token Governance 2021

1. **Concentration of Power:** Vitalik points out that token-based governance often leads to power being concentrated among a small number of wealthy stakeholders who hold large amounts of tokens. This concentration can skew decision-making towards the interests of these few at the expense of the broader community.
2. **Short-Termism:** Token holders may be motivated by short-term financial gains rather than the long-term health and success of the platform. This short-term focus can lead to decisions that prioritize immediate profit over sustainable development.
3. **Vulnerability to Attacks:** Token-based governance systems are susceptible to various types of attacks, including bribery and buying votes. These vulnerabilities can undermine the integrity and effectiveness of the governance process.
4. **Alternative Models:** Vitalik suggests exploring alternative governance models that do not rely solely on token ownership. These include systems that incorporate elements of reputation, identity-based voting, or randomly selected committees (akin to sortition). Such models aim to reduce the emphasis on wealth and investment size in decision-making.
5. **Layered Governance:** He also discusses the idea of layered governance structures where different types of decisions are made in different ways, potentially integrating both on-chain and off-chain processes. This approach can help balance efficiency, inclusivity, and resilience in governance.
6. **Experimentation and Innovation:** Vitalik emphasizes the need for continued experimentation and innovation in governance models. The blockchain community should be open to trying out new ideas, learning from failures, and iterating on successful mechanisms.

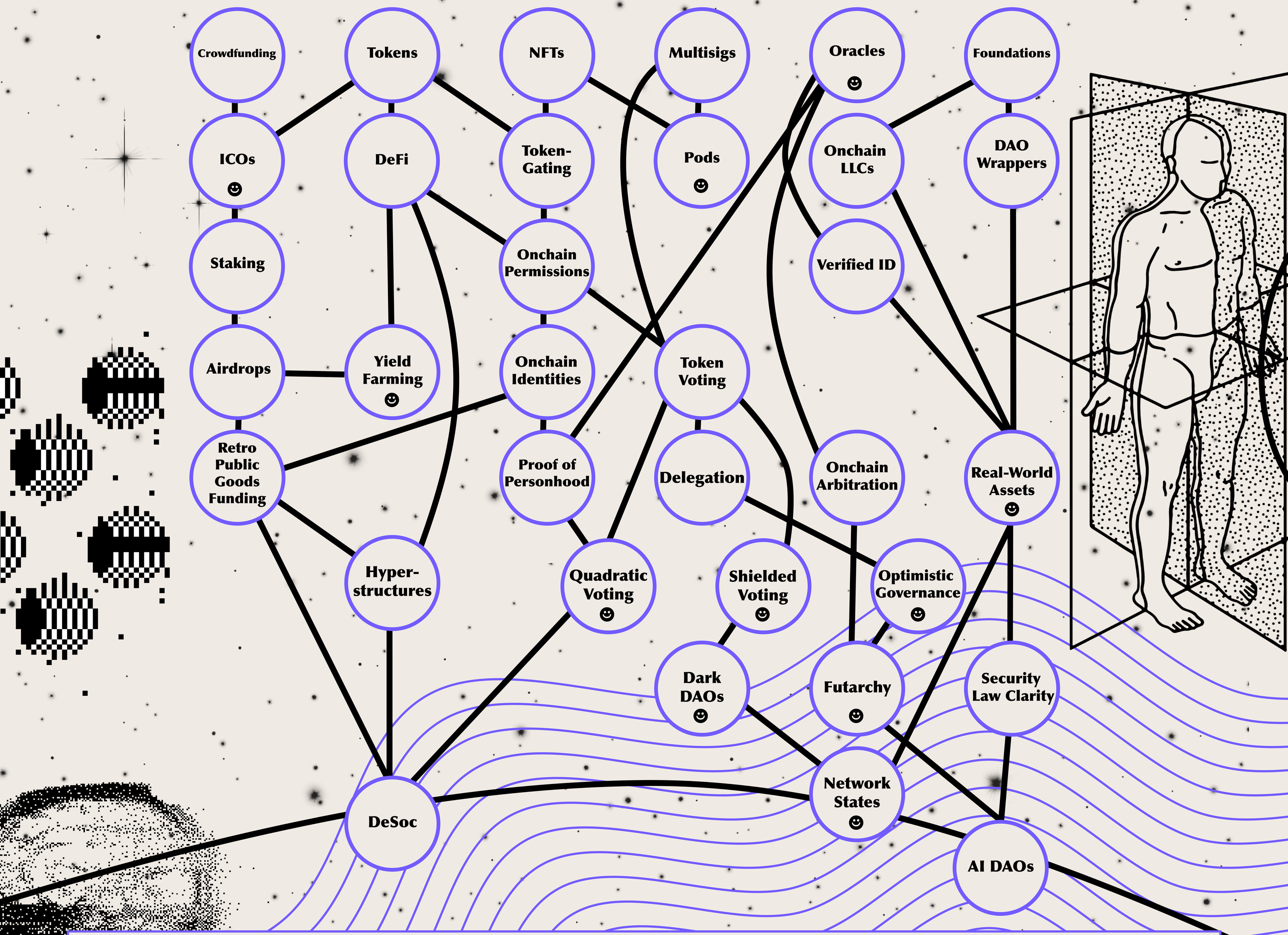
Why Governance Fails

Onchain governance, despite its innovative approach to decentralized decision-making, encounters several major pain points that can affect its efficiency, security, and overall effectiveness.

1. **Scalability & Gas Costs:** Onchain actions require gas which can become prohibitively expensive, especially on networks like Ethereum where gas costs can exceed $50. Governance processes become extremely expensive because voting on proposals becomes cost-prohibitive for smaller stakeholders.
2. **Voter Apathy and Low Participation:** Traditionally, only small fractions of stakeholders actively participate in governance processes. Voter apathy is exacerbated by complex governance mechanisms or the perceived insignificance of an individual’s vote in large systems.
3. **Complexity and Usability:** Onchain governance systems can be complex and intimidating for average users, especially users not familiar with the technical intricacies of blockchains and smart contracts. Complexity can hinder broader community engagement and lead to a concentration of power among more technically knowledgeable participants.
4. **Security Risks:** Malicious actors can take advantage of vulnerabilities in smart contracts to manipulate outcomes and steal funds. Employing security audit firms & investing in proper governance architecture goes a long way in preventing attacks.
5. **Centralization Risks:** Onchain governance can inadvertently lead to centralization. When a small number of large stakeholders or entities control a significant portion of the governance tokens, a disproportionate influence over the decision-making process is achieved within the DAO.
6. **Speed and Efficiency:** Onchain governance processes can be slow as proposals need to go through various stages of discussion, voting, and implementation.
7. **Legal and Regulatory Uncertainty:** DAOs and other entities using onchain governance operate in a largely undefined legal environment (as of 2024). Lack of clear regulations pose compliance risks & liability issues for participants.
8. **Manipulation and Biased Proposals:** Proposals risk being framed or timed in a way that they benefit a particular group of stakeholders. Information asymmetry and strategic proposal submissions can skew governance in favor of those with more resources or insider knowledge.

Addressing these pain points involves ongoing improvements in technology, user education, legal frameworks, and more inclusive governance models that seek to balance efficiency, security, and broad community participation.

“DAOs are not products, they are frameworks for decision making about products/projects. If your DAO is successful you shouldn’t even know its there, it’ll just be a well functioning community.”
- @evabeylin, May 22, 2021 (X.com)



DAO Tooling Tech Stack

DAO tooling empowers decentralized organizations to operate effectively and securely. Choosing the proper DAO tech is essential to maintaining a decentralized ethos while ensuring agility, compliance, and alignment with participants’ interests. Not all DAOs are created equal & there is not one tool to rule them all. DAOs are best suited plugging & playing tools that match their needs. The beauty of Governor’s modularity is an ecosystem teeming with new technology to support growth. This guide highlights different types of DAOs & the tech they employ in the following pages.

Decentralized organizations are uniquely positioned to solve broken organizational incentive mechanisms, a robust understanding of the tooling available to DAOs sets builders on the path to success.

Types of DAOs

Determining value alignment in DAOs is crucial for ensuring all actions and decisions support the collective interests and ethical standards of the community. DAOs coalesce around an established shared value & can be defined by one or more of the following nomenclature.

Protocol

Govern specific blockchain protocols or decentralized applications (dApps). Members typically use the DAO's governance tokens to vote on protocol upgrades, funding allocations, or changes to operational rules.

Uniswap, Arbitrum, Compound

Investment

Pool resources to make collective investment decisions. Members contribute capital and decide together how to invest, typically in other blockchain projects, tokens, or digital assets. Investment DAOs democratize access to investment opportunities that might otherwise be limited to venture capitalists or institutional investors.

The LAO, Flamingo DAO, MetaCartel, PleasrDAO

Social

Built around communities with shared interests, hobbies, or missions, social DAOs focus on creating value and experiences for their members, ranging from virtual events to real-world meetups. These DAOs often prioritize community bonding and shared experiences over profit.

Friends with Benefits, Seed Club

Service

Offer services in exchange for fees or other forms of compensation. They can operate like decentralized companies with members contributing skills—like software development, marketing, or consulting—to provide services. Service DAOs might serve clients within or outside the blockchain industry.

Raid Guild, LexDAO, Content Guild

Grants

Focused on funding and supporting projects within a particular ecosystem or community, grant DAOs allocate resources to innovative projects, often to support the broader adoption and development of a specific blockchain or technology. These DAOs play a critical role in fostering innovation and growth within the crypto space.

Aave, Gitcoin, OP Collective

Collector

Groups that pool resources to purchase valuable and often scarce items, such as digital art, NFTs, or even real estate. Collector DAOs leverage their collective buying power to acquire, manage, and potentially profit from high-value assets.

Constitution DAO, Nouns DAO

Governance Participation

Governance participation in DAOs often struggles due to a combination of factors that can dampen member engagement and effective decision-making. One of the primary issues is voter apathy, where members might feel that their individual contributions have little impact on the outcome, particularly in larger DAOs where thousands of votes are cast. This sense of insignificance, coupled with the complex nature of many governance proposals that require specialized knowledge to fully understand, can lead to a lack of confidence in voting effectively. Additionally, the allocation of voting power in many DAOs is proportional to token ownership, which can result in significant power imbalances. A few members with large token holdings can wield disproportionate influence, which may discourage broader participation from smaller token holders who feel their voices are less impactful.

The practical aspects of participation also pose hurdles. Members often face a barrage of information and numerous proposals to consider, which can be overwhelming and time-consuming. Without adequate incentives to engage deeply with these materials, many opt to remain passive. Moreover, the technical platforms that facilitate voting and discussion can intimidate those not well-versed in digital tools, while concerns about the security of these platforms can further deter participation. Finally, the uncertainty surrounding the regulatory status of DAOs and their decisions can make potential participants cautious, fearing possible legal repercussions. These challenges collectively contribute to the difficulties DAOs face in achieving active and representative governance.

Legal Frameworks

Traditional legal systems do not easily accommodate entities that are decentralized and operate on blockchain technology. However, various legal frameworks have been proposed or implemented to provide DAOs with a degree of legal recognition and structure. Here are the main approaches:

1 **Wyoming DAO Law:** Wyoming became the first U.S. state to legally recognize DAOs as a specific form of limited liability company (LLC) in 2021. This legislation allows DAOs to register as DAO LLCs, providing them with legal personhood and limiting the liability of their members. This framework requires DAOs to be managed by smart contracts to a significant extent and specifies that these entities must include "DAO" in their official names.

2 **Vermont Blockchain-Based LLC (BBLLC):** Vermont offers a form of LLC that allows for blockchain-based governance. This framework, although not tailored specifically for DAOs, provides flexibility for organizations that want to use blockchain technology for management and administrative functions. This can be adapted for DAO purposes, especially for those looking to integrate traditional business practices with blockchain operations.

3 **Decentralized Autonomous Trusts (DATs):** Some entities choose to form as trusts instead of companies. In this framework, a DAO operates under a trust structure where the trustees are tasked with managing the assets and operations in accordance with the trust's terms, which can be aligned with the DAO's goals. This structure is often used for DAOs that handle substantial assets or want to emphasize fiduciary duties.

4 **Unincorporated Non-Profit Associations (DUNA):** DAOs, especially those that function primarily for non-commercial purposes, can sometimes organize as an unincorporated nonprofit association. This offers a lightweight and flexible legal framework that allows members to coordinate activities without formal corporate structures, though it offers less legal protection compared to LLCs.

5 **European Cooperative Society (SCE):** In Europe, some DAOs may choose to organize as a Societas Cooperativa Europaea (SCE), which is a type of cooperative that allows members from different EU countries to join forces under a single European legal entity. This structure is particularly advantageous for DAOs that operate transnationally and focus on collaborative, cooperative goals.

6 **Offshore Company Structures:** DAOs seeking more flexible regulatory environments may choose to incorporate in jurisdictions with favorable laws concerning digital assets and blockchain technology, such as the Cayman Islands or Malta. These locations often offer structures that can be tailored to the needs of DAOs, including provisions for digital governance.

BONUS **The Zug Foundation:** Typically refered to as the Crypto Valley Association, is a nonprofit organization based in Zug, Switzerland. Zug has earned the nickname "Crypto Valley" because of its status as a global hub for blockchain and cryptocurrency companies, supported by favorable regulatory frameworks and a concentration of industry expertise.

Regulation & Bear

In 2022, the cryptocurrency market experienced a significant bear market, characterized by a steep decline in the prices of major cryptocurrencies like Bitcoin and Ethereum. This downturn was influenced by a combination of factors including tightening monetary policies by global central banks, rising interest rates, and broader economic uncertainties stemming from inflation and geopolitical tensions. The market was also impacted by several high-profile incidents within the crypto industry, such as the collapse of TerraUSD, a major stablecoin, and the bankruptcy of FTX, one of the largest crypto exchanges. These events eroded investor confidence, leading to massive sell-offs and a sharp decrease in market capitalization across the cryptocurrency sector.

The 2022 bear market extended throughout 2023 & as of the time of writing this guide (May 2024) is just beginning to show signs of returning to form. DAOs & DAO tooling companies experienced several challenges but also found unique opportunities for growth and adaptation.

Financial Challenges:

As the value of cryptocurrencies plummeted, many DAOs and projects relying on token economies faced significant financial constraints. The reduced market cap and lower liquidity affected the funding available for DAO tooling companies, which often rely on these ecosystems for their revenue streams.

Consolidation and Closures:

The financial strain led to a consolidation in the DAO tooling space. Some companies were forced to shut down or scale back their operations significantly due to decreased demand and funding shortages. Others were acquired or merged with larger entities seeking to expand their capabilities and consolidate resources.

Increased Focus on Sustainability:

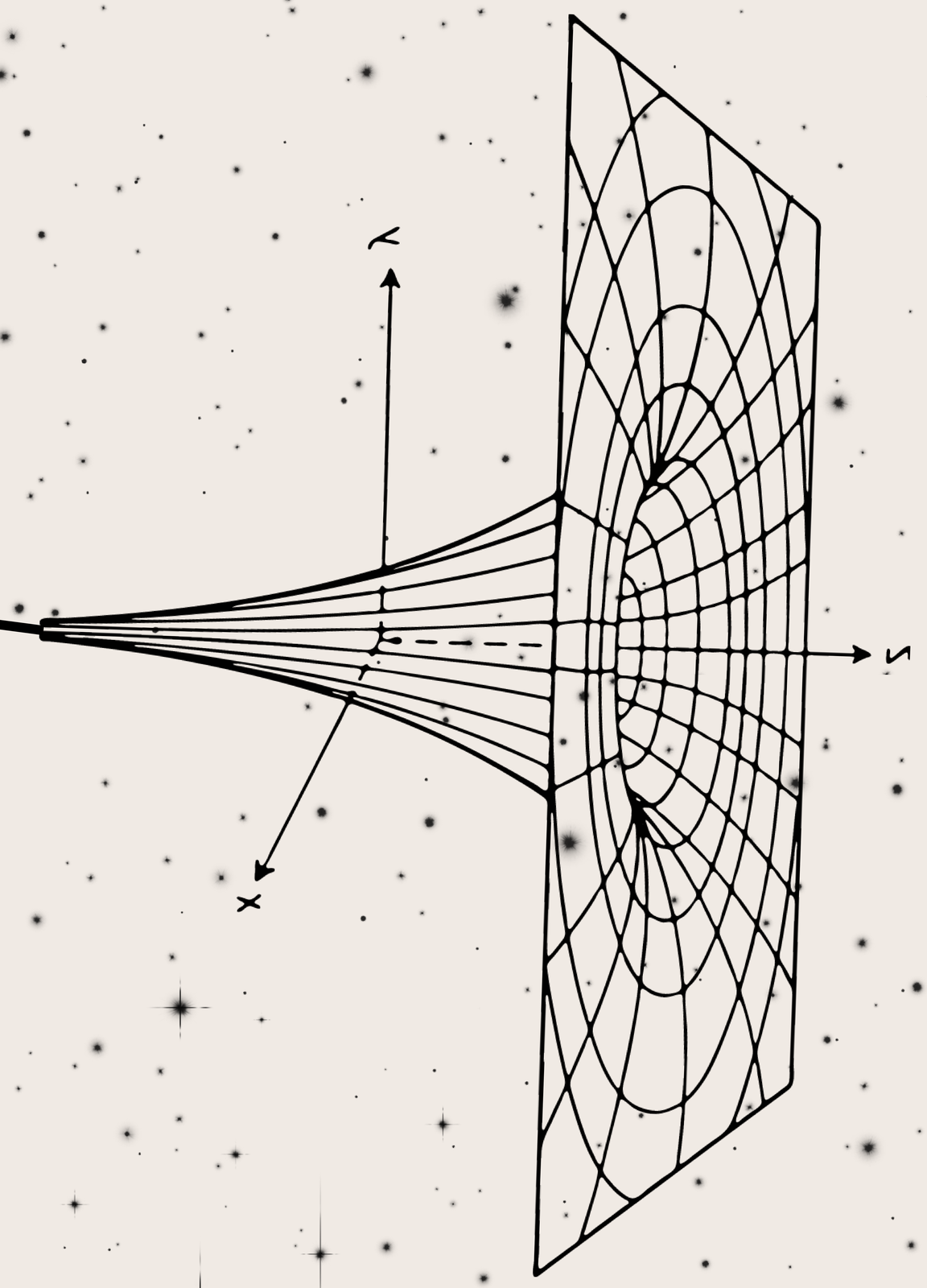
In response to the downturn, DAO tooling companies that survived began to emphasize building more sustainable and resilient business models. This shift often involved diversifying revenue streams, reducing dependency on volatile token-based funding, and focusing more on providing value through usability enhancements and integration support.

Innovation and Adaptation:

Despite the challenging conditions, the period also saw innovation within the DAO tooling space. Companies focused on improving governance models, enhancing security features, and increasing user engagement through better tooling interfaces. There was also a notable shift towards integrating more traditional business practices and regulatory compliance into DAO structures to attract a broader user base and stabilize operations.

The bear market tested the resilience and adaptability of the DAO ecosystem, pushing it towards more sustainable practices and sparking innovation to better meet the needs of decentralized organizations under less favorable economic conditions.

One thing is clear, DAOs emerged from the bear stronger & more focused. In a time rife with uncertainty, bad actors, and financial instability DAOs offered a beacon of hope & a home for the best builders in the space to coalesce.



THE PAST GUIDES THE PRESENT

why are DAOs different?
DAO NYC 2022

DAO NYC 2022

live DAO talk podcast recording
DAO NYC 2022

An Onchain Gathering
September 2023

Reza, HAI DAO
ETH Denver 2024

DAO DIFFERENT
ETH Denver 2024

Frisson, Tally
ETH Denver 2024

An Onchain Gathering
September 2023

Raf, Tally
ETH Denver 2024

Frisson, Building Tally
NYC, circa Fall 2023

“By learning from their prehistory DAOs can move towards a syncretic theory of organizations, meaning a theory which incorporates a wide range of cultural patterns, practices and influences while recognizing its inherited political biases. To escape the tendency to fetishize technical protocols for governance...organizations must cultivate compelling environments players want to inhabit, recognizing narratives, aesthetics, and goals held in common are key to their success.”

Kei, A Pre-History of DAOs

I

GENESIS

annotated readings, definitions, & sources are available on pages 53

photographs courtesy of @salteenarwhal, @dennisonbertram, & @tommylower

“Everything must be made as simple as possible. But not simpler.”

Albert Einstein

PART II
INCREMENTUM:

(noun) growth, development,
increase, augmentation

DAOs continue to evolve and expand, shaping new pathways for collaboration and governance in the digital arena. Decentralized organizations are successful in leveraging their ability to democratize decision-making processes to create more efficient organizational achievement. Earlier in this guide, it is proposed DAOs are poised to overcome the bottlenecks of traditional organizations by re-aligning value accrual to the group & leaning into the benefits of network based organization (adaptability, knowledge transfer, participant empowerment).

The continuing growth of DAOs is led by technological advancements & integrations directly improving DAO governance mechanisms. Governance is becoming more user-friendly, secure, & usable. The Governor ecosystem is thriving & benefits tremendously from the DAO ecosystems wholesale grassroots adoption of the Governor Standard. Billions of dollars of DAO treasuries are managed directly through the Governor contract. As more DAOs come online into the Governor ecosystem, the collective industry of decentralized organizations benefit. Tooling is robust & active, governance solution providers are leading a thriving sector of DAO consulting, and the best builders in the blockchain industry are coalescing around DAOs.

Regulatory uncertainty, scalability, and governance participation remain a core obstacle to overcome; however, the ecosystem continues to expand, learn from its mistakes, and commit to excellence. Digital governance is a sleeping giant beginning to wake up.

Reader's Note

Section II: Incrementum extensively covers the current state of DAOs through the lens of Tally: the leading Governor DAO frontend. Tally launched its services in 2019, staking its future to the successful adoption of Governor as the industry standard for digital governance.

A brief exploration of Tally's formation, operational standards, and partnership ecosystem provides necessary context for the reader to fully comprehend Section II as the Governor standard experiences extensive adoption.

Tally Formation

Frontends are an essential component of successful digital governance. User interfaces transform complex blockchain operations into accessible and user-friendly interactions. Accessible governance interfaces are especially important for Governor as it is robust, complex, and intimidating for uninitiated users. Instead of interacting with the DAO at the contract layer, which is tedious at best & paralyzingly complex at worst, frontends enable governance participation by supplying efficiently designed interfaces for voting, delegation, treasury management & the rest of the governance. Robust frontends promote security and cross-platform accessibility, vital ingredients for reaching a broader user base, enhancing the overall governance experience, reducing platform fragmentation, and catalyzing value alignment.

In 2019, the Tally founding team identified Governor as the potential industry standard and began building the core product which is currently the #1 governance platform in the ecosystem.

Tally gives users real power & control in decentralized organizations.

Tally's product offerings are increasingly expanding & are supported by a plethora of educational content, DAO best practices, consulting services, and a burgeoning partnership ecosystem of governance service providers & technical integrations.

"While a comprehensive prehistory of decentralized autonomous organizations could take us much further into the past, many proponents of DAOs have a core belief about their impact on the future: DAOs could out-compete by out-cooperating the modern firm."

A prehistory of DAOs, Kei

Section II expands on a few key features DAOs have adopted as staples in successful digital governance:

DAO Launcher
Launch once. Build forever.

Tally Zero:
a truly decentralized governance client.

Security Councils

Relay: gassless transactions.

Delegation communities
solving participation & fragmentation.

Multi-Governor support
for complex governance architecture design.

Governor DAOs by the Numbers*

$400b TVL	60+ networks
$600m+ transferred	$10b AUM
1500+ DAOs	25m votes cast

*as of June 2024

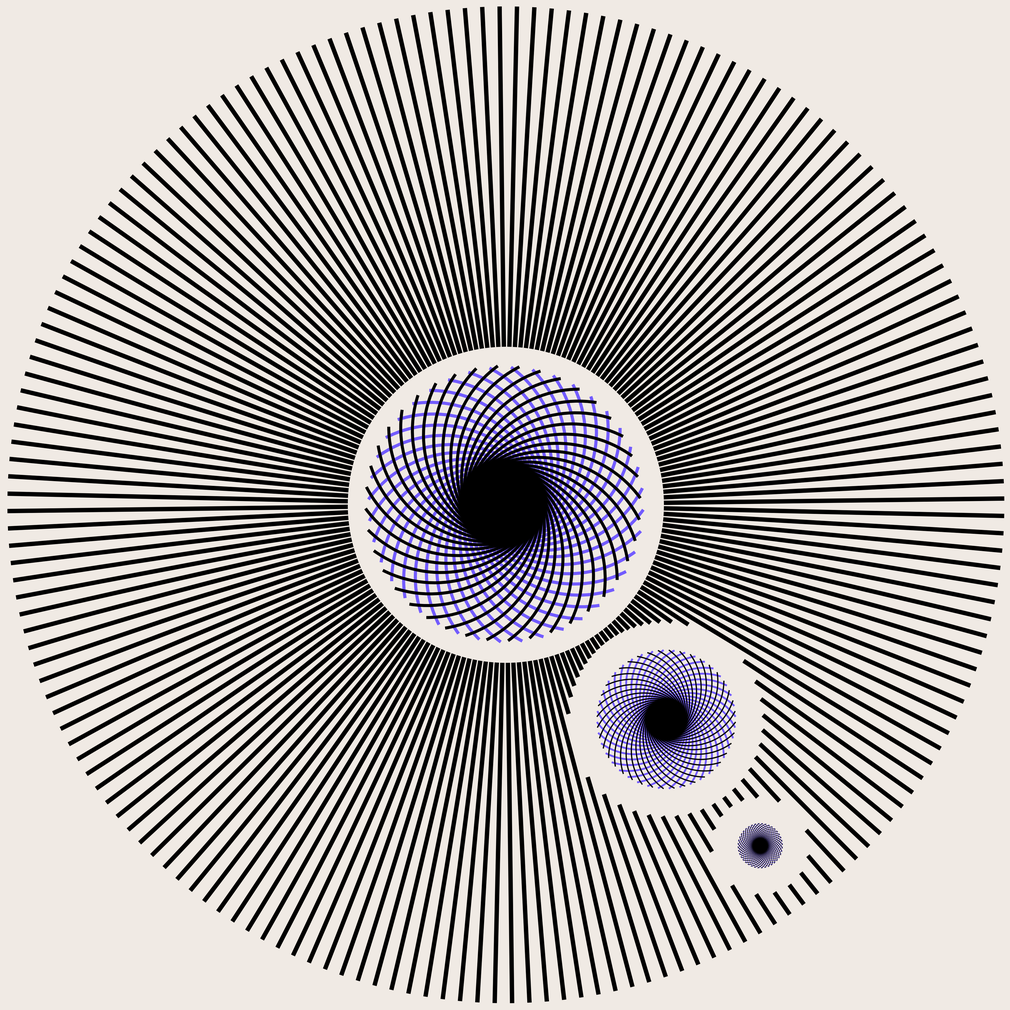
DAO LAUNCHER

LAUNCH ONCE. BUILD FOREVER.

Launching a DAO correctly is crucial in establishing trust, credibility, & a reputational foundation to attract a strong participation base. Early focus on robust security, clear governance, and regulatory compliance minimizes risks and legal issues. Many DAOs have launched without investing in proper governance architecture, security audits, & community considerations and experience growth challenges post launch.

The Governor framework's value proposition is most clear in the DAO launch phase. The beauty of an open standard for Governance is the power achieved in the collective ecosystem's years of building, stress-testing, & iterating failures of previous contract implementations. Builders are best suited investing heavily in initial planning to lay the foundation for financial stability, scalability, & adaptability.

DAOs can be infinitely scalable organizations, but only when built right from the beginning.



DAOs use features like custom **Airdrop Claim Pages** and a **Whitelabel Version** of Tally's technical infrastructure necessary for a seamless launch. But it's not just about the tech: it's about ensuring that DAOs can foster community engagement, maintain transparency, and drive participation from the get-go.

Tally's **Airdrop Claim Page** is designed to facilitate DAOs in distributing their tokens effortlessly. It's not just about claiming tokens: it's about integrating users into the DAO's ecosystem right from the start.

With Tally's **Whitelabel solution**, DAOs enjoy a fully functional DAO hompepage deployed on a custom URL ensuring the DAO has a unique identity and stands out.

Delegate Profile Creation:
Users can set up their delegate profile on the DAO, ensuring they're recognized and can actively participate in the DAO's activities.

Eligibility Check:
Before claiming, users can verify if they're eligible to claim tokens, ensuring transparency and fairness in the distribution process.

DAO Information Access:
Users can get comprehensive information about the DAO, its objectives, rules, and more, ensuring they're well-informed from the get-go.

Custom URL: Personalized URL, like dao.domain.xyz. The same DAO can also be accessed on Tally's traditional site.

Unique Interface Elements: From headers to breadcrumbs, DAOs customize elements to align branding.

Tailored User Navigation: Simplifies navigation for users by hiding non-relevant options to streamline participation.

Integrated Profiles: Clicking on "view full profile" from a delegate profile on the DAO's subdomain will redirect users to the full profile on the main Tally platform.

Hardcoded URL Adjustments: Ensures all embedded links and functionalities work seamlessly with the organizations custom domain.

TALLY ZERO

WHAT IS TALLY ZERO?

Tally Zero is a completely decentralized voting application designed to facilitate onchain voting via the InterPlanetary File System (IPFS) through Thirdweb. It serves as a fundamental tool to ensure that people can always vote onchain, even if all the more complex front ends, such as Tally and Boardroom, are down.

WHY IS IT IMPORTANT?

In June 2023, AWS had a compute outage that affected Tally during a big vote in Aribtrum DAO. Voting through the outage was made possible by Tally Zero.

DECENTRALIZATION

Tally Zero is built using React and IPFS via ThirdWeb, which ensures that the application is completely decentralized. This means that it does not rely on any central authority or single point of failure, making it resilient and secure.

Onchain Voting on the application allows users to connect to any governor address and vote on a proposal in a completely decentralized manner. This ensures that the voting process is transparent, secure, and tamper-proof.

ZERO DEPENDENCY

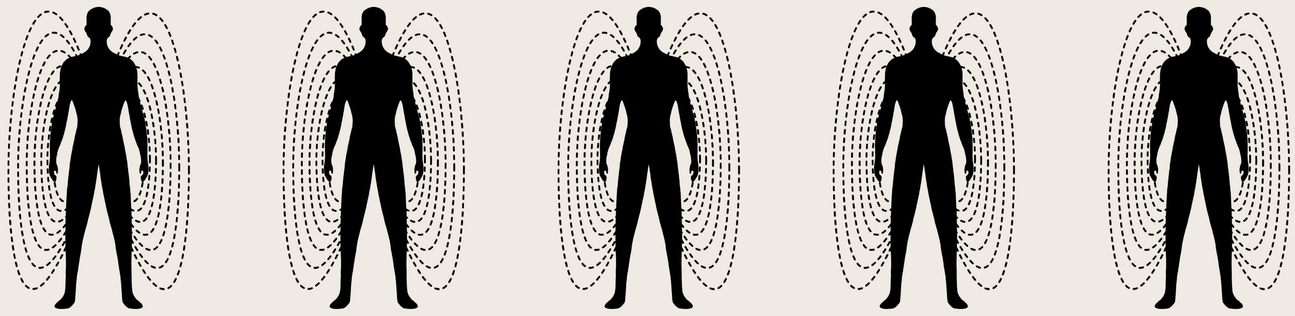
Tally Zero is designed to be a zero-dependency application. This means that it does not rely on any external services or applications to function. Even if other front ends are down, Tally Zero will still be operational, ensuring that people can always vote onchain.

IPFS DEPLOYED

The application is deployed on IPFS, a peer-to-peer hypermedia protocol designed to make the web faster, safer, and more open. This ensures that the application is accessible from anywhere in the world and is resistant to censorship.

SECURITY COUNCILS

Elevate Your DAO’s Standards of Excellence & Integrity



A council is comprised of a certain number of members who are entrusted with the responsibility of making urgent modifications to the protocol during emergencies. In the rapidly evolving world of DAOs, a council serves as a mechanism for stability and security. It consists of designated members with the authority to make necessary changes to the protocol during emergencies. The council's role is not only to govern but also to address potential threats, ensuring the DAO's security and adaptability.

MEMBER RESPONSIBILITIES

EMERGENCY ACTIONS:
Addressing critical situations that demand immediate attention, such as potential risks to users' funds. To execute emergency actions, a consensus of a certain number of members is required.

ROUTINE OPERATIONS:
Apart from emergencies, the council also supervises routine software updates, maintenance, and parameter adjustments, which are considered as "Non-Emergency Actions".

ELECTION PROCESS

NOMINATION:
Initially, contenders register to become nominees, requiring a certain percentage of votes.

ELECTION PERIOD:
A period where delegates vote for the nominees, with the voting weight decreasing linearly over the last two weeks.

COMPLIANCE PERIOD:
A period for the foundation to vet the nominees.

RESULTS & IMPLEMENTATION:
Following the election, the top nominees become the new members of the Security Council, with the results undergoing various time locks before the new members are integrated into the council.

CONSTRAINED ACCESS	REUSE OF EXISTING ARCHITECTURE	ADHERENCE TO SPECIFICATIONS
Access to the Upgrade Executor, a core component of the governance system, is strictly limited to prevent unauthorized or malicious activities.	**Leveraging existing secure infrastructure to avoid the introduction of new contracts that would require additional security measures.**	**The implementation strictly adheres to the guidelines outlined in the DAO's official documentation, ensuring the intended security properties are met.**

COST OF PARTICIPATION

Gas fees complicate DAO governance by creating a cost barrier that discourages participation, particularly among smaller stakeholders. High fees can lead to inequality, giving wealthier members more influence and excluding those with fewer resources. They also reduce the frequency of interactions and proposal submissions, stifling innovation and responsiveness. Additionally, network congestion can delay transactions, slowing down decision-making processes. The complexity of managing gas fees frustrates users and creates an administrative burden, diverting resources from other important initiatives and leading to economic inefficiencies.

Gas fees are especially high on Ethereum, where proposal, voting, & delegation transactions can exceed $50 per transaction. Solutions to reduce the cost of governance participation are incredibly vital to increasing digital governance participation & removing friction between participants & organizational execution. Layer 2 solutions process transactions offchain to lower fees, alternative blockchains like Solana offer lower transaction costs, & chain upgrades like sharding & better dApp design enhance efficiency and reduce gas usage. This guide highlights the use of cross-chain bridges (section III) & experiments with gas subsidies to alleviate the financial burden for governance participants.

RELAY

Relay is Tally's answer to the growing need for gasless transactions in DAOs. In essence, it allows users to relay any transaction—delegating, voting, or creating proposals—without incurring the often prohibitive gas fees associated with such actions.

DAOs can fund a budget dedicated to Relay transactions through Tally. Tally will then relay transactions for the DAO, making governance participation free for members. Tally sustains itself by taking a small fee on each transaction, ensuring the continued operation of the Relay service.

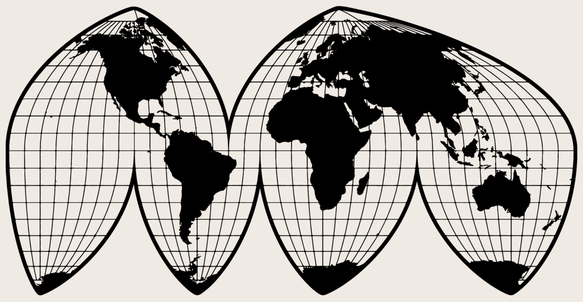
Technical Underpinnings

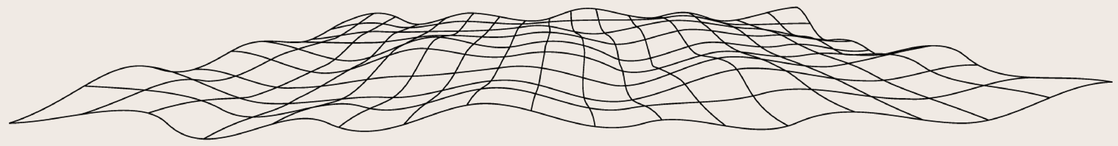
Relay leverages the power of OpenZeppelin Defender, a battle-tested framework designed for smart contract security and operations. By seamlessly integrating OpenZeppelin Defender with Tally's frontend, Relay ensures a secure and efficient process for gasless transactions within DAOs.

Why should I care?

Several hundreds of thousands of transactions have been made in DAO governance using Tally, racking up several hundreds of thousands of dollars in gas fees. These costs aren't merely numbers: they're tangible barriers that can hinder meaningful participation in a governance system that thrives on active engagement. DAOs have a vested interest in encouraging their members to participate in governance. More active participation leads to better decision-making, stronger communities, and ultimately, greater success. Here's where Relay comes into play. By stepping up to sponsor free governance transactions through Relay, DAOs are sending a powerful message of commitment to inclusivity and member engagement. Relay isn't just about removing gas fees; it's about amplifying the governance experience. It's about drawing in new members who value the chance to voice their opinions without the financial burden of gas fees weighing them down.Relay isn't just about saving costs for DAO members; it's about investing in the future of governance, fostering thriving and inclusive communities, and ensuring the sustainability of your DAO.

DELEGATION





Delegation is a mechanism which allows DAO members to delegate voting power to representatives, known as delegates, who vote on their behalf. The delegation process addresses several challenges plaguing DAO governance: low voter turnout, voter fatigue, centralization of voting power, and overall governance participation.

Creating a more efficient delegation process & educating participants about the delegation process is an essential part of optimizing DAO participation to unlock decentralized organizations' full potential.

Tally's Delegation Features
Delegate profiles highlight active participation in DAOs, broadcast delegate's governance intents to garner support, and inform delegators in making an educated decision.

Delegation Experiments

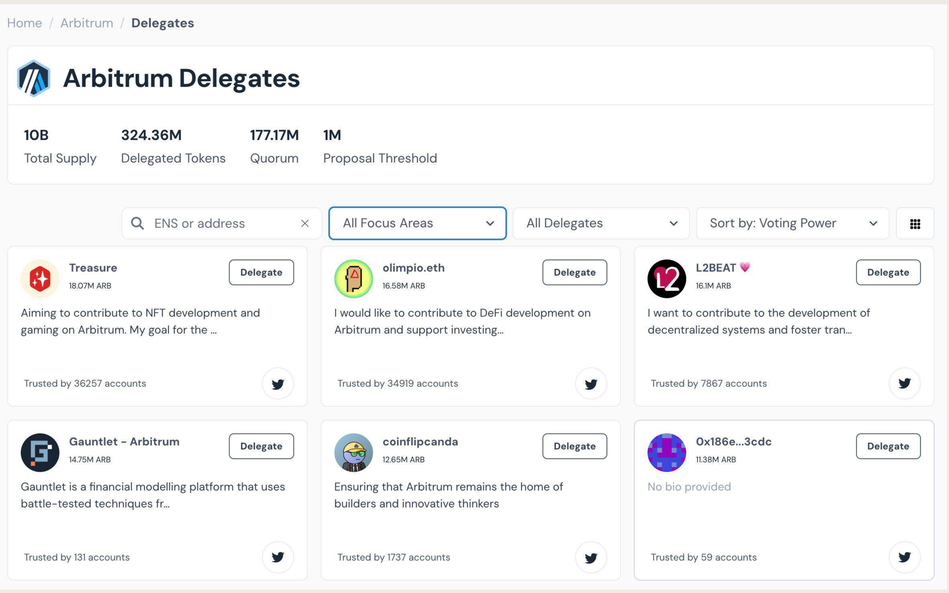
Professional Delegates
Professional delegates are individuals or organizations with a proven track record in DeFi, possessing extensive technical knowledge and experience in decentralized governance. They actively participate in governance discussions, propose changes, and vote on behalf of their delegators. Simply, they participate full-time in governance to act in the best interests of the community to ultimately help protocols succeed.

Liquid Delegation
A flexible system which combines elements of liquid democracy with traditional delegation, allowing members to either vote directly on proposals or delegate their voting power to trusted representatives. Liquid delegation enables transivity, meaning if Voter A delegates to Voter B, Voter B can delegate Voter A's delegations to Voter C. Delegations are usually revocable at any time, allowing members to reclaim their voting power if they choose to vote directly or change their delegate. By combining the benefits of direct and representative democracy, liquid delegation creates a more inclusive and efficient governance process within decentralized frameworks.

Butter's Delegate Race
Butter partnered with Aave Grants DAO to launch a 3-month pilot delegate campaign to financially incentivize the best talent and expertise to govern the DAO, which will ultimately lead to the best outcomes for the DAO.

The 3-month campaign unfolds in three stages:

1. **Election Week:** Aave holders cast their (weighted) vote for 1 of the 13 (pre-approved) delegate candidates in a 3-day Snapshot. All candidates have written Delegate Initiatives and spoken on Boardroom's Twitter Spaces. This period has *just* ended: TokenLogic has won.
2. **Delegation Week:** The winning delegate receives delegated tokens over this 7-day period, ideally from all those who voted on the Snapshot. Delegators receive exclusive NFTs.
3. **Campaign (Representation Phase):** The chosen delegate represents delegators' interests in Aave governance while receiving AAVE as compensation (~222 Aave/month funded by the Aave Grants DAO to Butter). During this campaign, Butter provides in-depth performance reviews at the end of each month.



Tally API

The Tally API makes it easy to query onchain data about Governor DAO: list all Governors, query onchain proposals, accounts with delegations, and more. Teams across the ecosystem use the API to build notifications, dig into voter data & build governance right into their games, apps, and products.

Designed specifically for developers, data enthusiasts, and organizations aiming to integrate governance into their platform, the Tally API provides a data layer to fuel any and all types of DAO activity across the ecosystem.

- **Comprehensive Data Access:** Dive deep into the world of Governor DAOs. From listing Governors to exploring on-chain proposals and accounts with delegations, we've got you covered.
- **Versatility:** Dreaming of building a notification system for DAO proposals? Or perhaps integrating governance mechanics into your next big game? The Tally API supports a myriad of applications.
- **Ease of Use:** With Tally's GraphQL-based API, you only request the data you need. Plus, with GraphQL's self-documenting nature, you'll find it a breeze to navigate and understand the API's capabilities.
- **Robust Support:** Tally's community and support channels are always ready to assist. Whether you're just getting started or need advanced technical support, they're for you in their Discord.

No Code

No-code governance solutions are crucial to empower non-technical users to participate in launching, operating, and participating in a DAO. Democratizing digital governance technology enables participants to employ the full power of the Governor tech stack securely & confidently. Tally's interface provides a variety of no-code governance features like DAO launcher, onchain treasury swaps, and onchain proposal templates.

Farcaster: A primitive for DAO participation

Farcaster is a decentralized social network protocol designed to provide a more open, user-owned, and interoperable alternative to traditional social media platforms.

Farcaster’s interoperability with other decentralized protocols facilitates seamless integration with DAOs. The protocol reduces the risk of censorship, ensuring DAOs can communicate and share information freely.

Farcaster's transparency promotes trust and accountability, while its flexibility allows for the creation of custom applications tailored to specific DAO needs, particularly with Farcaster Frames.

What are Farcaster Frames?

A Frame lets you turn any cast into an interactive app.

It’s a standard for creating interactive and authenticated experiences on Farcaster. Create polls, live feeds or interactive galleries inside Warpcast or any other FC client.

Frames extend the OpenGraph standard and turn static embeds into interactive experiences. The diagram below shows the difference between a standard OG and a Frame OG inside Warpcast.

A Glimpse Into the Current DAO Biome

Funding

Arbitrum STIP & LTIP

Provides short-term incentives to projects and protocols that contribute to the Arbitrum ecosystem. It aims to drive immediate engagement and adoption by distributing ARB tokens to approved projects, enhancing liquidity, and encouraging active participation. For instance, Camelot, a decentralized exchange, received a substantial amount of ARB tokens to incentivize liquidity, significantly increasing trading volume and ecosystem activity in a short period.

Gitcoin

Developers submit projects whe funders can browse and contribute to projects based on merit & interest alignment. The platform uses mechanisms like quadratic funding to match donations, amplifying the impact of individual contributions and ensuring a fair distribution of funds based on community support.

OP RGPF

Funding to public goods projects based on their proven impact rather than future potential. This funding is distributed retroactively, meaning projects that have already demonstrated positive contributions to the ecosystem receive rewards. The process involves community-selected badge holders who evaluate the impact of nominated projects and vote on how to allocate OP tokens. This approach aims to ensure that impactful projects are sustainably funded.

Governance Service Providers

Governance service providers for offer a variety of essential services to enhance and streamline governance processes. GSPs roles can include developing and auditing smart contracts, designing governance frameworks, providing secure voting systems, managing proposal submissions, regulation compliance, catalyzing community engagement, reputation system implementation, and educational content. Governance service providers are a nascent but extremely important player in the ecosystem helping DAOs operate efficiently, transparently, and securely.

See: Stable Lab, Gauntlet, GFX

Additional Tooling

HATS Protocol

Hats is a platform for building organizational graphs. In Hats Protocol, graphs are made up of roles, which are viewed as the atomic unit of organizational structure.

Roles, which are called hats, are rich objects that conform to the ERC-1155 standard and bundle responsibilities, permissions, and incentives. Hats are represented as tokens, which are held by agents (Ethereum accounts). Because of the flexibility of accounts in the EVM, they can easily be controlled by individuals, groups, DAOs, smart accounts, or AI agents, with any decision-making structure you can think of onchain. (Hats Documentation)

Jokerace

JokeRace enables communities to create, execute, and reward contests, known as JokeRaces. Contests can be used for a variety of purposes including bounties, hackathons, grants, awards, prediction markets, protocol feature requests, DAO governance, elections, and amendments. Participants can submit entries and vote on their favorites, with the process being managed through smart contracts on the blockchain. This ensures transparency and security, as every contest component is predetermined and immutable once deployed.

Foundations

Foundations play a critical role in DAO governance by providing structure, resources, and strategic direction to ensure the effective functioning and sustainability of the decentralized organization. Here are some key roles they play:

Funding and Resource Allocation:

- Grant Distribution: Foundations often manage the treasury and allocate funds through grants or incentive programs to support projects that contribute to the DAO's ecosystem. For instance, the Arbitrum Foundation oversees the distribution of funds through its Short-Term and Long-Term Incentive Programs.
- Sustainable Funding Models: Foundations help in establishing long-term funding models that ensure continuous support for public goods and ecosystem development.

Financial Management and Fund Allocation:

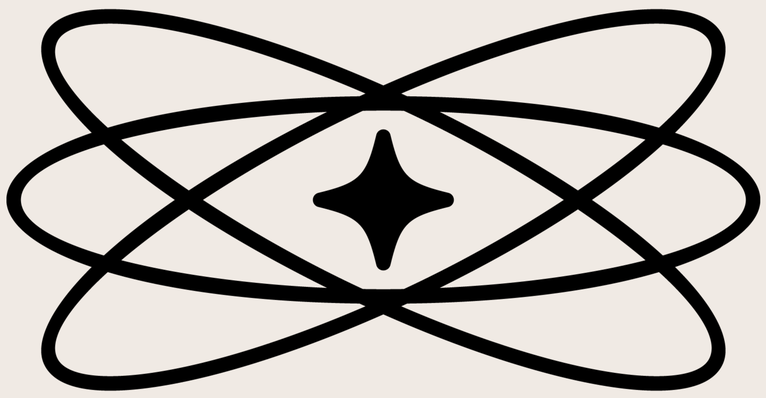
- Treasury Management: Foundations manage the DAO's treasury, ensuring that funds are allocated according to the community's decisions and long-term sustainability goals.
- Grant Distribution: They oversee the distribution of grants and incentives to projects and contributors, facilitating the growth and development of the ecosystem.

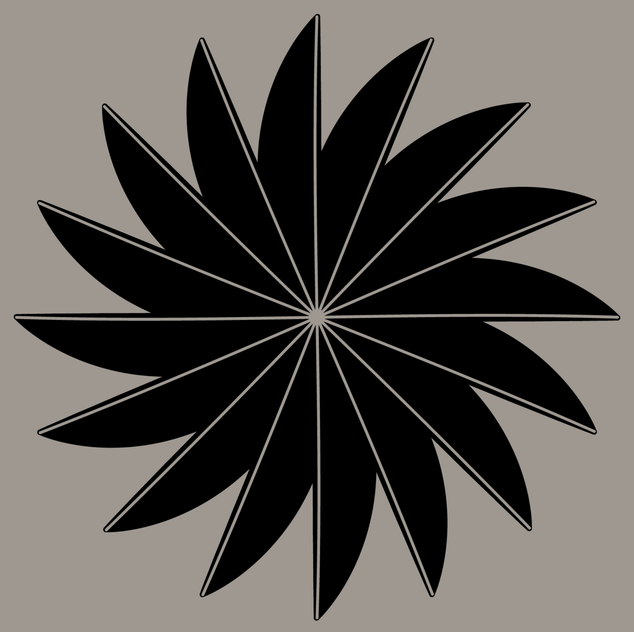
Strategic Oversight and Vision:

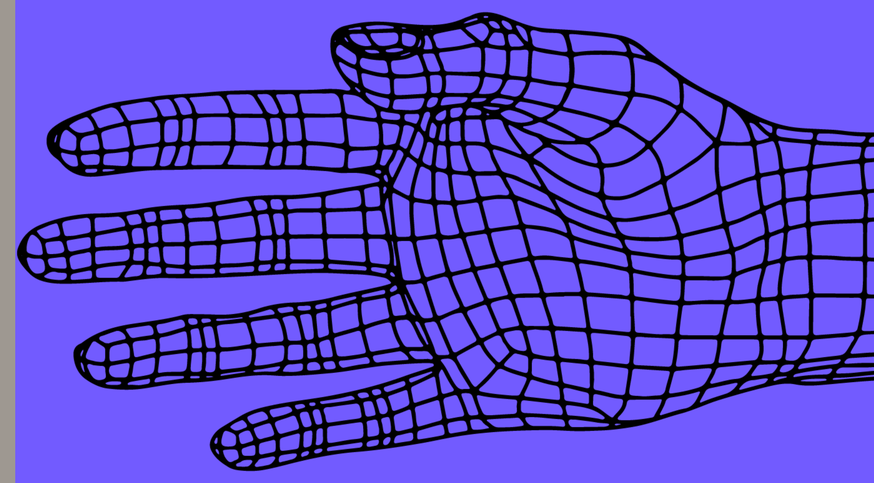
- Long-term Strategy: Foundations help in setting and maintaining the long-term vision and strategy of the DAO, aligning short-term actions with the broader mission and goals.
- Partnerships and Alliances: They forge partnerships and alliances with other organizations, enhancing the DAO's reach and influence within the broader blockchain and traditional industries.

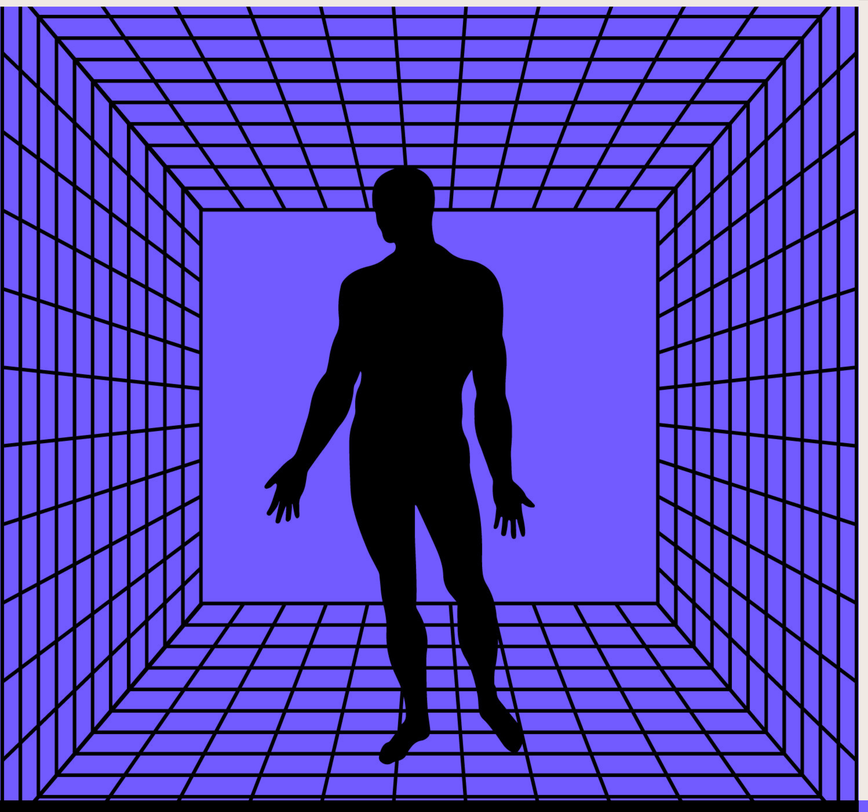
Governance and Coordination:

- Governance Facilitation: Foundations facilitate governance processes by organizing votes, proposals, and community discussions, ensuring that decision-making is efficient and inclusive
- Coordination Role: They act as coordinators between different stakeholders within the DAO, including developers, community members, and external partners, ensuring that everyone is aligned and working towards common goals.

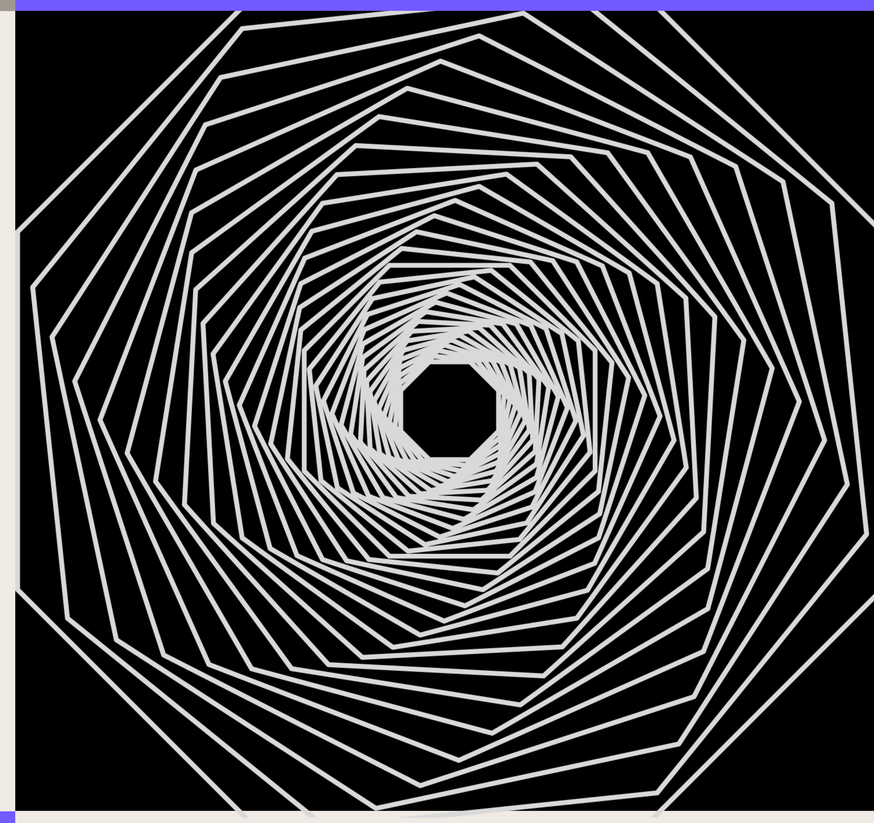


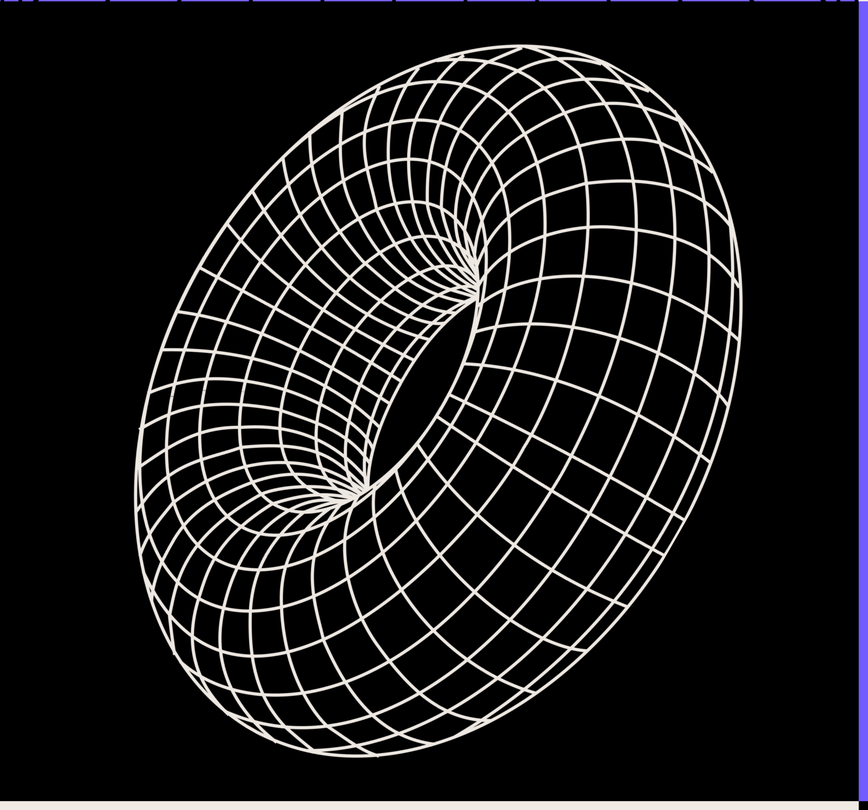


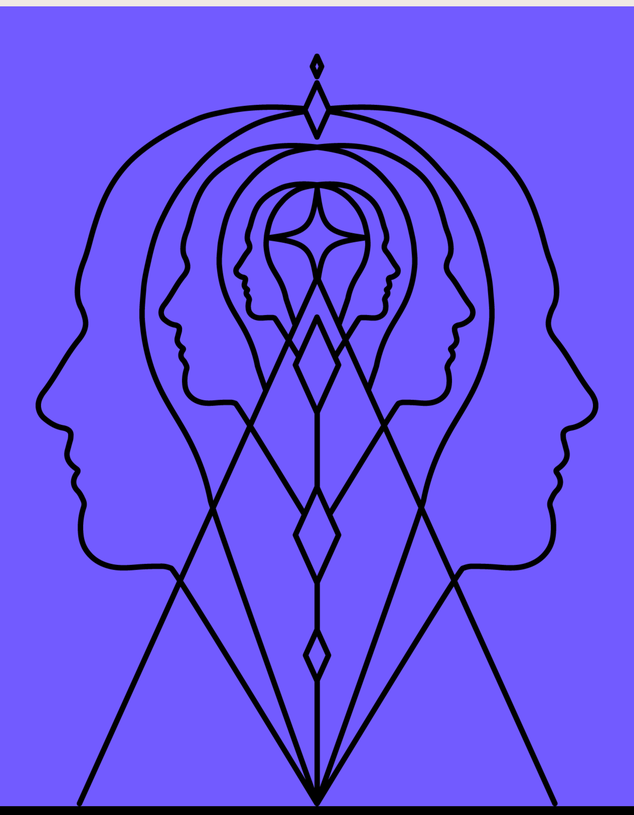


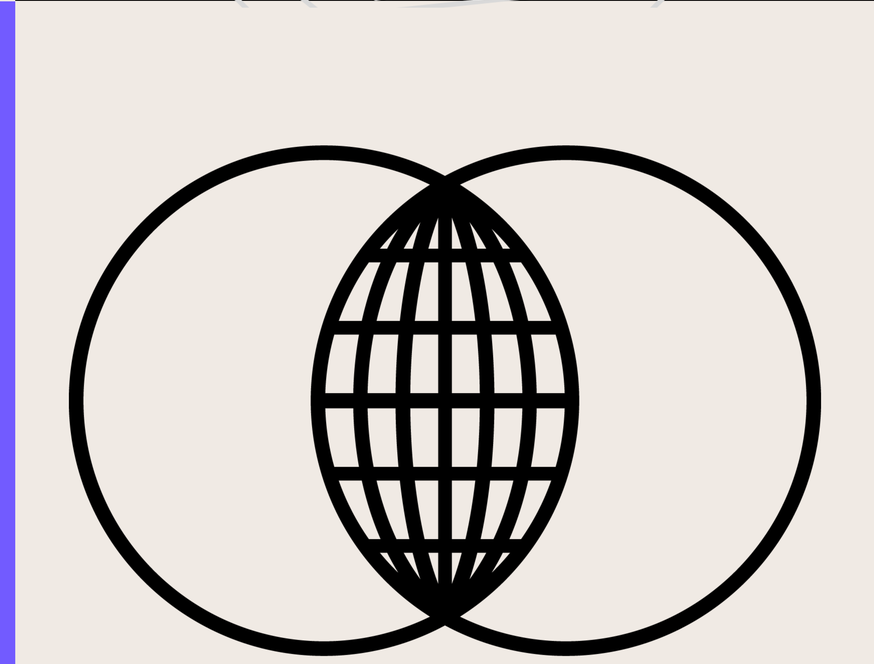


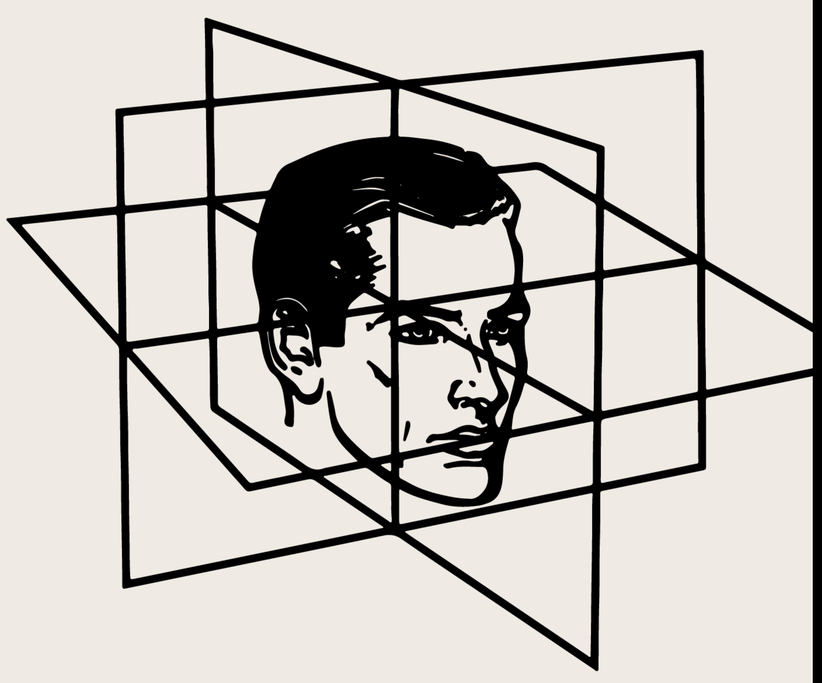
“Any sufficiently advanced technology is indistinguishable from magic.”
Arthur C. Clarke

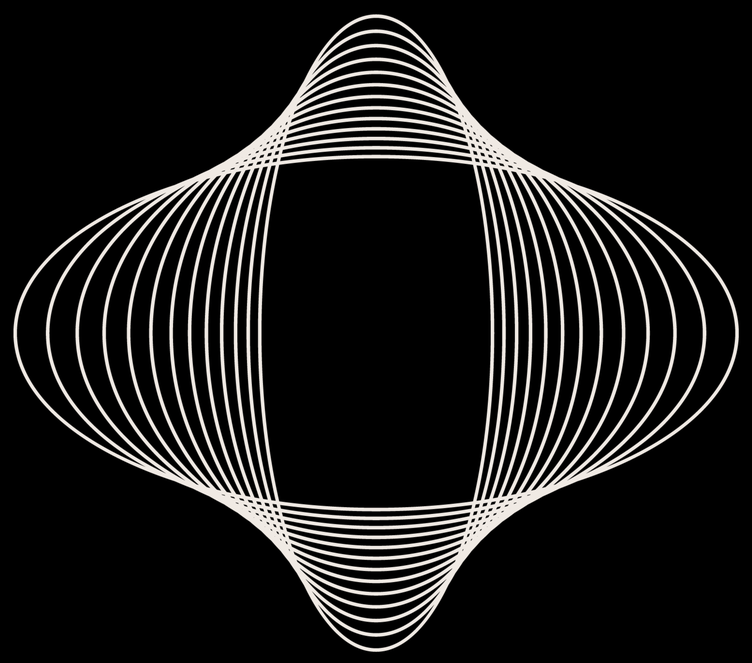


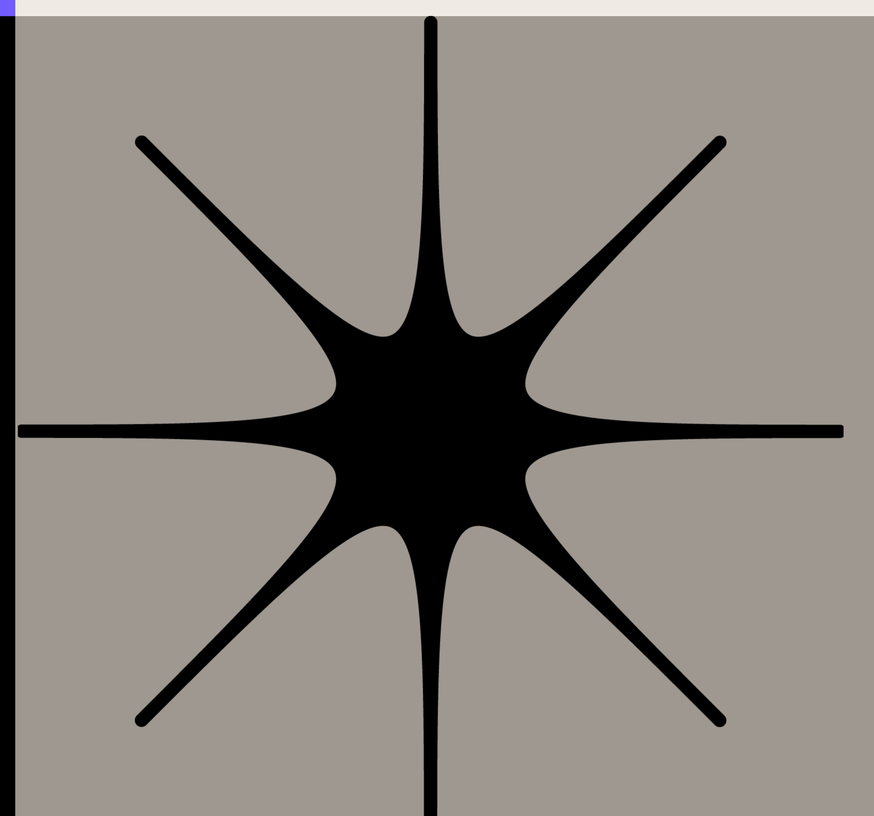












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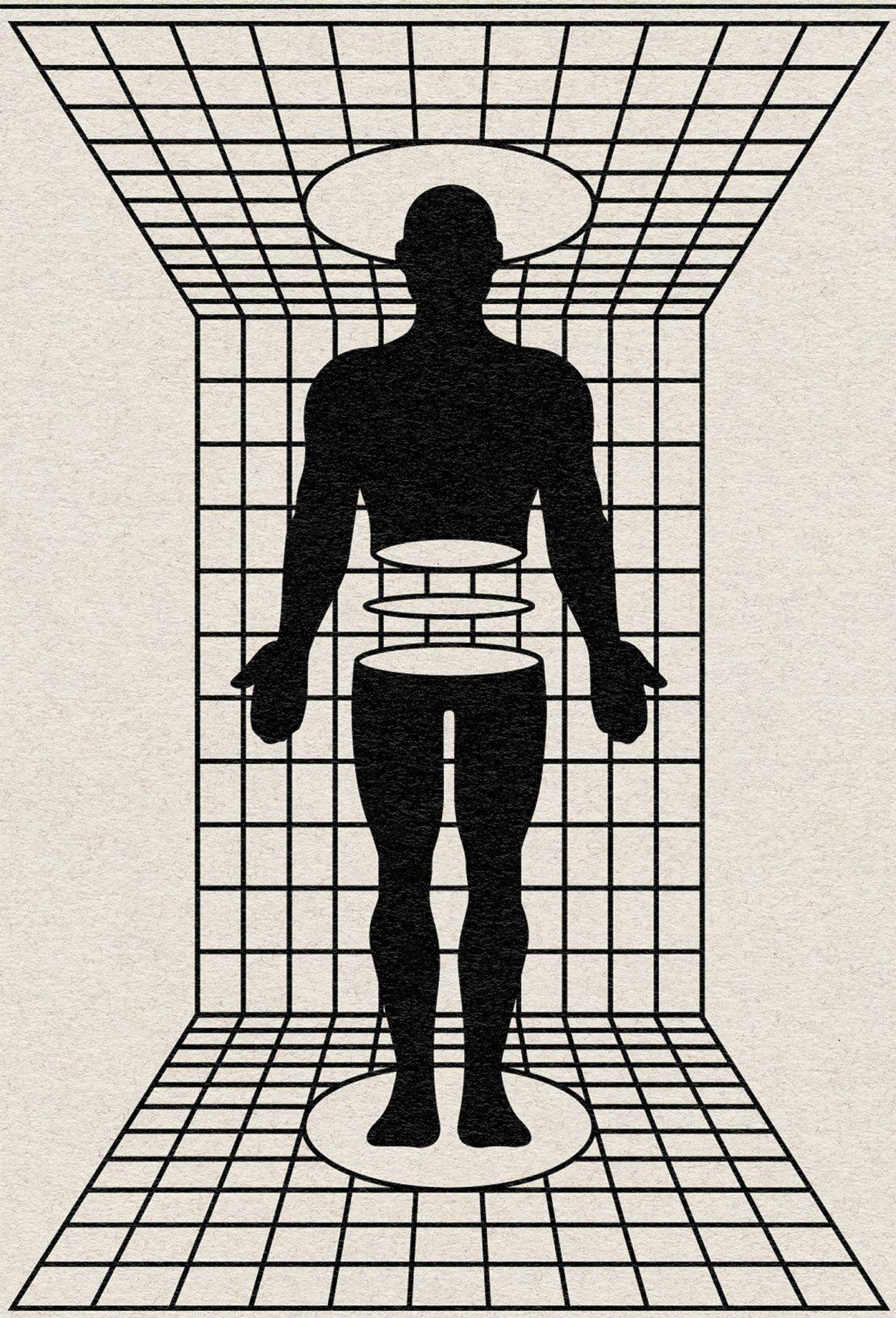


INCREMENTUM

“The Web as I envisaged it, we have not seen it yet. The future is still so much bigger than the past”

Tim Berners-Lee

PART III
FUTURUM:

(noun) the verb tense that is
used to show that an action will
be finished before a particular
time in the future

The DAO ecosystem is poised for significant growth and transformation. The industry continues to build & learn from the mistakes of previous experiments as it begins to experience wider adoption across a variety of industries. From finance to healthcare, decentralized organizations' unique ability to align participants under shared values & create equitable value accrual methods remains an attractive organizational structure for new and existing participants. Technological advancements (smart contracts, user interfaces) and increasingly clear regulatory frameworks will provide an even firmer ground for DAOs to flourish in the coming years. Sophisticated governance models, increased interoperability, and cross-DAO collaborations will lead to more effective large-scale decentralized initiatives. Existing features, products, & the collective ecosystem power will continue to lower barriers to entry and encourage broader participation. The tokenization of assets are beginning to expand beyond digital to real-world assets and traditional organizations are exploring DAO principles, blending decentralized decision-making with established stability. DAOs are proving to be a fundamental component of the evolving digital and economic landscape.

The Future of Digital Governance

Reader's Note:

Section III: Futurum explores two revolutionary upgrades to the DAO ecosystem which aim to solve the primary issues plaguing decentralized organizations & digital governance participation. Both products are being developed by Tally in collaboration with proven ecosystem partners.

MultiGov™

Multichain governance system allowing DAO members to participate seamlessly across multiple blockchains.

Solves: fragmentation, prohibitively expensive gas costs, tech debt

The Tally Protocol

Universal Liquid Staking for Governance Tokens

Governance tokens intermingle financial and organizational utility, failing at both. The Tally Protocol is a smart contract layer that creates Tally Liquid Staked Tokens (tLSTs) for DAOs' native governance tokens, decoupling the financial and organizational utility of governance tokens. tLSTs provide a simple and accessible way for token holders to earn rewards while maintaining their voting rights and being able to hold a liquid token they can use to seek additional rewards elsewhere.

Solves: financialization of voting, fragmentation, security tradeoffs

MULTIGOV™

Wormhole, Tally, and Scopelift teamed up to build MultiGov™: an industry-first multichain governance system for DAOs on Solana, Ethereum mainnet, and EVM L2s. Wormhole DAO is the first DAO to adopt MultiGov™, enabling W holders to create, vote, and execute governance proposals on any MultiGov™ supported chain. Integrating this innovative governance model marks a significant shift towards a truly decentralized and inclusive decision-making process that operates at a level above the multiple underlying chains.

What is it?

Your DAO operated by users on any chain. Multichain governance enables DAOs to meet token holders where they are. DAO members can raise proposals, delegate, votes, and generally participate in governance for an onchain DAO from whichever chain they hold tokens on. MultiGov™ supports multichain DAOs across Solana, Ethereum mainnet, and EVM-compatible L2s. As more projects expand to multiple chains, MultiGov will lower barriers to DAO participation and increase user reach in nearly all major ecosystems. Tally, Wormhole, and Scopelift are combining their expertise in state-of-the-art governance, delegation, and multichain infrastructure to build MultiGov.

Single Chain vs. Multichain

Until now, DAOs have operated their governance on a single chain. Many of the oldest and largest DAOs keep their token, governance, and treasury all on Ethereum mainnet. However, rising L1 gas costs make managing and participating in governance increasingly expensive. In addition, with the growth of robust multichain infrastructure, DAO token holders are increasingly distributed across many chains. To maintain active, accessible, and decentralized governance, many existing DAOs are exploring options to expand their governance systems. Newer protocol DAOs often plan out their multichain strategy from day 1, launching on one network and then strategically expanding to other chains to grow their users and liquidity.

Hub & Spoke Model

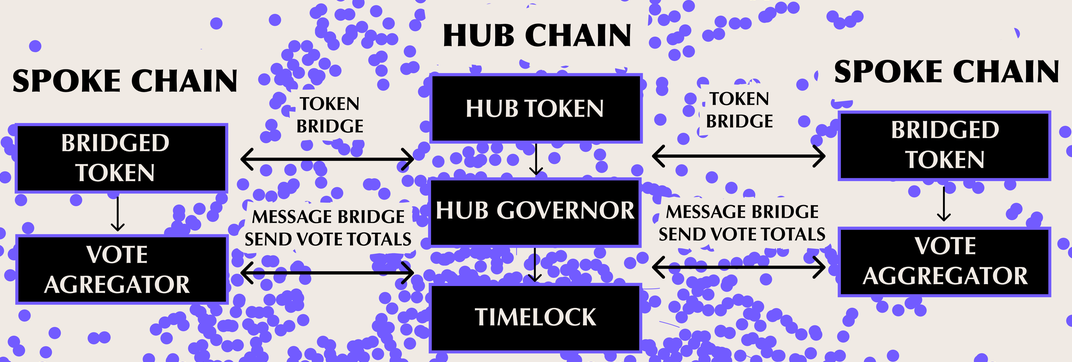
MultiGov™ implements a hub-and-spoke governance model. This model combines well-understood building blocks – governor, timelock, cross-chain token transfers, and cross-chain messaging.

On the "hub" chain, a DAO using MultiGov™ has a standard ERC20Votes token and OpenZeppelin Governor with the Flexible Voting extension. The hub can be any supported EVM chain. Token holders can choose to natively transfer their hub governance tokens to spoke chains.

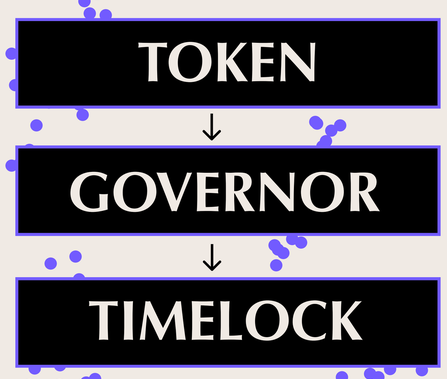
On each "spoke," there is a native governance token and a spoke Governor contract. The native governance token keeps track of voting power on that chain. When there is a proposal, token holders on that spoke chain submit votes to the spoke Governor. Votes on each spoke Governor can be aggregated and sent back to the hub chain via a cross-chain message. Users who are on the hub chain can submit votes directly to the hub chain Governor.

When the voting period is over, the hub chain will tally the votes it has collected from all the spoke chains and from users who submitted directly on the hub. If the proposal passes, it is executed on the hub chain, and sent to each of the spokes for execution via a cross-chain message. Creating new proposals to vote on follows a similar design, where proposals are created on the hub chain and then broadcast to each spoke chain.

To learn more about how DAOs can go multichain, watch Tally CTO Raf Solari's ETH Denver 2024 talk on Multichain DAOs.



SINGLE CHAIN DAO



MultiGov™ keeps DAO governance:

Active by meeting community members where they are.

Accessible to all token holders, by lowering gas costs.

Decentralized by enabling token holders to vote on any chain.

Flexible by allowing DAOs to easily expand to new networks along with their protocol.

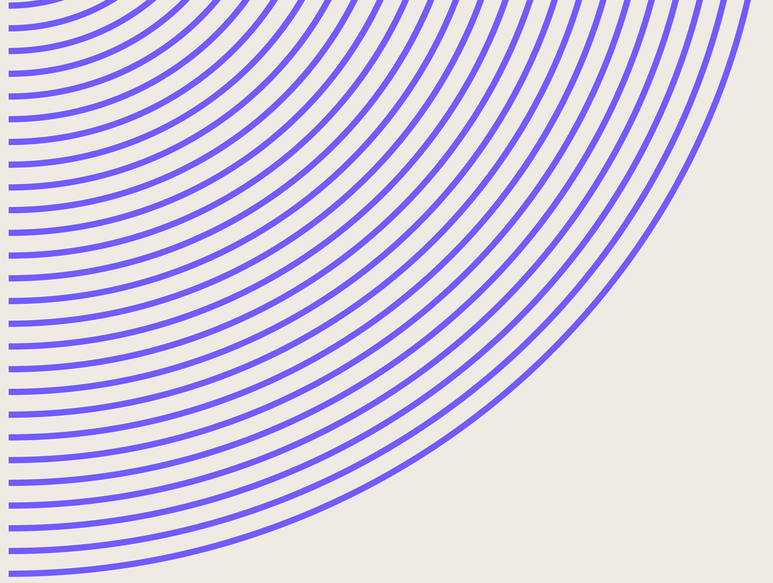
THE DAO DILEMMA

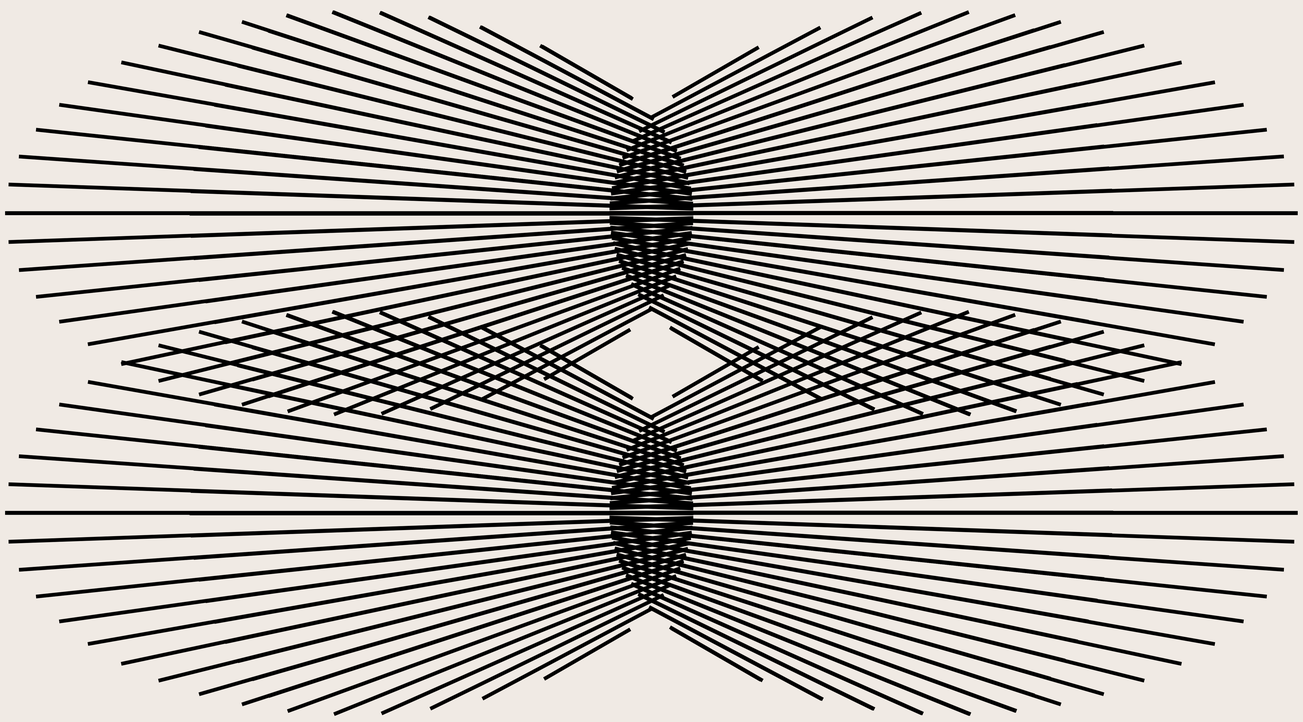
The Why

The incentives for participating in DAOs are broken. Token holders are asked to actively manage and govern multi-billion dollar protocols at their own expense. Large delegates fund their critical research and operations via inconsistent grants or retroactive funding. Token holders hold illiquid unproductive assets with little or no incentive to participate.

The critical challenges facing DAOs today are directly tied to the inherent dichotomy of governance tokens: they are both assets and voting rights. You cannot fully enjoy the utility of your asset and vote, and you cannot vote and fully enjoy the utility of your asset. DAOs ask their token holders to make an unreasonable choice: forgo the value of their asset to govern or govern without any reward to their asset.

DAOs must return value to token holders to remain viable. Some of the largest DAOs today are exposed to governance attacks due to lack of participation. Uniswap has 158% of its quorum for sale in DeFi and on centralized exchanges, while the market cap of delegated ENS tokens is lower than the value of the accumulated treasury revenue. It is imperative that token holders are properly incentivized to maintain the security of the protocols they govern.





Wyoming DUNA's

The Wyoming Decentralized Unincorporated Nonprofit Association Act provides a recognized legal framework for DAOs, which is essential for enabling staking for DAOs. By registering as a legal entity under Wyoming law, DAOs gain legitimacy and legal protection for their members. The law offers regulatory clarity, ensuring that staking operations are conducted within a recognized legal framework and reducing the risk of legal issues. The most important concept the framework clarifies is **staking & governance is defined as work**, meaning security law regulation is met.

THE TALLY PROTOCOL

Liquid Staked Governance

Protocol Overview

The Tally Protocol unlocks the economic potential of governance tokens by providing a liquidity layer for governance staking and restaking while reducing the incentive to attack DAO treasuries and optimizing the distribution of voting power.

The protocol is a smart contract layer that creates Liquid Staked Tokens (LSTs) for governance tokens. Tally LSTs (tLSTs) offer token holders a simple and accessible way to take advantage of opportunities to earn staking and restaking rewards, maintain their voting rights, and use the liquid token to participate in DeFi.

Key Features

- **DAO Alignment:** While the Tally Protocol governs the tLST protocol layer, each tLST is owned and controlled by its respective DAO. This allows DAOs to set and adjust key parameters, ensuring alignment between the protocol and the DAO.

- **Standardized Token Design:** The protocol generates uniform, standardized tLSTs that simplify integration for third parties such as exchanges and custodians.

- **Modularity:** The protocol supports various staking mechanisms and abstracts the underlying staking contracts via modules, allowing DAOs to experiment with different designs that suit their specific needs.

- **Voting Power Redistribution:** For tLST token holders that choose not to delegate their voting power, the protocol returns undelegated voting power to the DAO for redistribution to active delegates. Tokens that are locked in DeFi or restaking services automatically return their voting power to the DAO.

- **Optimized Governance:** Token holders have a financial incentive to hold their delegates accountable for high-quality governance.

- **Fee Distribution:** Protocol fees are shared among Tally, DAO delegates, and rebalancers (who manage the interface between tLSTs and underlying staking contracts) in a fair and aligned manner.

Protocol Mechanics

Liquid Staked GovernanceTokens (LSTs)

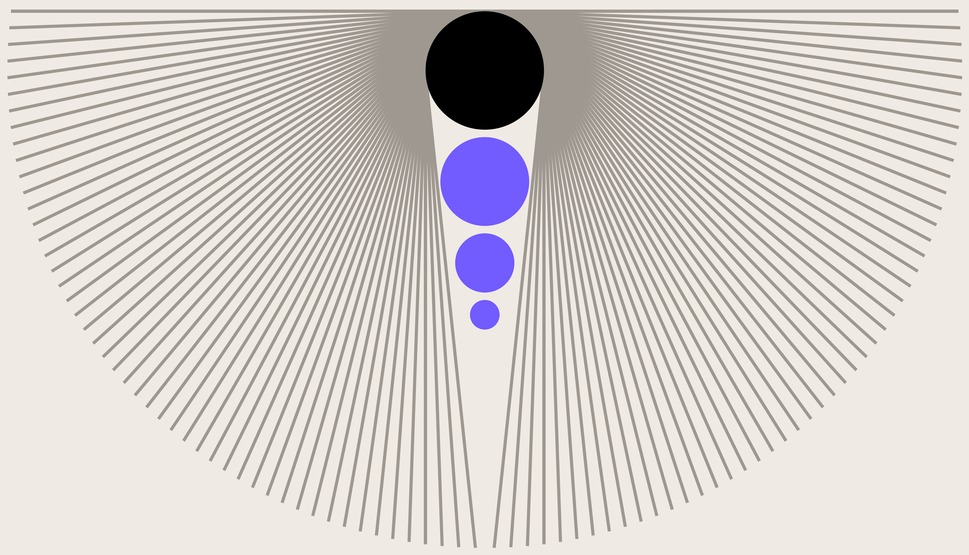
When a user stakes their token in the Tally Protocol, they receive a tLST token in return that can be used in DeFi or restaking and can be exchanged at any time for the equivalent amount of underlying DAO token plus any accrued rewards. Holders can choose to delegate the voting power of their token to themselves, to someone else, or to allow the Tally DAO to choose a delegate on their behalf.

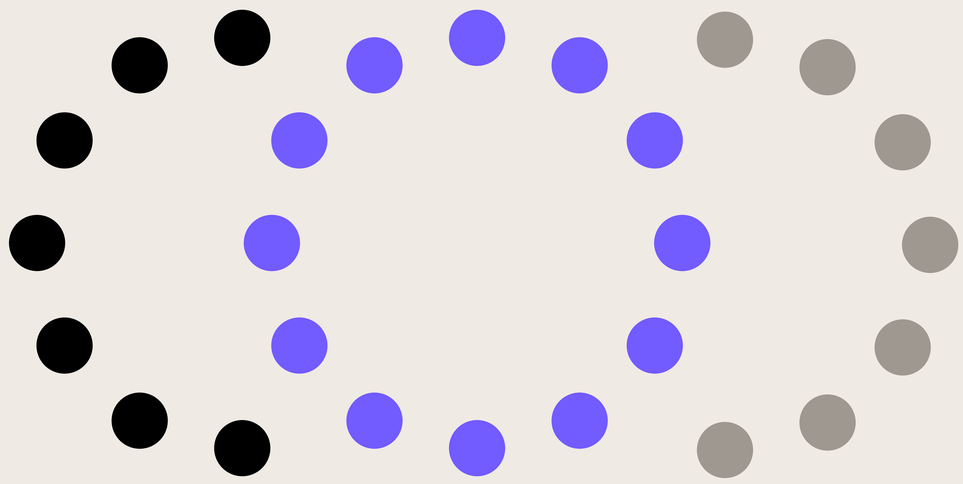
- tLSTs are liquid, auto-compounding ERC20 tokens.
- tLSTs accrue value in the underlying governance token, with their exchange value increasing over time as staking rewards compound.
- The protocol supports various delegation strategies for staked but undelegated tokens, including a default metagovernance strategy where the Tally DAO selects trusted delegates, and modular third-party strategies.
- The Tally DAO selects the default delegation strategy but the underlying DAO is free to choose their own strategy as well.
- tLST holders govern the LST contract in a dual governance model with the Tally DAO. The underlying DAO token holders are free to move in and out of the tLST contract at any time, and as such tLST token holders effectively represent the underlying DAO's wishes.

Rewards and staking types

tLSTs automate the process of accessing rewards for token holders by automatically claiming staking rewards and redepositing them back into the staking contract. This enables growth of the underlying position without manual intervention. Holders benefit from convenience and maximized earning potential.

- The protocol includes initial staking contract support for Uniswap Unistaker and Tally Staker: an improved version of Unistaker that incorporates delegate compensation, thereby incentivizing active participation in governance.
- The Tally Protocol is designed to be compatible with future staking designs.





Voting Passthrough

tLSTs enable voting passthrough, allowing token holders to maintain their governance rights while holding the LST.

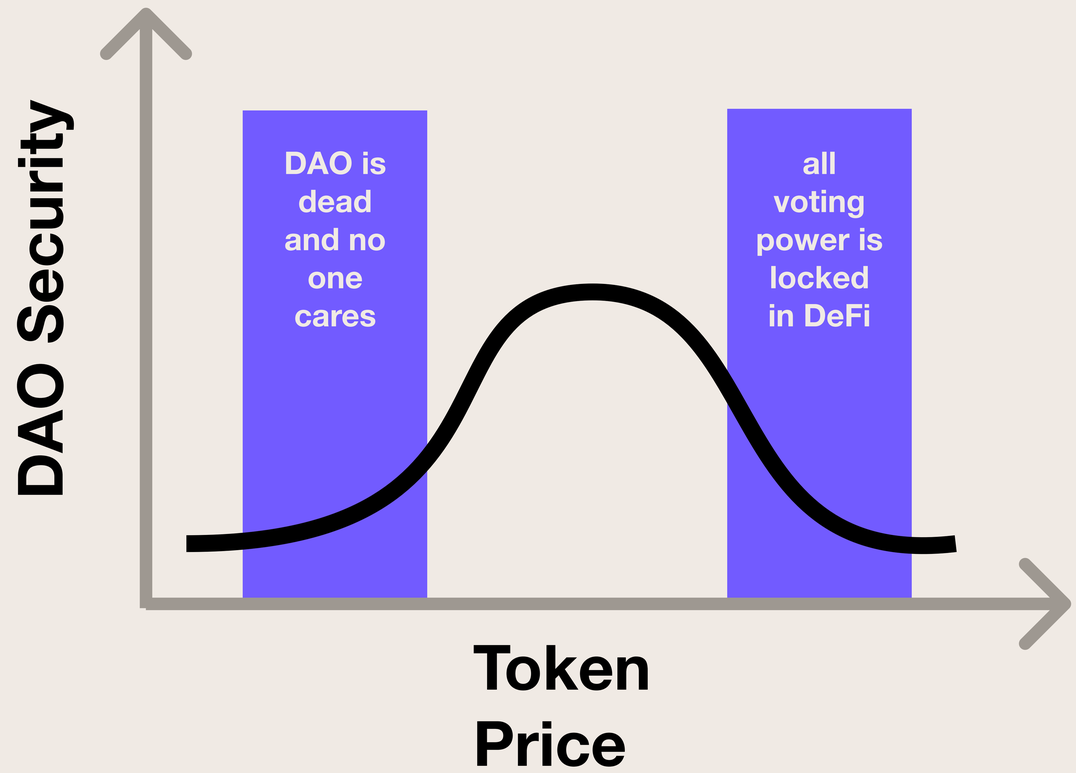
- Delegated tLST holders are able to vote in underlying DAO proposals as they normally would via the Tally interface.
- The protocol initially supports two designs for implementing voting passthrough:
  - OpenZeppelin Governor with Flexible Voting: Enables pooled tokens to cast partial votes with 1:1 precision.
  - Older versions of Governor: Pools tokens to achieve 0.39% voting precision using 8 pools, minimizing gas costs for rebalancing operations.
- The protocol will be modular and support adding new designs at a later date.

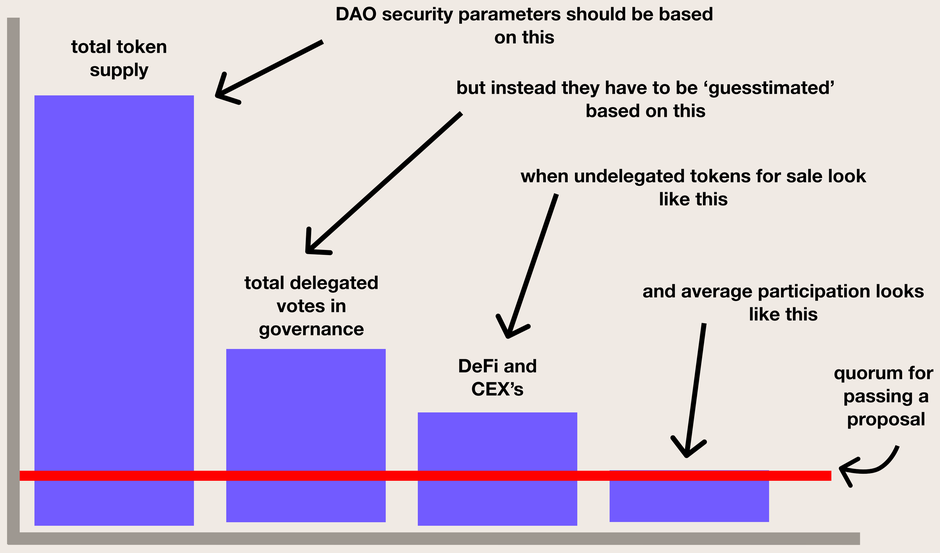
Protocol Fees and Rewards

The Tally Protocol implements a fee structure and reward system to ensure sustainability and align stakeholder interests. The fees are decided by the Tally DAO and are charged on the accrued rewards of the protocol. Delegate rewards are calculated by revenue from the Tally Protocol. The underlying DAO can add additional incentives to delegate rewards to incentivize high-quality governance.

- Rebalancing Fees
  - The Tally DAO sets rebalancing fees on a per-LST basis to cover operational costs and contribute to the protocol's long-term sustainability. Rebalancing is the operation whereby the Tally DAO claims underlying staked rewards and compounds the staked position. Tally amortizes the gas cost of the operation across the entire pool.
- Delegate Rewards
  - The Tally DAO controls a delegate fee switch, toggled per-LST, to determine rewards for delegates who actively contribute to governance.
- Maximum Fee Limit
  - The protocol sets a maximum fee limit to prevent excessive charges and ensure the majority of the reward is distributed to tLST holders.

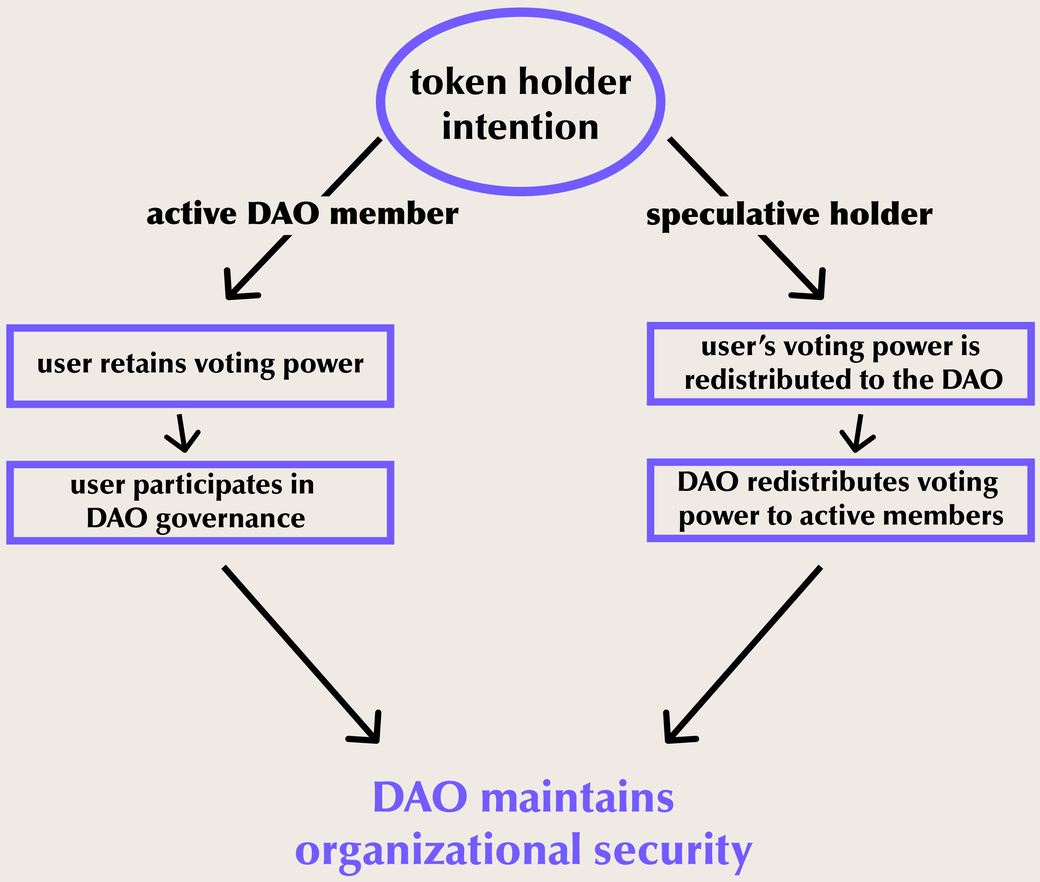
Governance tokens intermingle financial and organizational utility, failing at both.





DAOs Struggle Setting Security Parameters.

The Tally Protocol helps DAOs maintain organizational security.



Unlocking Liquidity for Restaking

Restaking systems pose an existential threat to protocol DAOs. As the business model of restaking necessitates the pursuit and capture of economic security at all cost, once the available ETH supply for restaking is exhausted, restaking systems will be forced to turn to protocol tokens to continue growing their economic security.

Restaking protocols will compete to consume the economic security of DAO protocol tokens as protocol tokens represent the natural expansion to their TVL.

For DAOs, this poses an incredible challenge and existential danger because restaking services like Eigenlayer and Symbiotic can always outbid DAO protocols for their own security. DAO protocols can pay token holders either inflationary rewards or as a percentage of DAO revenue. Restaking systems, however, can pay token holders as a percentage of DAO revenue plus the total TVL (economic security) locked in the underlying DAO protocol and/or as a percentage of the DAO protocols token market cap.

This means that DAO protocols should expect to lose control over their security to restaking services. Eventually, every DAO protocol will be consumed by restaking services.

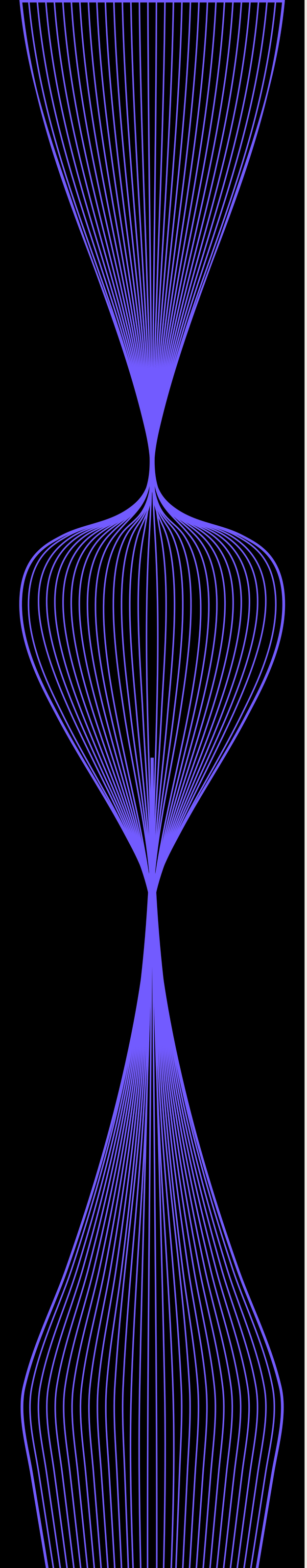
As the underlying DAO becomes inoperable, the economic security it provides to restaking decreases, but there is no incentive structure that allows DAOs to recapture their own security. This leads to the collapse of the underlying DAO, while restaking systems continue to pursue greater TVL opportunities elsewhere.

The Tally Protocol is the liquidity layer for restaking. The protocol solves the restaking capture problem by separating economic utility of DAO tokens from governance. The system is more efficient as DAOs can return value to token holders proportional to their revenue instead of being forced to attempt to outbid restaking protocols for their own security.

WELCOME TO THE FUTURE OF DECENTRALIZATION

The Tally Protocol represents a significant step forward in the evolution of decentralized governance and the alignment of stakeholder interests within the DAO ecosystem. By providing a simple, accessible, and reward-generating staking mechanism through Tally Liquid Staked Tokens (tLSTs), the protocol offers a powerful solution for DAOs seeking to engage and incentivize their token holders while ensuring the long-term sustainability of their communities.

The protocol's modular design and open architecture creates a strong foundation for future growth and innovation. As the DAO landscape continues to mature and new staking designs emerge, the Tally Protocol is well-positioned to adapt and evolve, offering a flexible and robust infrastructure for a wide range of governance use cases.



Benefits for DAOs

DAOs struggle with setting security parameters, which affects their long-term safety and viability, especially when treasuries become honeypots for malicious actors. The increase in returned voting power allows the DAO to choose security parameters closer to outstanding token supply instead of outstanding delegated token supply.

Alignment with the underlying DAO is a critical component to Tally's protocol design. In a world of competing LST standards, having a version explicitly aligned with the DAO significantly increases its adoption.

To ensure maximum alignment with the underlying DAO, the protocol:

1. Activates undelegated voting power by redistributing it to active delegates according to strategies chosen by tLST holders. This increases governance participation and enhances DAO security. If underlying DAO token holders wish to change the redistribution strategy, they can move into the tLST and alter the redistribution strategies, ensuring that the underlying DAO is always in control.

2. Creates a revenue stream for delegates that can be used to build feedback mechanisms for effective governance. This aligns delegates with the success of the tLST and encourages the DAO to endorse the tLST as their canonical solution.

3. Empowers DAOs with control over the critical tLST parameters to align stakeholders with protocol and DAO success.

Looking to the Future

There's a talk I used to give called Magic Internet Everything where I talk about how society is built on crazy, ridiculous concepts that at face value don't make any sense. But when as societies we come to believe they are real, they become primitives we can build incredible things on.

I think the best example of this is money. Money is an entirely fake, made up concept yet it is the underpinnings of absolutely everything that we've built in this world. All the marvels that we've achieved are underpinned by this really abstract concept of how many digital zeros are in a computer somewhere. Decentralization, web3, and blockchains are very similar. This idea that we use math to secure a concept so that this concept that exists in my head and someone else's head is universal across space and time is crazy. That's magic, right? But when we come to believe it, suddenly we have Magic Internet Money. And then on top of that, you can suddenly say, well, let's build the Magic Internet for this Magic Internet Money.

Banks write created their own version of the Magic Internet but those banks make no sense until you believe in their version of Magic Internet Money ($USD). If you follow this model & apply it to the current decentralized Magic Internet, you get DeFi: banks for Magic Internet Money. Now, once you have Magic Internet Money operating on the Magic Internet, you can start to think of Magic Internet Organizations which operate systems built on top of Magic Internet Banking (DeFi) or Magic Digital Internet infrastructure (Tally) that run on top of Magic Internet Math.

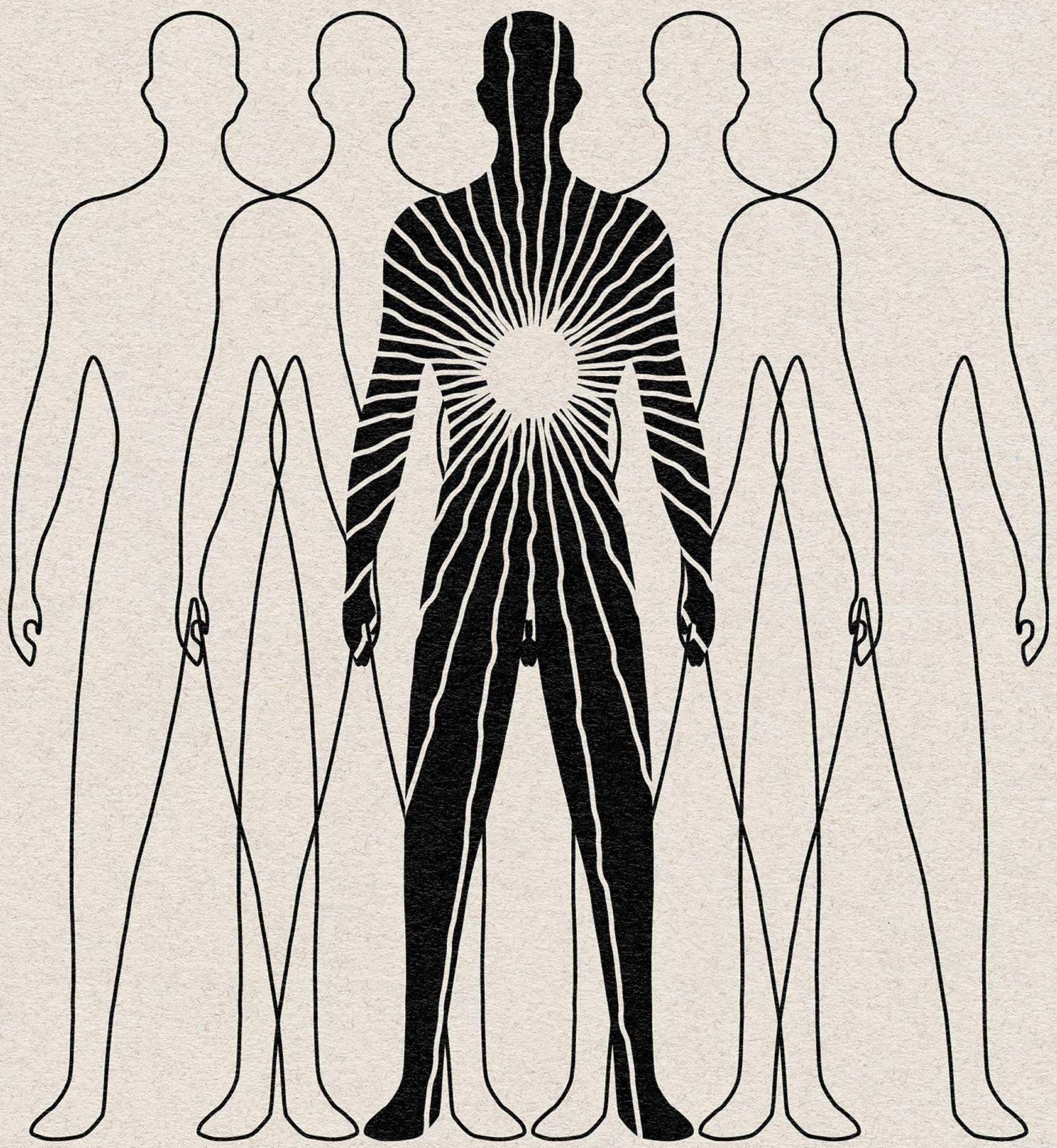
So, it's all these abstract, magical concepts that when put together become real and allow us to build really wondrous things. What I love so much about the Tally team & the DAO ecosystem as a whole is that they're here to collectively build these wondrous systems. These are some of the most talented people in the ecosystem and they could be working on anything, and they choose DAOs.

People are building incredible things all the time but they choose to build this particular thing because they believe in this future: when we collectively own and operate all the things that operate around us. They see the world centralizing and they say, “I can make a difference in how the world is going to be.” They correctly believe they can be a part of an idea that really is fundamentally, wildly revolutionary.

Every day I am so thankful that I get to work with a team of individuals that have the ability to work anywhere but choose to work on a really hard problem to push the future forward. And that is something truly incredible.

-Dennison Bertram, CEO & Co-Founder of Tally

III



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FIN

Acknowledgements

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The power of the DAO ecosystem lay in the collective. The efficacy of *The Modern Guide to Digital Governance* is not possible without tapping into the years of research, experimentation, & the commitment to excellence of the DAO community of builders. While many of the projects, builders, & institutions mentioned in this guide did not play a direct role in the completion of this guide, their influence cannot be overstated and we are deeply indebted to the foundation built over the past decade.

We look forward to releasing updated & amended editions of *The Modern Guide to Digital Governance* in the future and welcome feedback from our readers, fans, and haters alike.

Here’s to a more equitable & transparent operational future.

Power to the builders.

Glossary

☻ Definitions

Dark DAOs: DAOs which operate with a high degree of anonymity and privacy, often using advanced cryptographic techniques to conceal the identities of their members and the details of their activities

ERC-721: a standard for non-fungible tokens (NFTs) on Ethereum representing unique and indivisible digital assets. Unlike ERC20 tokens, each ERC721 token is unique, allowing for ownership of distinct items.

Futarchy: a form of governance proposed by economist Robin Hanson where decisions are made based on prediction markets. In futarchy, policies are chosen based on their predicted impact on a specified measure of societal welfare. People vote on what metric should define success, and prediction markets determine which policies are likely to improve that metric.

Heterarchies: an organizational system where elements are unranked; features multiple, flexible connections, distributing decision-making and control across multiple points.

ICOs: a fundraising method; a company sells a new cryptocurrency or token to investors in exchange for established currencies. Popularized in the 2017 crypto bull cycle.

Network States: a digital community governed by decentralized technology; these communities operate without geographic boundaries, using cryptocurrencies and decentralized governance to manage resources and achieve collective goals, creating scalable, self-sustaining digital societies.

Optimisitic Governance: a governance model where proposed changes or actions are assumed to be acceptable by default and can be implemented quickly; changes can be challenged and potentially reverted if a certain number of participants raise objections within a specific time frame.

Oracles: entities or services that provide external data to blockchain smart contracts; oracles bridge the gap between offchain information and onchain applications, enabling smart contracts to execute based on real-world events and data.

Pods: pods are groups of members designed to operate independently, making decisions and executing tasks aligned with the overall goals of a DAO. Each pod can focus on areas of expertise, leveraging the collective knowledge and skills of its members.

Quadratic Voting: individuals allocate votes based on the strength of their preferences rather than simply casting a single vote per issue or candidate; the cost of each additional vote increases quadratically to increase efficacy.

Real World Assets (RWAs): physical or tangible assets, such as real estate, commodities, or goods, that are represented and traded on a blockchain.

Shielded Voting: a voting mechanism that ensures the privacy and confidentiality of voters' choices; typically achieved using cryptographic techniques, such as zero-knowledge proofs, which allow the validity of votes to be verified without revealing the individual votes themselves.

Yield Farming: a strategy where investors lend or stake their crypto assets in Decentralized Finance (DeFi) platforms to earn rewards.

❀ Citations

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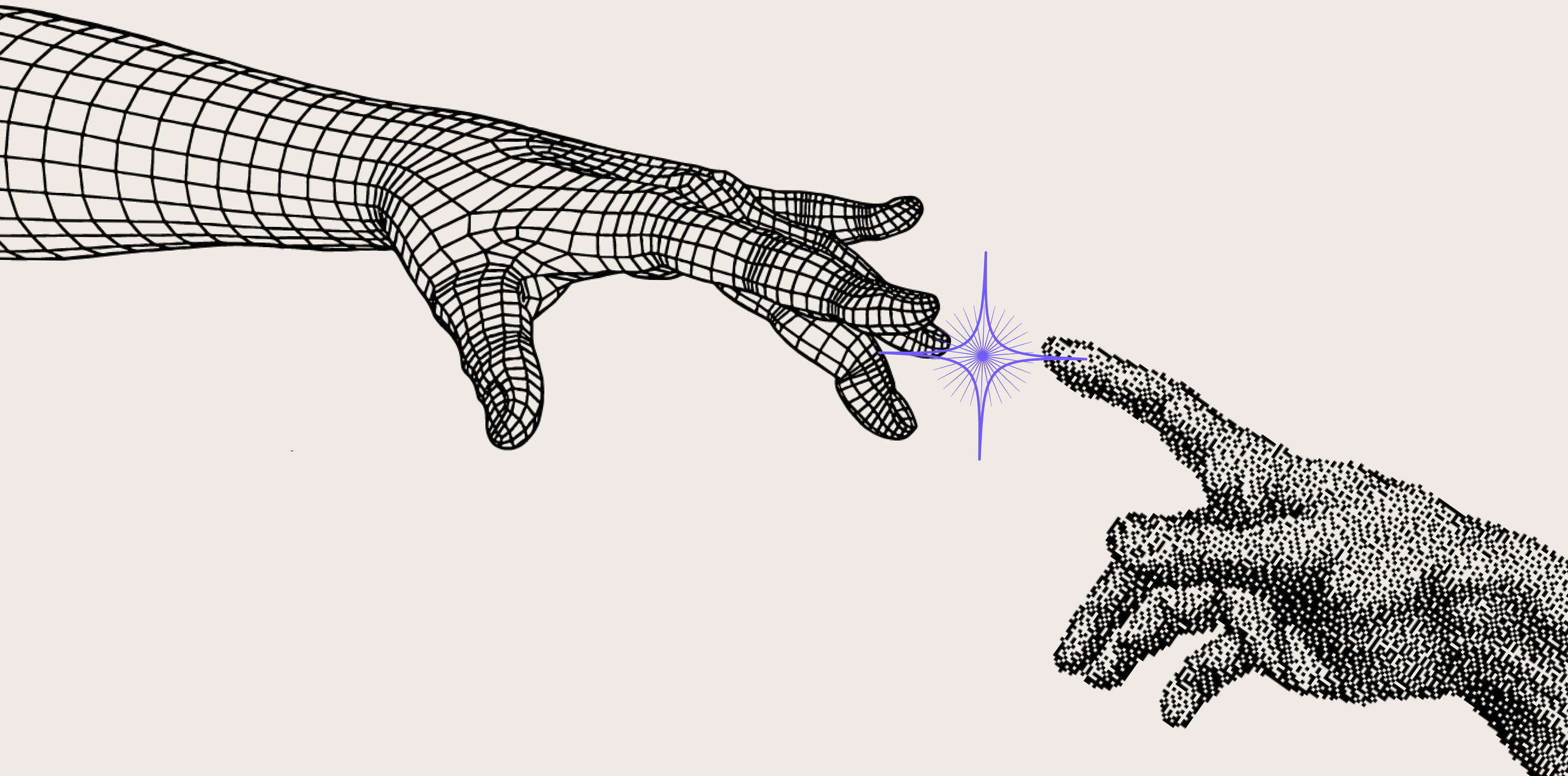
Who We Are

The Modern Guide to Digital Governance is curated, designed, & produced by Ellie Dotson and Tommy Lower.

Tally is a governance frontend powering the largest protocol DAOs in the decentralized ecosystem. Begin your governance journey at tally.xyz



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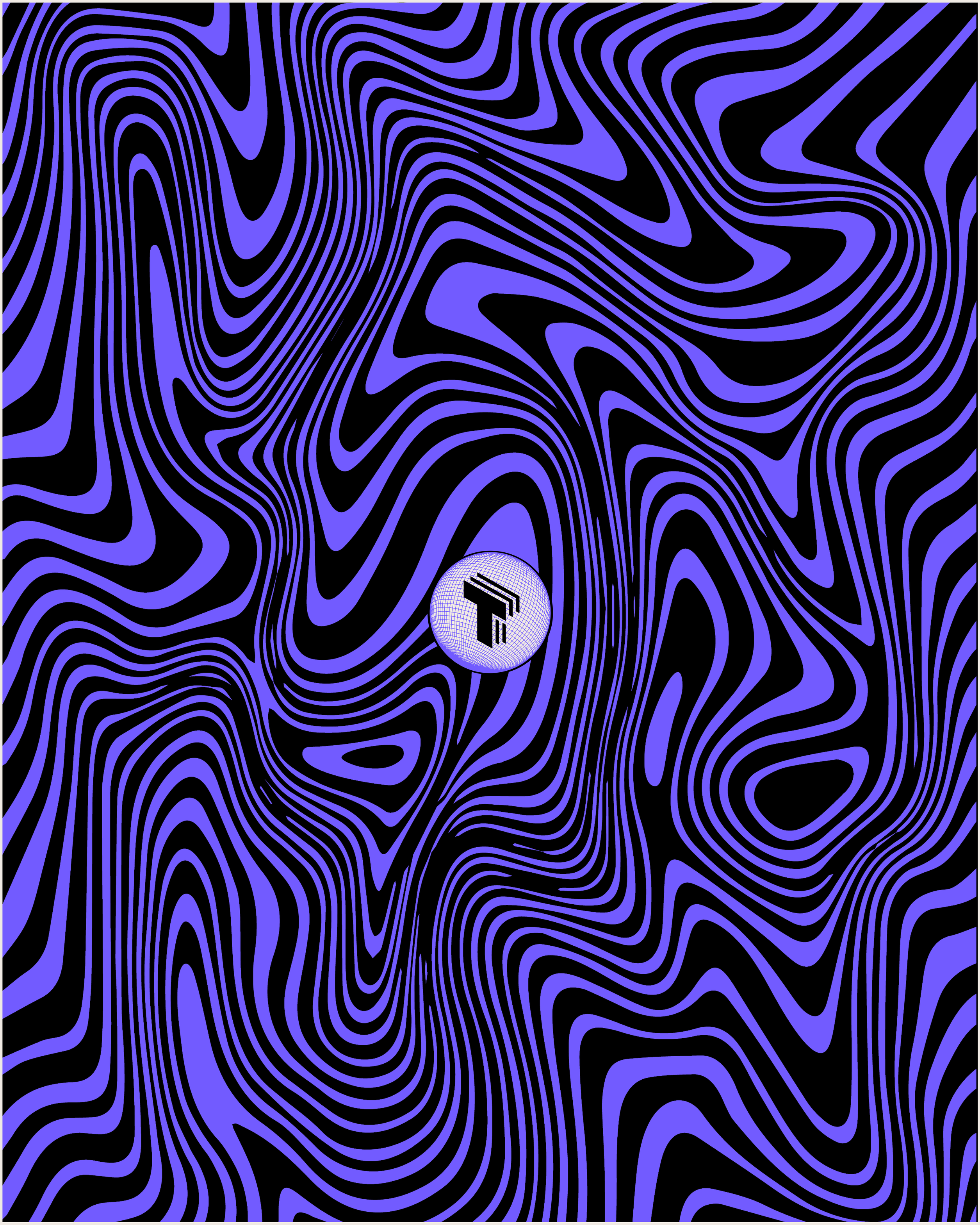
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