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# AMPLIFY

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Anticipate, Innovate, Transform



**DAOs and Token-Driven  
Organizations:  
Promises vs. Reality**

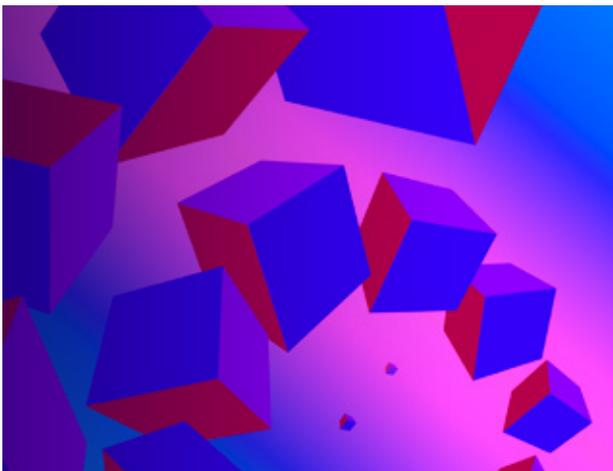
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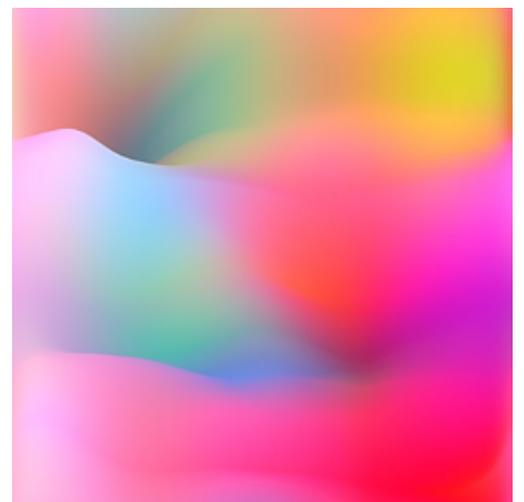
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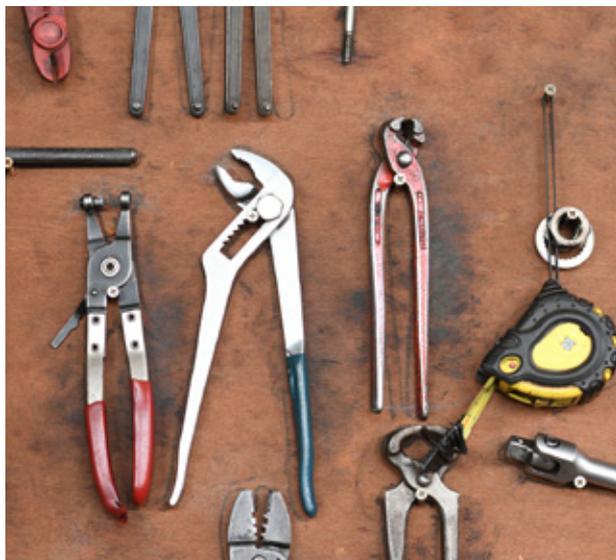
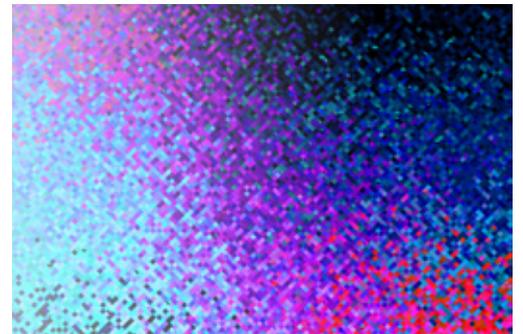
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# DAOS AND TOKEN-DRIVEN ORGANIZATIONS: PROMISES VS. REALITY

BY MICHEL AVITAL AND NINA-BIRTE SCHIRRMACHER, GUEST EDITORS

Organizing is the foundation of the human enterprise. The common denominator of building pyramids, flying to space, dealing with wildfires, and running hotels is the need for a well-oiled organization that gets the work done through the coordinated action of people entrusted with parts thereof. Almost every product and service we use requires a joint effort of many orchestrated through a management mechanism that determines how to carry out work effectively.

Recently, we have witnessed a new form of organization that develops and maintains digital services characterized by actors' self-selection into roles and tasks and grassroots-driven decision making. These organizations call into question well-established notions of organization and work.

Participation in these organizations is voluntary, comparable to the dynamics we observe in open source software development communities like Linux. Typically, actors coordinate with a changing set of collaborators who can freely enter and exit the organization. Instead of formal organization structures and legal grounds to induce, enforce, and motivate cooperation, participants rely on crypto tokens to govern operational activities and strategic decisions.

Thus, participating actors are token holders that have a stake in the success of the organization ("skin in the game"). In lieu of managers relying on command and control, the management mechanism of these organizations relies on tokens to provide members with remunerations for their contributions and the ability to vote on key decisions. Being financially involved in achieving organizational goals incents token holders to participate in voting sessions on resource allocation, equity sharing, and proposals for new features or initiatives for the organization.

This issue of *Amplify* focuses on organizations emerging and forming around crypto tokens deployed on blockchain networks. These token-driven organizations are often framed in the context of decentralized finance (DeFi) services and decentralized platforms. The International Monetary Fund estimated the cryptocurrency industry to exceed a collective market capitalization of US \$2.5 trillion in 2021,<sup>1</sup> while the DeFi sector retained assets valued at more than \$78 billion in February 2022, marking a 10x growth multiple in the span of 12 months.<sup>2</sup>

Overall, blockchain technology has enabled new organizational forms that rely on token-driven management and coordination mechanisms challenging traditional forms of organizing. In the past few years, we have witnessed a growing number of decentralized communities and Web3 projects that push the boundaries of possibility and fuel the imagination of a better world through technological and social innovation.

A decentralized autonomous organization (DAO) is a new form of organization that aims to orchestrate work and appropriation of shared capital independently of central control to attain espoused objectives through self-executing rules encoded in crypto tokens.

Web3 is envisioned as a corrective action for Web 2.0, in which big platforms monetize user-generated content. Web3 aspires to give content creators and users a way to monetize their activity and contributions using crypto tokens.

This issue of *Amplify* explores the trends, innovations, technologies, applications, opportunities, challenges, and novel research reshaping token-driven organizations. Understanding how digital tokens govern work and organizing in virtual organizations can unravel important questions for leaders and managers of traditional organizations.

## DAOS HAVE THE POTENTIAL TO DISRUPT INDUSTRIES AND SHAKE UP TRADITIONAL ORGANIZATIONAL GOVERNANCE MECHANISMS

For example, how can digital tokens make decision making more democratic and inclusive? How can Web3 challenge or change existing business models? How should responsibility and accountability be interpreted in token-driven organizations? How can a flat organization become digitally enabled and token-driven? Which regulatory pitfalls should decentralized, digitally enabled organizations be aware of? How can start-up founders adopt flat organizational structures to incent their employees and encourage innovative business models?

DAOs have the potential to disrupt industries and shake up traditional organizational governance mechanisms. However, the possibility of fatal pitfalls in developing a DAO is as significant as the likelihood that the DAO will have a disruptive economic and social impact.

This issue highlights the unprecedented nature of the DAO landscape — the vast variability of DAO forms and their warp-speed mutations. To exploit the potential of blockchain technology and crypto tokens, founders of and contributors to DAOs must stay on top of their game while building a solid foundation for future growth that accommodates a changing environment and workforce.

## IN THIS ISSUE

Our first article by Henrik Axelsen and Omri Ross provides an understanding of the challenges associated with regulating DAOs and the opportunity (if not necessity) of a transformational shift in the existing regulatory paradigm. The characteristics of DAOs, including fluid membership and locational independence as well as the financial resources implicated, raise the question of who, what, and where to regulate. The precedent of a DAO sanctioned for enabling money laundering highlights the urgency of initiating this discourse. With traditional finance as a reference, the authors discuss whether activity- or entity-based regulation is more appropriate and what current regulatory decisions mean for the DAOs landscape future.

Next, Lucy Frew picks up on the current predicaments of DAOs from a legal and regulatory perspective. The article explores the challenges that DAOs present to the legal structures of organizations as we know them. Overall, DAOs aim at decentralization, but the degree of decentralization varies over time and has critical implications for the accountability of its members: the token holders. Frew discusses the existing regulatory landscape of DAOs and looks at the circumstances under which a DAO might benefit from seeking legal status.

Based on broad domain knowledge and first-hand experiences with launching DAOs, Thomas Belkowski and Lukas Falcke share their insights into holistic DAO governance. They provide five guidelines for prospective DAO founders on how to develop governance mechanisms that can enable thriving DAOs. Although these general guidelines apply to a range of DAOs, the authors warn against applying a one-size-fits-all approach to DAO governance.

Next, we explore a case study from Diego Alvarez, Pietro Cortellini, and Emily Munchak that invites readers to look at DAOs through the lens of the music industry. The authors investigated three DAOs: Audius, BitSong, and MODA DAO, which aim to disrupt their market. The study differentiates between DAOs driven primarily by economic incentives from those focused on social incentives and highlights five dimensions that characterize all DAOs: purpose, community, technology, tokens, and governance. The study focuses on DAOs from the music industry, but the authors offer generalized insights for other industries.

## **THE POTENTIAL FOR DAOs AND WEB3 TO CHANGE THE WAY THE WORLD DOES BUSINESS IS VAST**

Our second case study is based on an interview with Elliott Waxman about his co-founding of ClimateDAO, an organization that invited private investors to collaborate on decarbonizing efforts. ClimateDAO was born from a crowdsourcing campaign that generated \$80,000 worth of crypto currency. However, challenges associated with the DAO structure led to complications that soon required a substantial restructuring.

Finally, Johannes Rude Jensen and Omri Ross share their vision of Web3 social media and how it can enable frictionless mobility between online communities on social media platforms. In contrast to legacy social media channels designed for content monetization by platform owners, content creators on Web3 social media maintain ownership and monetization rights, paving the way for commercial incentives and shifting bargaining power to content producers. The authors portray their vision of how Web3 social media users will be empowered to move between platforms of their choice while maintaining their network of followers and without losing their social stature and virtual assets.



As demonstrated in this issue of *Amplify*, the potential for DAOs and Web3 to change the way the world does business is vast. But even as these organizations form and then mutate at lightning speed, there are reasons to take a deep breath and ask questions about regulation, governance, and the best way for these organizations to achieve their full potential.

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# HOW SHOULD DAOS BE REGULATED?

A NEW PERSPECTIVE ON  
DECENTRALIZATION

## Authors

Henrik Axelsen and Omri Ross

**On 8 August 2022, the US Department of the Treasury's Office of Foreign Assets Control (OFAC) sanctioned Tornado Cash, a so-called currency mixer used to obfuscate the otherwise transparent money trail on the Ethereum blockchain. The service was said to have laundered more than US \$7 billion in illicit funds, of which \$455 million were initially stolen by the Lazarus Group, an infamous hacker group with alleged ties to the North Korean government.<sup>1</sup>**

Curiously, Tornado Cash is an open source software project comprising several smart contracts deployed on the Ethereum blockchain. Users of Tornado Cash operate independently by sending funds through smart contracts, which encrypt the money trail by submerging the funds in a liquidity pool from which the sending user can withdraw an equivalent amount of funds to a brand-new address with no prior money trail.

How is it possible to sanction an autonomous smart contract, and how will the precedents set by today's enforcement actions impact the future of the decentralized autonomous organization (DAO)?

### ENTITIES OR ACTIVITY?

The acronym DAO is typically used to describe a hybrid form of a community-based organization that relies on open sourced smart contracts, primarily on the Ethereum blockchain. The coordination of work usually relies on a token-based economy and primarily emphasizes the design and development of products that resemble financial services. Hence, the majority of DAOs relate to financial technology (fintech).

Fintech has long been a driver of transformation and digitization in the financial services industry. This has led to a global debate on whether or not the success of such fintech firms is due to lighter regulatory capital requirements than traditional financial institutions and the appropriate policy response.<sup>2</sup>

Although many questions on how to regulate fintech and crypto remain, the OFAC sanction challenges the status quo. It is the first time open source software has been listed on OFAC's Specially Designated Nationals and Blocked Person List as a sanctioned "person."

The OFAC sanction has potential implications for the regulatory paradigm surrounding DAOs. In this article, we discuss and evaluate some of the implications of this action.

## FINTECH HAS LONG BEEN A DRIVER OF TRANSFORMATION AND DIGITIZATION IN THE FINANCIAL SERVICES INDUSTRY

### EVOLUTION OF WEB3 & REGULATORY PLAYING FIELD

A blockchain is a distributed database, or ledger, operating on many independent computers (nodes), each holding a full replica of the database to validate transactions.

In permissionless blockchains, access is unrestricted, and anyone with an Internet connection can compute transactions on the network and read the state of the database.

The Ethereum blockchain introduced the notion of smart contracts and remains the primary network on which DAOs operate and produce decentralized applications. Interestingly, smart contracts are neither smart nor contracts but merely code deployed to the blockchain that executes a given logic in the replicated database maintained by the blockchain.

The key difference from a regular agreement is that the blockchain itself executes the code automatically. This means that once a smart contract is deployed, no human engagement is required to complete the transactions or other business logic denoted by the contract code.



Because the network of nodes that maintains the blockchain is decentralized, the propagation of transactions and deployment of smart contracts is a one-way street. Since there is no central intermediary keeping tabs on the behavior of the nodes in the network, it is not possible to reverse transactions, as this would require a mechanism of arbitration, which would run counter to the concept of decentralization.

This means that, once deployed, the smart contract will execute for as long as the version of the blockchain exists; it cannot be turned off.

Smart contracts made decentralized business models between untrusting counterparties possible by allowing the computation and atomic execution of agreements without human involvement. This introduced the notion of the decentralized application (colloquially referred to as a “dApp”), which computes various financial functions within the blockchain database.

Since the first dApps primarily serve financial purposes, they are typically associated with the decentralized financial (DeFi) movement<sup>3</sup> and compute features such as the exchange of assets at algorithmic price ratios<sup>4</sup> or the trading of art pieces linked to non-fungible tokens (NFTs).<sup>5</sup>

Decentralization usually refers to the physical distribution of active stakeholders asserting political influence over the network. This implies an organization of individuals operating without any hierarchical architecture in a fluid organization designed to promote equilibrium conditions between stakeholder groups with differing incentives.<sup>6</sup>

## SAME ACTIVITY — SAME REGULATION?

“Same activity, same risk, same regulation” is a slogan often used in traditional finance in response to large technology firms’ entry into what is perceived as an exclusive market.<sup>7</sup>

Global policy setters like the Financial Stability Board generally oppose activity-based regulation regarding prudential matters (i.e., matters related to financial stability, capital, and liquidity).

Although policy setters acknowledge the necessity of an activity-based regulatory approach in other matters, such as anti-money laundering, it’s often suggested that the notion of a level playing field is secondary to other public policy objectives, such as financial stability, market integrity, investor protection, and preserving monetary sovereignty.<sup>8</sup>

From this argument, we draw the tacit conclusion that entity-based regulation should be the primary approach for prudential matters, restricting market access only in cases where primary policy objectives are perceived as threatened.

## IS A TECHNOLOGY-NEUTRAL REGIME APPROPRIATE FOR DAOs?

As DAOs frequently operate DeFi applications, several DAOs have reaped immense profits from the rapid growth of this sector and now control treasuries worth billions. This somewhat drastic turn of events has led some regulators to imply that the operational aspects of DAO governance, which typically involve the issuance of new governance tokens to fund development initiatives, fall under the definition of regulated financial activities.<sup>9</sup>

It should be noted that, if applied without discretion, existing regulations would impose an excessive compliance burden on young DAOs: founders would be compelled to follow complicated controls, oversight, capital, liquidity, and reporting requirements equivalent to those observed by modern financial institutions.

Thus far, regulators have referred to a principle of technology neutrality, denoting an emphasis on what happened rather than how it happened.<sup>10</sup> For this reason, technology-neutral regulation tends to emphasize purpose and function, subject to context and interpretation.

The somewhat radical notion of deterministic automation challenges this otherwise common-sense principle. In most cases, the only identifiable agency in the interaction between a natural person and a set of smart contracts is the natural person him/herself. Because persons interacting with the smart contracts do so entirely of their own volition, it is hard to argue that the individual who developed and deployed the smart contract should be held responsible for its use.

Consequently, an attempted application of the prevailing regulatory paradigm results either in highly invasive regulation, which is not fit for purpose, or no regulation at all. This explains why regulators are still playing catch-up more than a decade into the emergence of blockchains.

In cases where no discernable entity can be identified, regulators acknowledge the competitive potential and innovative nature of DAOs as transparent and decentralized entities operated by pseudonymous agents governed by equal rules.

Lacking specific regulation of DAOs, regulators currently accept the concept of “sufficiently decentralized” as a means of avoiding the requirements for enforcement actions against noncompliance, even if the opinion is that a DAO is undertaking an otherwise regulated activity.<sup>11</sup>

## REGULATING EXACTLY WHO, WHAT & WHERE?

Regulators in the US and EU both adhere to the principle of technology-neutral regulation, but both struggle with the implementation and seem to iterate between entity- or activity-based approaches, resulting in what may be considered an aggressive approach.

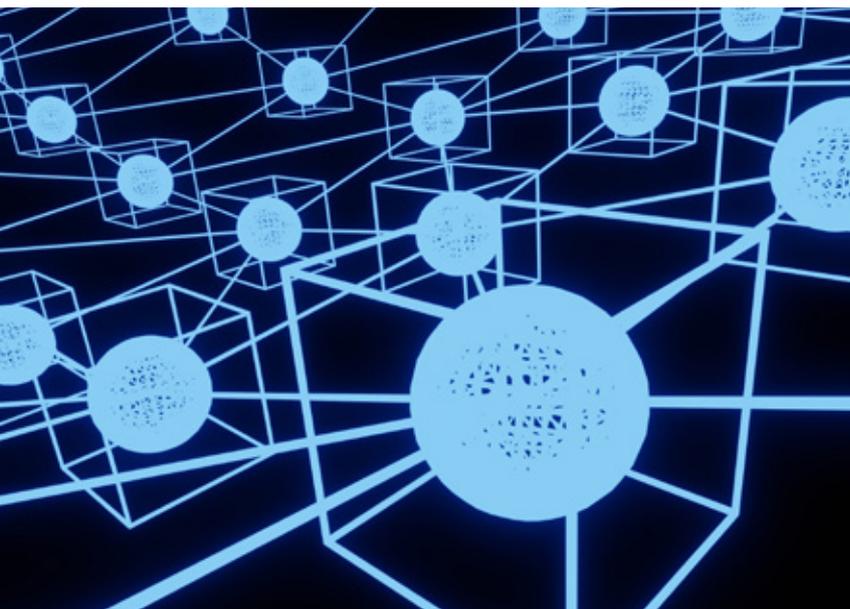
In the aforementioned Tornado Cash case, OFAC broadly sanctioned all known wallets that had previously interacted with the protocol, as well as other connected wallets identified from the hacking events, several websites linking to Tornado Cash, and, most interestingly, the open source smart contract code itself.

This led to a broader disruption of the decentralized financial system, as entities and individuals that had no relations with Tornado Cash suddenly found themselves sanctioned by the US Department of the Treasury because the audit trail of a token they own or control implicated a connection to Tornado Cash.

The impact of these sanctions reverberated far beyond the sanctioned individuals in scope, attracting media attention from newscasters around the world.

Although the source of the decision is unclear, it is to be presumed that the choice of issuing blanket sanctions was made due to: (1) a lack of appropriate regulation to enable proactive review, evaluation, and intervention in a proper format and (2) the inability to identify any definite legal subject, alongside growing concerns about the illegitimate activities conducted using Tornado Cash.

Hence, OFAC appears to have initiated a shift from a technology-neutral perspective toward a technology-specific intervention, resulting in an attack on the broader crypto ecosystem.



In a litigious society like the US, this regulatory sanction has already led to lawsuits focusing on constitutional rights, free speech, privacy, and stifled innovation.

Perhaps as a result, the regulator is now backtracking its initial blanket sanctions, publishing a statement suggesting that “interacting with open source code itself, in a way that does not involve a prohibited transaction, is not prohibited.”<sup>12</sup>

Turning to the EU, we are witnessing a less direct approach. The recent Markets in Crypto-Assets regulation (MiCA) makes no explicit mention of either DeFi or DAOs but instead introduces a general terminology for the otherwise abstract concept of decentralization.<sup>13</sup>

The regulation focuses on the issuance of certain crypto assets and services provided to these. And it allows otherwise regulated activity if it is “sufficiently decentralized” within the appropriate context.

This raises the question of what happens to “sufficiently decentralized” DAOs that infringe on the regulation when regulation comes into force, including DAOs that may already be operating a regulated crypto asset covered by the regulation within the EU. Could European regulators shut down an entire ecosystem, as was the case for Tornado Cash?

The short answer might be yes, as MiCA enables authorities to suspend a regulated crypto asset if it’s operating in conflict with the rulebook. The regulation allows authorities to suspend it directly or indirectly via the associated ecosystem.

If the infringing activity is carried out by a “sufficiently decentralized” DAO, the regulator will not be able to hold anyone accountable. In this case, the crypto asset service providers, such as exchanges or on- and off-ramp services, can be asked by the regulators to suspend services to the DAO.

## A WAY FORWARD?

Until recently, it was assumed that DAOs could operate outside the scope of compliance if sufficiently decentralized, a belief challenged by recent regulatory actions. Still, when one path closes, another opens.

The first question to ask is about the purpose of decentralization and business scope in any given DAO. Suppose the answer is mainly to gain an unfair advantage in what resembles traditional financial activity by having no capital or liquidity constraints, controls, or reporting requirements while disregarding any expectations to prevent illicit activity. This approach is increasingly becoming difficult through brute enforcement action, as discussed above.

But suppose the answer is that we have a great idea and want to build a global community around it and share not only the development effort but also the benefits, and we want to work across the globe with distributed teams of part-time contractors without having to establish legal entities with employment contracts in all local markets. In that case, the playing field for DAOs appears quite open. That is, if there is still meaning to “decentralization” as a concept in a technology-neutral regulatory paradigm.

For DAO as an organizational phenomenon, we could see an evolution toward tiers or paths based on purpose and intent. One path would be for DAOs with a transactional, for-profit purpose, with activities resembling regulated financial activity to accumulate and distribute profit based on the effort of others. A second path would be for DAOs in which the token economics required to incentivize the community serve a completely different intent, and the DAO format and blockchain technology just enable a better method to achieve the desired outcomes.

## **DAOS AS REGULATED PARTNERSHIPS**

Many jurisdictions may consider unregulated DAOs equivalent to unregistered general partnerships, meaning that individuals may face potentially unlimited liability. Along these lines, a very recent US Commodities Futures Trading Commission (CFTC) enforcement action found not only a DAO liable for violating the US Commodity Exchange Act rulebook, but also two individual token holders personally responsible for violations based on so-called control person liability, a local US phenomenon.<sup>14</sup> This personal liability was established based on the individuals' status as voting token holders of the DAO in question.

A lot can be said of this enforcement decision, and a dissenting commissioner also argued that the CFTC enforcement action was wrong and unsupported by legal theory, as, among several issues, it defined the DAO unincorporated association as being the token holders, who vote with their tokens at any given point in time. The resulting effect is distinguishing between token holders based on an arbitrary principle not found in the law. Nevertheless, this was a dissent, and the enforcement action confirms there is a real risk for individual token holders in unincorporated DAOs.

Hence, a legal industry to help DAOs ring-fence liability with "legal wrappers" for personal indemnity protection is developing. Some might consider such legal wrapping as a step toward centralization. However, from a regulatory perspective, this option appears appropriate.

From a commercial perspective, legal wrapping relates to the autonomy and ability of a DAO to engage with other parties rather than a question of decentralization, per se. Legal wrapping or incorporation may be a natural step forward for DAOs with plans to engage and interact with the traditional, for-profit world with an activity that resembles regulated financial activity.

Incorporation would be a suitable choice for DAOs aiming to disrupt traditional business processes through decentralized organizing while leveraging the DAO format to form new multi-party collaborative blueprints and develop smarter ways of working in a project-based economy with a modern form of stakeholder capitalism, better coordination mechanisms, and with a high level of automation and process efficiency.

This path can be considered an incremental innovation that does not fully replace existing organizational theory or thinking. Instead, it adapts existing paradigms to the transformative potential of the technology presented and expands with the automated features on- and off-chain as required.

**FOR DAO AS AN ORGANIZATIONAL PHENOMENON, WE COULD SEE AN EVOLUTION TOWARD TIERS OR PATHS BASED ON PURPOSE AND INTENT**

For example, these DAOs could become vehicles to blend capital from traditional finance and decentralized finance and create an enabling transition that finances the ecosystem using token economics, where different public and private capital sources could be brought together in technology-specific, multi-party collaborative business models to explore new ways of stimulating demand while establishing reliable, scalable supply.

## **THE CAPABILITIES OF DISTRIBUTED LEDGER TECHNOLOGY ALLOW DAOs TO DEVELOP TRULY INNOVATIVE PLATFORM BUSINESS MODELS**

An example could be a blended financing model that the world could use to transition to net-zero carbon emissions, which requires tracking the true carbon impact of environmental initiatives in rural or local areas. This market is developing, but there is a lack of integrity due to inconsistent standards, definitions, and enforcement. Blockchain could deliver the required transparency, and its tracking capabilities could assist in such a market development.

Decentralized and traditional finance could meet, with DAOs enabling the transmission of compliant financial instruments based on securitized, tokenized carbon sequestrations that allow institutional investors access where there is no access today. The intent of this business model is financial innovation, and the choice of the DAO format could be mainly due to the preference for distribution model, global reach, or simply resources, as the talent to deliver such a model would be scarce and difficult to manage in a traditional organizational format.

## **DAOs AS DECENTRALIZED PLATFORMS**

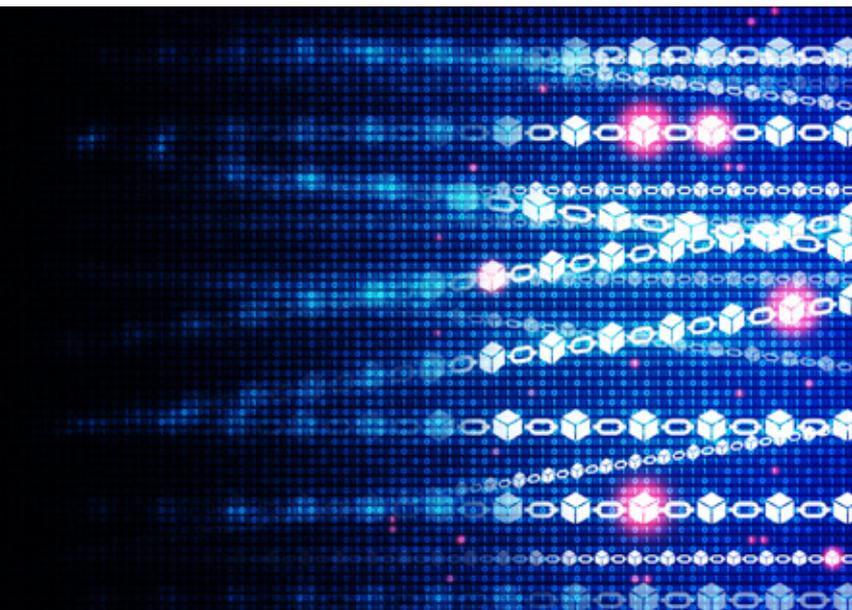
Although regulators mainly aim for financial policy objectives, they appear sympathetic to the transformative potential of blockchain technologies that reach far beyond finance's scope.

In this context, the disruptive potential of DAOs not only includes the possibility of establishing a fairer model for the distribution of wealth, it also allows new, decentralized ways of working. For example, a blockchain-based Internet makes it possible to reach the one-third of the global population that does not have access to traditional finance but does have access to a smartphone.

The capabilities of distributed ledger technology allow DAOs to develop truly innovative platform business models. Scaling via a replicated decentralized financial system embedded by blockchain may enable business innovation in places where traditional finance is either too inefficient, expensive, or too centralized or controlled to deliver optimal results.

Using the example of a blended financing model to transition to net-zero carbon emissions, a decentralized platform could leverage Nobel prize winner Elinor Ostrom's principles for self-governance of communities and explore the transformative potential of blockchain for communities to establish new contracts and ways of doing business to stimulate supply and demand based on community involvement. It would potentially leverage tokenization, self-enforcement and formalization of rules, autonomous automatization, decentralization of power over the infrastructure, increased transparency, and codification of trust.

The purpose and intent of these DAOs would likely be distinctly different from transactional partnership models in that they would focus mainly on creating a culture of relationships and collaboration. In both models, one could expect communities of fully anonymous (or, more realistically, pseudonymous) stakeholder representation. Still, where the partnership model is likely more focused on efficient voting mechanisms with delegated, verifiable mandates and professional investor backing, the platform model would likely operate in a much more distributed and fluid democracy, with open access and community management in an online forum of sorts.



These platform DAOs would likely use reputation tools to establish and manage token-based reputation credentials that would rely on the community members' (avatar) behavior on the platform and their contribution to the community, not through traditional means such as seniority or wealth. These communities would strongly resist centralized actors or collusion efforts. Their token economics would focus on funding community activities, long-term treasury operation, and the fair distribution of rewards to those that contribute according to the rules of the DAO while avoiding centralized bureaucracy, freeriding, and control. Activities would be project-based — projects would be selected based on token holder voting, and the token itself would likely be traded only on decentralized, automated markets.

The two paths outlined may overlap. A decentralized platform path does not exclude interoperability with the traditional world, and whether or not DAOs pursue the latter path as incorporated/regulated, the playing field is wide open. The key difference is some DAOs act as mechanisms of transmission (the partnership model), and others reward de facto contribution (the platform model).

The platform community DAOs should, however, keep an eye on how they interact with more mature regulated financial markets and take appropriate action where (1) they plan to trade their native token on a regulated exchange; (2) the native token aims to be supported by a stablecoin; or (3) the

business model becomes material to financial stability or serves a speculative purpose based on efforts of others. Also, considering the regulatory action mentioned earlier, they should always meet global expectations to prevent illicit activity, as other organizations should.

In those DAOs, pseudonymity would have the added benefit of avoiding personal liability should voting decisions (despite good intentions) result in loss or damage to contracting or third parties working with the DAO.

## CONCLUSION

Although pioneered many years ago, blockchain is still considered novel technology when it comes to innovative business models, wealth distribution, and new democratic forms of governance.

The core problem presented in this article is that the technological development around blockchain and DAOs offers a transformational shift that challenges the existing regulatory paradigm in which an identifiable legal entity is presupposed.

Despite the lack of technology-specific regulation required to deliver the full potential of this technology, and despite the lack of accelerated effort and incentivization of DAOs to meet the urgent need for innovative business models with blended capital (where DAOs and the decentralized economy could play a major role), DAOs are finding ways to maneuver into all aspects of the traditional economy because they offer communities more autonomy, decentralization, transparency, and trust than conventional organizations.

As regulators increasingly realize the transformative potential of blockchain, distributed technology, and the DAO format as an attractive alternative to traditional hierarchical structures, we hope regulators will also improve their approach. They should seek solutions for mitigating the fallacy of blind obedience, rather than acting with blanket sanctions of open source technologies or inventing new rules through enforcement actions that have a wide-reaching impact and should be subject to a proper process.

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# WILL POLICY MAKERS STIFLE THE DAO REVOLUTION?

Author

Lucy Frew

**DAOs, a new form of the online decentralized organization, have shown massive growth over the past two years, with more than 10,000 DAOs<sup>1</sup> and billions of crypto assets held in DAO treasuries.<sup>2</sup> They are increasingly important in the context of crypto-token networks, and many DAOs hold significant assets, but their legal and regulatory status is unclear.**

There are many uncertainties around DAOs, including:

- What is a DAO from a legal perspective? Is it, or should it be, regarded as a legal entity like a company or partnership, or is it a completely new type of legal entity?
- Should a DAO have a separate legal personality? How could contracts or other liabilities be enforced against it in practice (and in which jurisdiction)?
- How decentralized does a DAO have to be?
- Who is liable if something goes wrong? Does liability rest with the members, the founders, the developers, or the DAO?
- How do money laundering, reporting, and other regulatory concepts apply to DAOs, and who is liable for taxes?

DAOs represent a revolutionary new way of doing business, with an ethos of transparency and democracy. Their growth has attracted the attention of policy makers, regulators, and the mainstream financial sector, whose reactions will shape the DAO evolution. This article is written from a global perspective, as it is the global policy-making bodies that aim to set the international standards being implemented nationally.

## **GOODBYE TO TRADITIONAL LEGAL STRUCTURES?**

DAOs do not have a traditional legal structure. A DAO is generally set up by individual members coming together with the aim of raising money and carrying out projects in the crypto or real world and agreeing on the rules of the DAO. These rules are recorded in smart contracts, created by

coding, typically based on a decentralized protocol like Ethereum.

The smart contracts autonomously execute the process of the DAO's governance and/or its commercial activities to the extent they are programmed to do so (upon the triggering of specific coded preconditions). There is no need for lawyers to draft agreements or constitutional documents for the DAO, no need to register with corporate registrars, and no need for banks to transfer funds.

## **DAOs REPRESENT A REVOLUTIONARY NEW WAY OF DOING BUSINESS, WITH AN ETHOS OF TRANSPARENCY AND DEMOCRACY**

Members can send cryptocurrency to a DAO's treasury on the blockchain in exchange for tokens. These are often governance tokens, which carry voting rights. Governance tokens may also be distributed by way of airdrops or as rewards (e.g., to developers or others who contribute to the DAO).

In addition to providing voting rights, governance tokens are often traded in the secondary market on centralized and decentralized exchanges. In many cases, the valuation of these tokens has skyrocketed due to demand. Although tokens are not equity interests, members may aim to profit from an increase in the value of their tokens or through profit distributions to members.

## DAO GOVERNANCE & DECENTRALIZATION

There is no central body, such as a board of directors, responsible for the governance of the DAO. DAOs have no employees, bank accounts, or physical presence, and they are not connected to a specific jurisdiction. Instead, a network of smart contracts controls a large part of the activities and governance of the organization, making management essentially self-executing. When decision making above the automated processes is required (e.g., if a member proposes a change to the DAO's purpose or rules), governance is conducted by voting. Changes to the rules are implemented only if approved by the members.



However, the degree of decentralization varies from one DAO to another and may follow the path of the protocol development cycle, starting from a very centralized project at the inception and software development phase and becoming increasingly decentralized as the DAO is deployed and shared with users.

Software developers and the venture capital investors financing the creation of the protocol may in some cases retain certain controls related to voting, either through having delegated votes or through holding a large proportion of governance tokens. Some protocols impose minimum thresholds on what size holders must be to submit a

proposal and/or how many such holders must vote affirmatively for the vote to pass. As with some real-world democracies, voter apathy and lack of turnout can be a challenge for DAOs. Community splits on contentious decisions can also occur.

DAOs are set up for a wide variety of purposes, and projects may be real world-based or online. However, many question whether the form of automated governance central to the DAO ethos can be successfully used for complex, real-world businesses.

## SHOULD DAOs BE LEGAL ENTITIES?

There is ongoing debate about whether DAOs should be regarded as legal entities and, if so, what form. This is fundamentally important in terms of considering how DAOs can enter into legal contracts and hold assets; how laws, regulation, and taxation apply to DAOs; whether DAOs are liable under civil or criminal law; and whether individual members in a DAO have personal unlimited liability.

There is also ongoing debate about whether DAOs should be regarded as general partnerships or the equivalent, such that members are exposed to unlimited personal liability (discussed further below). Being a legal entity may or may not be a positive development for a DAO, depending on the context in which the question arises.

Regardless of theoretical debates about the legal status of DAOs, when it comes to contracting with even the more crypto-friendly elements of the mainstream financial sector, DAOs have needed some form of legal status. In addition, DAOs sometimes need a way to legally hold assets and open bank accounts.

Certain US states, such as Wyoming and Tennessee, recognize DAOs as legal entities by permitting them to register as types of limited liability companies (LLCs). However, DAOs may prefer not to have legal entity status themselves, seeing this at odds with their decentralized ethos, and instead to set up a legal entity with its own legal personality for the purposes of contracting and holding assets.

Although the term “wrapper” is often used as shorthand for such entities, they are more accurately described as tools for the DAO, with the DAO not gaining legal personality itself but simply conducting certain of its functions via the legal entity.

Cayman Islands foundation companies, which are a hybrid of a company and a trust and have limited liability, are often used for this purpose. Pursuant to the bylaws adopted by the foundation company and subject to applicable law, the directors of the foundation company will effect the proposals approved by the DAO. Entities in the British Virgin Islands, Channel Islands, Switzerland, and others are also used for this purpose.

## DECENTRALIZATION DOES NOT FIT WELL IN REGULATORY LANDSCAPE

Decentralized finance (DeFi) protocols aim to replicate certain functions of the traditional financial system in a decentralized, autonomous way, enabling users to participate in various trading and other transactions. DeFi protocols often rely on decentralized governance arrangements marketed as DAOs.

As such activities may be regulated, challenges arise for both regulators and industry in terms of what and who should be regulated. A few jurisdictions have implemented regulatory frameworks for virtual assets service providers, although not necessarily DeFi. However, regulators in most jurisdictions still have a technology-neutral approach, with the same rules applying to the same types of activities and risks.

Much time has been spent debating whether various types of tokens amount to a security (or a commodity, financial instrument, specified investment, or similar, depending on jurisdiction and regulator) and therefore fall within the traditional regulated financial services regime. Governance tokens have some characteristics of securities, and their issuance, promotion, or trading (which often takes place in the secondary market) may thus be considered noncompliant in some jurisdictions.

Some of the characteristics of DeFi may be incompatible with existing regulatory frameworks, particularly since the current framework is designed for a traditional financial system that has regulated entities with traditional governance structures at its core. Certain aspects

of regulation designed for the traditional financial sector may simply be impossible to comply with in a fully decentralized DeFi context, such as details of directors (or equivalent) as well as ownership, physical address, and audited financial statements.

Another issue is that activities falling outside the traditional regulated space in some jurisdictions raise risks that are left unaddressed by the existing rules. The Organisation for Economic Co-operation and Development (OECD) recently released details of a tax transparency reporting framework. The Crypto-Asset Reporting Framework and Amendments to the Common Reporting Standard will require intermediaries that conduct exchange transactions of crypto assets for or on behalf of customers (exchanges, brokers, dealers, market makers, and others) to conduct due diligence and report details of owners and transactions. Generally speaking, there continues to be a lack of satisfactory solutions with respect to decentralized models.

## DEFI PROTOCOLS AIM TO REPLICATE CERTAIN FUNCTIONS OF THE TRADITIONAL FINANCIAL SYSTEM IN A DECENTRALIZED, AUTONOMOUS WAY

The Financial Stability Board (FSB), whose primary purpose is protecting the stability of the traditional financial sector, has just come out with a key recommendation that effective regulatory and supervisory frameworks should be based on the principle of “same activity, same risk, same regulation,” which is also the approach taken by the EU in its proposed regulation on Markets in Crypto-Assets (MiCA). However, the FSB tempers this message to refer to “equivalent regulation” or “equivalent regulatory outcomes,” that “may require new guidance or regulation specific to crypto-assets to deliver equivalent outcomes.”<sup>3</sup> This is crucially important to avoid stifling innovation, which benefits a wide variety of institutional and retail stakeholders.

The aim should be to achieve regulatory objectives in a manner that is workable and addresses specific risks. According to OECD, some of the regulatory tools applicable in centralized settings may need to be redesigned to be interoperable and compatible with decentralized structures. OECD also says auditing of the code underlying the smart contracts by neutral external parties could help address the challenge that nontechnical expert users face when required to trust the author of the smart contract based on which transactions are executed.<sup>4</sup>

In an October 2022 white paper, FSB said persisting data gaps and other shortcomings make risk assessment challenging.<sup>5</sup> In fact, there is a wealth of reliable data available to regulators once there is clarity on what they want to see. Policy makers could benefit from actively playing a role in establishing a cooperative environment among stakeholders. Transactions are traceable and verifiable on the chain, albeit in a pseudonymous way.

OECD takes a less negative stance than FSB, suggesting that supervisors could have access to all the data involved in the DeFi protocol given the transparent nature of blockchain-based finance (in a pseudonymous way at the moment), while the protocol could incorporate automated provisions for regulatory compliance directly in the code of the smart contracts.

DAOs and those with similar governance arrangements could produce reporting for regulatory compliance purposes. In a hypothetical future scenario, there could be technological means for supervisors to participate as nodes in the network and/or intervene at the smart contract level.<sup>6</sup>

However, that scenario may be some way off, as it requires regulators to be willing and able to design and implement a novel regulatory framework. Funding and acquiring the necessary professional expertise for this may be challenging. In the meantime, it may be necessary to find ways to make existing regulatory frameworks work, which should involve collaboration between regulators and industry.

## COULD DEFI BE LEFT UNREGULATED?

There is also a question of whether DeFi should be regulated in the financial sector regulatory framework at all. It has been argued that DeFi applications and underlying protocols could be seen as a general-purpose information communications technology, similar to the Internet. In this case, organizations that provide Web tools, applications, interfaces, and other means to access the DeFi market might become subject to obligations and/or to the requirement to provide assurances to users.<sup>7</sup>

However, it is clear that the global policy makers and financial regulatory bodies want DeFi to be regulated within the financial services framework for two key reasons. First, DeFi is growing rapidly and attracts an increasing number of retail investors, potentially exposing them to risks that financial regulation is designed to mitigate. According to OECD, the provision of financial services on a decentralized basis in ways that do not comply with financial regulations expose retail and institutional members to risks such as excess volatility, unregulated leverage and other forms of regulatory arbitrage, governance-related risks, market manipulation, risk of illicit finance, and outright fraud.<sup>8</sup> In fact, there have been allegations that DAOs designed to raise funds for crypto projects are little more than Ponzi schemes.

Second, there is increased interest and adoption of crypto assets by institutional investors and other traditional financial service providers, leading to increased interconnections between the traditional finance services industry and the parallel DeFi system through intersection or convergence points, with stablecoins typically used as the bridge. Financial regulators want to see the whole picture, and regulatory cooperation at a cross-jurisdictional level will be important to mitigate risks.



## PUTTING THE PERSON BACK IN THE DAO

As operating through a legal entity or having a centralized governance body is contrary to the essence of decentralized finance, it will be challenging to identify parties involved that can be assessed or regulated. Also, DAOs are not subject to national borders, and token holders may be located anywhere. Enforcement is also difficult to apply if there is an absence of an identified accountable entity. This is one of the key policy questions that remains to be worked out, not only for regulators but also for tax authorities, enforcement agencies, and civil claimants. For example, the question of whether a DAO has legal personality in its own right will determine whether tax is applied at the level of the DAO or the level of its individual members. Approaches to tax are determined nationally, and a preliminary but difficult question for any tax authority is determining whether or not a DAO is a tax resident.

A variety of approaches have been proposed. As discussed below, these range from attempting to identify controllers of a DAO by seeing who has de facto control; requiring the involvement of a regulated virtual asset service provider; requiring DAOs to voluntarily nominate a central body (despite this being contrary to their ethos); holding all governance token holders responsible; or placing the burden on gatekeepers.

The view of the Financial Action Task Force (FATF) is that a DeFi application (i.e., the software program) is not an appropriate regulatory target but that “creators, owners, operators, or some other persons who maintain control or sufficient influence” over assets or the protocol may be, even if control “is exercised through a smart contract or in some cases voting protocols.”<sup>9</sup>

FSB notes that almost all protocols claim to have decentralized governance but is skeptical about whether they genuinely do so.<sup>10</sup> However, as mentioned earlier, decentralization may start from a centralized project at inception and software development phase and become increasingly decentralized as the DAO is deployed and shared with users.

Meanwhile, FATF has stated that self-identifying as decentralized is not enough to escape regulation, but it accepts that there may be cases where it is not possible to identify anyone with control or sufficient influence. In these cases, FATF suggests, countries may consider the option of requiring that a regulated entity be involved in a DeFi provider’s activities, presumably as some sort of chaperone or principal.<sup>11</sup>

In FATF's view, individual governance token holders do not have responsibility for ensuring that a DeFi provider satisfies its anti-money laundering obligations (and presumably, by extension, other regulatory obligations) so long as the holder does not exercise control or sufficient influence over its activities undertaken as a business on behalf of others.<sup>12</sup>

In contrast, in September 2022, the US Commodity Futures Trading Commission (CFTC) asserted that voting members of the Ooki DAO are liable for its violations of the US Commodity Exchange Act and related regulations.<sup>13</sup>

Meanwhile, in an ongoing US class-action claim filed in May by users of a DeFi platform, the plaintiffs allege that bZx DAO, as platform operator, is a general partnership and, as such, its members are jointly and severally liable to the users of the protocol for their loss of US \$40 million allegedly resulting from a security breach.<sup>14</sup> If accepted, an individual DAO member could be held personally liable, notwithstanding having only a small holding acquired on exchange, unless the DAO has set up a legal entity.

## BACK TO CENTRALIZATION?

The OECD suggests there may be a need to "recentralize" DeFi to get some comfort, without necessarily completely undermining decentralization. This would apparently involve identifying forms of centralization OECD thinks may exist in such networks, including holders of controlling shares of governance tokens, identified parties benefiting from the operation of DeFi services through profit-sharing mechanisms or fees, or admin key holders.<sup>15</sup> This might require DeFis to identify a legal entity, which DAOs may wish to do anyway.

This approach appears similar to FATF's, but rather than requiring regulators to search for controllers, it might require DeFis to actively nominate some form of governing body up front (which would certainly be preferable from a regulator perspective). It remains to be analyzed how such structures would compare on a risk/return basis to fully decentralized applications.

Some argue for a gatekeeper approach, which involves regulating entry and exit points (referred to as "on-ramps" and "off-ramps") to DeFi. This

would render exchanges, wallet providers, and other financial and nonfinancial service providers at the edges of DeFi the regulatory access point to the decentralized system when fiat is converted to crypto assets and vice versa. This would primarily cover the first and last transactions at the entry and exit points of DeFi, but would not necessarily leave all intra-DeFi activity unsupervised, as many exchanges conduct market surveillance on activity and report suspicious activity. The gatekeeper approach could be useful as a way to tax income from such activity and counter the tax evasion aspect of DeFi participation.

In addition, although DeFi transactions are traceable and verifiable on the chain, they are so in an anonymous or pseudonymous way, without recourse to the identity of the member. Regulated gatekeepers may be best placed to verify wallet holders' identities and source of funds to mitigate risks of money laundering, terrorism financing, and other illicit use. FATF similarly proposes using the regulated sector to clamp down on unregulated business, including by banning or refusing to license virtual asset service providers that allow transactions to or from unhosted wallets.

## CONCLUSION

There is significant attention being paid to the legal and regulatory issues and risks around DAOs and DeFi. Hopefully, although policy makers' and regulators' attention is warranted, the results will not stifle progress, as there are significant potential benefits, including faster, less expensive, frictionless value transfer; process automation; increased transparency; record-keeping integrity; and improved interoperability.

The fact that a fully decentralized model does away with the need for trusted centralized intermediaries reduces the concentration of service providers, increases diversity, and has potential systemic benefits. The absence of a central point of failure or single attack point could enhance system resilience.

This article is written primarily from a financial-sector perspective, but there are clear benefits of DAOs in other sectors, including social and nonprofit DAOs. It is still too soon to know how mainstream the decentralized model will become, but this is a fast-moving area and very much worth watching.

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# 5 GUIDELINES FOR HOLISTIC DAO GOVERNANCE

## Authors

Thomas Belkowski and Lukas Falcke

**Decentralized autonomous organizations (DAOs) are a new form of digital-first organizations that enable actors to self-coordinate, typically via automated governance rules implemented on blockchain technologies.<sup>1</sup> Usually, a DAO exercises joint control over some resources of value. Today's DAO applications are widespread, and their resources take many forms, such as the treasury of an investment DAO or valuable items in a collectible DAO.**

Some DAOs also control the underlying mechanics of decentralized applications (dApps), protocols, or even networks.<sup>2</sup> A prominent example is MakerDAO, which uses MKR as a governance token to let its members govern the decentralized application maker, which produces the stablecoin DAI.<sup>3</sup> Another example used throughout this article is an investment DAO, in which a group of actors pool their monetary assets and set up a governance that allows them to collectively invest in various asset classes.

Prior research has provided insights on various aspects of DAO governance,<sup>4</sup> but we believe several issues have not received enough attention or need to be reemphasized. In this article, we summarize five important issues derived from previously published articles and grey literature as well as direct and observed experiences of launching a DAO. We use a provocative tone to refer to typical challenges and breaking points for DAO founders and provide actionable guidelines on how to address these challenges.

### 1. DON'T JUST FOCUS ON VOTING: THINK ABOUT GOVERNANCE MORE HOLISTICALLY

Many DAO founders focus their attention on increasingly complex voting mechanisms. Accordingly, there are vast resources on this topic.<sup>5</sup> However, there are many other important (and mostly neglected) governance issues.<sup>6</sup>

To create a more holistic view of DAO governance, we draw from prior work on open innovation<sup>7</sup> and open strategy<sup>8</sup> as more established forms of democratic organizing.

Figure 1, which draws on work by researchers Christian Stadler<sup>9</sup> and Xi Zhao,<sup>10</sup> envisions DAO governance as a linear system with four phases (ideation, formulation, voting, and execution) and three gates (idea, proposal, and decision).

We want to emphasize the importance of thinking about the gates that sit in between the different phases. At these gates, the DAO must set the rules that govern under what conditions an idea, proposal, or decision can be regarded as valid and therefore move to the next phase. Instead of providing a comprehensive description of each phase, we are going to highlight a few issues that should not be neglected in a holistic approach to DAO governance.

**WE WANT TO EMPHASIZE THE IMPORTANCE OF THINKING ABOUT THE GATES THAT SIT IN BETWEEN THE DIFFERENT PHASES**

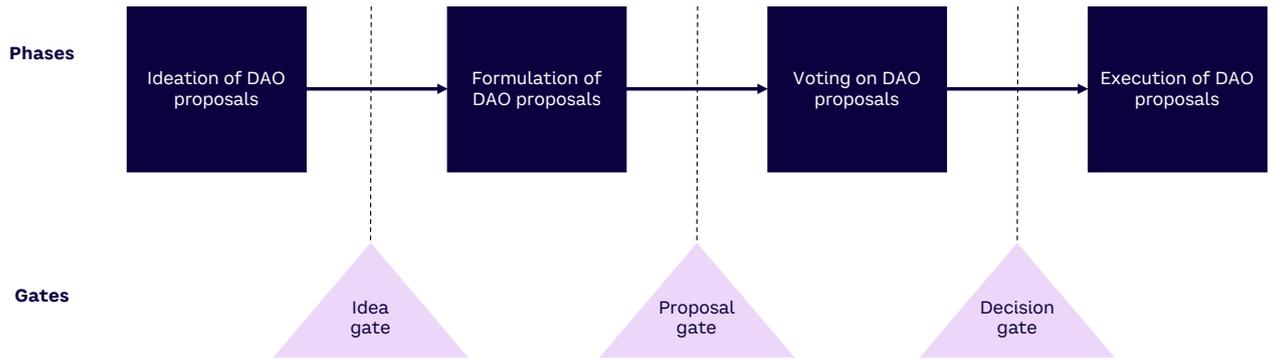


Figure 1. Phases and gates of a holistic DAO governance model

In the ideation phase, most commonly, the entire DAO community engages in discussions to generate ideas on how to address current and future circumstances, challenges, or opportunities that could be relevant to the DAO and its purpose. Such discussions usually happen in an unstructured way outside any blockchain-based tool (i.e., off-chain). The crucial questions here concern the idea gate: what mechanisms or actors have the ability to clear a given idea for the next phase, and what conditions must be met to move forward?

In the formulation phase, previously enabled actors contribute to converting a validated idea into a formal proposal. Key decisions for DAO founders include who qualifies as an actor and how that actor becomes enabled. The choice of empowered actors ranges from being limited to the core team (centralized) or expanded to representative members of the DAO (delegated authority) or to any member with ownership of a certain amount of governance tokens. The proposal gate defines the quality controls, validity checks, and mechanisms needed before setting a proposal up for a vote. It's important for DAOs to develop a standard that clearly states which kind of proposals or aspects can be voted on and whether informal, up-front votes are part of such a gate.

The voting phase, which usually receives the most attention, includes a voting mechanism to find democratic consent on a proposal. In addition to deciding on the voting approach, it's important to decide whether to implement off-chain or on-chain voting (i.e., on the blockchain). On-chain voting enables transparency and immutability of votes and can enforce certain decisions by machine-based automation through self-executing smart contracts.<sup>11</sup> However, on-chain voting requires technical knowledge and may incur a cost, depending on the blockchain in use. Off-chain

voting entails sacrificing some ideals of decentralization, which should be carefully considered.

We want to highlight the importance of the decision gate. Important issues here include participation thresholds to make a vote valid or the duration of a delay between the finalization of the vote and its execution to allow for interventions necessitated by previously unknown issues or manipulations.

Finally, in the execution phase, DAOs can either enforce the decision through self-executing smart contracts or set up manual mechanisms (e.g., multi-signature wallets) to trigger an action. Relevant decisions involve the quality assurance of smart contracts and compiling eligible wallet signers (i.e., core team, representative members, token owners, or a combination).

## 2. DON'T OVERPROMISE: BUILD TRUST THROUGH TRANSPARENT EXECUTION

Blockchain technology and DAOs promise trusted interactions. However, building that trust remains a core issue for DAO founders, especially if manual actions are required and the founders remain anonymous.

For instance, although many DAOs promise automated execution of votes, the use of on-chain voting doesn't necessarily ensure that. Similarly, even with smart contracts in place, there is no guarantee that every possible outcome either can or will be enforced as part of a smart contract. For many voting outcomes, the execution of a vote still requires manual execution, intervention, or the integration of newly developed code.

We suggest the following to build trust. First, transparently describe and communicate all aspects of your governance, as summarized in Figure 1, to all DAO members. Second, demonstrate the functionality of your governance model with early, repeatable execution cycles. Every transparent execution cycle adds to the legitimacy of the process and thus to trust in the holistic DAO governance model.<sup>12</sup>

Members may be skeptical, especially in the early phases of a DAO. The best way to convince members of robust governance is to show that the governance structure works and enables adequate decision making as intended. DAO founders can use votes on small or low-impact issues to demonstrate the effectiveness and efficiency of their governance or to improve the process further. This is particularly applicable for certain forms of DAOs, especially in the presence of repeating patterns requiring decision making and divisible resources. (Some DAOs may find this approach more difficult to implement.)

In the case of investment DAOs, founders could design governance that enables all holders of the associated governance tokens to make collective investment decisions. The DAO could then run several budgets (projects or asset classes) through the governance execution cycle. The budgets could be limited to small amounts in early phases and increase after the legitimacy and effectiveness of the approach have been proven.

### 3. DON'T OVERENGINEER: KEEP YOUR GOVERNANCE FLEXIBLE

Like all organizations, DAOs face a variety of issues with varying degrees of relevance that need to be discussed. For instance, in an open strategy approach, members collect strategic and operational issues but first focus on the strategic ones.<sup>13</sup> In looking at DAO governance as a (partly) self-regulating system with four phases and three gates, it's worth considering Ashby's Law,<sup>14</sup> which was developed as a way to think about self-regulation in biological systems.

Ashby's Law states that a system can only be stable if it can draw from a group of control mechanisms large enough to cope with the many issues that arise in its environment. Applied to DAOs, this means that a governance mechanism solely focused on voting will limit a DAO from dealing with the range of relevant issues in its environment.

DAO governance must include tradeoffs between efficiency and scrutiny. Governance mechanisms for important issues should entail a great level of scrutiny, but complex governance mechanisms applied to less important issues could ruin the ability of a DAO to execute at speed. This is especially problematic in the context of quickly evolving environments based on blockchains, where markets are volatile and require dynamic responses.

Experts have found that voting on strategic decisions can positively impact the performance of a DAO while voting on operational issues is associated with the risk of decreasing performance.<sup>15</sup> In many instances, it's better to limit community votes to strategic decisions and use other models for operational decision making (e.g., leaving operational decisions to delegated expert groups after having voted on a strategic imperative).



For example, in an investment DAO, strategic issues like budget allocation should be decided by vote. The operational issues that follow the vote should use a different model. Let's say the DAO decided to buy a certain type of non-fungible token (NFT). When that NFT becomes available for a certain price, a fast decision must be made, and a complex voting mechanism could ruin the opportunity to buy at a discounted price. The DAO could have an automated voting and execution mechanism that allocates the budget to various multi-signature wallets. The eligible signatories then have the operational execution authority to make buying decisions following the overall strategic guidance.

**WE SUGGEST  
DESIGNING A  
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ITS GOVERNANCE  
MODEL CAN  
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ESPECIALLY IF  
GROWTH IS PART  
OF THE STRATEGY**

#### **4. DON'T TRY TO SOLVE EVERYTHING AT ONCE: BUILD A FOUNDATION FOR GROWTH**

DAO governance structures should differ depending on the nature and relevance of the issue at hand. Structures may also differ significantly depending on the number of members of the DAO, which may change over time. Some governance rules and tools may be ideal for small numbers of DAO members, but the same rules and tools might perform poorly on a larger scale (and vice versa). The sum of those choices might result in very different structures, which is why there is no one-size-fits-all approach, even within the same

type of DAO.<sup>16</sup> It is tempting for founders to either follow the proven models of established DAOs and apply them as best practices or stick with the simple models they started out with, even if they become too difficult to manage at scale.

One issue is that a complex DAO governance model is usually problematic in the early phases of a DAO, when its members need to gain trust in the DAO's ability to execute. When founders choose a loose DAO governance approach, they are more likely to generate trust in the DAO's ability to execute early on. However, they are likely to run into problems as the DAO grows, especially if the governance structure is rigidly encoded in the DAO's technology infrastructure.

We suggest designing a DAO such that its governance model can change and adapt over time, especially if growth is part of the strategy. The possibility of change through the governance process must be embedded from the beginning and clearly communicated at inception. This reduces confusion or frustration on the part of long-term members while ensuring that governance changes do not happen without consent.

#### **5. AVOID DEADLOCKS: THINK OF WAYS TO HANDLE POTENTIAL RISKS**

A deadlock describes a state from which a system cannot recover. Applied to DAOs, a deadlock prevents the DAO from performing further actions, forcing it to a standstill. Deadlocks can occur when the DAO's governance model is not designed to deal with or recover from an unexpected situation. Deadlocks can also be triggered by external attacks and/or changes to the ecosystem, as happened with the governance attacks on Steem and Beanstalk.<sup>17</sup> Holistic DAO governance should include careful consideration of these risks.

Governance features have the potential to leave a DAO vulnerable to experiencing a deadlock. For instance, setting the participation threshold at the voting gate too high can limit the DAO from performing any further action due to a lack of casted votes.

Signer incapacitation is another good example. Say a multi-signature wallet handling a DAO's treasury has N signers and the requirement of N-2 signers for any given action in the execution phase. If signers become incapacitated (due to personal issues or accidents) and there are no mechanisms to replace them, there is the risk of maneuvering the DAO into a deadlock after further casualties. Founders should carefully consider these and other risk scenarios when designing their DAO's governance.

Just as ill-designed governance features can lead to deadlocks, well-designed governance can help protect a DAO against external attacks. Examples of external attacks include a large number of hacked or otherwise ill-gained governance tokens resulting in vast voting power. In the absence of controlling governance mechanisms at the various phases and gates, an external shock could give malicious actors full decision-making authority.

Controlling governance mechanisms may reduce the degree of automation, but implementing and applying them in a transparent manner can be key to protecting DAOs from external attacks. Deadlocks resulting from shocks to the broader ecosystem are particularly difficult to avoid. Nevertheless, DAO founders should be aware of these risks when designing DAO governance and include mechanisms for avoiding deadlocks or escaping such circumstances.

## CONCLUSION

In this article, we highlighted common challenges related to DAO governance and provided guidelines on how to work toward more holistic DAO governance.

Instead of an intense focus on voting, holistic DAO governance requires DAO founders to pay attention to the ideation, formulation, voting, and execution of proposals, as well as the gateways between phases. When designing the governance features for phases and gateways, founders should work to avoid the typical traps of overpromising, overengineering, and trying to solve everything at once. They should also consider the potential risk of deadlocks at every step of the governance process.

Although learning from examples is useful, copying current DAO governance models may lead to difficulties — there is no one-size-fits-all approach to DAO governance. The purpose, size, value, and risks differ for each DAO, and governance structures should reflect that.

As illustrated in Figure 2, DAO founders should: (1) think about governance more holistically, (2) build trust through transparent execution, (3) keep governance flexible, (4) build a foundation for growth, and (5) think of ways to handle potential risks. These guidelines will strengthen DAOs along the dimensions of transparency, flexibility, scalability, and resilience, helping DAO founders cope with challenges and leverage DAO benefits as an emerging framework for democratic organizing.

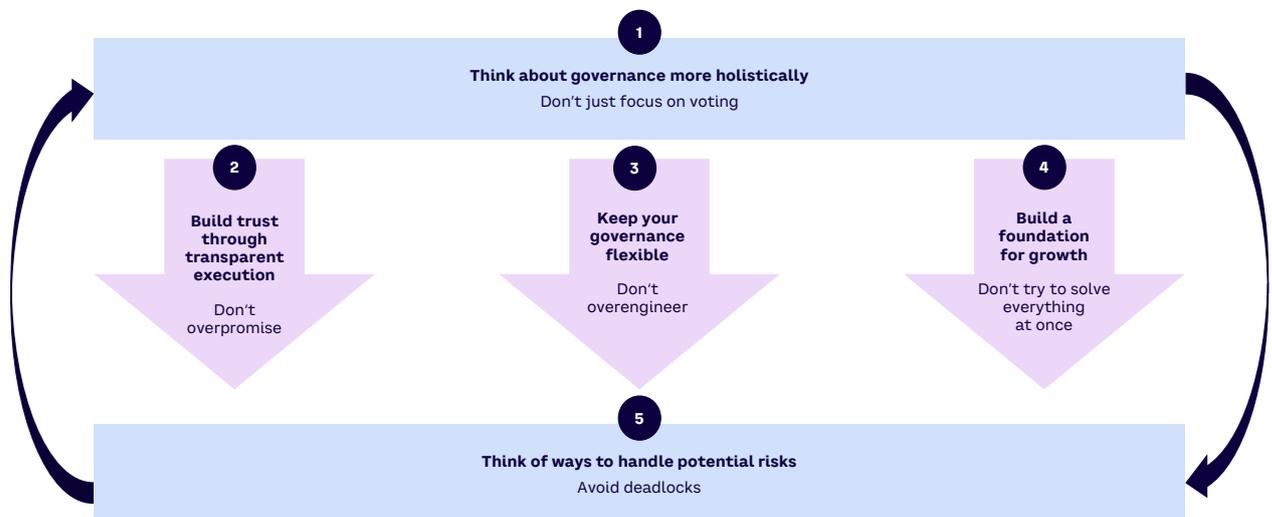


Figure 2. Working toward holistic DAO governance

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# REMIXING THE MUSIC INDUSTRY WITH DAOs

## Authors

Diego Alvarez, Pietro Cortellini,  
and Emily Munchak

**Organizations have existed since the dawn of mankind, but blockchain technology is enabling the evolution and acceleration of innovative organizational forms. As emerging blockchain-based organizations, decentralized autonomous organizations (DAOs) have the potential to profoundly impact society. In this article, we examine how DAO characteristics have affected the success of three music-oriented DAOs.**

DAOs present one of the most exciting prospects for blockchain 3.0 — the potential to disrupt entire industries and the way people organize. As such, DAOs are particularly suited to the music industry, where the disintermediating force of the technology can address some critical value chain flaws.

DAO founders and members should be able to leverage the learnings we share here to make more informed decisions and improve DAO success rates. Our findings also provide industry leaders and technology enthusiasts with a glimpse at how to remain resilient in the face of a potential grand-scale disruption to the way people collaborate.

### HOW DAOS ARE REMIXING THE MUSIC INDUSTRY

From the earliest societies to the 21st century, technology has created opportunities for social and economic coordination. Today, blockchain is being applied across an array of industries to eliminate middlemen and has the potential to disintermediate the music industry, shifting the power back to artists.

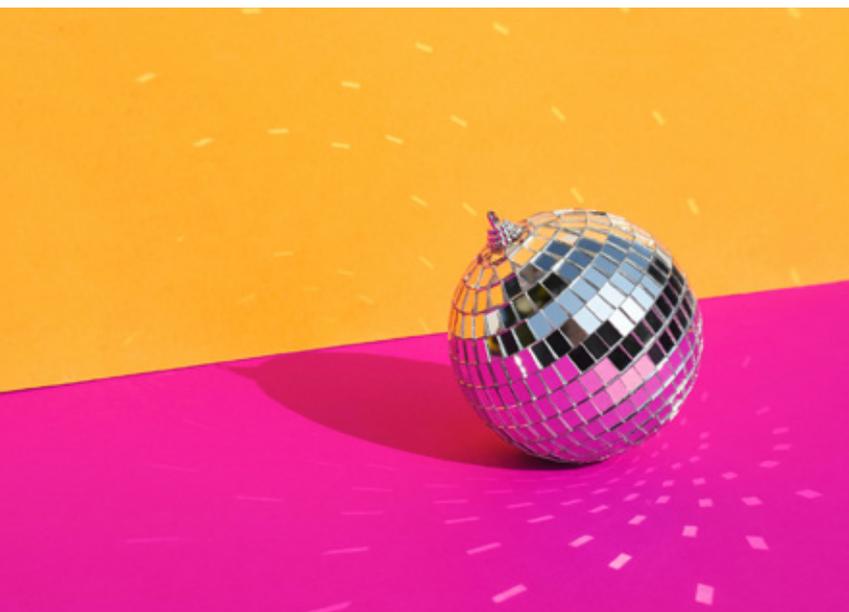
Web3, the newest iteration of the Web, is built on blockchain protocols, encompassing cryptocurrencies, non-fungible tokens (NFTs), and other modern tools that are revolutionizing the way people interact with technology and each other. More recently, blockchain technology's digital infrastructures have supported the establishment of DAOs. Although they're experiencing dramatic growth, DAOs remain widely under-researched and misunderstood.

The music industry has long experienced deep-rooted problems that hinder creator satisfaction. Since the advent of recorded music, every music industry iteration has been built on technological advancements, forcing it to adapt. The Internet contributed to creator frustration by making music easily accessible to consumers while not financially rewarding musicians appropriately. In an industry where issues relating to intellectual property are rampant and vast amounts of value are lost to intermediaries, blockchain is poised to bring value back to the creators.

**BLOCKCHAIN IS BEING APPLIED ACROSS AN ARRAY OF INDUSTRIES AND HAS THE POTENTIAL TO DISINTERMEDIATE THE MUSIC INDUSTRY, SHIFTING THE POWER BACK TO ARTISTS**

Only 27% of streaming revenue reaches creators, with the remaining 73% shared among the rest of the industry.<sup>1</sup> Music industry insiders have identified DAOs as a means to resolve these pressing issues. There are currently more than 30 self-proclaimed music DAOs, some of which have attracted notable investors and artists.<sup>2</sup>

To address the gap between DAO awareness and adoption, along with the prevalent misconceptions and skepticism surrounding them, we seek to understand why some DAOs succeed and others fail through an industry-specific lens. As we do so, we'll develop industry-specific knowledge that can be amplified beyond the constraints of our investigation. This may accelerate DAO adoption and help debunk misconceptions about their effectiveness for widespread organizations (as opposed to the small-scale organizations we see today).



### 3 DAOs

We examined three music-oriented organizations (Audius, BitSong, and MODA DAO) from their inception until 25 April 2022.

Audius is the oldest and most established DAO of the cases we researched. It was founded in 2018 on the Ethereum mainnet but has since expanded to the Solana blockchain for scalability. Audius centers around a decentralized application (dApp) that resembles popular traditional music

streaming platforms like Spotify. A dApp behaves like any other app, except it is built on blockchain technology. In contrast to a centralized application, it relies on smart contracts on a distributed network.

Audius has achieved relative success, growing to more than 33,000 members and exhibiting an impressive compound annual growth rate (CAGR) of 192.92% of its token price over 17 months.

BitSong was established in 2018 and also revolves around a music-streaming dApp. It first built its ecosystem on Ethereum and later built its own layer 1 infrastructure on Cosmos, which went live in 2020. Despite commonalities with Audius, BitSong is not as successful. It demonstrated an admirable CAGR of 134.49% over almost one year but has only 1,400 members.

MODA DAO, established in 2021, is a multi-chain DAO, building parts of its ecosystem on Ethereum but relying on the Polygon sidechain and Fantom for scalability. Unlike Audius and BitSong, its dApp is underdeveloped and is not a key feature of the organization. MODA has a token-price CAGR of -95.89% over three months, which from a market perspective is a failure. However, MODA has more than 2,600 members despite being founded only a year ago.

All three DAOs we studied aim to use blockchain technology to solve the problems stemming from non-value-adding intermediaries. Audius and BitSong both have explicitly defined objectives concerning the disintermediation of the value chain and the enhancement of the relationships between artists and fans. MODA's objectives are more theoretical and open to the influence of its members.

Audius and BitSong project themselves as decentralized alternatives to mainstream music-streaming platforms while MODA's objective is to explore the wide range of opportunities of Music3. A MODA white paper describes Music3 as "a broad label referring to a new set of interconnected technologies, projects, companies, approaches, and ideologies designed to harness Web3 distributed technologies for the purpose of creator empowerment and deeper connection between creators and fans,"<sup>3</sup> a more abstract and ambitious goal.

Our analysis generated several discoveries. First, we identified five fundamental dimensions characterizing DAOs. Second, we observed that DAOs can be divided into two types: utility-driven and mission-driven. Third, we learned that their success must be assessed depending on their type. Fourth, we found that purpose, tokens, and technology are critical to the success of utility-driven DAOs while purpose and community are critical to the success of mission-driven DAOs. And fifth, although governance mechanisms are fundamental to DAOs, they do not drive their success.

## 5 FUNDAMENTAL DIMENSIONS OF DAOs

These fundamental dimensions represent the common features across the DAOs we studied:

1. The **purpose** dimension indicates how a DAO pursues its objectives and how its members gain value from the organization, encompassing all its activities.
2. The **community** dimension revolves around the people who make up the organization, including their characteristics and behavior, as well as the policies that shape them. This describes the members from a social standpoint, rather than merely reporting the fact that DAOs require members to sustain them.
3. The **technology** dimension relates to the organization’s technical infrastructure, architecture, applications, and members’ interaction and experience with the DAO’s interfaces.
4. The **token** dimension includes the organizations’ respective tokens, tokenomics, and the tokens’ features, plus anything that affects member utility gained from the use of tokens.
5. The **governance** dimension encompasses the mechanisms and processes affecting the DAOs’ distributed decision making, including coordination mechanisms, voting procedures, and quorums.

To summarize, the community is comprised of members who are assembled around a common purpose and determine the direction of the organization through participation in governance, which is facilitated by tokens and technology.

Figure 1 shows the relationships between the five fundamental dimensions. Potential contributors join a DAO because they are drawn to its purpose. Once they acquire tokens, they become contributing members of the DAO community, taking on a variety of roles. Some of these are infrastructural and shared across DAOs; others depend on the specific purpose and operations of the organization.

The community continually shapes the direction of the DAO as its members change over time. The figure demonstrates this with double-sided arrows: potential contributors join because of the purpose, but existing members use this to assess the DAO and may leave if dissatisfied.

The underlying technology layer provides the infrastructure for individuals to interact. Tokens grant members voting power in the governance process, shown through the connection between community and the governance dimension. The governance dimension is shown on the edge of technology but squarely within the constraints of the DAO. It can be orchestrated either on or off chain but, regardless, is an instrumental element.

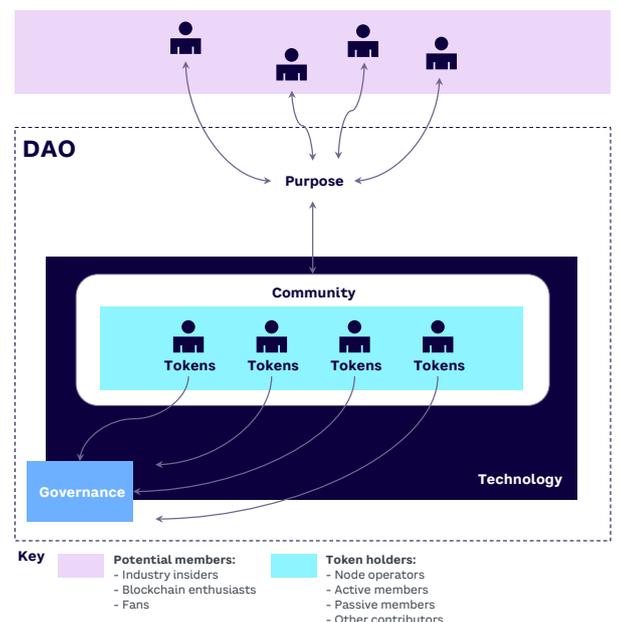


Figure 1. The 5 fundamental dimensions of DAOs

## DAO CLASSIFICATION: CRUCIAL WHEN ASSESSING SUCCESS

The five fundamental dimensions are important when assessing a DAO and can help us further categorize them (see Table 1).

For example, Audius and BitSong both rely on dApps. Based on their frequent discussion and governance proposals aimed at addressing the dApps, especially with regard to features and functionalities, members highly value this aspect of the DAOs. MODA’s dApp is crude, lacks basic functionality, and did not receive the same attention from its members.

We found in our analysis that Audius and BitSong members are more interested in the tangible aspects of the organizations, from which they derive practical use. Conversely, MODA members are focused on a variety of projects and collaborations in pursuit of complex goals for collective benefit, rather than individual gain.

Taking this a step further, we noted that Audius and BitSong members prioritize the practical use afforded by the DAO and their ability to profit from their affiliation with the organization over its social aspects. Audius and BitSong can thus be categorized as a different type of DAO from MODA since their goals, core activities, and member preferences are divergent. We use the terms utility-driven (Audius and BitSong) and mission-driven (MODA DAO).

Since utility-driven DAOs represent Web3 alternatives to existing platforms, which are driven by profit, they should be evaluated by how well they perform their practical function. Conversely, mission-driven DAOs are driven by objectives toward achieving a higher mission and should be evaluated based on the progress of their pursuit of this theoretical goal.

For this reason, we decided to rely on market value as a proxy measure of success for utility-driven DAOs, since the market value can be interpreted as a quantitative representation of the perceived value they produce. Community growth

5 DIMENSIONS		UTILITY-DRIVEN DAOs	MISSION-DRIVEN DAOs
5. Governance (enables)	<b>1. Purpose</b> — attracts and retains members	<ul style="list-style-type: none"> <li>• <i>Critical:</i> tied to practical use</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Critical:</i> in pursuit of abstract “higher mission”</li> </ul>
	<b>2. Community</b> — influences member behavior	<ul style="list-style-type: none"> <li>• <i>Secondary:</i> members prioritize individual utility</li> <li>• Social aspects are secondary for success</li> <li>• Collaboration is limited to assistance on how to use tools provided</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Critical:</i> members prioritize collective gain</li> <li>• Social aspects are critical for success</li> <li>• Members collaborate on a wide range of music-related projects</li> <li>• Key value creator for members</li> </ul>
	<b>3. Technology</b> — facilitates members actions	<ul style="list-style-type: none"> <li>• <i>Critical:</i> members make constant technological improvements to the DAO</li> <li>• Key value creator for members</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Secondary:</i> DAO does not depend on a specific technology, so other aspects are prioritized</li> </ul>
	<b>4. Token</b> — grants privileges to members	<ul style="list-style-type: none"> <li>• <i>Critical:</i> tokens provide access to several key features and functionalities</li> <li>• Key value creator for members</li> </ul>	<ul style="list-style-type: none"> <li>• <i>Secondary:</i> DAO’s core focus is not based on accessing features and functionalities through tokens</li> </ul>

Table 1. Key dimensions of utility-driven and mission-driven DAOs

represents the key proxy measure of success for mission-driven DAOs, as it reflects the adoption of the organizational purpose and signifies the aggregation of resources from a wider pool of individuals in pursuit of their goals.

Regardless of the type of DAO, purpose is a crucial feature; without a clear purpose, DAOs lack a north star to guide their members and struggle to execute against their goals and evolve as necessary. Additionally, members evaluate the organizations based on their interpretation of their purpose, and their dissatisfaction grows if the DAO fails to deliver it.

If a DAO's purpose is intrinsically tied to a dApp, and it does not provide its members with one that meets their expectations, it will likely fail. Likewise, if an organization's purpose is more conceptual and does not tie itself to the development of a specific application, members will not evaluate it based on these criteria. Therefore, purpose is critical to the success of either type of organization, as it contextualizes how members should evaluate and participate.

## **DRIVERS OF SUCCESS FOR UTILITY-DRIVEN DAOs**

The technology and token dimensions allow members to access the features and functionalities enabled by the DAO. Given that a utility-driven DAO's primary focus is to operate a dApp, its technology must offer strong usability; anything else leads to confusion and/or frustration, resulting in members leaving the dApp and the DAO.

Furthermore, since many core features are restricted solely to token holders, tokens must provide members utility and facilitate their continued use of the dApp. For example, in both BitSong and Audius, governance proposals overwhelmingly address their technology and token, such as both organizations' migration from Ethereum's blockchain due to member concerns and the subsequent changes to their ERC-20 tokens. Mission-driven DAOs avoid tying their purpose to a dApp, emphasizing other aspects as the key value creators for members, causing their technology and token to be secondary to their success, as long as they meet a certain threshold of usability.

## **DRIVERS OF SUCCESS FOR MISSION-DRIVEN DAOs**

The community dimension is critical for mission-driven DAOs because they don't rely on a dApp to attract and retain members. People join these organizations to engage with like-minded individuals and extract the most value from the social aspects of DAOs through their collective pursuance of a mission they champion.

**WITHOUT A CLEAR PURPOSE, DAOs LACK A NORTH STAR TO GUIDE THEIR MEMBERS AND STRUGGLE TO EXECUTE AGAINST THEIR GOALS AND EVOLVE AS NECESSARY**

For example, MODA members display a distinct interest in community participation, collaborating on musical projects and supporting each other, even beyond the scope of the DAO. Despite the technology being underdeveloped relative to the other organizations, this does not appear to be a major pain point for members.

In contrast, Audius and BitSong members are fixated on the aspects of the technology and tokens they perceive as pain points, such as high gas fees and challenges relating to using tokens. Clearly, an emphasis on community-building efforts must be more prominent in mission-driven DAOs than in their utility-driven counterparts.

## SECONDARY DRIVERS OF SUCCESS FOR DAOs

Distributed decision making is undoubtedly a key feature of DAOs, enabling members' dual role as actors and owners to align their interests with the success of the organization and resolving the "principal-agent problem" (a conflict in priorities between the owner of an asset and the person to whom control of the asset has been delegated).<sup>4</sup>

However, our findings suggest that despite governance being a fundamental dimension for all DAOs, the mechanisms themselves are not a key driver of success in either mission-driven or utility-driven DAOs because they do not add value to members. In other words, the substance of governance proposals is critical to their success, but mechanisms and processes are not.

The matter of governance directly addresses DAO members' interests and leads to the discovery that members in music-oriented DAOs have the power to initiate change as owners and members of the organizations. This can be seen by the majority of Audius's and BitSong's proposals addressing their tokens and technology and through MODA releasing a grant proposal to support an emerging musician who is a member of the community. The fact that governance can amend all the other dimensions suggests that governance can be thought of as an enabler of the other dimensions.

## IMPLICATIONS FOR DAOs BEYOND MUSIC INDUSTRY

Our investigation focused on the music industry, but our findings can be applied to DAOs across industries since the key learnings are about DAOs as a tool for coordinating people and resources. The five dimensions we defined do not exist solely in the music industry but in all DAOs.

Regardless of the space in which a DAO operates, it requires: (1) a purpose that motivates members to join and stay and (2) an engaged community assembled around a common purpose that determines the direction of the organization through (3) a governance mechanism that facilitates member participation in decision making, (4) a token that enables members to contribute to the organization, and (5) a technology that facilitates the efficient operation and maintenance of the organization.

Our conclusions are applicable to many industries, especially those exhibiting highly intermediated value chains and low-value capture by value creators. For example, in the fashion industry, a utility-driven DAO could be designed to create and manage a decentralized marketplace or a platform for tokenizing luxury fashion.

A mission-driven DAO in the fashion industry could create a community of fashion designers by creating a space for them to collaborate, helping them coordinate and collectively pursue projects for the betterment of the overall community.

In the financial services industry, a utility-driven DAO could be designed to drive infrastructure development for future decentralized finance protocols. A mission-driven DAO in the financial services space could bring together financial services professionals, lawyers, and other experts to collaborate on projects and represent their interests to financial regulatory bodies.

Our conclusions are important for DAO founders and members, regardless of industry. They can be distilled into the following actionable insights:

- DAOs can be identified as utility-driven or mission-driven.
- Utility-driven DAOs can be measured based on their market performance, while mission-driven DAOs should be assessed on their ability to establish a solid community that pursues its "higher mission."
- DAOs can benefit from establishing a clear purpose early in development, so community members can easily understand the present and future goals of the organization.
- As the purpose is what attracts members to join and remain in a DAO, it is important that all activities are in line with its purpose.
- Mission-driven DAOs benefit from an engaging, collaborative community that fosters a unified identity that prioritizes collective needs over individual needs.
- Utility-driven DAOs benefit from a functional token that members can easily acquire, transfer, and use, as well as from technology that supports their purpose.

- Because governance mechanisms are merely enablers of the other dimensions, they are secondary as long as they are designed to mitigate problems that arise from the features of the community, ensuring that members' goals and concerns can be regularly addressed through the substance of proposals.

## CONCLUSION

Understanding DAOs' best practices and focal success drivers is critical to determining whether this organizational form will thrive in the future. Early attempts at establishing DAOs were hindered by a few high-profile hacks that led to distrust and skepticism about their viability.<sup>5</sup> It is still uncertain whether this will affect DAOs' potential to become the main organizational form replacing how for-profit and social firms coordinate today. At the moment, their future looks promising: the number of DAOs increased from 700 in May 2021 to 6,000 in June 2022.<sup>6</sup> The highly publicized success of a few large DAOs could help this organizational form gain credibility, further accelerating its adoption.

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# THE VISION & AFTERMATH OF CLIMATEDAO

## An interview with Elliot Waxman

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by Cutter Consortium

**Elliot Waxman and Matthew Rodgers met the first day of their freshman year at New York University (NYU). Good friends throughout their NYU days, they shared a passion for finding ways to mitigate the climate crisis. They graduated in 2020, remained friends, and in June 2021 began talking seriously about combining Waxman's expertise on corporate governance, decarbonization, and blockchain with Rodgers's software engineering skills. In this article, we share the results of the friends' first foray into decentralized autonomous organizations (DAOs).**

In January 2021, both Waxman and Rodgers had closely observed GameStop's stock volatility when a short squeeze, triggered by the Reddit subgroup Wall Street Bets, caused the retailer's stock to rise 30 times its value in about a month.<sup>1</sup> "Nonprofessional retail investors with Robinhood accounts were able to cause huge movement in the market despite the fundamental value of the company," explains Waxman.

By June of that year, Waxman and Rodgers were similarly interested as they watched activist hedge fund Engine No. 1 successfully push ExxonMobil to change its approach to reducing its carbon footprint. The hedge fund was almost unknown before the fight but was able to garner the support of some of Exxon's large institutional investors, including BlackRock, Vanguard, and State Street. Interestingly, the *New York Times* notes that "huge investment companies rarely side with activists on such issues."<sup>2</sup>

Seeing the potential for values-driven stock movement (investing in companies that do not conflict with one's personal values) rather than value-driven movement (picking stocks that appear to be trading for less than their intrinsic or book value) sparked an idea: galvanizing a large community of retail investors to collaborate, with the goal of getting public companies to decarbonize.

Since most investors don't own the amount of stock required to issue a shareholder proposal

(US \$25,000 for one year per the US Securities and Exchange Commission), Waxman and Rodgers decided to form a hub populated by investors interested in this goal and willing to buy tokens to fund the project. Collectively, the group would own more than \$25,000 of many companies, so any member would be able to issue a shareholder proposal. "These laws restrict shareholder engagement by retail investors — they're heavily affected by companies they hold in their portfolio, but they don't have enough of a voice because they don't own the threshold amount of stock," says Waxman.

Rather than look for venture capital to fund the project, Rodgers and Waxman decided to bootstrap it, using token-based crowdsourcing. They knew the idea was radical and thus would not have the predictable returns venture capitalists seek. They also knew there was a great deal of interest in the idea, along with new technologies (blockchain) and company structures (DAOs) to support it.

In November 2021, after building a barebones website where people could join a waitlist to "have your voice heard by the powers that be" and taking on some part-time employees working for tokens, they launched a Mirror crowdsourcing campaign for ClimateDAO. It quickly generated about \$80,000 worth of cryptocurrency (Ethereum), allowing Waxman to breathe a sigh of relief over his decision to leave his job just prior to the launch.

## WHY DAO?

Waxman and Rodgers wanted to make sure the organization they created was:

1. **User-owned.** Traditional companies don't foster the type of loyalty found in organizations owned by everyone involved.
2. **Value-driven.** Those contributing the most value to the network would be rewarded for their time and effort and would (hopefully) talk up the product.
3. **Set up to incentivize early-user adoption.** By giving early adopters blockchain-based tokens that increased with the value of the network, they hoped to avoid the cold-start problem.<sup>3</sup>

## CREATING AN AUTONOMOUS ORGANIZATION IN WHICH PEOPLE MUST COMPLETE COMPLEX TASKS IS MORE DIFFICULT

The DAO model met all three criteria, and the structure did indeed deliver some essential benefits to the start-up. First, it was a fast way to create enough momentum to raise initial funding for the project through crowdsourcing. Second, it allowed people with a limited amount of time to contribute to the project.

DAOs don't have employees, so contributors don't need to be recruited or hired, and people with only a few hours a week to spend on the project can still contribute. This meant busy climate scientists and climate policy professionals could easily lend their expertise to ClimateDAO. "That's a kind of value I don't think we would have seen if we had been just a regular company," says Waxman. "The DAO culture promotes part-time contributions."

In Season 1 (similar to a fiscal quarter), the DAO organized itself into four pods: (1) marketing and external communications, (2) research, (3) product development, and (4) tactical opportunities. The teams explored the legal implications of the token

launch, fleshed out a minimum viable product, onboarded contributors, grew the DAO's social media following, created a more formal roadmap, and completed an initial round of venture capital financing.

In Season 2, the group reorganized into six teams. "Our hypothesis was that more groups of three to five people would be more effective than fewer groups with more people in them," says Waxman. The new org structure included a group for the platform, tactical operations, growth, community, and governance, plus a proxy group for research, outreach, and proposals. The DAO was able to launch a private alpha and an updated website, as well as successfully connect with institutional investors.

## THE SHIFT

Despite the initial success of the DAO model and enthusiasm over using tokens to both reward contributors and fund the organization, Waxman and Rodgers eventually realized they would need to make a shift.

The main reason was legal: Waxman read several articles on DAOs that led to him speaking with a number of Silicon Valley lawyers with crypto expertise.<sup>4</sup> He came to understand that if they sold tokens to retail investors that could appreciate in value and be sold for profit, the token could be considered an unregistered security offering, which is illegal. Since the goal was to mitigate the climate crisis, not to create a crypto-based organization, Waxman and Rodgers decided to move away from the token model.

"I have a cultural affinity toward crypto, which made it attractive," says Waxman. "But we realized that it wasn't necessary for the company to have impact and mitigate the climate crisis."

At about the same time, they realized that the DAO structure was creating unnecessary complications. "The goal was to solve a problem, and at one point, we thought the answer to that problem could be a DAO," explains Waxman. "Then we realized we could solve the problem without having a DAO structure. And if we can solve it without having a DAO structure, that's probably advantageous — when capital, time, and energy are constrained, it's best to keep things as simple as possible."

DAOs unquestionably have advantages, but they're a new organizational form with some details still being worked out. For example, Bitcoin works as a DAO in part because it's permissionless — sellers can sell Bitcoin and buyers can buy it without anyone's permission. It's a truly autonomous, decentralized organization.

Creating an autonomous organization in which people must complete complex tasks is more difficult. Waxman says some organizations post "bounties" that allow people to pick up a discrete package of work for an agreed-upon fee, submit it through the platform for approval (by a human), and get paid. This moves organizations a step closer to autonomy, but Waxman says the methodology is too similar to relatively traditional structures like Fiverr. He believes oracles are needed to truly fill the gap in decentralized working structures — an independent third party that provides information on whether the criteria that was agreed upon for the deliverable was met.

## THE FUTURE

Waxman and Rodgers have rebranded the organization and changed its structure — the mission remains the same. It's now called Awake, which Waxman says reflects its conscious investment approach, and it will soon onboard its first 10,000 users to its public beta.

Awake plans to make it easier for investors to have their voices heard at the companies they own stock in by acting as the missing link between shareholders who care about complex issues and the fund managers voting on their behalf. Says Waxman, "Fund managers are searching for new ways to engage investors on environmental, social, and governance issues, increase retention, and increase assets under management. We'll provide fund managers with white-labeled applications and charge for each additional user; we anticipate they'll be delighted by the increased engagement and loyalty by investors in their funds as a result of our product."

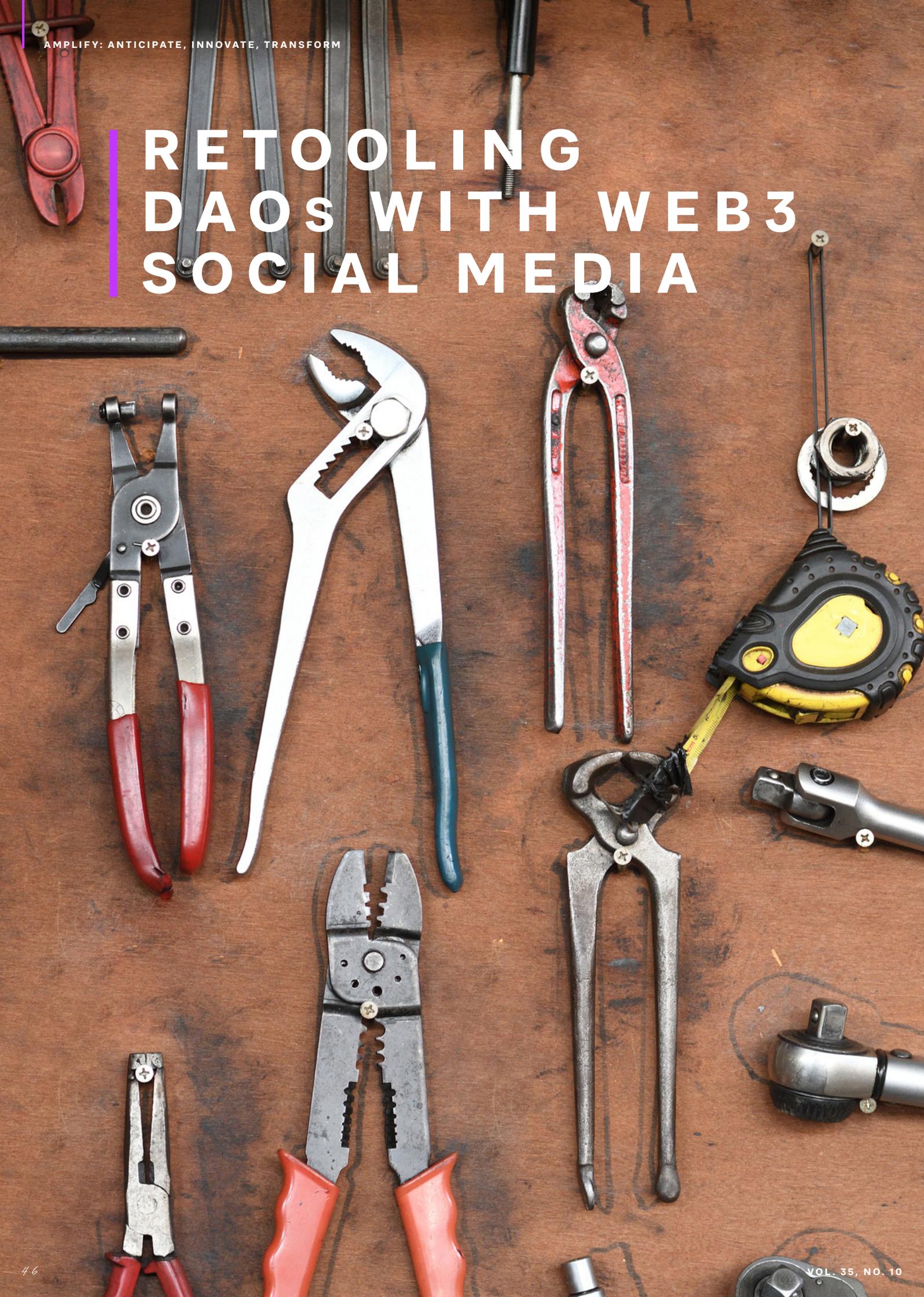
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# About the interviewee

**Elliot Waxman** is cofounder of Awake (formerly ClimateDAO). He spent the early part of his career grappling with questions around the artificial intelligence alignment problem. More recently, Mr. Waxman concentrates on tackling existential risk from the climate angle. Prior to Awake, he was a researcher at KPMG's Innovation Lab, where he delivered projects related to corporate governance and the global energy transition. He can be reached at [elliott@climatedao.xyz](mailto:elliott@climatedao.xyz).

# RETOOLING DAOs WITH WEB3 SOCIAL MEDIA



## Authors

Johannes Rude Jensen and Omri Ross

**In the span of just six years, the once-nascent concept of the decentralized autonomous organization (DAO) has grown into a rich tapestry of fluid organizations and token-powered communities.<sup>1</sup> Today, DAO governance is considered to be a new universal primitive for value generation and capture across digital markets and industries. The thinking is that, in all instances in which value is generated by networks of prosumers and consumers, a DAO model has the potential to reallocate value capture to the network.**

To date, several DAOs manage multi-billion-dollar treasuries and, at the time of this writing, collectively administer more than US \$55 billion within decentralized financial (DeFi) applications<sup>2</sup> controlled via token-weighted voting.<sup>3</sup> The sheer size and volume of the cashflows generated by these organizations offer the promise of rapid future growth, a point noted by venture capitalists who, seemingly undeterred by price volatility, continue pouring money into the rapidly growing industry.

Although we are just six years into the making of these new vehicles for human organization, early ventures lay out a pattern of innovation that, if managed correctly, may have fundamental implications for the way business is conducted in the 21st century.

Despite high hopes for the disruptive potential of these concepts and technologies, participating in a DAO is far from easy. Hopeful contributors often find themselves dissuaded by technical challenges while onboarding the DAO alongside steep financial barriers to entry.<sup>4</sup> In practice, DAO governance happens through three channels: (1) governance forums where proposals are submitted and discussed, (2) a voting tool where proposals are voted on by holders of governance tokens, and/or (3) weekly or monthly stakeholder Zoom calls that are recorded and uploaded to YouTube for playback.

Although these communication channels have been successful in facilitating the first generation of DAO governance, it is not immediately obvious how these ad hoc attempts at asynchronous coordination will scale to the next million stakeholders.

We believe that Web3 social media will serve as an accelerant for innovation in DAO governance by introducing the concept of co-ownership to digital economies. This will promote a new level of accessibility for decentralized technologies, unlocking new commercial incentives and driving adoption among creators and consumers.

## TRANSITIONING FROM CREATOR TO OWNERSHIP ECONOMIES

The concept of Web3 social media is best understood in the context of the ownership economy, a tongue-in-cheek reference to the now prolific “creator economies” promoted by intermediary platforms such as Facebook, Uber, and Airbnb.

The rapid growth of the creator economy in the past decade has become an incredible business model, with some observers projecting the market size of content production and consumption to grow beyond \$100 billion in 2022,<sup>5</sup> the lion’s share of which is distributed on YouTube, Instagram, and TikTok.

The emergence of the creator economy proved what was once believed to be infeasible. There now exists a substantial market for peer-to-peer-based production and consumption of entertainment and educational content, primarily driven by photo- and video-based content produced entirely by amateurs.<sup>6</sup> The creator economy is a multi-lateral marketplace, but the service providers hosting and serving the content enforce a strict consumer-platform and producer-platform

model. In doing so, the platform retains all rights to monetize, distribute, or censor content shown to consumers. Since the data is stored on the providers' servers, it effectively becomes their property. Although ostensibly common sense, these privileges have proven highly efficient for extracting rent from organic interactions between producers and consumers of content on the Internet.

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BLOCKCHAIN**

As has been shown on countless occasions, the commercial incentive for rational intermediaries is maximizing return on attention. This is achieved by sandwiching content between microtargeted ads served up by algorithms trained to elicit basic human emotions: fear, anger, and outrage. Simply put, in any organic network in which rational intermediaries extract rent by matching supply and demand, the logical incentive is to drive growth and retention by deploying increasingly subtle attempts of psychological manipulation.

Executives argue that users are free to “vote with their feet” and seek out more benevolent platforms, but few ever do.<sup>7</sup> The sole reason for the stickiness of social platforms is not, as has been suggested, behavioral, but simply a result of the appropriation of the social graph, which denotes the total set of relationships between users.

A social graph is a massive diagram denoting the set of all relationships between classes of objects, such as individuals, groups, organizations, and businesses. For content producers, the social graph directly determines the commercial viability of their business, as the algorithm selects a subset of connected users to which content is distributed. Because content producers are unable to recreate their social graph on other platforms, making the move is nearly impossible.

Enter Web3 social media. Projects like Lens Protocol seek to move the formation of social graphs from a siloed environment to the transparent environment of the blockchain database.<sup>8</sup> Lens itself is not a social media platform; it's an infrastructure that other product and service providers can view and use in their curation, distribution, and moderation of content. Lens computes the social graph by generating an interlinked network of non-fungible tokens (NFTs) containing the logic for all profiles, posts, and followers.

Because NFTs are smart contracts, they live in the transparent and deterministic environment offered by the blockchain. When a user conducts a standard action, such as publishing a post or following a content producer, a transaction is submitted to the network and recorded on the blockchain.

The entire social graph containing the history of all profiles, their posts, links to contents, and followers is stored in the blockchain database and is thus accessible to anyone with an Internet connection.

In the case of Lens, publications are posted directly to a user's Profile NFT and contain links that point to content stored externally, either on decentralized storage or on typical server infrastructure. Lens also allows users to create NFTs from content for resale and to control who can comment or reshare a given publication.

Rather than maintaining their own social graph in a private database, Web3 social media platforms simply read the social graph from the blockchain database and offer novel algorithms for content curation and moderation. Since the social graph is public, any user with a Lens handle can move their content and subscribers onto a more suitable platform, effectively breaking the power social media platforms currently derive from managing centralized server infrastructure.

This introduces the incentive for competition among Web3 social media platforms. In the race to produce the most popular product, Web3 social media platforms will be forced to become DAOs themselves, as this will enable them to entice creators and consumers of content with token-based incentives, granting them co-ownership of the platforms in the process.

## HOW WILL WEB3 SOCIAL MEDIA DRIVE INNOVATION IN DAO GOVERNANCE?

Although the still-abstract concept of Web3 social media may not immediately appear relevant for the current generation of DAOs, we believe this tooling will emerge as a force multiplier for the growth of token-powered organizations. We think Web3 social media will:

1. Promote accessibility in the decentralized technology stack
2. Bring commercial incentives for value capture to the forefront
3. Create a new standard for identity on the blockchain

First, the concept of social media delineates an entirely new set of requirements for the decentralized technology stack, for which a commercial incentive is not yet present. Although most DeFi users and stakeholders in existing DAOs may find the mandatory signing actions required in allocating funds or voting for proposals cumbersome, signing actions are sensible at a fundamental level and mimic the behavioral patterns required to move funds in traditional banking.

This will never be the case for Web3 social. The current state of Web3 social solutions still requires frequent signing operations, but the drive to introduce keyless signing will create a new level of usability for decentralized technologies. Coupled with the release of smartphones that can store and secure private keys and new techniques for comfortable and easy key recovery, DAOs will become far more accessible to the average user. There are several emerging solutions to private key encryption and social recovery on the market today, and drivers to reduce requirements for signing operations further will multiply as demand accelerates.

Second, as the obstacles related to private key generation and storage are mitigated, the commercial incentives for content producers will become increasingly relevant. Not only will content producers on Web3 own their content, data, and followers, but they may derive a far better negotiation position from their ability to move to an alternative platform. This will return negotiation power to content producers, as Web3 social media platforms will compete to attract the most popular personalities by offering token-based

incentives alongside larger cuts of advertising revenues.

This development will attract first movers, to whom the commercial incentives of owning their content while becoming an early token holder in the DAO managing the platform will appear extremely attractive.

Similarly, consumers will be able to leverage their resources by selecting what advertisements they are exposed to and the extent to which advertisements can be targeted to their specific profile. Calculating the average revenue generated per user on leading social media platforms today provides a sorry indication of how advertisers price consumer attention, but the introduction of a bilateral model for advertisement is likely to increase both the price and returns for targeted advertisements (and opens the door to new commercial models on which Web3 social media platforms may seek to compete).

On one hand, a platform may look to create a high-quality supply of content by offering token-based incentives for creators, allowing users to opt in for selected advertisements. If consumers are empowered to select categories of advertisements they are willing to consider, advertisers will be incentivized to pay far higher rates for what is, essentially, qualified sales leads. As there are no intermediaries extracting rent from the transaction, the total time spent browsing social media may become redundant, creating a tacit incentive for quality over quantity in the moderation of content and advertisement. On the other hand, platforms may push to create new demand by attracting users with token-based incentives for time spent consuming content and watching ads.

In both cases, the DAOs forming to govern these platforms will grow as a consequence of their ability to successfully create value by matching demand- and supply-side incentives, without extracting rent.

Third, the presence of a verifiable social history is a powerful enabler for the notion of identity in token-powered decision making. By referring to the existence of a vast network of followers and connections, some of whom will have a verifiable physical presence, proving your abilities and commitment as a newcomer in an existing or young DAO becomes significantly easier.

The existence of verifiable reputation extends beyond the use of DAO reputation into the notion of credit scoring for protocol users, which may unlock new areas of risk management for DeFi applications, as lending protocols may accept risk on individuals with a longstanding social presence across multiple communities.<sup>9</sup>

One might even imagine a future in which DAOs compete to attract talent and users across verticals by appealing directly to users with an extensive on-chain social history of interacting with a variety of communities and producing content and proposals. The concept of “user acquisition” may take a literal turn, as DAOs compete by rapidly delegating ownership to passionate prosumers in the race to remain relevant.

## THE IMPLICATIONS FOR ORGANIZATIONAL PRACTICE

Much like every organization is a digital organization today, the future will see nearly every company on earth interface with a blockchain-based solution at some point in their value chain.

How can today’s digital organizations level the momentum for growth and capture value in a future in which digital value creation will become increasingly disintermediated?

The process of defining a Web3 strategy ought to start with the recognition that Web3 is, by definition, oligopolistic. Low barriers to entry and nearly nonexistent consumer switching costs have created a highly competitive environment in which an upper segment of successful organizations command market power, while a long tail of smaller competitors imitate the first movers. The tense level of competition in Web3 continues to yield new, creative competitive dynamics, with competitors often using token-based incentives to drain users from larger competitors.

Consequently, attempts at generating value through classic lock-in effects are likely to fail, as defensibility and pricing power are challenging to maintain when users can simply move their business with the click of a button.

In stark contrast to the blitzscaling mentality popularized by venture capitalists of the noughties,

success in Web3 is won either by adding real value through incremental innovation of existing services or by creating brand new categories. In simple terms, you are better off growing the pie than attempting to steal your neighbor’s slice.

## WILL DAO GOVERNANCE RISE TO MEET THE CHALLENGES IN WEB3 SOCIAL MEDIA?

Social applications differ widely from financial applications in the degree to which they touch our lives. As such, the notion of Web3 social media introduces a set of novel challenges for decentralized communities, which have not yet surfaced in first-generation DAOs.

First, the notion of a transparent social graph runs counter to our core intuition for privacy. This will likely introduce challenges from proponents of the existing legislation and consensus on privacy and the right to be forgotten. Although data on external services may in some cases be removed, leaving only a link behind, a trace of the publication will be permanently enshrined in the blockchain ledger.

Second, the problem of content moderation is increasingly relevant in a world where censorship and deplatforming will do little but reduce the reach of an individual within the scope of a single platform. This underscores the ethical question of the legitimacy of censorship and the role of the digital public square in civil society.

Unfortunately, the ethical question of censorship becomes intrinsically entwined with the existence and pervasiveness of fake news or, even worse, repulsive and illegal content in the context of the immutability of the blockchain database. These issues require new thinking about the limitations of DAO governance within the context of content moderation. Can a DAO be tasked with defining guidelines for online discourse?<sup>10</sup> Can it be charged with cultivating and stimulating healthy dialogue in online communities? If so, how do we define legitimacy in this context? To what extent should this decision be made by a decentralized committee of peers,<sup>11</sup> and how do we source a truly representative set of stakeholders from a diverse group of representatives?

These are challenging questions requiring multi-disciplinary contributions from those in social sciences and humanities. Whether or not there are scalable, robust solutions to these problems remains to be seen.

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