Mastering DAOs

A Practical Guidebook for Building and Managing Decentralized Autonomous Organizations

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Contents

This guidebook summarizes the insights and outcomes from the Innosuisse Project 103.141 IP-ICT *Designing and Implementing a Decentralized Autonomous Organization*. Running from November 2022 to May 2024, the project was conducted as a collaborative effort between the ZHAW Institute for Organizational Viability and DecentAge AG with support from Innosuisse and Infinity Economics, Stefan Kneller. The project's primary objective was to develop a robust DAO Design Framework and deploy it on the Infinity Economics Platform (IEP). DecentAge AG successfully executed this model on the IEP, giving users an easy way to create and manage DAOs directly on the blockchain. This implementation allows organizations to operate without centralized management, streamlining governance and enhancing accessibility. This guide will provide you with the essential practical and scientific understanding of DAOs and how to effectively structure the initiation process in accordance with a DAO Design Canvas.

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How to use this guidebook

This guidebook serves as a guideline for practitioners who want to implement a decentralized autonomous organization (DAO). For this, we describe the most important elements of a DAO (Chapter 2) and give background information, tips, and recommendations on how to design these elements (Chapters 3 and 4). We provide a DAO Design Canvas that can be used to sketch out your DAO (Chapter 5). Finally, using a case study (Chapter 6), we show how to put these tools into practice using the DAO Assistant (Chapter 7) of the Infinity Economics Platform (IEP) blockchain to implement a DAO.

How to read this guidebook

If you want to gain a thorough understanding of how to design a DAO, you can read this guidebook from beginning to end. However, if you are already familiar with this subject you may use this guidebook as reference work, and consult only the chapters on topics you want to know more about. Within the text, we use three types of formatting to mark specific information:

Passages in orange are practical hints and recommendations for the reader seeking to design their own DAO. Read these sections carefully for how to optimally set up your organization.

Text in a gray textbox provides additional background information from the scientific literature. This content is for readers who want to dig deeper into specific topics, but is not necessary for those whose goal is to grasp the main concepts.

- **At the end of the main chapters, key takeaways are set apart in a bold frame.**
- **These summarize the main points of the chapter.**

1 Introduction

DAOs are complex entities, and setting up a DAO is a complicated task that requires careful planning and consideration. This guidebook is intended to help both DAO enthusiasts and designers by providing an overview of the key design elements involved in setting up a DAO. To do this we have developed a *DAO Design Framework* (Fig. 1) that centers around three key constituent elements, each significantly influencing all other design aspects:

- Purpose
- Use Case
- Legislation

Once these three constituent elements are defined, you can start to focus on the definition of the further five structural elements in your development and implementation of a DAO:

- Organizational Bodies
- Decision-Making
- Tokens
- Treasury
- Communication

Figure 1: DAO Design Framework

This guidebook comprehensively describes these different design elements of a DAO and shows how they are interrelated, to help you understand how to build a DAO from an organizational design perspective. In Chapter 2, we begin with an overview of the DAO Design Framework, introducing its several components. In Chapter 3 we delve into the three key constituent elements, and then analyze the five structural elements in Chapter 4. Chapter 5 presents the DAO Design Canvas, a practical tool for addressing the crucial questions involved in DAO design. Chapter 6 describes a case study that demonstrates a step-by-step approach to designing and implementing a DAO using the Infinity Economics Platform (IEP) blockchain. Finally, Chapter 7 concludes this guidebook with a brief introduction to the DAO Assistant on IEP and provides links to more technical details. After you have read this guidebook, you will have a clear understanding of the organizational design elements required to successfully establish a DAO.

2 DAO Design Framework

DAOs operate as blockchain-based entities, sharing a fundamental organizational principle with their traditional counterparts: they must serve a defined purpose. The distinctive nature of DAOs lies in their inherently decentralized nature, which is enabled by smart contracts and other on-chain functionalities that also make them autonomous to a certain degree. However, they rely on individuals for tasks beyond their automated capabilities. As such, they involve a community of DAO members, often referred to as internal stakeholders, who are fundamental for the operation, governance, and development of the DAO.

From an organizational perspective, DAOs can be broken down into fundamental elements that influence their overall design. Their purpose as defined above is intricately tied to the use case, a crucial factor influencing various layers of a DAO's structure. Additionally, the legal structure adopted by a DAO can significantly impact its organizational design, with some DAOs opting for a council vested with special decision-making powers. Recognizing the profound influence of purpose, use case, and legislation, these elements take on a special role, affecting all organizational layers. Therefore, these elements form the constituent elements in our design framework (Fig. 1). Building on insights from organizational theory and DAO literature, five key structural elements can be identified for designing and implementing DAOs, with organizational bodies taking on a special role because they link the other elements[1]:

- Organizational Bodies
- Decision-Making
- Tokens
- Treasury
- Communication

1 For a detailed description of the scientific development of the framework, see Lustenberger, M., Spychiger, F., & Küng, L. (2024). Designing a Decentralized Autonomous Organization. ECIS 2024 Proceedings 6. **https://aisel.aisnet.org/ecis2024/track16_fintech/track16_fintech/6**

In the scientific literature, DAOs have not yet been clearly defined. Ethereum founder Vitalik Buterin made an initial attempt in 2014 when he described a DAO as “an entity that lives on the internet and exists autonomously, but also heavily relies on hiring individuals to perform certain tasks that the automation itself cannot do.” An often-cited scientific definition of DAO comes from Hassan and De Filippi (2021), who referred to a DAO as “a blockchain-based system that enables people to coordinate and govern themselves mediated by a set of self-executing rules deployed on a public blockchain, and whose governance is decentralised.” A further academic definition is found in Santana and Albareda (2022): “DAOs are blockchain-based organizations fed by a peer-to-peer (P2P) network of contributors. Their management is decentralized without top executive teams and built on automated rules encoded in smart contracts, and their governance works autonomously based on a combination of on-chain and off-chain mechanisms that support community decision-making.” The World Economic Forum further defines DAOs in a specific report in 2023 as “organizational structures that use blockchains, digital assets and related technologies to direct resources, organize activities and make decisions. Community-oriented and code-driven, DAOs attempt to provide an alternative to traditional organizational forms by making operational information publicly available and enabling members to participate in governance.” (Gogel et al., 2023) Today, the Ethereum Community (2024) calls a DAO “a collectively-owned organization working towards a shared mission. They have built-in treasuries that no one has the authority to access without the approval of the group. Decisions are governed by proposals and voting to ensure everyone in the organization has a voice, and everything happens transparently on-chain [on a public blockchain].” Overall, we can see that all these definitions highlight the core aspects of DAOs: decentralized governance, smart contract-based rules, member control, and blockchain transparency.

3 Three Constituent Elements

DAOs can be considered blockchain-based organizations, and like any other organization they must serve a purpose that guides organizational activities. In practice today, DAOs serve various purposes, from *governance DAOs* that collectively govern digital products or services, to *investment DAOs* in which a community invests in projects, to *social DAOs* that bring together like-minded individuals. The purpose functions as a guiding force across the whole organization, influencing various other organizational elements. It is also related to the use case of the DAO, which in turn affects the structural elements of a DAO. DAOs tend to work well for non-profit organizations that are charitable in nature. However, there are also DAOs with monetary goals, especially in the case of investment DAOs, which generally seek profit/financial returns. Hence, the orientation of a DAO use case fundamentally affects the DAO design. While a profit-driven organization often requires more closed and tighter structures, a more socially driven organization may be built with a more open and looser organizational structure.

In most cases, DAOs have touchpoints with the traditional world, such as when they need to open a fiat bank account. As a result, many DAOs opt for a legal structure to interact effectively with real-world external entities. Having said that, the possible legal structures may affect the organizational design of DAOs, as some forms require an elected council that executes special decision power in the organization, for example, while other legal forms require DAO members to be identified. As these three elements – purpose, use case, and legislation – seem to take on a special role transcending many organizational layers, we define them as constituent elements in the framework shown in Figure 2.

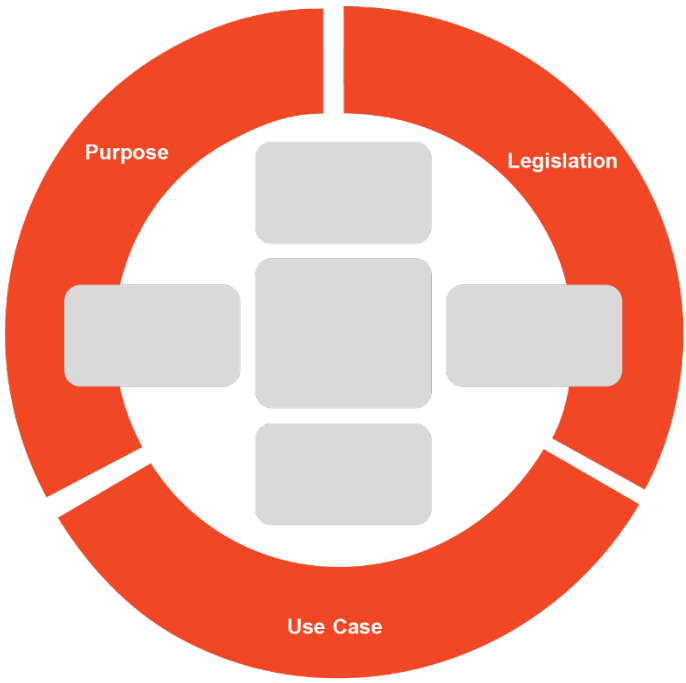

Figure 2: Three Constituent Elements

3.1 Purpose

Like any other organization, DAOs can be understood as a group of people (membership) who organize themselves in a specific way (governance) with the aim of achieving a shared mission (purpose). This shared purpose is important in guiding participants. With the definition of a clear organizational purpose, the goal towards which all decisions and activities of the organization should be directed is given. Problems can arise if either the purpose of the organization is unclear or the members pursue different (or in extreme cases, even contradictory) goals within the organization. Particularly in the case of DAOs, which can be understood as a special form of digital and virtual organization, the often anonymous and geographically dispersed members may pursue contradictory goals. In this respect, with a DAO particular attention must be paid to the fact that a clear organizational purpose must be widely shared by its member community.
Additionally, an organization must align the activities of dedicated groups with its purpose to ensure they perform the expected processes. This is generally done by encouraging desired organizational activities and imposing sanctions for disobeying the organization's rules. In DAOs, the organizational activities necessary to pursue the shared purpose are normally encouraged through a formal positive and negative incentive structure based on rewards that align the behavior of the members with the purpose. Therefore, the purpose should always be kept in mind when designing a DAO, as all the activities of these organizations should serve to achieve that purpose.

In a DAO, the members (and thus the community itself) can be described as autonomous in the sense that the individual members could theoretically remain anonymous, and they can join and leave the DAO independently at their own discretion without the approval of a higher authority. However, the anonymity and decentralization of decision-making structures also lead to significant problems, both from a legal perspective and in other respects, relating to the responsibilities and accountability of a DAO and its members. The lack of clear responsibilities and accountability within a network of anonymous participants can lead to significant governance problems, such as:

- Uncertainty over decision-making authority, causing delays and inefficiencies.
- Duplicated efforts, missed opportunities, and a lack of progress toward goals.
- Poor ownership of tasks, resulting in suboptimal performance and misconduct.
- Challenges and delays in resolving conflicts.
- Participants engaging in detrimental behaviors without fear of repercussions.
- Reduced engagement and participation, undermining collaboration.
- Difficulties in enforcing rules and imposing sanctions.

Furthermore, it can compromise the purpose of a DAO, since the anonymous members may be disconnected from the purpose. Therefore, the purpose should transcend the organizational elements and be an integral element such that all members are aligned with the purpose.

Particular attention must be paid to the fact that a clear organizational purpose must be widely shared by a DAO's member community. Additionally, an organization must be able to align member activities with the purpose to make them perform tasks and carry out the processes that are expected. This is generally done by encouraging desired organizational activities and imposing sanctions for disobeying organizational rules.

It is important to note that the purpose of an organization may change over time and can be adapted. A living organization should be able to evolve and develop, meaning the purpose should be periodically reconsidered. Examples include:

- Changes in general conditions
- Achievement of the original goal
- Realization that the original goal is unrealistic
- Breaking down the goal into intermediate goals

Many DAOs have long-term purposes that adapt only slowly over time. Governance DAOs may have the purpose of "governing a digital platform". Such a purpose is quite general and can be seen as a long-term project. However, there are also DAOs that have short-term purposes. For instance, ConstitutionDAO was established in 2021 with the specific purpose of purchasing an original copy of the US Constitution at a Sotheby's auction. As the DAO was not successful in purchasing the US Constitution, the single-purpose DAO was closed, and the DAO members were refunded. Therefore, one should also think about what will happen both when such a DAO successfully achieves its purpose, but also what will happen in the event, as in the case of ConstitutionDAO, it does not. There are then two options:

- The community decides on a new purpose. This could be the case if a DAO was made for an iterative setup, such as creating a sustainable photovoltaic plant at a specific location. Afterwards, the DAO could decide to create another plant at another location or to shift its focus to wind power.
- The DAO is dissolved when it has achieved its objectives. This could be the case for one-off undertakings, such as setting up a DAO to support a candidate for office. Once the election is decided, the purpose is fulfilled, and the DAO created for this purpose is obsolete and the community can dissolve.

It is generally accepted in organizational theory literature that an organization needs a specific purpose to give direction, coherence, and meaning to its activities. However, the role of organizational purpose varies between organizational theories, with each offering its own insights into why a clear purpose is critical. For instance, in scientific management and administrative theory, the organizational purpose is to achieve organizational efficiency and productivity. This focus directs an organization's efforts toward optimizing tasks and processes to maximize efficiency, as Taylor (1911) and Fayol (1949) emphasized. Similarly, Weber's

(1947) bureaucratic theory emphasizes the importance of a clear goal to ensure rationality, predictability, and efficiency through a structured hierarchy and to legitimize formal structures and rules that enable a clear division of labor and accountability. In contrast, Mayo's (1933) human relations movement emphasizes that a clear purpose increases employee satisfaction and productivity through improved human relations, the principle being that by aligning organizational activities with employee well-being and motivation, a positive work environment can be fostered. Then, there is the contingency theory argued by both Woodward (1958) and Lawrence and Lorsch (1967), which states that an organizational purpose is essential for adapting organizational structures and processes to specific environmental and situational factors in order to ensure flexibility and responsiveness to external contingencies. Similarly, according to both Bertalanffy's (1968) systems theory and Luhmann's (2000) social system theory, organizations are viewed as open systems that must achieve synergy and adaptability, whereby a clear purpose helps to maintain the balance between the organization and its environment and ensure that all parts work cohesively towards common goals. DiMaggio and Powell's (1983) institutional theory also assumes that organizations need a specific purpose to gain legitimacy and ensure their survival by adapting to societal norms and expectations and aligning their practices with external cultural and institutional constraints. Pfeffer and Salancik's (1978) resource dependency theory likewise emphasizes the need for a clear purpose to manage dependencies and power relations with external institutions. This purpose guides strategies for acquiring and maintaining essential resources and managing power dynamics to reduce uncertainty. Similarly, Freeman's (1984) stakeholder theory emphasizes that a specific purpose helps to balance the interests of different stakeholders for long-term success, ensure value creation for all stakeholders, and promote sustainability and ethical behavior. As Stacey (1996) points out with complexity theory, a clear purpose enables organizations to manage non-linear change and uncertainty and to foster innovation and self-organization to deal with complexity. In turn, Teece, Pisano, and Shuen's (1997) dynamic capabilities theory suggests that a specific purpose guides the development of capabilities to integrate, build, and reconfigure internal and external competencies and helps organizations to innovate and respond to a rapidly changing environment. Overall, a specific purpose is essential for guiding the behavior, decision-making, and strategies of organizations in different theoretical frameworks. The purpose provides direction, improves coherence, ensures adaptation to the environment, and promotes legitimacy and sustainability, all of which ultimately contribute to the success and effectiveness of the organization.

- **The purpose guides all the activities in a DAO and defines its structures.**
- **The DAO's community needs to be aligned according to the purpose of the DAO.**
- **The purpose of a DAO may change over time or be achieved. Then the DAO may need to evolve, or may even be dissolved because it has reached its goals.**

3.2 Use Case

DAOs utilize blockchain technology to coordinate and manage activities through self-executing computer programs, bypassing the need for traditional management or employees. This novel form of decentralized governance introduces an alternative organizational coordination mechanism alongside hierarchy, contractual cooperation, and the free market. By embracing democratic principles and new work structures, DAOs potentially offer innovative digital collaboration solutions and new ways of creating value. DAOs engage external entities to provide community services, but also as potential customers, with individual activities coordinated autonomously and transparently via smart contracts and other on-chain services and functionalities, aiming for a more efficient and equitable value creation model.

The flexibility of DAOs makes them versatile across various industries, and as the technology evolves and becomes more user-friendly, new applications are likely to emerge. Their decentralized and transparent nature is particularly attractive for projects and products that benefit from community-driven decision-making and participation. DAOs can be classified into a number of types. These include:

- **Governance DAOs** collectively develop and maintain digital systems and products such as blockchains, decentralized exchanges (DEXs), or applications through community-driven decision-making. Good examples of governance DAOs are blockchains like Tezos; they can also be seen in DEXs like Uniswap or in borrowing and lending platforms like MakerDAO.
- **Investment DAOs** bring together contributors to pool funds for collective investment decisions in platforms like The LAO.
- **Grant DAOs** provide decentralized platforms to facilitate the funding of public goods and community-driven non-profit initiatives. A famous example in this category is Moloch DAO, which allocates capital with the primary purpose of developing the Ethereum platform as a digital public good.
- **Content DAOs** prioritize self-organizing, community-driven content, ensuring individual creators receive a fair share. A prominent example of these DAOs is BanklessDAO.
- **Corporate Governance DAOs** apply DAOs in traditional corporations for decision-making, improving transparency, and engaging stakeholders in important decisions. Shapeshift and DOrg are both traditional organizational structures from the corporate landscape that have successfully transitioned to decentralized governance models.
- **Collector DAOs** are platforms for transparent and decentralized management of valuable assets—typically digital assets like NFTs, art, or other collectibles. Examples of such DAOs are Flamingo DAO and PleasrDAO.
- **Energy DAOs** implement distributed energy management solutions that enable communities to make collective decisions about sustainable energy projects and resource allocation. These include Grid+ and the EWF (Energy Web Foundation).
- **Research DAOs,** such as Vita DAO or LabDAO, facilitate collaborative research efforts by funding projects in healthcare, biotechnology, and medical innovation.

- **Education DAOs** support decentralized education initiatives by creating platforms where educators, students, and administrators can collectively make decisions about curriculum, resources, and policies. EduDAO is a leading example of this model being applied to advance educational opportunities and innovation in the sector.
- **Gaming DAOs** create solutions for the governance and development of virtual worlds and gaming ecosystems, enabling players to have a voice in the evolution of the gaming environment. Yield Guild Games (YGG) and GameDAO are leading examples of how Gaming DAOs can transform the way games are developed, played, and monetized.

By introducing decentralized decision-making and empowering community members to collaboratively shape a DAO's use case, DAOs introduce the notion of inclusivity within their value creation. DAOs therefore represent a paradigm shift in organizational design, offering new possibilities for co-creation and enabling shared revenue generation through various services and avenues within their ecosystem. These include charging transaction fees for activities like trading on decentralized exchanges, implementing membership fees for participation in decision-making processes, earning asset management fees from managing digital assets, and providing liquidity in DeFi protocols to earn trading fees. Additionally, DAOs can generate revenue through governance token sales, partnerships with other organizations, consulting services, monetizing content or data, licensing intellectual property, and providing staking rewards to incentivize community participation. As a rule, this revenue is used to cover operating costs and as an incentive or renumeration for certain tasks; generally, profit-seeking by members is rare.

> **Organizations that necessitate physical presence may find DAOs less suitable; these may be better suited for technology-oriented and virtual organizations. Presently, DAOs are predominantly employed in Decentralized Finance (DeFi), notably for establishing and managing decentralized exchanges, but increasingly, newer versions emphasize social concerns and ways to address them. DAOs acting as social organizations should prioritize community involvement; this would potentially yield substantial value with genuine and widespread community impact. However, it is essential to recognize that the DAO model is not universally applicable across all use scenarios and warrants careful consideration.**

While the internet was highly successful in establishing new forms of centralized digital business models and gave rise to the so-called "sharing economy" (Tumasjan & Beutel, 2019), which heavily involved user activity and helped build an understanding of digital communities (Hoegg at al., 2006), it has lacked effective methods to allocate value to those who create, consume, and maintain the network within the community (Murray et al., 2023). And while these centralized

organizational structures have been very successful in the past, they are not well-suited for today's dynamic and rapidly changing business realities driven by technology (Fenwick et al., 2019). DAOs as new types of organizational structures are gaining momentum on the web and are reshaping digital communities, communication and collaboration, and the way value is being created, shared, and distributed (Wang et al., 2023). Murray et al. (2023) point to the significant opportunities for innovation due to reduced networking barriers, while Vermeulen et al. (2018) emphasize the potential of DAOs shifting the power into the hands of the community to establish "community-owned" platforms, which are not based on traditional hierarchies. Hence, DAOs offer new use case possibilities that allow for automated agreements between anonymous participants to achieve both cooperation and coordination in public and distributed decision-making processes (Lumineau et al., 2021). In summary, it has been argued (Bellavitis et al., 2023) that DAOs represent the natural evolution of crowd-based decision-making platforms strongly engaging with the community and enabling new value distribution models, while simultaneously disrupting current intermediated business structures and industries.

- **DAOs can cover a range of use cases that profit from community-driven decision-making and participation.**
- **The limitations on the applicability of DAOs to individual use cases must be considered.**
- **DAOs may generate revenue through services, fees, licensing, staking, or token sales.**

3.3 Legislation

Some DAOs are structured without a legal entity. While this approach aligns with the principles of decentralization and autonomy, offering participants greater control over decision-making processes and reducing reliance on centralized authorities, it may pose challenges regarding legal recognition, regulatory compliance, accountability, and liability. Without a legal form, a DAO cannot enter into contractual agreements with external parties, cannot open a bank account, and may be subject to sanctions by regulatory authorities. Moreover, if such a DAO is classified as simple partnership, each of its members bears unlimited liability for all activities of the DAO. This affects every single token holder. While this might be irrelevant for most token holders, it can be a significant challenge for venture capital funds invested in DAOs. In practical terms, the lack of a formal legal identity can lead to several challenges for DAOs, especially when interacting with the real world: The hiring of employees or external service providers, opening bank accounts, and paying taxes all become significantly difficult and, in some cases, impossible without a formal legal identity.

With the aim of creating legal certainty and protection, many communities therefore decide to wrap their DAO in a legally recognized organizational entity, such as an association or foundation

under Swiss law or a limited liability company (LLC) under the law of a US state such as Wyoming, Vermont, or Delaware. Further existing forms of regulated DAOs include the Maltese Innovative Technology Arrangement (ITA), the Marshall Island DAO Act 2023, and the Cayman Islands Foundation. These approaches provide legal recognition and protection for the organization and its participants, making it easier to navigate regulatory requirements, enter into contractual agreements, and resolve disputes. However, they may introduce elements of centralization and undermine the core principles of decentralization and autonomy.

A hybrid approach involves combining elements of both DAOs and traditional legal structures. For example, a DAO may establish a legal entity to represent its interests in legal agreements and regulatory matters while maintaining decentralized governance mechanisms for decision-making processes. This approach seeks to strike a balance between legal compliance and decentralized operation, but it may add complexity and overhead to the DAO's operations. Ultimately, the choice of legal structure for a DAO depends on various factors, including the DAO's purpose, activities, regulatory environment, and risk tolerance. Some DAOs may opt to operate without a legal wrapper, relying on the decentralized nature of blockchain technology to achieve their purpose. Others may choose to establish a legal entity to provide legal recognition and protection, albeit at the cost of some decentralization and member anonymity. The decision may also be influenced by practical considerations, such as the need to interact with traditional legal systems, engage in commercial activities, or attract investment. Determining the most appropriate legal structure for a DAO requires careful consideration and may benefit from input from legal experts, regulators, and other stakeholders in the blockchain ecosystem. The legal form of a DAO may have implications for the organizational structure because certain organizational bodies, processes, or duties are prescribed by law.

> **In the decentralized environment of a DAO, participants benefit from the anonymity provided by the blockchain, as they are identified solely by their public key, representing their wallet address. Typically, their "real" identities are only revealed when interacting with regulated services that mandate Know Your Customer (KYC) verification. This pseudonymous structure lowers the barrier for entry into a DAO primarily constrained by economic factors. Consequently, DAOs attract members from diverse geographical locations, forming a community of individuals with varying degrees of reliability. This should be considered when setting up a DAO.**

With the development of the Ethereum smart contract blockchain and the first discussion about DAOs in 2014, the debate on the legal implications of this technology and its decentralized applications also arose. In this context, Ethereum co-founder Gavin Wood (2014) proposed the

idea of “alegality”, stating that the blockchain supports and enables activities that are neither legal nor illegal, essentially operating outside the reach of the law and therefore resisting inclusion in a legal system. De Filippi et al. (2022) have also argued that DAOs exist in a gray area where the law has not yet fully caught up and that this alegality of DAOs presents both opportunities for innovation and challenges for regulation. Legal scholars and policymakers are actively debating how to adapt legal systems to accommodate and govern these technologies effectively. Some argue that DAOs should be legally recognized and that the current legal landscape is flexible enough to cope with DAOs (Gyr, 2017; Riva 2020), while others argue that the complexity of defining and regulating DAOs underscores the urgent need for DAO-specific legislation to support their growth and integration into the broader legal and economic landscape (Boss, 2023). Based on that, a consortium of academics and practitioners has proposed a model law framework to create legal certainty for DAOs. This *COALA DAO Model Law* is intended to serve as a foundational framework that jurisdictions can consider when developing laws or regulations for DAOs, aiming to foster a conducive environment for the growth of decentralized governance structures within the bounds of existing legal frameworks.

- **The DAO and its members are always subject to a regulatory environment. Anonymity is no protection.**
- **A legal entity safeguards DAO members against liability, but it may compromise decentralization and member anonymity.**
- **A number of legal forms are suitable for DAOs, these being primarily the association, foundation, or LLC.**
- **The legal form can directly influence the design decisions and the organizational structure of a DAO.**

4 Five Structural Elements

In a DAO, the structural elements of organizational bodies, decision-making, tokens, treasury, and communication form a complex interplay that supports operations and viability. These elements are closely interlinked, and each affects and is affected by the others (Fig. 3). The organizational bodies in particular have a profound influence on the entire DAO structure, as the design of the bodies also determines the rights and responsibilities of the members, how decisions are made, and how resources are managed in DAOs. Decision-making processes in DAOs further depend on transparent participation and fairness, which requires clear communication channels facilitated by the organizational framework. The flexibility of these processes is crucial for effectively adaptating to changes in DAO objectives, member dynamics, and governance structures. Tokens, which are an integral part of DAO functionality, incentivize member engagement, allocate economic rewards, and grant voting rights. Careful token design is essential for mitigating risk and ensuring equitable participation within the DAO. The treasury, which manages assets and financial stability, interacts closely with the token system.

Furthermore, effective communication is fundamental to transparency and community engagement in DAOs. Maintaining open and accessible platforms and a balanced flow of information promotes trust and active participation by the members. Moreover, legal and regulatory frameworks often require compromises that affect all structural elements. Adaptability is, therefore, key in developing DAOs that can manage these complex interdependencies and evolving needs and ensure long-term effectiveness and viability.

Figure 3: Five Structural Elements

4.1 Organizational Bodies

An organization must establish its boundaries by defining its members, often referred to as the "community" in DAOs. This community can be further categorized into subcommunities or organizational bodies, each with specific roles, functions, and rights (Fig. 4). In DAOs, organizational bodies are often named to reflect their roles, functions, or thematic focus within the organization. Given the autonomous and decentralized nature of DAOs, naming conventions can vary widely; however, some common examples are:

- **Guilds:** specialized groups focusing on specific functions and sharing common interests, such as those in Bankless DAO.
- **Pods:** small, self-organizing units, as seen in the Orca Protocol.
- **Circles:** inspired by sociocracy and holacracy, these represent specific responsibilities. In Bankless DAO, guilds are often represented by circles.
- **Squads:** Agile-inspired teams focused on temporary projects, like those in SquadDAO.
- **Working Groups:** task-oriented teams, commonly used by Gitcoin.
- **Task Forces:** temporary groups addressing urgent tasks, such as those in Aragon.
- **Committees:** formal groups overseeing specific areas like ethics or funding, as in MakerDAO.
- **Chapters:** geographic or thematic subdivisions for efficient coordination, such as those in Metagame.
- **Labs:** teams focused on innovation and experimenting with new ideas, similar to Aave Grants DAO.
- **Nodes:** autonomous units within a network, as implemented by DAOstack.

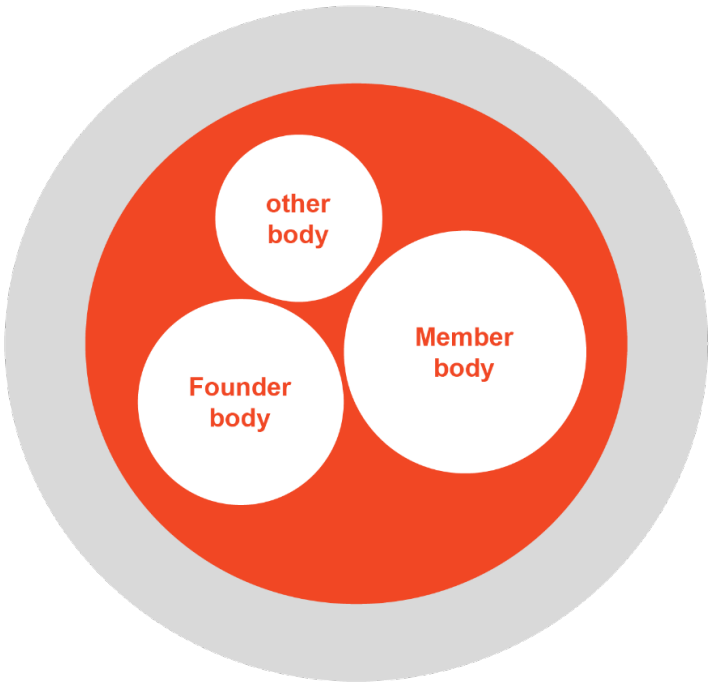

Figure 4: Structural Element: Organizational Bodies

Given the different tasks and objectives of these organizational bodies, which include making contributions, participating in voting protocols, and managing member dynamics, the rights within these bodies may also vary. These rights may include access to funding, decision-making, voting on proposals, and allocation of resources. Depending on what organizational groups they belong to, not all members of a DAO will ultimately have the same rights, which means that DAOs are not by definition organizations with equal rights for all.

> **There are different ways to become a member of an organizational body. Some bodies such as the community might be very open, and the mere acquisition of a token is enough. Others might require participants to contribute to the DAO in a substantial way and distribute badges that entitle them to join a specific body. Still other organizational bodies might require some kind of a membership fee. If a DAO has specialized bodies, their members are normally elected by the community based on their merits. While there are different entry mechanisms, at a minimum the access to the community should be very open to allow for inclusivity. As for the exit from an organizational body, here again there are many options. Participants may voluntarily leave the bodies; this is an option that should always be possible to ensure flexibility for DAO participants. At the same time, this is also a challenge for DAOs, as a high turnover in an organization might not be optimal. However, a forced exit of an undesired member should also be an option for the community under certain circumstances.**

Founders

The founding phase is usually initiated by a small group of people who share the purpose, vision, and mission of the DAO. These founders are the team that brings the DAO to life. As such, they are the initial organizational body and at this stage define many of the organizational characteristics of a DAO. In many DAOs, the founders initially have a lot of power and make many decisions centrally. This is necessary because generally when a DAO is founded there is not yet a large community behind it, and this is when many quick decisions need to be made. Decentralizing these decisions at this early stage would slow down the DAO enormously and hinder the organization's development.

Members

The members of a DAO are usually identified by a token which must be acquired once or on a recurring basis. Certain rights and obligations are associated with the token; the rights are formal rights, such as share and voting rights, but the obligations are usually informal. It is precisely these informal obligations that often lead to passivity among the DAO membership, which can become a problem depending on the design of the processes in a DAO (e.g., deadlock situations

in decision-making because a given quorum might not be reached). It is therefore also possible that a certain hierarchy may develop among the members, under which individual members have more influence and possibly even more rights due to their contribution and reputation in the community. In such dynamic and flexible structures, temporal “hierarchies” might be unproblematic and can even increase efficiency.

Other bodies

A DAO may create other committees or teams on an ongoing basis that have dedicated tasks to fulfill. In particular, a DAO can instantiate project teams that exist only temporarily for certain tasks, functions, or topics. Such a team can have a separate budget that they can manage and allocate independently. Within the team, different decision-making mechanisms can be applied. It is important to provide the team with a clear task and the necessary skills and resources. Only then can a team work independently on a task (or even a project) and be accountable to another body such as the community or the founders. Also to be considered in this regard are the conditional funds that are only released to a team after reaching a milestone. Besides temporary teams, a DAO may also instantiate more permanent functional teams such as an accounting team, a marketing team, and so on. However, in principle, all these teams are temporary, because the DAO needs to be able to adapt to a changing environment. At a minimum, no individuals should have permanent positions, as this would potentially lead to centralized authorities.

> **Working in a team and contributing to the DAO can be incentivized (or renumerated) through tokens. Whether the members of a certain organizational body should be incentivized (financially or in some other way) is an important decision. Some teams profit from members who are intrinsically motivated, e.g., the council of a DAO. The council takes many strategic decisions that should be aligned with the purpose of the DAO and may be adversely influenced by potential financial interests. However, for teams that are more active on the operational side in DAOs, financial remuneration may very well be an effective compensation for their contribution.**

The term “organizational structures” refers to the way in which organizations design their internal framework to align activities, processes, and hierarchies to achieve their goals. These structures are crucial for coordinating activities, managing resources, and ensuring efficient communication and decision-making. Several common types of organizational structures have been identified both in practice and in the academic literature. For example, Weber (1947) described how hierarchical structures are characterized by a clear chain of command from the top management level to the lowest level. This structure ensures order and predictability but can be rigid and slow

to adapt to change (Burns & Stalker, 1961). The matrix structure, highlighted by Davis and Lawrence (1977), combines functional and departmental structures. Employees report to both a functional manager and a project or product manager, which promotes flexibility and collaboration but can also lead to conflicts of authority and increased complexity (Galbraith, 1971). In flat structures, as proposed by Drucker (1988), there are few or no middle management levels between employees and managers. This structure aims to reduce bureaucracy and speed up communication and decision-making. However, it can be difficult to manage in larger organizations due to the wide span of control (Olson & Eoyang, 2001). According to Miles and Snow (1986), network structures imply that a central organization outsources many functions to specialized organizations. This structure is very flexible and can adapt quickly to change, though this depends heavily on the quality and reliability of external partners (Powell, 1990). As described by Chandler (1962), divisional structures divide organizations into semi-autonomous units or departments, each with its own resources and goals. This allows for greater focus and accountability within individual departments but can lead to a duplication of resources and efforts (Hill & Hoskisson, 1987). Mintzberg (1983), in turn, identifies ideology, expertise and politics as key structuring factors that influence organizations and lead to alternative organizational structures. For example, a strong organizational ideology ensures the direction and coherence of an organization and reduces the need for strict hierarchical control (Denison & Mishra, 1995), whereas organizations structured based on expertise will function as a meritocracy in which decisions are made by those with the most relevant knowledge. This can improve the quality of decisions but can also create dependencies on key individuals (Pfeffer & Sutton, 2006). When ideology or knowledge-based structures become unstable, politics can become a dominant structural force in organizations. This often leads to conflict and power struggles as different factions fight for influence within the organization (Pfeffer, 1981).

- **DAOs have a variety of organizational bodies, each with specific rights and responsibilities.**
- **Joining a body may require tokens, contributions, or fees, and members may have different levels of access and influence.**
- **In many cases, founders start the DAO with centralized power, while teams handle tasks and can be incentivized with tokens, balancing internal hierarchies and flexibility.**

4.2 Decision-Making

In the context of DAOs, the involvement of a broad community is one key aspect that requires close consideration due to its central role in shaping the blockchain-based governance paradigm. In traditional organizational structures, decision-making power is often hierarchically centralized, whereas DAOs distribute this power among its members and foster a culture of

collective participation within its community. The typical decision-making process within a DAO involves four key stages, which are provided by on-chain and off-chain decision-making structures (Fig. 5):

- Proposal Submission
- Community Discussion
- Community Voting
- Execution/Commissioning

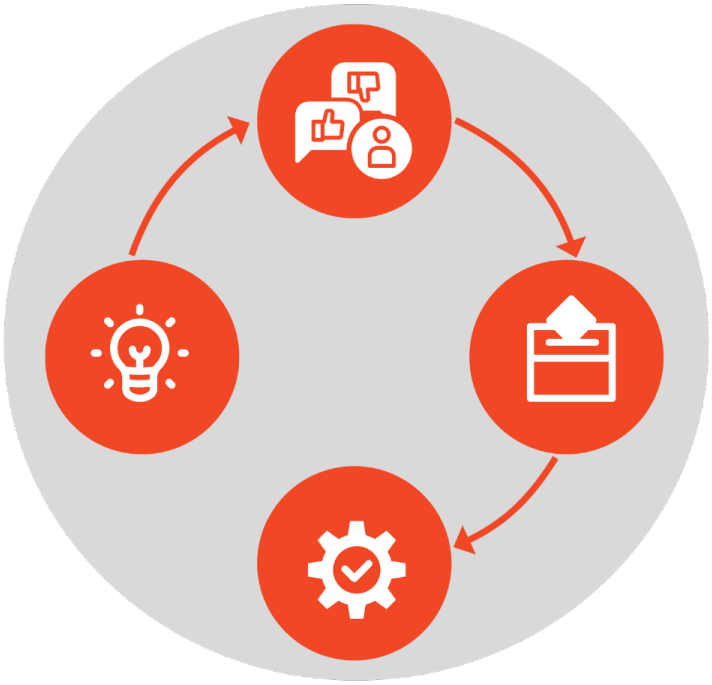

Figure 5: Structural Element: Decision-Making

Proposals can normally be submitted by any member or group of members within the DAO community and can cover various topics ranging from technical adjustments to funding requests. These proposals are discussed extensively through various communication channels to promote consensus building and ensure that different perspectives are considered. The voting phase is the decisive moment when proposals are either accepted or rejected, which is the culmination of the decision-making process. Unlike traditional organizations, where decision-making can be limited to the executive level, DAOs rely on decentralized voting mechanisms that give all members the opportunity to participate directly.

The decision-making process in DAOs typically starts with *off-chain idea generation and sentiment investigation*. During this phase, proposals are created and discussed in community forums, chat platforms, and meetings. Off-chain refers to activities that occur outside the blockchain. Off-chain voting, often facilitated by platforms like Snapshot, is used to gauge

community sentiment without incurring the costs of on-chain transactions. This preliminary voting helps filter out proposals that lack sufficient support, making the process more efficient.
Once a proposal passes the off-chain sentiment investigation, it moves to the *on-chain voting phase*. On-chain refers to activities that are recorded on the blockchain. In this phase, community members vote with their governance tokens, and the results are recorded on the blockchain, ensuring transparency and immutability. Various voting protocols can be employed, differing in duration, quorum size, and other parameters. If the proposal is approved, it enters the execution phase, where it can be implemented either automatically through smart contracts or manually by development teams.

However, DAOs currently face several challenges and problems regarding voting mechanisms (see grey text above for more details). Several DAOs have, therefore, developed different voting mechanisms to overcome these challenges.

- **Token-based quorum voting** is simple and widely used because it is based on the principle of “one token, one vote” and requires a quorum. However, it runs the risk of centralizing power in the hands of wealthy actors and can lead to deadlock when participation drops. Examples include Tezos and UniSwap.
- **Quadratic voting** aims to counteract the concentration of power by increasing the cost of additional votes by the square, giving minorities a stronger voice and reducing the influence of wealthy voters. It is, however, not sybil-resistant and needs an identity concept for the DAO members. GitCoin is a notable example.
- **Conviction voting,** as implemented by 1Hive and Commons Stack, allows members to spread out their votes over time, encouraging long-term engagement and increasing the influence of small token holders, but it can result in funds being blocked.
- **Futarchy** uses prediction markets to decide on proposals, theoretically optimizing decision-making by leveraging collective intelligence and financial incentives, though it is challenging to measure goals.
- **Holographic consensus** combines prediction markets with local decision-making that aligns with global opinion, balancing efficiency and decentralization, but it is complicated to implement on blockchain. Gnosis DAO uses this mechanism.
- **Reputation-based voting** allocates voting power based on reputation rather than wealth, which encourages positive contributions but potentially leading to exclusivity and difficulties in defining how reputation is built. Cardano Catalyst is a well-known example.
- **Rage quitting,** as implemented by MolochDAO, provides an exit option for disaffected members, protecting minority interests and preventing the tyranny of the majority. However, it presents a threat of forking and can potentially slow down decision-making.

Each of these mechanisms addresses, to varying degrees, the centralization of governance, concentration of voting rights, and low participation, and aims to create a more equitable and

effective decision-making process in DAOs. However, each also introduces new complexities and potential vulnerabilities, suggesting that the search for optimal decision-making in a DAO remains an ongoing challenge. Within a DAO, different mechanisms can be applied in different organizational bodies, depending on the efficiency and decentralization needs of a body.

Hence, the decision-making process within DAOs is a dynamic interplay of community engagement, technological innovation, and decentralized governance principles. By incorporating the principles of inclusivity, transparency, and deliberative democracy, DAOs empower stakeholders to actively participate in shaping the future of governance. Through iterative cycles of idea generation, sentiment exploration, voting, and execution, DAOs embody the democratization of decision-making and promote resilience and adaptability in an ever-evolving landscape of decentralized governance.

> **It is important to recognize the influence of key stakeholders in shaping opinion within the community, which may have an impact on the final voting outcome. Once a proposal has been successfully approved, the execution phase follows, in which certain measures are implemented either on-chain through smart contracts or through off-chain adjustments by community stakeholders. The integration of on-chain and off-chain processes ensures the efficient implementation of approved proposals and maintains the integrity of the DAO's governance framework.**

Organizations predominantly revolve around decisions and must possess clear decision-making powers, rules, and processes to avoid descending into political chaos (Mintzberg, 1983). Decision-making emerges as a frequently discussed design challenge in the DAO literature, underscoring its significance as the second structural element (Kaal, 2021; Zhao et al., 2022). The challenges and problems in decision-making processes that DAOs face are currently numerous and are mainly related to the centralization of administration, the concentration of voting rights, and low participation. Thus, while decision-making in DAOs should ideally be accessible to the entire community, the reality is often different due to the parameterization of voting protocols, such as timing, proposal thresholds, and voting thresholds. Axelsen et al. (2022) described that often a small group, typically the core team, can update the code and control the treasury via a multi-signature wallet, which compromises decentralization. DAOs also often implement crisis management mechanisms that allow for temporary centralization in emergencies, which is necessary to protect participants' funds quickly when the need arises. Dispute resolution mechanisms can also centralize decision-making processes. There is an inherent trade-off between decentralization and efficiency, as the inclusion of more participants tends to reduce efficiency. Sun et al. (2024) argue that this trade-off also affects performance,

noting that in DeFi, voting dominated by large players can lead to better protocol performance, while Zhao et al. (2022) observe that community voting on operational decisions has a negative impact on DAO performance, although strategic decisions benefit from broader participation. Concentration of voting rights is another critical issue, as DAOs often function more like an oligarchy than a democracy. As voting rights are usually based on token ownership, wealthier actors have more influence. Campajola et al. (2022) attribute this to the phenomenon of the Matthew effect, in which those who are at an advantage at the beginning can accumulate more advantages over time, and those who are at a disadvantage at the beginning become more disadvantaged over time ("the rich get richer, and the poor get poorer"). Feichtinger et al. (2023) found that voting rights are highly concentrated in DAOs, with fewer than ten actors controlling more than 50% of the voting rights in most projects.

Similarly, based on a quantitative evaluation of DAO communities, Peña-Calvin et al. (2024) found that while most DAOs have short lifespans and low participation, there is a trend toward oligarchy as they grow. Even if some of these actors represent broader interests, this concentration can inhibit diversity and growth. Han et al. (2023) show that the concentration of voting rights correlates negatively with the further growth of a DAO, which has a detrimental effect on both the ideological and practical aspects of DAO performance. Low participation further exacerbates the challenges of decision-making in DAOs. Although DAOs theoretically give all members the opportunity to participate, actual participation rates are often low. Liu (2023) analyzed voting activities within different DAOs and found an average participation rate of under 2% among individual token holders. Feichtinger et al. (2023) found that voting participation measured through voting power instead of individual voter participation fluctuates around 30-40% in DAOs. This indicates that small voters often do not participate due to their limited influence on decisions, with voting typically dominated by large token holders who in many cases represent multiple small actors, making DAOs more akin to a representative democracy rather than the direct democracy they were initially touted as. Rikken et al. (2023) found that a minimum number of 20 token holders is required to sustain the activity of DAOs, suggesting a threshold for engagement but not necessarily ensuring high participation. DAOs seek to integrate community input and technological solutions to manage decision-making, though finding the right balance between inclusivity and efficiency is an ongoing challenge.

- **DAOs seek to integrate community input and technological solutions to manage decision-making, though finding the right balance between inclusivity and efficiency is an ongoing challenge.**
- **Core challenges of DAOs in decision-making are centralization of administration, concentrated voting rights, and low participation.**
- **Voting mechanisms like quadratic voting and reputation-based voting aim to balance power and participation and to enhance decision-making processes.**

4.3 Token

Tokens can have very different forms and functionalities. For example, the Swiss Financial Market Authority (FINMA) has issued guidelines for classifying tokens[2] and introduced three categories: payment tokens, utility tokens, and asset tokens (Fig. 6). Payment tokens are tokens that are synonymous with cryptocurrencies and are mainly used for payments. Utility tokens are tokens that grant access to certain services or applications. The third category, asset tokens, refers to tokens that are connected to earning streams such as dividends or interest payments. As such, they are comparable to equities, bonds, or derivatives.

These classifications are relevant for legal reasons and determine which regulations apply. However, in DAOs tokens primarily serve as a central element for governance, incentivization, and operational structuring. Tokens help encode the rules and protocols of a DAO using smart contracts on a blockchain, reflecting the organizational structure. For instance, tokens can align the members with the specific purpose of an organization by implementing various social and economic instruments. Additionally, they represent the value of the DAO, with market prices indicating the perceived value. In particular, asset tokens are tied to income streams or assets under management, reinforcing this value. Furthermore, tokens incentivize participation and encourage members to actively participate by rewarding them for their contributions. Tokens also signal membership and determine access and voting rights based on the number of tokens held. This is crucial for governance, as it ensures that decision-making processes are transparent and decentralized, even if this can lead to a concentration of votes for large holders (as explained in the previous section).

In general, when setting up a DAO, the structure of the token system is of crucial importance, as it governs membership, decision-making rights, and all financial aspects of a DAO. Terms such as “cryptoeconomics” or “tokenomics” are proposed to better describe the unique token-based economic models of DAOs. In addition to economic incentives, social benefits such as reputation and recognition also motivate participation, similar to engagement in social media or non-blockchain-based online communities like open-source software development. Many DAOs manage their finances on the blockchain using cryptocurrencies and NFTs, which raises the question of integrating traditional financial elements. In summary, tokens are versatile tools that are essential for decentralized management, aligning incentives, facilitating transparent governance, and representing the value and assets of the DAO. Nonetheless, applying and implementing a successful token system in a decentralized and mostly anonymous DAO community remains challenging. This task requires careful consideration of the structural token

[2] https://www.finma.ch/en/news/2018/02/20180216-mm-ico-wegleitung/

elements to build a robust community and manage the complexity of decentralized governance in DAOs within an appropriate legal framework.

For example, DAOs such as UniSwap implement straightforward one-token models, where the UNI token is used as a governance token but also as a utility token that users must buy to vote on the platform. In contrast, The Sandbox DAO uses a rather complex multi-token model to enhance value creation and distribution within its ecosystem. The native currency, SAND (fixed supply), serves both utility and governance roles, while ASSETS (non-fungible tokens representing in-game items) and CATALYSTS (used to define and enhance ASSETS) contribute to the creation of a dynamic virtual world. Additionally, LAND (fixed supply) tokens represent digital real estate required for building and monetizing experiences within The Sandbox.

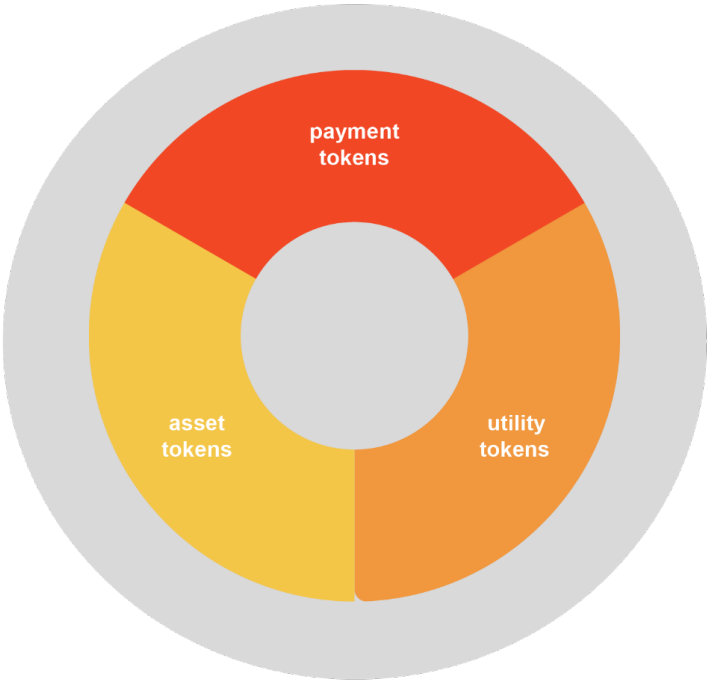

Figure 6: Structural Element: Token

FINMA requires compliance with anti-money laundering regulations for *payment tokens* but does not classify them as securities. *Utility tokens* are generally not considered securities if their only function is to provide digital access to an application or service and are already usable for that purpose when issued. However, if a utility token has investment characteristics, it may be treated as a security by FINMA. *Asset tokens* are classified as securities by FINMA, which means they are subject to securities law requirements for trading and civil law requirements under the Swiss Code of Obligations, such as

prospectus requirements. The recommendation for DAOs is that the issued tokens should not be asset tokens or involve interest or dividends, as this would subject them to heavy securities law regulations. Therefore, DAOs should generally use utility tokens and, in some cases, payment tokens. Additionally, professional legal advice should be obtained to ensure compliance.

Tan (2020) provides a very general definition of tokenomics: “Token economics is the engineering of factors that affect, define, and govern a digital ecosystem. The purpose is to understand and affect the decisions made by participants. It consists of both economics and engineering. It involves responsibility for detail to deal with externalities”. This definition is very broad. Lamberty et al. (2020) explain that tokenomics encompasses “the concept of economic system and optimization design to incentivize specific behaviors in a community, using tokens as the incentive instrument.” Therefore, tokenomics is primarily characterized by the design of effective incentive structures and the management of token supply and demand dynamics to create sustainability. The goal of tokenomics is to align the incentives of all participants to ensure the long-term viability and growth of the ecosystem.

However, designing incentives is notoriously difficult, as illustrated by the famous cobra effect (Siebert, 2001): The cobra effect describes a situation in which a policymaker or a designer puts a measure (here: incentive) in place and people react to it in unforeseen ways, potentially making the situation even worse than before the incentive was implemented. The term cobra effect is derived from an anecdote dating from the time of British rule in colonial India: the British were concerned about the high number of dangerous cobras in Delhi. They decided to put an incentive in place, offering the people of India a generous bounty for every dead cobra. Initially, the Indians started to hunt cobras to earn this additional money. The cobra population decreased, and the incentive scheme seemed to be working. However, once the cobra population became too small to successfully hunt them and the Indians were not receiving this additional income, they began to breed cobras themselves. They then killed these cobras to collect the bounty. Once the British noticed the Indians were doing this, they stopped the bounty program. As a consequence, the Indians freed the now worthless cobras. In the end, the cobra population in Delhi was larger than before the incentive program. This anecdote shows that incentive design is far from simple, and token incentives in DAOs may lead to various unintended consequences.

Nevertheless, tokens are a crucial element to incentivize DAO members. There are two main ways to launch a token: Some DAOs decide to airdrop tokens by distributing tokens to potential members as a way to bootstrap a community or reward loyal users (Zhao et al., 2022). Another option is the Initial Coin Offering (ICO): fundraising events where new tokens are sold to investors. These gained prominence in the crypto boom of 2017 and continue to be a popular

method (Lyandres et al., 2022). DAOs can integrate these tokens into their governance structures, allowing members to participate in decision-making. The quantity and type of tokens vary based on factors like project goals, technology, and community dynamics (El Faqir et al., 2020; Rikken et al., 2023; Ziegler & Welpe, 2022).

- **Generally, DAOs can have three tokens: payment tokens for transactions, utility tokens granting access to services, and asset tokens that function like securities with income streams.**
- **Tokens in DAOs are a tool for managing the DAO's governance, incentivizing member contributions, and reflecting the DAO's value.**
- **DAOs should use utility and payment tokens to avoid complex securities laws, and seek legal advice on compliance questions.**

4.4 Treasury

The treasury is another key structural element in the design and operation of DAOs. It comprises the management and allocation of the DAO's financial resources, which usually consist of digital assets such as cryptocurrencies and NFTs, but may also include fiat money or real-world assets (Fig. 7).

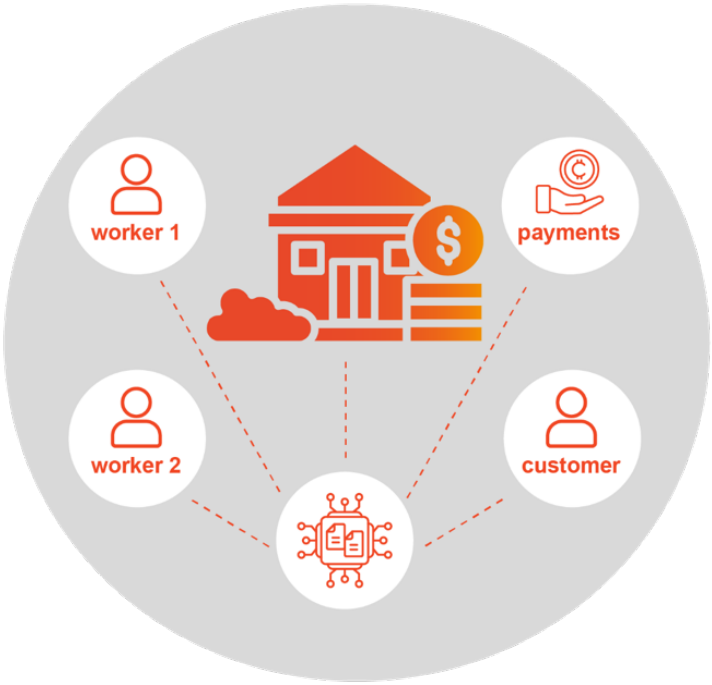

Figure 7: Structural Element: Treasury

The treasury is central to the economic functioning of a DAO and has a direct impact on its ability to incentivize participation, support projects and ensure viability. Effective treasury management is therefore critical for the smooth operation and sustainability of a DAO. It ensures that resources are allocated to support various organizational activities and initiatives. Ultimately, it is also the treasury that gives economic value to the DAO's tokens, which are often used to incentivize participation and contribution of community members. Consequently, since the economic benefits of the members are directly linked to the value of the treasury, it can be understood as a mechanism to motivate members to participate and remain in the DAO. However, the innovative aspect of a DAO treasury is its decentralized nature, which allows for collective, global, and often anonymous management of value without traditional boundaries.

Managing these assets involves both operational aspects and strategic decision-making on their use and investment. The decentralized nature of DAOs means that decisions about asset usage and treasury management are typically made collectively by members. This participatory approach requires robust mechanisms for proposing, debating, and voting on financial decisions to ensure transparency and inclusivity. This decentralized approach contrasts with traditional organizations, in which financial management is usually centralized. Operating a treasury with digital assets raises regulatory challenges, especially when interacting with traditional financial systems. For instance, opening and maintaining fiat bank accounts can be complex for DAOs, which often operate without a traditional legal structure. This is another reason why some DAOs adopt legal wrappers such as associations, trusts, or foundations to comply with applicable regulatory and legal requirements. These legal entities help DAOs interact with the real world by providing a bridge between a decentralized digital treasury and centralized regulatory frameworks. When designing a DAO, it is important to consider the structure of the financial administration. A decision that needs to be made is whether it will only manage digital assets or also real assets such as fiat currencies. The token structure, which is closely linked to the treasury, affects the legal and regulatory status of the DAO. A well-designed token system is crucial to ensure that the DAO's economic activities align with its decentralized objectives. DAOs must remain flexible and adaptable in managing their financial resources. As the DAO evolves, financial management practices must also adapt to changing needs and regulatory frameworks. In summary, financial management is a fundamental element of a DAO that is critical to its economic functioning and the engagement of its members. It presents unique opportunities and challenges, especially when navigating the regulatory environment and maintaining a balance between decentralization and legal compliance.

A salient example is the Arbitrum DAO, which has a built-in treasury system consisting of ARB tokens to fund ongoing development and maintenance of the organization and its technologies. Token holders are able to make proposals and vote on how to use the treasury's funds. Another

is, City DAO, a DAO that manages physical assets. It owns a 40-acre plot of land in Wyoming, and its members can vote on its use and collaboratively manage it.

> **Designing a DAO requires careful planning of the treasury, which is central to managing financial resources. Effective treasury management is critical to ensure that resources support the DAO's projects and maintain its viability. Decisions about asset use and treasury management should be made collectively by all members or dedicated assigned members, with robust mechanisms for proposing, discussing, and voting on financial decisions to promote transparency and inclusivity. Navigating regulatory challenges is essential, so consider using legal entities such as associations or foundations to comply with regulations and bridge the gap between decentralized digital treasuries and traditional financial systems. Financial management practices must be flexible and adaptable to evolving needs and regulatory frameworks. These elements ensure the smooth operation, viability, and economic value of a DAO's tokens and motivate member participation and contribution.**

Buterin (2014) describes the concept of a DAO as a smart contract that contains funds and the rules of an organization with members who have the right to allocate these assets and modify the rules that govern the shared values. Further, he adds, it is this kind of "internal property" that can be used to encourage activity within the DAO in the pursuit of its goal. Hence, DAOs enable collective fund management through transparent accounting, with the smart contracts offering new and participatory ways of asset management. Wright (2021) adds that a key principle of a DAO is that, unlike in traditional organizations, no single member of the DAO can unilaterally transfer funds unless they are the sole participant in the decision-making process. The fact that DAOs are organizational structures in trustless environments with anonymous members collaboratively managing valuable funds has led to the development of various approval mechanisms and their relevance to securing the funds. A well-established security mechanism in DAOs that ensures that decisions are made through a more democratic process is called multi-signature voting (Ziegler & Welpe, 2022). This process requires a certain group of users to sign off on a proposal before it can get implemented, providing a security measure protecting the shared assets and enabling a certain level of consensus before any action is taken with respect to the assets (Ding et al., 2023). Today, DAO treasury can take all sorts of forms, ranging from fungible or non-fungible tokens to even real-world assets. In essence, the DAOs inherent decision-making process determines how to use the assets to achieve its purpose (Ziegler & Welpe, 2022). DAOs offer a disruptive alternative to traditional organizations, not only by virtue of their flat hierarchies, but also in their direct ownership of the treasury by their members.

- **The treasury of a DAO can be digital assets, fiat money, or real-world assets to support and finance the DAO activities and incentivize participation.**
- **Members collectively propose, discuss, and vote on financial decisions to ensure transparency and inclusivity.**
- **DAOs may need legal entities like associations, trusts, or foundations to comply with regulations and connect digital treasuries with traditional financial systems.**

4.5 Communication

DAOs, characterized by their decentralized governance and community-oriented ethos, rely heavily on effective communication to foster alignment, transparency, and member participation. Clear and transparent communication channels are essential for building trust among participants, especially in the early stages when decisions are often made by a centralized founding team aligned with the DAO's mission. At this early stage, communication is clearly focused on articulating the common purpose and aligning members with the collective goal. As DAOs mature, robust communication structures that consider different perspectives and ensure equal participation continue to be needed through the transition to decentralized decision-making. The challenge is to provide clarity in decentralized discussions, which can become chaotic without structured communication protocols. Furthermore, sharing documents and storing relevant information in a transparent manner is crucial for DAOs. At this stage, effective communication platforms and practices are essential for disseminating information, facilitating discussions, and ensuring that all voices are heard in decision-making processes (Fig. 8).

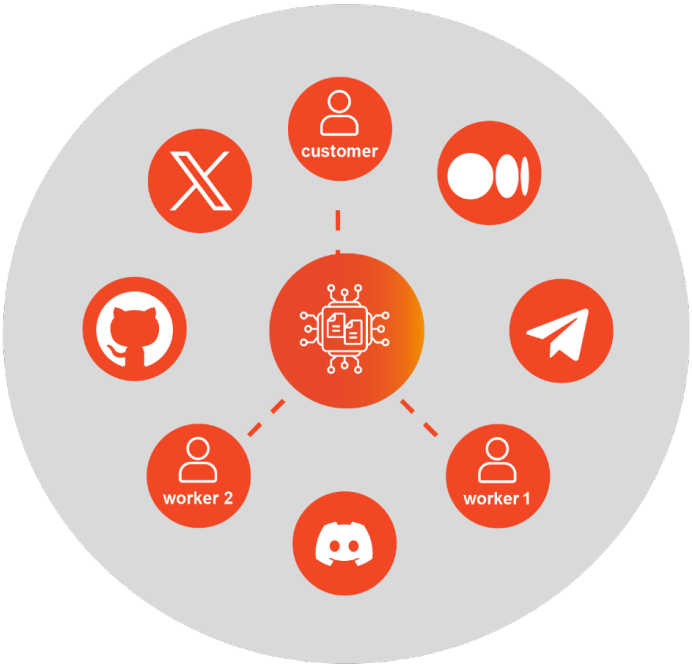

Figure 8: Structural Element: Communication

Communication within DAOs goes beyond operational logistics to encompass social dynamics and community engagement. Like social media platforms or open-source communities, DAOs incentivize participation through social benefits such as reputation and recognition. This emphasizes the dual objective of communication: not only to convey information, but to foster a sense of belonging and engagement among members. Integrating communication into the framework of DAOs underscores its critical function in ensuring organizational resilience and responsiveness. Transparent communication builds trust, reduces uncertainty, and improves accountability within decentralized structures. It serves as a backbone for democratic decision-making processes and supports community-driven initiatives that underpin the viability of DAOs. Communication in DAOs can encompass both on-chain and off-chain interactions, each playing different roles in promoting transparency, efficiency, and community engagement. On-chain communication refers to interactions directly on the blockchain through smart contracts or decentralized protocols. These interactions are immutable and transparent and are therefore in line with the basic principles of blockchain technology. In DAOs, on-chain communication facilitates key functions such as voting, submitting proposals, and verifying transactions. Consequently, on-chain storage solutions such as Filecoin could also be considered to make relevant information available for all DAO stakeholders. On-chain communication ensures that all actions and decisions are recorded in a tamper-proof manner and provides a transparent audit trail that strengthens trust between participants.

In contrast, off-chain communication includes interactions outside the blockchain infrastructure. These include discussions in community forums, messaging platforms, or virtual meetings where DAO members exchange ideas, discuss proposals, and coordinate joint efforts. These communication channels can take different forms, but are usually marked by the DAO as an official channel. For example, many DAOs have an official forum or discord channel for proposal discussion and a dedicated telegram group for informal conversations. Documents may be shared over distributed file systems such as IPFS or even shared drives–as long as it is clear for everyone where to find the relevant information. Off-chain communication complements on-chain activities by facilitating nuanced discussions, clarifying complex proposals, and fostering interpersonal relationships between DAO participants. Although off-chain discussions are not immutably recorded on the blockchain, they are critical for building consensus, resolving disputes, and adapting to changing circumstances that require flexible, human-centered interactions.

The interplay of on-chain and off-chain communication is essential for DAOs to function effectively. On-chain mechanisms provide transparency and automation and ensure the integrity of transactions and administrative processes and the availability of necessary information. Off-chain communication complements these mechanisms by facilitating democratic deliberation,

community engagement, and strategic planning, all aspects that do not always lend themselves to automated execution. It enables DAO members to negotiate, collaborate, and innovate together, enriching the governance process with diverse perspectives and collaborative efforts. Integrating on-chain and off-chain communication enhances the adaptability of DAOs that balance transparency and flexibility. While on-chain interactions maintain the immutability and security of blockchain technology, off-chain discussions promote dynamic discourse and participatory decision-making. Together, they enable DAOs to respond to community needs and maintain operational resilience in a rapidly evolving digital landscape.

In summary, while DAOs leverage blockchain technology and decentralized governance models, effective communication and information sharing remain fundamental to their organizational structure. As DAOs struggle with complex issues such as regulatory compliance and scalability, optimizing communication strategies will be crucial to unlocking the full potential of decentralized organizational structures. By prioritizing transparent communication and information storage, DAOs can foster inclusive decision-making, strengthen community cohesion, and uphold their core values amidst an evolving operating landscape. In doing so, DAOs must focus on the synergy between on-chain and off-chain communication in a holistic approach. The main difference between on-chain and off-chain communication lies in their functions: while off-chain is for preliminary discussions and networking, on-chain acts as the official channel for decisions and critical information. By leveraging the transparency and automation of blockchain and flexible, human-centric interactions, DAOs can effectively harness collective intelligence, foster community cohesion, and achieve sustainable growth in line with their shared mission and values.

As an example, Lido DAO utilizes both on-chain and off-chain communication channels to engage with its community, manage governance, and facilitate operations. On-chain channels include the Aragon governance framework, while examples off-chain channels are Discord, Twitter, Medium, Telegram, Reddit, GitHub, or any community forum for various interactions and updates. Similarly, Optimism DAO makes use of a governance portal called Optimism Agora to gather on-chain governance activities. Agora serves as a platform where DAO members can participate in governance processes, such as proposing and voting on various initiatives and decisions. Optimism DAO further engages its community through off-chain channels such as Discord for real-time interaction, Airtable for project management, resource organization, and team collaboration, and GitHub for code repository, issue tracking, and documentation. As previously outlined, the combination of on-chain and off-chain options ensures effective communication, transparent governance, and active participation within the DAO.

Designing a DAO requires effective communication to promote community building and member participation. Initially, clear and transparent communication channels build trust and align members with the DAO's mission and purpose. As the DAO matures, robust communication structures provide clarity for decentralized decision-making. Integrating both on-chain and off-chain communication is critical; on-chain interactions provide transparency and immutability, while off-chain discussions facilitate nuanced dialog and community engagement. Prioritizing transparent and inclusive communication strategies will enhance democratic decision-making, strengthen community cohesion, and support the sustainable growth of the DAO.

In their seminal work, Katz and Kahn (1978) explain that communication in organizations involves both formal and informal channels. Formal communication follows the official chain of command, while informal communication, often referred to as the "rumor mill", circulates outside formal channels and has a significant impact on organizational dynamics. As Monge and Contractor (2003) argue, communication networks represent the channels through which information flows within the organization. These networks can be centralized, with information flowing through a few key nodes, or decentralized, with information more evenly distributed. Effective communication involves both transmitting information and ensuring that the message is properly received and understood. In this regard, Shannon and Weaver's (1949) model of communication emphasizes the importance of encoding, transmitting, and decoding messages, taking into account potential interferences that could distort the message. However, as Clampitt (2016) highlights, barriers such as jargon, cultural differences, and hierarchical distance can make understanding difficult. Robbins and Judge (2019) further explain that communication serves several functions in organizations, including coordinating activities, making decisions, and fostering relationships among members. Coordination requires clear and timely communication to align efforts toward common goals. In decision-making, communication is an essential element of gathering and sharing relevant information. According to Eisenberg and Witten (1987), leaders play a critical role in organizational communication and set the tone for communication practices. Transformational leaders who inspire and motivate their followers through effective communication can significantly improve organizational performance. This leadership style contrasts with transactional leadership, which relies more on formal communication and structured processes.

On the other hand, Leonardi et al. (2013) argue that technological advances have dramatically changed organizational communication. Digital communication tools such as e-mail, instant messaging, and video conferencing allow for faster communication across geographic

boundaries. However, these tools also present challenges, such as information overload and potential miscommunication due to the lack of nonverbal cues. According to Daft and Lengel (1986), media richness theory states that the effectiveness of communication depends on the match between the richness of the medium and the complexity of the message. Thus, rich media, such as face-to-face communication, are suitable for clarifying complex issues and less rich media for unambiguous agreements. However, as Schein (2010) points out, organizational culture also has a significant impact on communication practices. Schein describes culture as shared assumptions, values, and beliefs that shape the way members perceive and respond to their environment. A strong culture promotes consistent communication practices that are consistent with the organization's values. Conversely, misalignment of culture can lead to a breakdown in communication.

- **Communication should build trust, align members with the DAO's mission, and coordinate the DAO's internal processes.**
- **On-chain communication ensures transparency and immutability, while off-chain supports discussions, engagement, and planning.**
- **DAOs rely on both on-chain and off-chain communication for democratic decisions, community cohesion, and growth.**

5 DAO Design Canvas

The DAO Design Canvas is a strategic management tool designed to help groups of individuals systematically plan, develop, and manage DAOs. Inspired by the well-known Business Model Canvas by Osterwalder and Pigneur (2010), the DAO Design Canvas breaks down the complex elements of DAO creation into manageable sections, allowing for a clear overview and structured approach to building a DAO. Each section addresses a critical aspect of DAO design, guiding you through the essential questions that need to be answered for successful implementation.

In the previous chapters of this guidebook, we have discussed the different DAO design elements in-depth, providing you with a comprehensive understanding of each component necessary for constructing a robust and effective DAO. The DAO Design Canvas builds on this knowledge, offering a practical framework for applying these concepts to your DAO idea.

The DAO Design Canvas thereby serves multiple purposes:

- **Clarity and Alignment:** Provides a clear and shared understanding of the DAO's mission, structure, and operations.
- **Strategic Planning:** Helps identify potential challenges and opportunities early in the DAO design process.
- **Collaboration:** Facilitates collaboration among diverse stakeholders, ensuring all voices are heard and considered.
- **Adaptability:** Allows for ongoing adjustments and improvements as the DAO grows and the environment changes.

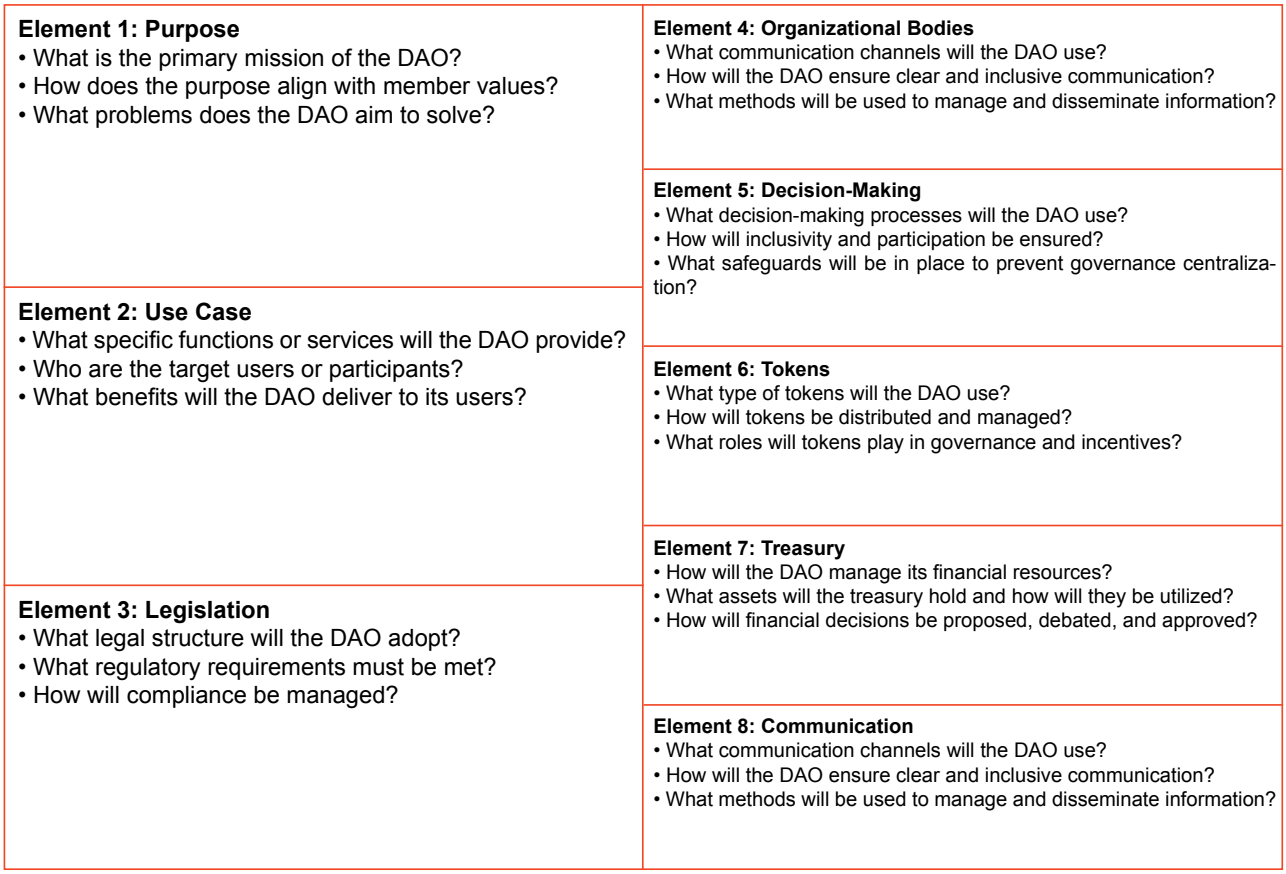

Figure 9: DAO Design Canvas

How to Use the DAO Design Canvas

Step 1: Gather your team

Assemble a diverse group of stakeholders who are invested in the success of the DAO. This can include potential members, developers, legal advisors, and other relevant participants.

Step 2: Collaborate and share the DAO Design Canvas

Print a large version of the DAO Design Canvas or create a digital version using collaborative tools like *Miro* or *Google Docs*. Ensure it is easily accessible to everyone involved.

Step 3: Start with the Purpose section

Begin by defining the purpose. Discuss and document the core mission and objectives of the DAO. This step lays the foundation for the rest of the canvas.

Step 4: Work through each section

Move through each section methodically:

- *Purpose:* Define the mission and alignment with member values.
- *Use Case:* Identify functions, target users, and benefits.
- *Legislation:* Choose the legal structure and ensure compliance.
- *Organizational Bodies:* Establish governance structures and roles.
- *Decision-Making:* Determine decision-making processes and safeguards.
- *Tokens:* Plan token types, distribution, and roles.
- *Treasury:* Manage financial resources and decision-making.
- *Communication:* Set up communication channels and strategies.

For each section, ask the critical questions provided in the canvas and engage in open discussions to capture detailed answers.

Step 5: Iterate and Refine

The DAO Design Canvas is a living document. Regularly revisit and refine each section as new insights emerge and the DAO evolves. Ensure continuous alignment with the core mission and adaptability to changing circumstances.

Step 6: Document and Share

Document the outcomes of each discussion clearly on the canvas. Share the completed canvas with all stakeholders to ensure transparency and collective understanding.

By using the DAO Design Canvas, you can build a strong foundation for your DAO, ensuring it is well-organized, compliant with legal requirements, and capable of achieving its mission through effective governance and member engagement. This canvas complements the detailed discussions from earlier chapters, translating theoretical insights into actionable steps for your DAO's development. In the following, we will go through all eight design elements and explain in more detail the three most critical questions for each aspect you will have to address in your DAO Design Canvas. By addressing each of these expanded questions and understanding their

implications, a community can effectively design and implement a DAO that is aligned with its mission, legally compliant, operationally sound, and capable of engaging and sustaining its community.

Element 1: Purpose

The purpose of a DAO is its core mission and reason for existence. It defines what the DAO aims to achieve and aligns the interests of its members. A clear and compelling purpose helps to attract like-minded individuals and maintain focus.

- **What is the primary mission of the DAO?**

Define the overarching goal or mission that the DAO aims to achieve. This mission should be concise and clearly communicated to ensure everyone understands and is aligned with the DAO's objectives.

- **How does the purpose align with member values?**

Ensure the purpose is widely shared and understood by the community to avoid conflicting goals. This alignment fosters a strong community bond and ensures that members are motivated to contribute.

- **What problems does the DAO aim to solve?**

Identify specific issues that the DAO will address and its expected impact. A well-defined problem statement helps in designing effective solutions and measuring success.

Element 2: Use Case

The use case defines the specific functions or services the DAO will provide and identifies the target users or participants. Understanding the use case will aid in designing the DAO's operational model and value proposition.

- **What specific functions or services will the DAO provide?**

Clearly define the applications and services the DAO will offer. This helps in setting clear expectations and designing the necessary infrastructure.

- **Who are the target users or participants?**

Identify and understand the needs of the intended community or users. This ensures the DAO is designed with the end-users in mind, increasing its chances of success.

- **What benefits will the DAO deliver to its users?**

Outline the unique value proposition and advantages of participating in the DAO. Clearly communicating the benefits attracts users and keeps them engaged.

Element 3: Legislation

Legislation refers to the legal framework within which the DAO operates. This includes choosing an appropriate legal structure, understanding regulatory requirements, and ensuring compliance. Proper legal considerations are crucial for protecting the DAO and its members.

- **What legal structure will the DAO adopt?**

Consider legal wrappers like associations, trusts, foundations, or LLCs to interact with traditional systems. The choice of structure affects the DAO's liability, tax obligations, and ability to enter into contracts.

- **What regulatory requirements must be met?**

Identify and comply with relevant laws and regulations in jurisdictions of operation. This may include securities law, tax laws, and other financial regulations.

- **How will compliance be managed?**

Establish processes to ensure ongoing adherence to legal standards and obligations. Regular audits, legal consultations, and a compliance team can help manage this.

Element 4: Organizational Bodies

Organizational bodies refer to the governance structures within the DAO, such as councils, committees, or working groups. These bodies manage the DAO's operations and facilitate effective decision-making and accountability.

- **What are the main governance structures of the DAO?**

Define the key organizational bodies such as councils, committees, or working groups. Well-defined governance structures help in distributing responsibilities and maintaining order.

- **How will roles and responsibilities be distributed?**

Assign clear roles and ensure accountability within the DAO. This prevents confusion and ensures that tasks are handled efficiently.

- **What processes will be in place for creating and managing these bodies?**

Establish procedures for forming, maintaining, and dissolving organizational bodies. This ensures that governance structures remain flexible and responsive to the DAO's needs.

Element 5: Decision-Making

Decision-making processes determine how proposals are created, discussed, and approved within the DAO. Effective decision-making ensures that the DAO can adapt and evolve while maintaining transparency and member participation.

- **What decision-making processes will the DAO use?**

Determine the methods for proposal submission, voting, and decision execution (e.g., quadratic voting, reputation-based voting). This ensures decisions are made efficiently and fairly.

- **How will inclusivity and participation be ensured?**

Implement mechanisms to encourage and facilitate member engagement and participation. These might include regular meetings, forums, and incentives.

- **What safeguards will be in place to prevent governance centralization?**

Address potential issues of concentrated voting power and low participation. This ensures that no single entity can dominate the decision-making, maintaining the DAO's decentralized nature.

Element 6: Tokens

Tokens are digital assets used within the DAO for various purposes, including governance, incentives, and transactions. They play a crucial role in aligning incentives and enabling decentralized operations.

- **What type of tokens will the DAO use?**

Decide on payment tokens, utility tokens, or asset tokens based on the DAO's needs. The type of token affects its functionality and regulatory considerations.

- **How will tokens be distributed and managed?**

Plan the issuance, distribution, and management of tokens, including mechanisms like airdrops, ICOs, or sales. This ensures fair and transparent token distribution.

- **What roles will tokens play in governance and incentives?**

Define how tokens will be used for voting, incentivizing participation, and aligning members with the DAO's purpose. This encourages active engagement and aligns member interests with the DAO's goals.

Element 7: Treasury

The treasury manages the DAO's financial resources, ensuring they are used effectively and transparently. Proper treasury management is essential for sustaining the DAO's operations and funding its initiatives.

- **How will the DAO manage its financial resources?**

Establish transparent and participatory processes for managing the treasury. These might include multi-signature wallets, spending proposals, and regular audits.

- **What assets will the treasury hold and how will they be utilized?**

Determine the types of assets (digital, fiat, real-world) and their intended uses. This ensures the treasury is diversified and aligned with the DAO's purpose.

- **How will financial decisions be proposed, debated, and approved?**

Ensure robust mechanisms for collective decision-making regarding the treasury. This maintains transparency and member trust in financial matters.

Element 8: Communication

Effective communication is crucial for coordinating activities, making decisions, and maintaining transparency within the DAO. It involves choosing appropriate channels and ensuring information dissemination is clear, inclusive, and timely.

- **What communication channels will the DAO use?**

Choose on-chain and off-chain channels to facilitate transparent and effective communication. This might include forums, chat platforms, and newsletters.

- **How will the DAO ensure clear and inclusive communication?**

Develop strategies to build trust and align members with the DAO's mission through both formal and informal channels. Regular updates, Q&A sessions, and open forums can help.

- **What methods will be used to manage and disseminate information?**

Implement systems for encoding, transmitting, and decoding messages to avoid misunderstandings and ensure all members are informed. Clear documentation and consistent communication practices are critical.

6 *Case Study:* Solar Power DAO

Introduction

In a world increasingly focused on sustainable energy, three visionary founders, Alice, Bob, and Carol, recognize the transformative potential of solar power. Their shared commitment to environmental sustainability and technological innovation leads them to establish the *Solar Power DAO*, a decentralized autonomous organization dedicated to democratizing access to solar energy. They decide to leverage the Infinity Economics Platform (IEP) blockchain and its newly developed *DAO Assistant* (see Chapter 7) to ensure transparency, security, and decentralized decision-making. This case study chronicles the DAO's formation and development, guided by the DAO Design Canvas strategic management tool (see Chapter 5).

1. Phase One: Initial DAO Setup and Treasury

1.1 Founders' Contribution

Alice, Bob, and Carol each contribute initial funds to kickstart their initiative. They understand that by pooling their resources, they can achieve cost efficiency through bulk purchasing of solar modules. This initial capital is crucial for securing the necessary equipment to establish the first installation of solar panels.

1.2 Cost Efficiency

Leveraging economies of scale, the founders negotiate a significant discount from a solar module supplier. By purchasing in bulk, they reduce the per-unit cost of the solar modules, allowing them to maximize their initial investment and install a larger capacity of solar power from the start.

1.3 Setting up the DAO on the Blockchain

Using IEP blockchain technology, the Solar Power DAO is officially established. This technology ensures transparency, security, and decentralized decision-making, which are core to the founders' vision. They create a DAO wallet, ensuring sufficient funds for blockchain transactions, and establish the necessary infrastructure for the DAO's operations.

DAO Design Canvas 1.0

Purpose: The primary mission of the Solar Power DAO is to promote solar energy through collective investment and community participation. This mission aligns with the founders' values of sustainability and technological innovation. They aim to solve the problem of high upfront costs and limited access to solar energy.

Use Case: The DAO's primary function is to facilitate the purchase and installation of solar modules. The target users include homeowners, small businesses, and, eventually, the general public. The key benefit is the reduced cost of solar energy installations through collective buying power.

Legislation: The founders adopt an association as their legal structure, allowing them to operate within traditional legal systems while maintaining the decentralized nature of the DAO. They consult legal advisors to ensure compliance with relevant regulations and set up processes for regular audits and legal reviews.

Organizational Bodies: The governance structure includes a founder team responsible for strategic decisions and a technical specialist team for technical proposals. Clear roles and responsibilities are defined, ensuring accountability and efficiency.

Decision-Making: Decision-making processes are established to be inclusive and transparent. Voting mechanisms require a 2-of-3 multi-signature approval for transactions, ensuring decentralized governance.

Tokens: Utility tokens are created to represent membership and governance rights within the DAO. These tokens are initially distributed to the founders and will later be issued to new members and public contributors.

Treasury: The treasury manages the DAO's financial resources. Transparent processes for spending proposals and regular audits are set up to engender trust and ensure accountability.

Communication: Communication channels include an official web page, chat channel, and data storage URL. Regular updates and open forums facilitate clear and inclusive communication.

2. Phase Two: Neighborhood Expansion

2.1 Inviting Neighbors

After the initial setup, Alice, Bob, and Carol turn their focus to expanding their initiative. They begin by inviting their neighbors to join the DAO, presenting it as a community-driven effort to increase solar power usage locally.

2.2 Membership Model

Neighbors are offered the opportunity to join the DAO by contributing a membership fee. This fee, managed by the treasury team, can be a one-time payment or a subscription, providing flexibility. The collected funds are used to purchase additional solar modules, further expanding the solar capacity.

2.3 Benefits to Members

New members benefit from the established infrastructure, reduced costs, and a voice in the DAO's decision-making process. This fosters a sense of ownership and community involvement, which is essential for the DAO's success.

DAO Design Canvas 2.0

Purpose: The mission is reiterated and aligned with the values of new members, ensuring a shared understanding and commitment. The expansion aims to solve the local community's high energy costs and promote environmental sustainability.

Use case: The expanded use case includes providing solar power solutions to the local community. The benefits include reduced energy costs and a cleaner environment, directly addressing local needs.

Legislation: Legal compliance is maintained as the DAO expands, with regular updates and consultations ensuring adherence to new regulations as membership grows.

Organizational bodies: A new "neighbors team" is created, which includes the founders. The technical specialist team continues to propose technical solutions, which the neighbors team votes on.

Decision-making: The voting process is extended to include new members, maintaining inclusivity and transparency. Regular meetings and open forums are held to encourage participation.

Tokens: Membership tokens are issued to new members, giving them governance rights and a stake in the DAO's success. These tokens also incentivize active participation.

Treasury: The treasury is managed transparently, with new membership fees contributing to the purchase of additional solar modules. Multi-signature approval ensures secure financial management.

Communication: New communication channels are established for the growing community, ensuring everyone remains informed and engaged. Regular updates and Q&A sessions are held to address members' questions and concerns.

3. Phase Three: Public Opening

3.1 Going Public

In the final phase, the DAO opens to the public, allowing anyone to join and contribute. This marks a significant milestone, aiming to scale the initiative and promote widespread adoption of solar power.

3.2 Marketing and Outreach

A comprehensive marketing strategy is implemented to attract new members beyond the existing network. This includes online campaigns, local events, and partnerships with organizations promoting sustainable energy. The goal is to highlight the benefits of joining the DAO and the positive impact of solar energy.

3.3 Scaling Up

With increased membership and funding, the DAO scales up its operations, purchasing more solar modules and exploring additional areas such as energy storage and distribution. The aim is to create a large, decentralized network of solar power installations to drive a significant environmental impact.

DAO Design Canvas 3.0

Purpose: The mission remains focused on promoting solar energy, now on a larger scale. This purpose continues to align with the values of both existing and new members, ensuring broad support and commitment.

Use case: The expanded use case now includes providing solar energy solutions to a broader audience. The benefits of joining the DAO are communicated clearly, emphasizing cost savings, environmental impact, and community participation.

Legislation: As the DAO expands publicly, compliance with additional regulations is necessary. The legal structure is reviewed and updated regularly to accommodate new jurisdictions and legal requirements.

Organizational bodies: New teams are created to manage the influx of public members and the expanded operations. This includes a public team for new contributors and a treasury team to manage public income.

Decision-making: The decision-making processes are refined to handle the increased complexity of a larger membership base. Robust mechanisms ensure inclusivity and transparency, preventing governance centralization.

Tokens: Public contributions are incentivized through token distribution, granting governance rights and encouraging active participation. The token model is designed to align member incentives with the DAO's goals.

Treasury: The expanded treasury manages increased funds from public contributions, ensuring transparent and participatory financial management. Regular audits and multi-signature approval processes maintain trust and security.

Communication: Effective communication strategies are implemented to manage the growing membership. This includes regular newsletters, forums, and real-time updates to keep everyone informed and engaged.

4. Financial Projections

4.1 Initial Investment

The initial investment is used to purchase and install the first batch of solar modules. The DAO starts to generate solar power, which can be used by founding members or sold to the power grid.

4.2 Phase Two Revenue

During the neighborhood expansion phase, new members contribute fees to the DAO, significantly increasing the DAO's financial resources. These funds are used to purchase additional solar modules and expand the solar power capacity and revenue streams for the DAO.

4.3 Phase Three Revenue

With the public opening, the DAO sees a surge in contributions. Public memberships and additional funding enable the DAO to scale its operations and explore new areas, such as energy storage. The increased financial resources ensure the DAO's sustainability and growth.

5. Risk Analysis

5.1 Market Risks

Fluctuations in the cost of solar modules and potential regulatory changes pose significant risks. The DAO mitigates these by maintaining a reserve fund and staying informed on policy changes, ensuring flexibility and adaptability.

5.2 Operational Risks

Challenges in scaling operations and managing a growing membership base are addressed through robust management systems and transparent processes. Continuous improvement and member engagement are key to overcoming these challenges.

Conclusion

The Solar Power DAO successfully leverages collective investment and decentralized governance to promote sustainable energy. Through three strategic phases, the organization builds a strong association, expands locally, and ultimately opens to the public, driving widespread adoption of solar power. By using the DAO Design Canvas, the founders ensure that the organization is well-structured, transparent, and capable of achieving its mission, fostering a collaborative and inclusive community dedicated to environmental sustainability.

7 Technical Implementation on IEP

The Infinity Economic Platform (IEP) blockchain offers a robust environment for DAOs, although its complexity can be daunting for new users. To address this, the IEP DAO module includes a ***DAO Assistant*** that simplifies setting up and managing DAOs. This assistant guides users through essential tasks such as defining DAO membership, establishing founding and operational teams, adding team members, and managing DAO metadata and communications. The implementation of the DAO assistant leverages IEP's native blockchain functionalities, avoiding the need for code alterations across the network and thus maintaining system consistency. Users can enable or disable the DAO assistant through the IEP software app menu, making its features accessible without extensive technical know-how.

The setup process begins with the DAO root wallet, which must be securely managed throughout the DAO's lifecycle. The assistant helps create the DAO, define team structures, and distribute DAO and team tokens, which represent membership and roles within the organization. Special features include messaging, voting, and multi-signature approvals for enhanced security and governance.

Additionally, the DAO module supports various team management functions, such as adding members, assigning roles, and managing team-specific tasks. The DAO's structure and membership details can be viewed through the *Show DAO* functionality, providing transparency and easy access to organizational information.

For a comprehensive guide to setting up a DAO using the IEP blockchain, refer to the following documentation https://wiki.infinity-economics.io/0.3.3/downloads/. This guide provides detailed instructions and considerations for successfully implementing and managing a DAO on the IEP blockchain.

Additional Information

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Infinity Economics

The Infinity Economics Platform (IEP) is a decentralized blockchain platform designed to facilitate a balanced combination of security and performance for diverse use cases. In 2021, DecentAge AG technologically stabilized the IEP by taking over its source code, expanding its server/node population to seven global locations, and updating the software to the latest version. This platform supports various blockchain applications, offering features such as transactions, asset management, and smart contracts. With the latest DAO module development, IEP established a “DAO Assistant” to implement Decentralized Autonomous Organizations (DAOs).

DecentAge AG

DecentAge AG is a blockchain-focused company specializing in delivering comprehensive blockchain solutions, including development, smart contracts, and operational support. Their strategic pillars encompass blockchain implementation, business process integration, and security solutions. With a multidisciplinary team experienced in large-scale enterprise projects, DecentAge provides end-to-end technical support and security solutions. DecentAge is dedicated to advancing blockchain technology and has actively contributed to the development of a DAO design reference model within an innovation project supported by Innosuisse and in collaboration with the ZHAW Institute for Organizational Viability.

ZHAW Institute for Organization Viability

The ZHAW Institute for Organizational Viability (IOV) specializes in transforming traditional, hierarchical companies into innovative, self-organized, and decentralized organizations. With a focus on applications of blockchain technology and DAOs, the institute develops advanced governance and decision-making structures. The IOV engages in interdisciplinary research, combining insights from social sciences, business management, and information technology to create robust frameworks for organizational viability. Additionally, the institute provides education and consulting services to help organizations implement these innovative structures effectively.

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