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DAOs and Limited Liability

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To my supportive parents

To my dear friends

To my supervisor, Prof. Pierluigi Matera

Abstract

The most talked-about breakthrough in the digital transformation of businesses and society is distributed ledger technology, which has characteristics that differ dramatically from traditional centralized operations. Despite substantial progress since the SEC's first action in 2017, notable blockchain-based ecosystems and projects still require a significant amount of legislative work.

The development of purely digitally existing decentralized organizations that operate autonomously without traditional leadership and hierarchy is summarized under the term decentralized autonomous organizations (DAOs). These DAOs have hitherto been governed by opaque and non-univocal legislation, operating under different conditions than many of today's traditional legal companies. The case *Ooki v. CFTC* and the related putative class action between *Sarconi et al.* and the *bZx DAO et al.* are of particular importance in this respect. Both limited liability theory and general partnership theory have been examined in these cases.

DAO has been classified as a general partnership by the CFTC and the Hon. US District Judge Larry Alan Burns and consequently, his governance token holders were subject to unlimited liability. As a single legal framework has not yet been developed, innovative approaches to these issues will be needed for DAOs to realize their full potential.

We must therefore ask ourselves if the legislative efforts undertaken by US states are beneficial for DAOs' legal qualification and their ability to supplant traditional corporations.

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I. INTRODUCTION

How DAOs work

Businesses built around emerging technologies are evolving at a rapid pace.¹ Although predicting the direction of advances can be tricky, it seems clear that decentralized autonomous organizations (DAOs)—quasi-corporate management structures organized through blockchain—could be important to the next wave of development.²

Even though the concept may still seem pre-mature, DAOs have skyrocketed in popularity in the past two years, to \$12 billion in assets under management (AUM) and more than 2 million users.³ This drastic increase raises questions on the efficacy and persistence of DAOs: Can a shared and digital community of anonymous people establish a fully functioning company? Does shareholder democracy add more value to firms, and to what extent does this active participation pay off for investors? Is there the possibility of incorporating a limited liability DAO, and if so, are there any outstanding specificities?

Blockchain technology has its dawn back in the '90s when open-source software emerged as an alternative to commercial software. Early adopters of blockchain technology were motivated by the promise of decentralization. The widespread popularity of blockchain started with Satoshi Nakamoto who published the Bitcoin⁴ whitepaper⁵ in 2008.⁶ Bitcoin may be addressed as one of the first real-world implementations of a “decentralized autonomous organization” (DAO) and offered a new paradigm for organization design. To understand DAOs it is first necessary to understand “blockchains” and “smart contracts.”⁷ Blockchains are decentralized databases implemented by defined protocols⁸ expressed in computer code. Each blockchain varies in terms of the hierarchy and

¹ Mark Cianci, Evan Gourvitz et al., *Legal Implications of Decentralized Autonomous Organizations*, (April 2022), Bloomberg Law, pg.1, <https://www.bloomberglaw.com/external/document/X7236IS4000000/commercial-professional-perspective-legal-implications-of-decent>.

² *Id.*

³ *Id.*

⁴ Bitcoin is an open-source software code that implements a decentralized, peer-to-peer digital cash payment system that does not require any trusted intermediaries to operate (e.g., banks or payment companies).

⁵ A whitepaper is a document released by developers that explains the technology and purpose of the project they are working on. It tells prospective investors how the DAO/cryptocurrency was conceived and highlights its purpose. A crypto whitepaper contains various forms of data like statistics, diagrams, and formulas.

⁶ Jozef Siu, et al., *A Decentralized Governance Framework for Open-Source Software Organizations*, (March 10, 2022), Utrecht University, <https://studenttheses.uu.nl/bitstream/handle/20.500.12932/598/DAO%20for%20OSS%20Governance%20MBI%20Thesis%20Jozef%20Siu.pdf?sequence=1&isAllowed=y>.

⁷ *Id.*

⁸ DeFi protocol is a set of codes that govern how digital assets are used on a blockchain network. See: Raul Nambampurath, *What are DeFi Protocols?*, (Dec. 14, 2022), The Defiant, <https://thedefiant.io/what-are-defi-protocols>.

sophistication of the protocol, the ways in which users interact with the protocol and its protocol's governance. These variations allow blockchains to differentiate their functions.

Basic blockchain protocols can be designed to perform either simple functions, such as exchanging value—e.g., the Bitcoin blockchain—or representing ownership of digital or physical assets—e.g., non-fungible token (NFT) blockchains. More sophisticated blockchain protocols can enable automated or “smart” contracts that can perform convoluted financial and other transactions without the need for third-party intermediaries.⁹ DAOs are advanced smart contracts that use programmable blockchain protocols to automate deals and corporate governance through tokens.¹⁰

These organizations oversee design and strategy changes through a democratic voting process, involving a previously unseen class of stakeholders called “Token-holders”.¹¹ This new kind of equity called Tokens, is a new instrument for business activities.¹² The term “token” derives from the traditional meaning of an object that gives the holder the right to a certain asset or service (for instance, a casino token or wardrobe token), however, their precise definition as to whether they can be defined as securities has yet to be given. Tokens can be explained as lines of code embedded in Distributed ledger technology networks that serve different purposes. For instance, a token can be used for various services, such as a digital means of exchange, a digital investment, or a resource. No matter how they are categorized, the primary purpose of tokens on a distributed ledger technology is to allow parties to conduct operations involving either services, goods, or financial instruments, with the token acting as an independent representation of each of these.¹³

When a DAO is originated, its developers usually maintain initial control over its protocols to supervise development as it attains membership and market traction. An individual or entity gains membership in a DAO by purchasing DAOs tokens.¹⁴ These purchases generally occur either directly, via peer-to-peer digital wallet transactions, or through decentralized “swapping” platforms, whereby digital wallets detain widely used cryptocurrencies—e.g., Ethereum or Binance Coin—can exchange these assets for DAO tokens.¹⁵ DAOs' reliance on smart contracts, grant people the ability to govern or administer the organization's assets either directly or indirectly.¹⁶ Smart contracts and an

⁹ Mark Cianci, Evan Gourvitz et al., *supra note 1*.

¹⁰ Mark Cianci, Evan Gourvitz et al., *supra note 1*.

¹¹ José Garrido, Ms. Yan Liu, Joseph Sommer, and Sebastià Viancha, *Keeping Pace with Change: Fintech and the Evolution of Commercial Law*, Volume 2022: Issue 001, (Jan. 27, 2022), IMF, <https://www.elibrary.imf.org/view/journals/063/2022/001/article-A001-en.xml>.

¹² *Id.*

¹³ *Id.*

¹⁴ Mark Cianci, Evan Gourvitz et al., *supra note 1*.

¹⁵ Mark Cianci, Evan Gourvitz et al., *supra note 1*.

¹⁶ Aaron Wright, *The Rise of Decentralized Autonomous Organizations: Opportunities and Challenges*, (June 30, 2021), Stanford Journal of Blockchain Law & Policy, <https://stanford-jblp.pubpub.org/pub/rise-of-daos/release/1>.

underlying blockchain keep track of members of the organization and membership can be purchased or allotted as a reward (often in the form of a token) in exchange for capital, use, or resources.¹⁷

Smart contracts manage member-to-member transactions and define tamper-resistant practices that structure and facilitate the affairs of the organization.¹⁸ Due to these facets, DAOs collide with today's existing enterprises and corporations, which rely on statutory laws and often written documents to define the metes and bounds of the organization.¹⁹ Parties that join a DAO agree, in substance, to abide not just by the rule of law, but the rule of code too. This code forms an intrinsically cohesive network of hard-to-change rules that establish the standards and procedures of anyone interacting with, or taking part in, a DAO.²⁰ Leveraging these capabilities, blockchain technology is fostering the creation of organizations where constituents collaborate with less of a need to rely on a centralized entity or intermediary.²¹ Membership in some DAOs gives participants specific privileges, such as the one to take a portion of the organization's profits or losses, in other provide their associates with the right to access, manage, or transfer the resources or services that an organization controls. Membership can also be associated with specific privileges, providing people the opportunity to engage in an organization's decision-making processes, rather than being just a mere inconsequential shareholder.²²

In Part II, firstly I explain DAOs' governance and its many facets regarding Voting and Token Economics. In sections B and C, I will enumerate and describe the several differences between DAOs and traditional corporations, citing both positive and negative aspects related to each of the two company frameworks, and giving particular weight to the concept of limited liability. Part III will first deal with "DAO-Friendly jurisdictions" both inside and outside of the US and will then proceed with the concept of limited liability, unlimited liability, with the definition of general partnership. Such concepts will be discussed in the bZx DAO Case and the following Sarcuni Vs. Ooki DAO putative class action. The discussion of such cases will be anticipated by the discussion of another case, The DAO, which laid the foundations for government enforcement against blockchain-based companies. In Part IV, I will analyze the main gap between technology expectations and the clash with current legal reality, coping with the issues of (Un)limited liability, the struggle towards

¹⁷ *Id.*

¹⁸ Aaron Wright, *supra* note 16.

¹⁹ Aaron Wright, *supra* note 16.

²⁰ One notable current example of DAO-related smart contract is the Moloch DAO. These smart contracts enable members of a DAO to pool funds, keep track of ownership interests, and accept another digital asset back from a third-party in exchange for a transfer of funds. See Moloch Ventures, *Moloch DAO*, https://github.com/MolochVentures/moloch/tree/minimal-revenue/v1_contracts.

²¹ Aaron Wright, *supra* note 16.

²² Aaron Wright, *supra* note 16.

decentralized governance, and the definition of token-related rights. The conclusion will be addressed in the final portion, Part V.

II. DAOs GOVERNANCE AND DIFFERENCES WITH TRADITIONAL CORPORATIONS

As occurs in traditional companies, governance is a fundamental part of corporate life and such practice in DAOs is made easier thanks to smart contracts, with which human errors are often reduced to zero. The governance of a DAO is defined by its smart contracts and made effective through the recording of its events and transactions on a blockchain.²³ These set the basis through which the governance of a DAO is achieved. In this section, we will touch upon the 5 governance layers mechanisms that are enabled in a DAO. The basic technology layer curtains the underlying technologies that enable the DAO and support its duties. The governance operation layer concerns itself with mechanisms that bolster the operation and governance in matters of trust, allocation of resources, and collaboration. The incentive mechanism layer concerns itself with different aspects of a token economy for incentivization. The organization form layer concerns itself with how the organization members are structured and how the structure forms or morphs. Lastly, the manifestation layer is about how the DAO is presented to the world and what form it takes, i.e., whether it is a platform, an organization, or a (financial) system. By addressing the aspects of each layer, the model aims to provide a reference for all the considerations that need to be made for a DAO. Concerning governance, the operation layer, and incentive mechanism layer are the most remarkable.²⁴

A. DAOs Governance

²³ Jozef Siu, et al., *supra* note 6.

²⁴ Jozef Siu, et al., *supra* note 6.

1. Voting

Voting covers a core capability of DAO governance. Liu et al. (2020) even simplify the activities of a DAO to essentially having members create proposals and vote on these proposals. As opposed to customary organizations, where decision-making is concentrated at the vertices, in DAOs, all token-holders can directly participate through decentralized voting (Wright and De Filippi, 2015). Currently, in DAOs, the general approach is that a proposal is submitted, after which the members of the DAO take a vote (Wang et al., 2019; El Faqir, Arroyo, and Hassan, 2020; Liu et al., 2020; Wright and De Filippi, 2015). The proposal and votes are recorded on the underlying blockchain. The result of the proposal may lead to an action that is automatically executed by the DAO, e.g., promoting a member, accepting a new member, allocating funds, or performing payment. The resulting actions are registered on the blockchain that ensures all parties of its execution.²⁵

The deeds that are tied to the results of the motion are defined in the smart contracts. The possible actions are only limited by the underlying technology and the programmer's ability to code the smart contract. As DAO technology matures, the governance abilities of DAOs mature as well, expanding the applications for DAOs and moving governance away from off-chain and towards on-chain. The underlying smart contracts may dictate what the conditions are for a tender to be approved or rejected. It may set the quorum,²⁶ i.e., what percentage of votes of the total possible votes need to be cast to approve a proposal. But there are a wide variety of different models through which voting rights are assigned. A popular design is the one-token-one-vote design. However, this has the downside that it has centralizing characteristics of a plutocracy²⁷, or government by the wealthy. Therefore, a plutocracy favors private interests over the common good.²⁸

In a pseudonymous public blockchain, a person interacts with the blockchain through his blockchain address. However, a user may have multiple addresses. This makes it susceptible to a

²⁵ Jozef Siu, et al., *supra note 6*.

²⁶ A quorum refers to the minimum acceptable level of individuals with a vested interest in a company needed to make the proceedings of a meeting valid under the corporate charter. See: Adam Hayes, *What Is a Quorum? Definition, How It Works, Ways to Reach One*, (Sept. 22, 2022), *Investopedia*, <https://www.investopedia.com/terms/q/quorum.asp>.

²⁷ Plutocracy is a government controlled exclusively by the wealthy, either directly or indirectly. A plutocracy allows, either openly or by circumstance, only the wealthy to rule. This can then result in policies exclusively designed to assist the wealthy, which is reflected in its name—the Greek words "ploutos" and "kratos" translate to wealthy and power or ruling, respectively, in English. See: Clay Halton, *What is plutocracy? Definition and meaning*, (Sept. 24, 2022), *Investopedia*, <https://www.investopedia.com/terms/p/plutocracy.asp>.

²⁸ Jozef Siu, et al., *supra note 6*.

Sybil attack. i.e., a person can create multiple addresses and may vote multiple times. While a solution may be to have users identify themselves using more traditional means (e.g., linking their driver's license to their blockchain address). A technical alternative is to link reputation scores to blockchain addresses. Swarm City - a blockchain project that aims to build a blockchain-based sharing economy platform - assigns reputation scores to blockchain addresses. Their users are able to attain a reputation as an indicator of trust. In DAO frameworks, reputation is often used to determine a user's voting weight on proposals in each organization. Reputation cannot be transferred between users and are therefore non-fungible. A DAO may decide to award reputation points to a user, based on dynamic criteria, but may also remove reputation points.²⁹ Other alternative voting and more complex designs, besides reputation voting are amongst others, quadratic voting,³⁰ liquid democracy, and conviction voting.

2. Token Economics

Crypto tokens cover a major role in blockchain, and they have many different use cases. Their most classic application, like Bitcoin, is a currency. However, today crypto tokens fulfill a wide variety of roles.” Some tokens are similar to currencies, others are more like securities, and others have properties that are entirely new”.³¹ In more modern blockchain applications it has become a currency to pay for services from a blockchain network. It is widely used to raise funds through initial coin offerings (ICO). Or it has a utility within the network e.g., in proof of stake (PoS)³² the token ownership plays a role in the consensus mechanism. Or tokens may even represent an ownership interest or voting right. As a result, when dealing with crypto tokens a distinction is made as to whether they are utility tokens or security tokens.³³

²⁹ Jozef Siu, et al., *supra note 6*.

³⁰ Quadratic voting systems are like one share = one vote, except that participants' voting power does not increase linearly with the number of shares (or tokens) they hold, but rather exponentially.

Quadratic voting in general means that to cast one vote, a voter needs only hold one share (or token). But to cast two votes, they must hold four shares (two squared is four). See: Galen Moore, *What is quadratic voting and why don't more projects use it*, (Jan. 23 2023), Axelar, <https://axelar.network/blog/quadratic-voting-DAOs-dPoS-and-decentralization>.

³¹ Jozef Siu, et al., *supra note 6*.

³² Proof-of-stake is a cryptocurrency consensus mechanism for processing transactions and creating new blocks in a blockchain. A consensus mechanism is a method for validating entries into a distributed database and keeping the database secure. In the case of cryptocurrency, the database is called a blockchain—so the consensus mechanism secures the blockchain. See: Jake Frankenfield, *What does Proof-of-Stake (PoS) mean in Crypto*, (April 22, 2023), Investopedia, <https://www.investopedia.com/terms/p/proof-stake-pos.asp>.

³³ Jozef Siu, et al., *supra note 6*.

Bigger shareholders undoubtedly have more voting power in a one-token-one-vote system. describe three utilities that are generally embedded in crypto tokens: 1. equity (value-added, long-term income), 2. property (representing the right to use, goods, or services), and 3. currency (circulating within a certain range.” Crypto tokens are not exactly currency and not exactly securities. They can combine elements of both and have whole new traits. In this section, the attributes and characteristics of crypto-tokens and their possible applications for DAOs are explored.

In the governance of DAOs, tokens can be used to represent shareholder-ship. It can be a medium of exchange that incentivizes participants or be used for voting. Additionally, a DAO may also use it to raise funds. Tokens can be designed in very different ways and will impact the economic model that results from their design. Designing a token is complex as the use, cases and utilities differ.³⁴ Five distinct aspects may be analyzed: token incentive, token issue/circulation, token locking/recycling, token value management, and reputation system.

Token incentive

Token incentive addresses how tokens are utilized and awarded.³⁵ In Bitcoin, for example, miners are rewarded with bitcoins and are paid transaction fees for validating the blocks that contain the transactions. In a DAO the incentive could be to reward members for performing certain actions. In return tokens return a utility, to the token holders, i.e., governance rights. However, there is a duality to incentives. The incentive should allow actors to improve their own utility while also benefiting the DAO and its constituents.³⁶

Token circulation

³⁴ Yuanzhu Zhan, Yu Xiong, Xinjie Xing, *A conceptual model and case study of blockchain-enabled social media platform*, (Jan. 2023), Elsevier, <https://www.sciencedirect.com/science/article/pii/S0166497222001572>.

³⁵ *Id.*

³⁶ *Id.*

In Bitcoin, all tokens are mined. However, it is also possible to directly issue tokens and mint additional tokens, depending on how the token model is designed. By issuing tokens in an initial coin offering (ICO), funds can be raised to fund the activities and development of a blockchain network. Smart contracts may also dynamically issue tokens.

Token value management

The value of a token depends on its given supply and demand. The demand is calculated as the utility that the token holds. DAOs can manage the value of a token by increasing its utility to their liking. Another method to affect the supply is the procedure of increasing or decreasing the tokens in circulation, as to create repercussions on the token's valuation on trading platforms. A relatively trivial example is the one minting additional tokens to increase the supply of tokens. The opposite scenario can be achieved, by either locking or burning the tokens. The blockchain network Ripple decided to lock up a consistent portion of their tokens into escrow accounts on the Ripple blockchain due to concerns that the company held too large of a portion of the currency. It had held over 60% of the entire XRP supply. The tokens were locked to prevent concerns over possible market manipulations. However, in this specific case, the tokens were only locked, whereas burning removes the tokens from circulation definitively. Tokens are burned by irreversibly sending them to a burn address. There is no corresponding private key to the burn address, which makes the coins definitively lost or burned. Burning is done quarterly in Binance Coin³⁷, the result is a dwindling supply and possibly increased value.³⁸ Perhaps this is somewhat comparable to stock buybacks.³⁹

³⁷ Binance Coin is the cryptocurrency issued by Binance exchange and trades with the BNB symbol. As of Q2 2022, Binance Exchange is the largest cryptocurrency exchange in the world, with a volume of \$7.6 billion. See: Jake Frankenfield, *Binance coin (BNB) uses and market cap*, (May 29, 2022), Investopedia, <https://www.investopedia.com/terms/b/binance-coin-bnb.asp>.

³⁸ *Id.*

³⁹ A buyback, also known as a share repurchase, is when a company buys its own outstanding shares to reduce the number of shares available on the open market. Companies buy back shares for several reasons, such as to increase the value of remaining shares available by reducing the supply or to prevent other shareholders from taking a controlling stake. See: Adam Hayes, *Buyback: what it means and why companies do it*, (Feb. 7, 2023), Investopedia, <https://www.investopedia.com/terms/b/buyback.asp>.

3. Reputation system

Tokens can also be part of a reputation system, where tokens are an indication of the trustworthiness of a user. In such a system reputation token can be earned by performing actions. Tokens can also be taken away when a user acts undesirably. In some blockchain systems, reputation tokens are non-fungible, meaning that they cannot be transferred to other people and are only associated with the address that they are awarded.⁴⁰

4. On-chain and off-chain governance

As organizations involve humans, they also involve social interactions and rules of society. In traditional organizations, formal rules exist in the form of written contracts, but most of the governance happens through social interactions between the members of the organization. In DAOs, a similar distinction can be drawn between on-chain and off-chain governance. Where on-chain governance comprises” the rules and decision-making processes that have been encoded directly into the underlying infrastructure of a blockchain-based system” (Reijers et al., 2018, p. 2). While off-chain governance comprises all other rules and decision-making processes that are not encoded on the blockchain.

An example that illustrates the frontier of on-chain and off-chain can be seen in the case of The DAO. The DAO was a decentralized venture capital fund, that was built using smart contracts on the Ethereum network (Jentzsch, 2016). It was encoded in smart contracts and investors could invest Ether - the crypto token of Ethereum - into The DAO. The governance of The DAO was encoded in its smart contracts, which can be seen as on-chain governance. The DAO raised USD 250M worth of Ether, which amounted to about 14% of the total Ether supply. However, an attacker exploited a loophole in the smart contracts of The DAO and was able to drain about 30% of its funds. The events that followed, show how traditional models of sociality were used to deal with the attack, thus in an off-chain manner, when on-chain governance is unable to do so.⁴¹

⁴⁰ *Id.*

⁴¹ *Id.*

The attack resulted in an existential crisis for the Ethereum network (DuPont, 2017). For the short term, to counteract, major exchanges shut down trading to prevent the attacker from converting the stolen Ether to traditional currencies. After a month of debate and considering different solutions, eventually it was decided to perform a hard fork. The hard fork would roll back the ledger to a state in which the events of The DAO never happened. It would roll back the entire supposedly immutable ledger. An act that some argued was an act of deceit, as it violates the promise of immutability. And some, including, the attacker even argued that "code is law" - a slogan from Lessig (1999) - and therefore the attacker was entitled to the stolen funds.⁴²

These events are an illustration of an extreme case where on-chain governance ends and off-chain governance has taken over, even crossing the boundary and imposing on-chain governance. This is not an everyday event and had heavily impacted the Ethereum network. Currently, the governance of DAOs consists of a small part of on-chain governance at the core, while most governance happens off-chain. This is because of the limitations of the current early state of DAO technology. As the technology matures, increased on-chain governance can be expected (Wang et al., 2019).

5. *Forking*

Beck, Müller-Bloch, and King (2018) describe the case of a blockchain project, called Swarm City. The project originates from the Arcade City project, because of a disagreement. As a result of the disagreement, a group from the project split off and forked the Arcade City project to form Swarm City. In this case of forking, they copied the existing code and continued developing it as they saw fit. Forking in this case is used as a governance mechanism through which a dispute is settled. Another example is the case of Ethereum and the events surrounding The DAO DuPont, 2017. After the attack, the majority of the community decided to perform a hard fork, to roll back the events that had led to the attack, as if the offense had never happened. A part of the community disagreed, deciding not to erase the events of the attack and to continue with a blockchain in which the funds had been stolen. They split off from the project to continue under the name Ethereum Classic. Ultimately this form of forking translates to parties splitting up on disagreement and going their ways. Although forking in a

⁴² *Id.*

way can settle disputes, it results in a loss of opportunity and an economic loss (Kaal, 2021). Additionally, it does not solve a dispute but rather offers a suboptimal solution as parties go their own way, resulting in a loss for the ecosystem as a whole.⁴³

Concluding, from the following digression, what became clear is that DAO technology offers a model for the governance of organizations, however just like traditional organizations, the governance structure of DAOs cannot be unique. Each DAO may utilize the governance mechanisms that DAO technology offers to suit their own governance needs, or even invent new ways of governance. DAO technology mostly offers tools and mechanisms through which governance can be done in a formalized, decentralized, autonomous, and accountable manner.

B. DAOs VS Traditional Corporations

DAOs are not without challenges, their ideal design needs still to be explored, exposing challenging governance questions which may ultimately stimulate their growth and development. Furthermore, their non-unique legal recognition makes it difficult for DAOs to interact with traditional business entities. As a result, current DAOs tend to differ from existing organizational structures in several key aspects, namely: Formation, Structure, and Finance.

Formation

DAOs and conventional organizations both necessitate an originator or a cluster of founders to strike the very first pitch.⁴⁴ In a conventional business, an entrepreneur who pinpoints a business need as well as seeks to supply it with a fresh product or service can play such a function. Likewise, a DAO might well be created by a group that seeks to satisfy a specific request by launching a brand-new system, business, or operation.⁴⁵

⁴³ *Id.*

⁴⁴ Blockchain Council, *DAOs Vs. Traditional Organizations: A Detailed Comparison*, (Oct. 27, 2022), <https://www.blockchain-council.org/dao/daos-vs-traditional-organizations>.

⁴⁵ *Id.*

Structure

Companies' construction resembles Jenga towers. Any institution's structure relies on its sub-component well-functioning.⁴⁶ The complete edifice runs the danger of crumbling if any of those sections veers too far from the rest. A conventional business maintains its Jenga tower through a pyramid-shaped management structure that groups its management and workers. Critiques are made at the top, and duties are finalized at the bottom to execute those judgments. The reputation of traditional rankings has suffered due to the emergence of DAOs and virtual labor. On the other hand, DAOs lack directors, managers, and CEOs.⁴⁷ Instead, each member may engage with smart contracts to vote on how things should work.⁴⁸ DAOs benefit from smart contracts mainly through the elimination of human error. As a result, DAOs often lack formal managers, and the implied relationship between DAO members—for many DAOs—is not that of a fiduciary, but rather that members stand on equal footing, at least in terms of the availability to join and gain access to material information related to how a given DAO operates.⁴⁹

Finance

Invested capital from the founding partners and members of an LLC often serves as its initial source of financing. These fundings frequently cover starting costs as well as a share of the equity in the company. If an LLC needs more cash flow in the future, its members may look for funding from investors and venture capitalists (VCs) or secure corporate credit. Every investment in this case deprives the initial investors of a portion of ownership.

In the instance of DAOs, the company takes action to match financial contributions with governance rights in order to make it easier for investors to double as both employees and owners of the business.⁵⁰ Additionally, unlike what could be believed for shareholders in conventional organizations, DAO memberships are not seen as necessarily being permanent.⁵¹ Instead, they may turn out to be only temporary in nature. Members may sign up for a DAO for a little time, engage with the organization, and then leave because they lost interest, found a better opportunity, or for

⁴⁶ *Id.*

⁴⁷ Aaron Wright, *supra* note 16.

⁴⁸ Aaron Wright, *supra* note 16.

⁴⁹ Aaron Wright, *supra* note 16.

⁵⁰ Blockchain Council, *supra* note 44.

⁵¹ Aaron Wright, *supra* note 16.

other reasons. Discussing the financing possibilities of DAOs, we should cite the importance of ICOs (Initial Coin Offerings).

The usual practice is for issuers to control the sale of token using an online platform. Investors can trade digital currency for new tokens using smart contracts.⁵² The advertising campaign primarily relies on social media channels.⁵³ As a result, the targeted investor audience is younger and more tech-savvy than in traditional capital markets. In line with the SEC's required disclosures concerning traditional companies' IPOs, in ICOs DAOs publish a so-called “white paper” on their website. This document typically contains information about the issuer and its business, the available tokens, and the investments planned. While some white papers cover most of the important information required, they cannot match the level of detail required by securities regulations for a prospectus.⁵⁴ For example, while under securities regulation it is mandated that the prospectus comprises detailed information about the issuer, this element is very often overlooked in white papers.⁵⁵ The established term for this whole process is ICO, quite obviously based on the introduction of securities on a stock exchange in an IPO.

For issuers, ICOs come with a range of benefits. First, they experience no intermediation with the client, circumventing the typical range of banks and stock exchanges. This results in the increased velocity of the offering procedure while significantly cutting capital costs. Second, the technology required is relatively straightforward and accessible. The ERC20 Token Standard,⁵⁶ a standardized Ethereum smart contract, allows the issue of a token using 57 lines of smart contract code.⁵⁷ Fewer than 100 lines of code seem to be typical in the industry. These lower barriers allow for a “democratization” of capital markets because market entry for issuers is facilitated. For example, an ICO can open the gate to capital markets for businesses that, due to their legal nature, are unable to be listed on a stock exchange (including, among others, partnerships or private limited companies).⁵⁸ Third, thanks to the cryptocurrency boom, much more money can be raised than with conventional

⁵² See Aubrey K. Noonan, *Bitcoin or Bust: Can One Really “Trust” One’s Digital Assets?*, 7 EST. PLAN. & CMTY. PROP. L.J. 583, 593 (2015).

⁵³ See Peter Zickgraf, *Initial Coin Offerings – Ein Fall für das Kapitalmarktrecht?*, 63 DIE AKTIENGESELLSCHAFT 293, 296 (2018).

⁵⁴ Philipp Maume & Mathias Fromberger, *Regulation of Initial Coin Offerings: Reconciling U.S. and E.U. Securities Laws*, (Feb. 1, 2019), Chicago Journal of International Law, <https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1748&context=cjil>.

⁵⁵ Philipp Maume & Mathias Fromberger, *supra note 54*.

⁵⁶ See ERC20 Token Standard, *ETHEREUMWIKI*, <http://perma.cc/9DPB-ZFBD>.

⁵⁷ Philipp Maume & Mathias Fromberger, *supra note 54*.

⁵⁸ Philipp Maume & Mathias Fromberger, *supra note 54*.

fintech models like crowdfunding.⁵⁹ Is not a coincidence that ICOs can theoretically raise even more funds than traditional IPOs, whose exposure is typically limited to their regional stock exchange. Fourth, issuers seem to believe that they are not within the scope of financial market regulation, including prospectus requirements and disclosure/reporting obligations.

It remains to be seen if this is the case. At the end of 2017, the U.S. was the central hub for ICOs.⁶⁰ Issuers from the U.S. raised more than \$1 billion. In the E.U. member states, \$575 million was raised, followed by Russia (\$310 million), Singapore (\$260 million), the People’s Republic of China (\$256 million), and Hong Kong (\$196 million). In terms of the number of token sales, the E.U. member states came first (125 ICOs), followed by the U.S. (76), Singapore (37), Russia (33), and Switzerland (32). This demonstrates (maybe against common perception) that the E.U. is also a central hub for ICOs.⁶¹

C. DAOs key features and drawbacks with respect to traditional corporations

For DAOs to reach widespread adoption, they will need to go through a variety of legal challenges and limitations intrinsic to the current international legal framework—which could ultimately frustrate their mainstream adoption. These challenges range from governance concerns and questions related to the status of interests in DAOs to concerns related to the lack of a limitation of liability.

1. The Risks of Distributed Governance

Since its origination, the governance of traditional corporations has taken place “in the boardroom,” according to rules provided by the legal system, the organization’s material documents,

⁵⁹ The average crowdfunding campaign only raises about \$7000, see *Crowdfunding Statistics*, Fundable, <https://perma.cc/AK36-T72N>.

⁶⁰ Philipp Maume & Mathias Fromberger, *supra note 54*.

⁶¹ Angelos Delivorias, *Understanding initial coin offerings*, (July, 2021), EPRS, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/696167/EPRS_BRI\(2021\)696167_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/696167/EPRS_BRI(2021)696167_EN.pdf).

any relevant side agreements, and, in some instances, the listing standards of the exchanges on which the organization's securities trade.⁶²

However, so far, the same cannot be said for DAOs.⁶³ With blockchain, and specifically blockchain-based smart contracts, DAOs can enforce all or parts of their governance rules and procedures using the automation coded in their "blockchain-based Article of Incorporation." The byproduct of this new trend is the action of memorializing governance in a set of smart contracts that will be stored on a blockchain, as The DAO and other more mainstream implementations of blockchain-based governance already have.⁶⁴ The consequences of blockchain technology on traditional organizational governance are not limited to incremental improvements to existing organizational forms but rather to the creation of new legally recognized frameworks. The recent growth of blockchain-based governance is fundamental from the perspective of corporate law. Smart contracts have the potential to reduce the practical obstacles that prevent the adoption and application of several uniquely tailored governance methods. In contrast to more complex and expensive systems for gathering and confirming votes, smart contract-based voting schemes enable the participation of a greater number of people in decision-making. Smart contract voting methods may enable some businesses to implement their own, uniquely designed distribution of decision-making authority among stakeholders.⁶⁵

However, even though DAOs heavily rely on smart contracts and participatory governance to drive down technical costs associated with the operation and management of an organization, this structure has notable difficulties too. DAOs still face governance issues despite forgoing centralized management like a board of directors or managing members. Furthermore, due to DAOs' youth, the size and shape of the ideal governance are still up for debate and could be subject to sudden structural changes. Even though smart contracts may offer some operational synergies, the social and political aspects of governance are still present. Humans have well-known limits to their ability for knowledge and rationality, which makes it difficult for DAO members to participate fully in an organization's governance structure.

Participatory DAOs are a famous example of these dangers. Even though smart contracts streamline decision-making processes, there are still costs associated with achieving group consensus,

⁶² Aaron Wright, *supra* note 16.

⁶³ Aaron Wright, *supra* note 16.

⁶⁴ For example, Overstock, Inc. (which runs the popular retail website Overstock.com) has issued classes of common stock as well as debt securities whose ownership is tracked on a permissioned blockchain. See Daniel DeConnick, *Overstock Completes First Public Stock Issuance Using Blockchain*, 36 Rev. Banking & Fin. L. 416 (2017).

⁶⁵ Aaron Wright, *supra* note 16.

which may hinder the ability of participatory DAOs to act. Direct voting through distributed consensus is still challenging to implement since it demands individuals to remain continually engaged and aware of an organization's operations throughout time.⁶⁶ Many token-holders might be discouraged from participating, especially in the case in which the process of data gathering, as to make an informed choice, proves to be too time-consuming and complicated. Thus, the question of whether DAOs will function as efficiently, or even as efficiently as more hierarchical organizations, arises. The social clash caused by ongoing voting may ultimately hobble these organizations, restricting their ability to generate social and economic gains.⁶⁷

To address these concerns, participatory DAOs are already experimenting with diverse types of voting mechanisms to rouse participation in governance-related decisions.⁶⁸ One possible proposal is the allocation of more weight to certain decisions based on how long a member supports a given proposal,⁶⁹ aiming to approximate voting “conviction” and generate a reward-based framework for the votes of long-standing members.⁷⁰ Other procedures comprise quadratic voting, assessing group consensus based on members’ willingness to disburse for a given outcome, as opposed to the bare majority rule. In the future, DAOs could even conceivably explore the use of prediction markets to decrease the friction of DAO-related decision-making in the longings stemming from potential voter apathy.⁷¹

Due to these perils, some technologists express a preference for having DAOs managed entirely algorithmically.⁷² This kind of DAOs does not rely on continual voting, but rather on underlying smart contract codes to lead social and economic interaction.⁷³ While superficially appealing, even here governance decisions are not eradicated. The adoption of this procedure by DAOs indirectly calls for the consent and approval of the stringent guidelines established by the underlying code by its members. As a result, the choice to partake—or not participate—in the DAO,

⁶⁶ Aaron Wright, *supra note 16*.

⁶⁷ Aaron Wright, *supra note 16*.

⁶⁸ Aaron Wright, *supra note 16*.

⁶⁹ Jeff Emmett, *Conviction Voting: A Novel Continuous Decision-Making Alternative to Governance*, (July 3, 2019), Medium, <https://blog.giveth.io/conviction-voting-a-novel-continuous-decision-making-alternative-to-governance-aa746cfb9475>.

⁷⁰ Aaron Wright, *supra note 16*.

⁷¹ Voter apathy refers to a lack of interest in participating in elections by certain groups of voters. One side-effect of voter apathy can be low voter turnout on election day if voting is non-compulsory. Two possible causes of voter apathy may arise: Alienation and Voter fatigue. See: Polyas, *Polyas election glossary*, <https://www.polyas.com/election-glossary/voter-apaty>.

⁷² Quinn DuPont, *Bitcoin and Beyond 157-177* (2017) (reporting based on survey results that “most members of the cryptocurrency and blockchain community believed algorithms were more trustworthy and authoritative than existing socio-political institutions.”)

⁷³ Aaron Wright, *supra note 16*.

itself becomes the governance decision.⁷⁴ Although a more algorithmic DAO's simplicity and ease of interaction have some appeal, it still shows some fragilities. In fact, in the case in which the underlying software's design contains a flaw, DAO members not only would have little opportunity to intervene, but they could also be subject to unlimited liability.⁷⁵ In a similar situation, there could be two possible things to do; One approach would be for members to stop participating in the DAO but is rather rigid and will make the associate unable to detain its tokens. The opposite approach would be instead to adjust the software and set up a “fork” of the DAO with modified rules and hope that members move their attention and potential assets to the new implementation of the DAO.⁷⁶ For algorithmic DAOs, decision-making is still present.⁷⁷

Governance decisions often bubble in times of crisis or in times when problems in the underlying software have manifested.⁷⁸ At these inflection points, members must choose which software to support. In the case in which there is an unexpected shock due to an unforeseen issue, the DAO may run into a fatal issue. Eventually causing the DAO to derail its long-term viability. These hazards are especially present in DAOs with smaller roles of members. If there is not a clear path toward addressing the issue and the complication of the free rider problem arises, a smaller DAO could fracture and any asset under management (AUM)⁷⁹ be lost.⁸⁰

2. Limitation of Liability

Beyond issues with governance, numerous nations still do not officially recognize DAOs, which could expose DAO members to the obligations and liabilities of the organization as a whole.⁸¹ However, in addition to regulatory and securities law risks, whenever valuable assets are invested and kept by any organization, the risks and liabilities of retaining those assets and running the business

⁷⁴ Carla L. Reyes, *(Un)corporate Crypto-Governance*, 88 Fordham L. Rev. 1875 (2020) (exploring governance in the context of Bitcoin and other blockchains).

⁷⁵ Aaron Wright, *supra* note 16.

⁷⁶ Indeed, an algorithmic DAO fork will be similar to other forking challenges that face protocol level blockchains, like Bitcoin and Ethereum. These forking-related decisions have practical and political dimensions. See Primavera De Filippi & Aaron Wright, *Blockchain and the Law: The Rule of Code* 131-155 (2018).

⁷⁷ Aaron Wright, *supra* note 16.

⁷⁸ Aaron Wright, *supra* note 16.

⁷⁹ Assets under management (AUM) is the total market value of the investments that a person or entity manages on behalf of clients. Assets under management definitions and formulas vary by company. In the calculation of AUM, some financial institutions include bank deposits, mutual funds, and cash in their calculations. See: James Chen, *Asset under management (AUM) definition and calculations*, (March 13, 2022), Investopedia, [https://www.investopedia.com/terms/a/aum.asp#:~:text=Assets%20under%20management%20\(AUM\)%20is,and%20cash%20in%20their%20calculations.](https://www.investopedia.com/terms/a/aum.asp#:~:text=Assets%20under%20management%20(AUM)%20is,and%20cash%20in%20their%20calculations.)

⁸⁰ Aaron Wright, *supra* note 16.

⁸¹ Aaron Wright, *supra* note 16.

must be proportionately distributed among the participants in that organization.⁸² DAOs also operate outside the regular systems, limiting their ability to deal with more traditional legal entities. Earlier this year, a case in the Southern District of California examined whether a decentralized organization that delegated decision-making to a computer program would give its members de facto limited liability protection.⁸³ The concept of liability limitation is one of the long-standing advantages of forming a legal body, whether it is a corporation or a limited liability business. With this approach, the personal assets of an organization's owners are shielded from creditors' claims by a veil of limited liability.⁸⁴ DAOs, by default, do not enjoy these benefits because most of the current legal system does not recognize these structures—by default—as legal entities eligible for a limited liability regime.⁸⁵

For instance, in the U.S., DAOs formed to make a profit likely would be deemed a “general partnership” and cannot consequently shield members’ assets if the organization injures a third party or is unable to pay its creditors.⁸⁶ DAOs may struggle to attract members if they are labeled as a general partnership, especially those members that possess significant wealth.⁸⁷ Large corporations, institutional investors, and other regulated commercial entities may be hesitant to invest in or otherwise support a DAO for fear of jeopardizing other assets.

Unsurprisingly, state law initiatives to convert traditional commercial entities to DAOs are already underway. The Vermont legislature's two houses have enacted an amendment to the state's limited liability company statute that would allow a limited liability company to describe itself as a “Blockchain-Based LLC.”⁸⁸ The legislation specifically authorizes a Blockchain-Based LLC to “provide for its governance, in whole or in part, through blockchain technology.”⁸⁹ In other words, it specifically qualifies the creation of an LLC that replaces “blockchain technology” for traditional governance means. One might argue that, at most, this sort of legislation clarifies the status of something that is already permitted—arguably, there is nothing in currently existing LLC statutes that would prohibit a code-based operating agreement.⁹⁰ Nonetheless, legislative acknowledgment of blockchain-based governance lends it some legality and provides a clear path for those relying on it

⁸² Matthew S. Miller and Spencer Green, *Beyond a Reasonable DAOubt: Tennessee's Limited Liability Statute for Decentralized Autonomous Organizations (DAOS)*, (Aug. 4, 2022), *The National Law Review*, <https://www.natlawreview.com/article/beyond-reasonable-daoubt-tennessee-s-limited-liability-statute-decentralized>.

⁸³ *Id.*

⁸⁴ Aaron Wright, *supra* note 16.

⁸⁵ Aaron Wright, *supra* note 16.

⁸⁶ RUPA § 202a (Nat’l Conference Comm’rs of Unif. State Laws 1997).

⁸⁷ Aaron Wright, *supra* note 16.

⁸⁸ Vt. Acts & Resolves 1 § 269 (2018).

⁸⁹ *Id.*

⁹⁰ Lynn M. Lopucki, *Algorithmic Entities*, 95 WASH. U. L. REV. 887 (2018).

to reap the benefits of legal personality and restricted liability. As blockchain-based enterprises become more mainstream, the creation of a path to limited liability and legal personhood will become vital to entrepreneurs and investors.⁹¹ Such an approach is widely subsidized under U.S. law.⁹² To a remarkable degree, American business law echoes an enabling approach,⁹³ giving parties significant room to arrange their commercial matters in the way they see fit.⁹⁴ The operative statutes that govern corporations and other business associations largely consist of “default” provisions—rules that apply only if parties fail to “opt out” and enforce other rules.⁹⁵ Mandatory rules, though not unheard of, are not the norm in American business law.⁹⁶

And the few compulsory rules often can be avoided through cautious structuring or by choosing a different entity.⁹⁷ Although this enabling approach has dominated company law in the United States for decades, it has not always been the case. The history of American company law is littered with the shards of required laws that were repealed or waived.⁹⁸ In part, this is due to jurisdictional competition for corporate charters that emerged in the late 1880s.⁹⁹ New Jersey initially dominated this market by offering a largely enabling statute¹⁰⁰ but lost its position after it amended its corporate statute in 1913 to include a variety of new restrictions, including a prohibition on the formation of additional holding companies within the state.¹⁰¹ By refusing to accept these limits, Delaware duplicated New Jersey's corporate legislation and displaced New Jersey as “the place” to incorporate. Since then, Delaware and other jurisdictions, such as Wyoming, have generally implemented an enabling approach, owing to Delaware's success in attracting many entity formations and its effect on the lawmaking of other jurisdictions.¹⁰²

The enabling approach is not only being used in practice; it is also being supported by a powerful school of scholars and commentators through the sturdy and widely accepted theory of the firm. These contractarian scholars and commentators argue that corporations and other legal entities

⁹¹ Carla Reyes, *If Rockefeller Were a Coder*, 87 GEO. WASH. L. REV. 373 (2019).

⁹² Aaron Wright, *supra* note 16.

⁹³ Jens Dammann, *The Mandatory Law Puzzle: Redefining American Exceptionalism in Corporate Law*, 65 HASTINGS L. J. 441 (2014).

⁹⁴ Stephen M. Bainbridge, *The New Corporate Governance in Theory and Practice* 28 (2008).

⁹⁵ John Armour et al., *The Anatomy of Corporate Law: A Comparative and Functional Approach* 18 (3rd Ed., 2017).

⁹⁶ Jens Dammann, *supra* note 93; Stephen M. Bainbridge, *supra* note 94.

⁹⁷ Bernard S. Black, *Is Corporate Law Trivial? A Political and Economic Analysis*, 84 NW U. L. REV. 542 (1990).

⁹⁸ In their canonical account of the separation of ownership and control, Berle & Means bemoan the demise of a variety of formerly mandatory rules, including, for example, preemptive rights. See Adolf A. Berle, Jr. & Gardiner C. Means, *The Modern Corporation and Private Property* 144-48 (1933).

⁹⁹ Aaron Wright, *supra* note 16.

¹⁰⁰ Edward Q. Keasbey, *New Jersey and the Great Corporations*, 13 HARV. L. REV. 198 (1899)

¹⁰¹ Charles Yablon, *The Historical Race Competition for Corporate Charters and the Rise and Decline of New Jersey: 1880-1910*, 32 J. CORP. L. 323 (2007).

¹⁰² Aaron Wright, *supra* note 16.

are fundamentally contractual and are nothing more than “a set of implicit and explicit contracts establishing rights and obligations among the various inputs making up the firm.”¹⁰³ For contractarians, statutes that govern the creation and control of commercial entities merely form contracts that enable organizers to use "off-the-shelf" contractual provisions, saving the costs of negotiating and creating a completely customized contract.¹⁰⁴

However, the contractual method is more than just descriptive. It influences the substance of "off-the-track" contracts as well as the extent to which parties should be free to deviate from them. Because state-supplied, off-the-rack contracts primarily serve as a vehicle for reducing transaction costs, contractarians argue that they should be comprised primarily of “majoritarian” default rules that “reflect the terms that the majority of well-informed parties would themselves most commonly choose.”¹⁰⁵ Or, as Easterbrook and Fischel put it in their canonical treatment of the contractual view of the firm, “the terms people would have negotiated, were the costs of negotiating at arm’s length for every contingency sufficiently low.”¹⁰⁶ Furthermore, because these statutes are made up of norms that should be desirable to the majority but not necessarily all parties, those who prefer different terms should be permitted to employ them in the absence of third-party impacts or market failure.¹⁰⁷ Mandatory terms can be wasteful in law and economics, hence parties should be free to submit their governance norms in place of the rules supplied in the relevant laws.¹⁰⁸

The pro-private ordering view of business associations has had a significant influence, particularly in the realm of unincorporated business entities, like limited liability companies. Although these entities have long been recognized as providing notable flexibility when it comes to devising governance structures, the Delaware legislature amended its limited liability company and limited partnership statutes in 2004 to include provisions stating explicitly the state’s policies in favor of contractual freedom¹⁰⁹ and also allow expressly for the elimination of fiduciary duties.¹¹⁰ With this legislation, the Delaware Assembly clearly stated its preference for private ordering. DAOs theoretically align with the overall purposes of company law in the United States to encourage private ordering. DAO-based governance offers the potential for firms to better match their governance needs

¹⁰³ Stephen M. Bainbridge, *The New Corporate Governance in Theory and Practice* 28 (2008).

¹⁰⁴ Frank H. Easterbrook & Daniel R. Fischel, *The Economic Structure of Corporate Law* 12 (1991).

¹⁰⁵ John Armour et al., *The Anatomy of Corporate Law: A Comparative and Functional Approach* 18 (3rd Ed., 2017).

¹⁰⁶ Frank H. Easterbrook & Daniel R. Fischel, *The Economic Structure of Corporate Law* 12 (1991).

¹⁰⁷ *Id.*

¹⁰⁸ Aaron Wright, *supra* note 16.

¹⁰⁹ Delaware Limited Liability Company Law, Del. Code tit. 6, s 18-1101(b); Delaware Limited Partnership Law, Del. Code tit. 6, s 17-1101(c).

¹¹⁰ Delaware Limited Liability Company Law, Del. Code tit. 6, s 18-1101(c); Delaware Limited Partnership Law, Del. Code tit. 6, s 17-1101(d).

with the arrangements they adopt, whether they do so in the context of a traditional associational form or an entirely algorithmic entity, by removing many of the practical barriers that stand in the way of the implementation of specific governance mechanisms.¹¹¹

From a purely contractual standpoint, this could have ramifications for the continued usage of traditional commercial alliances. After all, in the contractarian's opinion, they are just readily available contracts. If blockchain-based governance can remove—or reduce the cost of—practical impediments to more comprehensive private ordering, corporations may no longer need to rely on off-the-shelf contracts. As The DAO and other token-based organizations demonstrate, this is not just a supposition. Already, some types of business owners do not appear to perceive the necessity to form a formal legal corporation.¹¹² The possibility that blockchain-based governance could eventually reduce (and maybe even displace) reliance on traditional business entities as a vehicle for governance cannot be dismissed.¹¹³

However, focusing primarily on the potential for blockchain to disrupt traditional internal governance misses the other motivations for company entity formation. Capturing the variety of benefits that come with pre-existing governance systems is undoubtedly one motive for forming an entity.¹¹⁴ However, as single-member LLCs and single-shareholder corporations demonstrate, it is not the only reason. Even when governance rules are not needed, entity formation is a way to secure limited liability, partition assets, and enjoy the convenience of separate legal personhood (for example, being able to sue in the entity's name).¹¹⁵ And, while blockchain-based governance reduces the need to form business entities for governance purposes, it does not eliminate the necessity for entity formation for other reasons, such as clear limited liability and the convenience of corporate personhood. Participants will need a clear path to restricted responsibility for blockchain-based governance to become popular.¹¹⁶ Contractual counterparties will seek assurances regarding who and what they are dealing with, as well as which assets are accessible to meet contractual obligations. The key policy challenge appears to be how far politicians should go to facilitate the replacement of blockchain-based governance for traditional governance in legally recognized, limited-liability corporations.

¹¹¹ Aaron Wright, *supra* note 16.

¹¹² Some have argued that at least some decentralized organizations be treated as partnerships, the default business entity under American business law, but this is an awkward fit. Reyes, *supra* note 74.

¹¹³ Aaron Wright, *supra* note 16.

¹¹⁴ Aaron Wright, *supra* note 16.

¹¹⁵ Henry Hansmann & Reinier Kraakman, *The Essential Role of Organizational Law*, 110 YALE L. J. 387 (2000).

¹¹⁶ Reyes, *supra* note 74.

These early efforts to combine blockchain-based governance with traditional business entities raise a host of further questions. Traditional governance incorporates a variety of mechanisms that are applied to fill “gaps” in the “contract.” Fiduciary responsibilities are one of the most well-known elements in classical corporation law. Fiduciary duties, from a contractual standpoint, are a pragmatic manner of dealing with the inability of comprehensive contracting.¹¹⁷ Rather than specifying ex-ante a fiduciary’s obligations in all situations, fiduciary duties supply general principles that are enforced ex-post. When a legal decision-maker is asked to assess whether a specific action breached a corporate director's duty of loyalty, they are both providing and applying a "contractual" word.¹¹⁸ Much of the debate surrounding private ordering in the context of business associations has focused on the degree to which these mandatory gap fillers should be subject to modification or elimination.¹¹⁹ As previously mentioned, supporters of private ordering won this battle in the context of unrelated business alliances and have achieved significant headway with piecemeal relaxations of corporate fiduciary duties. However, even in the case of unrelated organizations when contractual freedom reigns supreme, there is a necessary gap filler, the duty of good faith and fair dealing.¹²⁰

It may simply not be possible to provide for a DAO's entire governance scheme without relying to some extent on open-ended standards and gap fillers, which today sit ill-fitted with the intent and structure of DAOs, or by supplementing smart contract-based rules with a traditional natural language contract to supplement the code-based provisions. This is because the parties forming and participating in DAOs currently order their affairs through a code-based mechanism.¹²¹ While using more conventional legal documents to create and maintain DAOs has some appeal, there are a number of drawbacks. First off, it leaves an opportunity for potential ambiguity or misinterpretation of how the underlying smart contracts of a DAO operate when legal text is used to accommodate or describe the fundamental workings of smart contracts.¹²² Such translation errors increase the likelihood that members will disagree and force courts, which may be tasked with handling a DAO-related dispute, to determine whether the operating agreement's natural language clauses or the code should take precedence. The potential advantages offered by using blockchain

¹¹⁷ Frank H. Easterbrook & Daniel R. Fischel, *Contract and Fiduciary Duty*, 36 J. L. & ECON. 425, 427 (1993) (“The duty of loyalty replaces detailed contractual terms, and courts flesh out the duty of loyalty by prescribing the actions the parties themselves would have preferred if bargaining were cheap and all promises fully enforced.”).

¹¹⁸ Easterbrook & Fischel, *supra note* 104.

¹¹⁹ Henry N. Butler & Larry E. Ribstein, *Opting Out of Fiduciary Duties: A Response to the Anti-Contractarians*, 65 Wash. L. Rev. 1, 4 (1990).

¹²⁰ (2013) Del. Code Ann. tit. 6 § 18-1101(c); (2013) Del. Code Ann. tit. 6 § 17-1101(d); see also (2013) Del. Code Ann. tit. 6 § 18-1101(b) (2013); (2013) Del. Code Ann. tit. 6 § 17-1101(c).

¹²¹ *Id.*

¹²² Harry Surden et al., *Managing Representational Complexity in Computational Law* (2018), <https://pdfs.semanticscholar.org/409a/b0eb41a84b7ad790f3bcb3ee5c464d042280.pdf>.

technology and associated smart contracts to create, set up, and manage a DAO are undermined by the fact that legal agreements raise the cost of developing and managing a DAO. Smart contracts will be the main tool used by members of a DAO to manage their private affairs, and they frequently plan to create entities that alter some of the present "off the shelf" default regulations. The need to enlist a lawyer or other legal service to assist in the creation of an agreement that aligns with the intent of DAO members cuts against this very purpose and frustrates their ability to privately order their affairs.

3. Representing Interests in DAOs

DAOs' capacity to express interest in these organizations as tokens present further difficulties. DAOs offer a testing ground for private ordering through the use of inexpensive and widely available smart contracts. Instead of being run on a centralized server, these smart contracts are executed by the network that hosts the code that makes up the smart contract. Smart contracts can be combined in the case of DAOs to create a web of coding relationships that together define the guidelines for how the business will be run. A blockchain-based "token" that is linked to the smart contracts that control a DAO is frequently used to demonstrate participation in or affiliation with the organization. Individuals can either purchase tokens¹²³ or receive them as a reward for some other contribution, such as computing power. Tokens can be linked to specific rights that benefit their owners through the use of smart contracts, such as the right to a share of the company's revenue or the use of its network, software, or other services. DAO tokens are also increasingly designed to provide their holders with the right to govern underlying software through a vote.¹²⁴

Usually, when businesses want to raise money from the public, they issue securities in one of several well-known shapes, such as common stock, preferred stock, bonds, or convertible bonds, which are well-known as debt securities, equity securities, or securities that combine the two. But firms can offer tokens to the public that creatively combine rights by using smart contracts and blockchain-based tokens. Tokens that are sold to the public in ways like to a conventional initial public offering might be associated with economic rights, participation rights, governance rights, and utility rights.¹²⁵ Other DAO tokens may be made available to platform users, but they will only give

¹²³ Aaron Wright, *supra* note 16.

¹²⁴ Aaron Wright, *supra* note 16.

¹²⁵ Aaron Wright, *supra* note 16.

members restricted rights that are unrelated to any potential financial gain. The recent growth in ICOs has shown that blockchain-based businesses may generate significant sums of money through the sale of these tokens, but there is still a great deal of regulatory uncertainty. It is not yet clear if all of these tokens are securities. A former Chairman of the SEC stated that, in his opinion, many are.¹²⁶ Even if these tokens are securities, it is unclear how to classify them for regulatory purposes. For instance, a token that entitles the holder to utilize a specific platform or network and offers the option of making money through resale on the secondary market can implicate concerns in both investment and consumption.¹²⁷

This can matter for a variety of reasons. As an example, consider Section 12(g) of the Securities Act of 1934 and its application to blockchain-based tokens. Under Section 12(g), a company is required to register with the SEC and comply with ongoing disclosure requirements if it has more than \$10 million in assets and a class of equity securities that are “held of record” by either 2,000 persons or 500 persons who are not accredited investors.¹²⁸

It has become evident how simple it is for blockchain-based businesses to acquire assets worth more than \$10 million, and the majority of tokens are owned by buyers as soon as they are offered for sale to the general public. In the event a blockchain-based enterprise sells digital tokens that constitute equity securities, Section 12(g) may require registration at a very early stage in the life of the enterprise. Certainly, if a blockchain-based enterprise sells traditional securities that have simply been digitized, this issue is easy to resolve.¹²⁹ However, it is unclear whether these enterprises are issuing non-traditional interests in the first place, and if they are, whether they are equity securities (for example, a digital token that only offers governance earned through use). Even if it doesn't quite fit, this kind of interest resembles debt or a commodity more than equity.¹³⁰

Indeed, there are compelling reasons for DAOs to have governance-related tokens, as well as compelling reasons why these assets should not be classified as securities or debt. One of the most obvious objections to the pro-private ordering, contractual view of the firm (at least when it comes to firms with a diverse and dispersed investor base, such as publicly traded corporations) is that the governance terms are offered without negotiation or, in the case of most shareholders, any meaningful

¹²⁶ Jay Clayton, *Statement on Cryptocurrencies and Initial Coin Offerings*, U.S. SEC & Exch. Comm'n (Dec. 11, 2017), <https://www.sec.gov/news/public-statement/statement-clayton-2017-12-11>.

¹²⁷ Aaron Wright, *supra note 16*.

¹²⁸ 15 U.S.C. § 78l(g).

¹²⁹ Aaron Wright, *supra note 16*.

¹³⁰ Aaron Wright, *supra note 16*.

awareness of their content or operation.¹³¹ The vulnerability of investors under these circumstances is one longstanding argument in favor of mandatory terms that are designed to protect investors from the imposition of one-sided terms.¹³² Unsurprisingly, contractarians believe that the answer resides in the market, specifically the market's power to price governance terms. "All the terms in corporate governance are contractual in the sense that they are fully priced in transactions among the interested parties," write Easterbrook and Fischel. They are then examined for desirable features; enterprises that choose the incorrect terms will fail in competition with other firms seeking finance. It makes no difference that they cannot be 'negotiated'.¹³³

In other words, capital markets' informational efficiency ensures that investors get what they pay for while also preventing the imposition of unfair or one-sided terms because those terms are priced into the firm's cost of capital. Mandatory terms are suitable, according to this contractarian account, only when private ordering produces negative externalities or when "the terms chosen by firms are both unpriced and systematically perverse."¹³⁴ Of course, Easterbrook and Fischel overstate things a bit—there is a body of empirical evidence that shows that the market does not always fully price governance terms.¹³⁵ Instead, markets display differing degrees of informational efficiency.¹³⁶ They incorporate new information at varying rates and degrees, but the underlying idea—that the price of a security is indicative of performance (which is influenced by governance) and there is no better indicator available—remains relevant for both contractual freedom debates and theories explaining a variety of current governance practices.¹³⁷

Governance tokens enable the market to price governance terms in the setting of DAOs, leaving unanswered the question of how much private ordering can be justified under the classic contractarian perspective. A market's informational efficiency is a function of information costs; when information costs are high, markets are likely to be less efficient.¹³⁸ When information is acquired and processed easily, markets are likely to be more informationally efficient.¹³⁹ Certainly, there are strong reasons to believe that the market will be able to price the terms of traditional securities that have simply been "tokenized," provided there is a way to "translate" the code that

¹³¹ Aaron Wright, *supra* note 16.

¹³² Jeffrey N. Gordon, *The Mandatory Structure of Corporate Law*, 89 COLUM. L. REV. 1549, 1556-62 (1989).

¹³³ Aaron Wright, *supra* note 16.

¹³⁴ *Id.*

¹³⁵ Lawrence A. Cunningham, *Behavioral Finance and Investor Governance*, 59 WASH. & LEE L. REV. 767, 774-76 (2002).

¹³⁶ *Halliburton Co. v. Erica P. John Fund, Inc.*, 573 U.S. 258, 134 S. Ct. 2398, 2402, 189 L. Ed. 2d 339 (2014).

¹³⁷ Bainbridge, *supra* note 94.

¹³⁸ Ronald J. Gilson Reinier, *The Mechanisms of Market Efficiency*, 70 VA. L. REV. 549, 550 (1984).

¹³⁹ *Id.*

reflects those governance terms into a format that market participants can understand and use to inform their purchasing decisions. If purchasers can trust that blockchain-based governance is an accurate reflection of traditional governance terms that have simply been transferred from operating agreements, certificates of incorporation, and other governing documents to blockchain-based smart contracts, information costs should be relatively low in comparison to their analog counterparts.¹⁴⁰

Concerning non-traditional arrangements that fall under the definition of "security," however, there is the possibility that information costs will be significantly higher because market participants will find it more difficult to determine both what the code means and how novel private ordering mechanisms should be valued. Because these instruments do not correspond directly with analog assets, consumers will be compelled to (1) determine the meaning of the code and (2) its significance for pricing. With higher information costs come questions related to the informational efficiency of the market, which raises further questions related to the degree to which private ordering is appropriate.¹⁴¹

It is far too early to draw any conclusions on the informational efficiency of the market for digital tokens. Nevertheless, given the relationship between information costs, market efficiency, and private ordering, it may be appropriate to consider measures to clarify the nature of these tokens, as they relate to DAOs.¹⁴²

Two other related concepts that can be included in the series of complications underlying DAOs structure and recent growth are their scalability and the speculative excess as they generate premium returns.

Scalability

From a certain perspective, the Achilles Heel of DAOs is their limited to scalability. As the number of DAO participants increases, the complexity of operating and updating protocols grows, resulting in delays and other difficulties. Furthermore, as the number of transactions increases, networks may not be able to keep up with demand leading to diminished transaction completion

¹⁴⁰ Aaron Wright, *supra* note 16.

¹⁴¹ Aaron Wright, *supra* note 16.

¹⁴² Aaron Wright, *supra* note 16.

times. It is thus essential to take scalability into account when designing or committing to DAOs to run an organization or a part of it.¹⁴³

Despite the numerous advantages that DAOs offer over traditional business structures, their scalability remains a significant issue. By scalability, we mean a DAO's ability to handle increasing numbers of users or transactions without compromising performance. Scalability is pivotal to a DAO's mission because successful membership engagement directly hinges on scalability (Singh & Kim, 2019). Several factors contribute to it: high transaction costs on blockchain networks, constrained transaction throughput, and difficulties with governance at scale. These challenges, while marked, are likely not insurmountable.¹⁴⁴ We find cause for optimism as multiple solutions are presently in the works. Solutions such as layer 2 protocols, proof of stake (PoS), increasing block size, interoperability, and hybrid models can help to increase scalability; however, it is difficult to predict how long it will take to implement these solutions or whether competing structures may emerge in the meantime. For instance, since off-chain transactions lower the minimum processing transaction requirements, throughput pressure on the network is reduced. On the infrastructure side, layer 2 protocols, if implemented, serve a twin win: off-chain processing while maintaining ties to a blockchain network. Meanwhile, as a stop-gap measure, while these problems await a technical solution, firms are free to adopt hybrid models tailored to their needs. In sum, while it's highly suggested to approach DAOs with a realistic expectation of their scalability, the technical solutions surveyed above can greatly mitigate the scalability bottlenecks.¹⁴⁵

Speculative Excess

The burgeoning interest in DAOs extends beyond ideological investments like advocacy for decentralization or egalitarianism.¹⁴⁶ The concurrent success of Silicon Valley, the rise of the alternative investment asset class, and a low-yield monetary environment have meant that speculative capital flows to DAOs in a bid to catch the next big Amazon. Especially for DAOs, the in-built profit distribution mechanism makes it especially appealing to early-stage investors. Add to that the rising

¹⁴³ Saqib Sheikh and Imtiaz Sifat, *Built to Last, Not to Scale: The Long Run of Decentralized Autonomous Organizations*, (Jan. 22, 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4335053.

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

interest in decentralized finance, where DAOs are expected to play a prominent role. Unmitigated speculative fervor, however, almost always is detrimental. For instance, the token price of a DAO in which there is high speculative interest can experience heavy volatility, potentially affecting its operations (Krishnan, 2020). Like traditional financial assets, excess speculation can inflate token valuation. This can either precipitate a bubble that inevitably bursts, or, in a milder scenario, produces unrealistic expectations and sets the organization up for failure. From a managerial perspective, when the foremost focus is on generating returns for investors and not achieving mission objectives as per member (stakeholder) demands, the DAO's original goals suffer. Financial and accounting literature are replete with examples of managerial myopia leading to self-destructive short-term decisions (Hirshleifer, 1993; Nyman, 2005). There are reputational risks too, e.g., if a DAO is believed to exist for the sole sake of generating quick income for its members, the market may deem it untrustworthy, making recruitment of new members.¹⁴⁷

D. Latest regulatory key points

Unsurprisingly, DAOs raise a variety of legal issues, in addition to the ones presented previously. Some of those include corporate formation, contracting, securities regulations, intellectual property law, and data privacy and cybersecurity requirements.

Formation & Contract Law

For individuals and businesses planning to use the DAO model, the formation has presented certain challenges. While a handful of U.S. jurisdictions, such as Wyoming, Vermont, and Tennessee, and non-U.S. jurisdictions including the Marshall Islands, have provided a clear pathway for DAOs to be integrated into traditional legal structures, DAOs nowadays are not recognized legal entities in most jurisdictions. Developers interested in making their DAO available to the public with a legal framework typically require deploying customized solutions to do so because the simple act of

¹⁴⁷ *Id.*

encoding and building a DAO does not always result in the creation of a legal entity. Two DAO structures are currently gaining popularity: the "wrapped" DAO and the "unwrapped" DAO. An organization that is generally not protected by current U.S. law is known as an "unwrapped DAO."¹⁴⁸ As a result, it is not covered by the protections against liability that apply to limited liability companies (LLCs), limited liability partnerships, and other corporate legal entities. Without a formal legal structure, judges might determine that the DAO's participants had effectively established a general partnership, with each participant (i.e., each DAO token holder) accepting personal responsibility for the DAO's operations. This may be a noteworthy concern for participants, since many individual token holders may not intend to expose themselves to the various legal and compliance risks that could materialize in connection with a DAO.¹⁴⁹

Moreover, if a DAO with no associated legal entity is found to be a general partnership, any individual DAO member theoretically could enter into contracts and bind the other DAO members without their knowledge or consent. Additionally, although DAO members could authorize a single member to enter commercial contracts on behalf of the whole organization, both the authorized member and the other DAO members still might face unlimited personal liability for any claims arising from such agreement unless the passive DAO members individually contracted with the counterparty to impose limitations to their liability.¹⁵⁰ The rights, obligations, and potential liabilities for token holders of unwrapped DAOs and contracting counterparties are extremely speculative in most jurisdictions absent further legislative or regulatory action. Wrapped DAOs, however, provide more confidence, albeit not being a perfect answer. In a wrapped DAO, all of the DAO's members or a portion of them form a legal corporate entity—often a company or LLC—that controls and/or owns specific elements of the DAO's ecosystem, like its smart contracts and treasury. A DAO's ability to contract with and exchange services and payments with third parties, as well as to engage in general commerce, may be improved by being associated with such an entity, depending on the precise structure used.

To be most effective, the LLC or other corporate organization developed for the DAO should have an adequate nexus to the broader DAO community and ecosystem to assure token holders and counterparties that the DAO falls under the corporate form. Given the nascent emergence of DAOs generally, and wrapped DAOs, the degree to which a DAO's association with an LLC or other

¹⁴⁸ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁴⁹ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁵⁰ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

business organization will provide the broader DAO ecosystem with limited liability, and the knowledge to contract with traditional counterparties, remains untested.¹⁵¹

Securities Laws

As to ensure compliance with U.S. securities laws, when a DAO issues tokens that are not registered with the Securities and Exchange Commission, the organizers of the ICO should either satisfy themselves that such tokens are not securities or ensure that the tokens are issued according to an exemption from registration.¹⁵²

Under the Securities Act of 1933, every offer or sale of a security must either be registered or subject to an exemption from registration. Section 2(a)(1) of the Securities Act defines securities to include “investment contracts.” In *SEC v. W.J. Howey Co.*,¹⁵³ the U.S. Supreme Court established the framework for analyzing whether an asset is an investment contract subject to securities laws. Under *Howey*, an investment contract is a contract, transaction, or arrangement whereby a person invests money in a common enterprise and expects to receive profits on that investment resulting from the efforts of the enterprise's promoters or others.¹⁵⁴

The SEC first prominently asserted that the *Howey* analysis applies to cryptocurrencies too. This result was reached in its July 2017 Report of Investigation into DAO Tokens. After “The DAO”—the name of a specific DAO created by a German startup in 2016—was hacked and litigation ensued, the SEC discovered that token holders’ contributions of Ethereum in exchange for tokens of The DAO constituted an “investment of money,” and that the efforts of The DAO's founders and curators were essential to the functioning of The DAO.¹⁵⁵ The DAO's founders and curators were found liable for having pooled the contributed Ethereum to fund projects from which The DAO's token holders eventually stood to profit. These facts led the SEC to conclude that The DAO's tokens fell squarely within the purview of *Howey*, constituting security.

¹⁵¹ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁵² Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁵³ *SEC v. W.J. Howey Co.*, 328 U.S. 293 (1946).

¹⁵⁴ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁵⁵ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

The SEC's subsequent Munchieeese-and-desist order in December 2017 promulgated additional factors to be considered when determining whether a DAO or other cryptocurrency token is a security, including the immediate usability of the tokens, the presence of the tokens on the secondary markets, how the tokens are advertised, and how the proceeds from an offering will be used.¹⁵⁶ The SEC has never stated that any tokens or cryptocurrencies—aside from Bitcoin and Ethereum—are not securities, despite the enumeration of various characteristics that could suggest a somewhat lenient approach to the classification of tokens as securities. Recent SEC enforcement actions and current legal stances suggest that the SEC is growing increasingly interested in contesting unregistered securities offers in the cryptocurrency sector.

For instance, the SEC sued BlockFi Lending LLC in 2021 for failing to register its cryptocurrency lending product as a security, joining several state regulatory authorities in doing so in February 2022. Investors who lent digital assets to BlockFi were promised returns, according to BlockFi's advertisements. Then, at BlockFi's discretion, without any approval from the tokenholders, these assets were gathered, lent out, and invested to make money. The SEC determined that BlockFi's investment product satisfied the Howey test's requirements and was not excluded from registration since it was offered to retail investors.¹⁵⁷

BlockFi was forced to pay a fine of \$100 million to conclude the enforcement action, making it one of the biggest fines in the history of digital assets. Similar to this, the SEC claims that Ripple Labs Inc.'s offering of its cryptocurrency asset, XRP, satisfies the Howey test and acted as an unregistered security offering in an ongoing action brought against the business in late 2020. DAOs will also need to take the regulatory environment for any NFT assets into account more and more. The SEC has indicated that such tokens qualify as securities under the Howey test, particularly in the case of fractionalized NFTs, in which ownership of tangible or intangible assets is divided into numerous pieces and sold to dispersed investors through the process of tokenization.¹⁵⁸

It is critical to realize that registration statement disclosures must be extensive and complete when DAOs attempt to register their token offers as securities as no DAO has yet been able to properly register its token offering. For instance, the DAO American CryptoFed DAO LLC, which was established under the recently passed Wyoming law recognizing DAOs as a distinct corporate form, made an attempt to register two digital tokens in late 2021.¹⁵⁹ The SEC filed a lawsuit against

¹⁵⁶ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁵⁷ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁵⁸ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁵⁹ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

CryptoFed, claiming that the DAO had not provided enough details in its registration statement about its tokens. The case of CryptoFed serves as a warning that DAOs and other cryptocurrency industry players are needed to make sure that their disclosures are truthful and fully disclose the risks associated with token investments. As digital assets become more popular and the courts and SEC are forced to grapple with the concept of a security, DAOs will eventually be better able to decide whether to view their tokens as securities.¹⁶⁰ The possibility that DAOs who choose not to register their tokens as securities or use a registration exemption may later have their tokens categorized as securities give rise to the risk of enforcement action and private litigation.¹⁶¹

Licensing, Copyrights & Software Code

DAO parties unquestionably will be faced with how to ensure ownership and enforcement of the intellectual property they forge and acquire as they continue to grow and develop. Ownership and licensing of the IP associated with DAOs, such as copyrights and software code, are becoming increasingly vital. In the case of software, if a DAO's underlying software is adequately creative to constitute an “original work of authorship,” then it likely is protectable as a matter of law— if a discernable entity authored and owns the software and can plead it against another discernable entity or individual.¹⁶²

If the DAO is wrapped and enforces traditional IP ownership assignments from the author(s) to the associated entity in place, then copyright ownership may be a straightforward question. However, it is vague who exactly possesses the underlying software if a DAO is unwrapped (or if there are no IP assignments from DAO members who wrote the protocol to the associated entity). This is especially true depending on how many associates the DAO has and who contributed to the growth and advancements of that software.

Moreover, in the licensing context (especially for unwrapped DAOs), it may be unclear who or what is the licensor or licensee where a DAO seeks to license either valuable software code or copyrights related to other DAO assets, such as NFTs.

¹⁶⁰ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁶¹ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁶² Mark Cianci, Evan Gourvitz et al., *supra* note 1.

Recently, Curve DAO fielded a proposal that it should hire counsel in the U.S. and other relevant jurisdictions to discourage other DAOs from “wholesale copying” its code. Subsequently, a ballot on Curve's forum revealed that sixty-seven percent of the members agreed. The suggestion was made as a reaction to the allegations that Curve DAO's code had been copied by Saddle DAO, a lesser-known DAO, which then claimed ownership of the copyright and offered a license to the code to everyone in the world. The conundrum faced by Curve DAO was a noteworthy development, particularly in light of the opposition in the DeFi community to DAOs and other organizations attempting to defend their IP rights, which is seen as at odds with the completely open-source culture and nature of DeFi. Critics of extensive IP licensing in the DeFi space worry that it may stifle innovation and dissuade talented programmers from joining DAOs. As with Curve DAO, however, DAOs may start to take protecting their valuable IP more seriously.¹⁶³

Trademark Law

As is the case with contracting and licensing, a DAO's capacity to both possess and execute a trademark may depend on its organizational structure and legal standing. For wrapped DAOs, it will be simpler to register the company using the organization's trademark in commerce and to make a motion to enforce that trademark. For unwrapped DAOs, however, trademark matters will likely be more complex due to the intrinsic difficulties in determining ownership, use in commerce, and the right to enforce the mark.¹⁶⁴ It will be interesting to see how trademark issues pan out in the context of unwrapped DAOs, especially because federal case law from the Ninth Circuit¹⁶⁵ and a few other circuits have held that unincorporated associations can hold trademarks. Unwrapped DAOs could endeavor to enforce their trademark under a similar theory and be successful in federal court, although they could have difficulty proving that their mark serves as an indicator of source.¹⁶⁶

¹⁶³ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁶⁴ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁶⁵ The United States Court of Appeals for the Ninth Circuit is a federal appellate court with appellate jurisdiction. It hears appeals from all of the circuit courts within its jurisdiction and its rulings may be appealed to the Supreme Court of the United States. The Ninth Circuit is the largest appellate court with 29 authorized judicial posts. Appeals are heard in the James R. Browning Federal Courthouse in San Francisco, California, the Richard H. Chambers Courthouse in Pasadena, California, the Pioneer Courthouse in Portland, Oregon, and the William K. Nakamura Courthouse in Seattle, Washington. See <https://www.ca9.uscourts.gov>.

¹⁶⁶ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

IP Infringement

Finding the appropriate defendant(s) when the infringing entity is an unwrapped DAO presents another hurdle for IP enforcement. Even if the plaintiff has all the appropriate legal structures in place to enforce its IP—i.e., legal entity, IP assignments, registrations, etc.—if an unwrapped DAO is an infringer, it may be unclear what party or parties properly should be named.¹⁶⁷

Holding its members collectively accountable as a general partnership may be feasible if its members are easily recognized. If not, the plaintiff can locate one or more DAO members, add them as defendants, and prosecute the lawsuit under joint and several liability. The designated parties would then be left to seek redress from and judgment from the remaining DAO members. However, due of the prevalence of anonymity in the DeFi and DAO environments, such a technique is less than ideal because it can be difficult, if not impossible, to discover all of the essential individuals or organizations, preventing the offended party from gaining full justice for infringement.¹⁶⁸

Data Privacy Law

Legislators have placed the onus on firms to offer careful oversight when collecting, keeping, and exploiting data that can be related to individuals' identities as legislation on consumer data privacy and cybersecurity continues to evolve and become more comprehensive. Personal data is defined as any consumer data that may be linked to an individual in legislation such as the California Consumer Privacy Act, Europe's General Data Privacy Regulation (GDPR)¹⁶⁹, and an increasing number of other regulations.¹⁷⁰

¹⁶⁷ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁶⁸ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁶⁹ The General Data Protection Regulation (GDPR) is the toughest privacy and security law in the world. Though it was drafted and passed by the European Union (EU), it imposes obligations onto organizations anywhere, so long as they target or collect data related to people in the EU. The regulation was put into effect on May 25, 2018. The GDPR will levy harsh fines against those who violate its privacy and security standards, with penalties reaching into the tens of millions of euros. See GDPR.EU, <https://gdpr.eu/what-is-gdpr/#:~:text=The%20General%20Data%20Protection%20Regulation,to%20people%20in%20the%20EU>.

¹⁷⁰ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

Most notably, under the GDPR, individual consumers are considered “data subjects” with corresponding rights such as the right to be informed, to access data collected about them, to rectify incorrect data, to erase data, etc. The "data controllers" who are in charge of the data and the "data processors" who handle consumer data on their behalf must abide by these regulations. However, with a DAO, it is typically thought that members have some ownership in the organization and a voice in how it is run. Because members can contribute to the underlying protocol, it is difficult to determine who owns or controls the data for privacy reasons. Furthermore, due to the public, permissionless, and largely immutable nature of many blockchain protocols, there would most likely be no option for "erasure" of data obtained on a blockchain. While some EU agencies have embraced blockchain technologies, several European data protection authorities have highlighted blunderbuss worries about all blockchain technologies.¹⁷¹ Several crucial questions remain unanswered in this area: How will highly decentralized DAOs, and blockchains more generally, comply with data privacy laws? Which data privacy laws apply to DAOs? If a DAO is highly decentralized and its members are anonymous, how will the applicable data privacy laws be enforced against it?

Until legislators further address the inherent characteristics of blockchain technology, the path to achieving full compliance with privacy laws may be unclear for DAOs. For now, DAOs will have to contend with striking a balance between collecting and processing consumer data and fully embracing the promises blockchain technology offers.¹⁷²

III. THE NEED FOR LIMITED LIABILITY PROTECTION

Before analyzing the case history and the subsequent case concerning the concept of limited liability in DAOs, it is necessary to understand how and with what differences DAOs are recognized in the various American and non-US jurisdictions. We will suddenly realize that the difference is not only in the company registration phase but also and above all in the recognition of limited liability or not, unlike the country in which we decide to incorporate our DAO.

¹⁷¹ Mark Cianci, Evan Gourvitz et al., *supra* note 1.

¹⁷² Mark Cianci, Evan Gourvitz et al., *supra* note 1.

A. DAO-friendly jurisdictions across the US

Wyoming

On March 17, 2021, Wyoming's state senate enacted the Decentralized Autonomous Organizations Supplement (DAO Supplement), a bill aimed at clarifying the legal standing of the decentralized autonomous organization (DAO). The Wyoming DAO Supplement is intended to offer a legal framework for an entity that has already been granted legal status in Wyoming, Tennessee, and Vermont but has not yet been considered by the federal or state legislatures.¹⁷³ The bill gives DAOs legal standing as limited liability enterprises (LLCs), applying the Wyoming LLC Act to them.¹⁷⁴ The DAO Supplement is being backed on the grounds that it will protect DAOs from being sued as general partnerships, clarify their status as legal entities, and bring transparency to several DAO projects. Although this new legal framework does not address all DAO-related difficulties, it does clarify the potential liability faced by DAO members and represents an important advance towards the legalization of DAOs.¹⁷⁵

To highlight the initial distinction between general partnerships and LLCs, we must first analyze an LLC's fundamental definition, which specifies that an LLC is a legal entity apart from its members or owners. It is a subject of state law, therefore when you form an LLC, you do so in line with the laws of that state, in this case, Wyoming. As a result, Wyoming law governs an LLC's internal operations.¹⁷⁶

The Wyoming LLC Chapter applied to DAOs to the extent not inconsistent with the provisions of the DAO Supplement and the powers supplied to the secretary of state. In essence, the DAO supplement supplants the Wyoming LLC Act where there are inconsistencies between the two chapters, while the Wyoming LLC chapter applies to all matters not addressed in the DAO

¹⁷³ Dilendorf Law Firm, *Forming & Operating a Wyoming DAO LLC*, 2021, <https://dilendorf.com/wp-content/uploads/2021/06/Forming-and-operating-a-Wyoming-DAO-LLC.pdf>.

¹⁷⁴ Pierluigi Matera, *Delaware's Dominance, Wyoming's Dare. New Challenge, Same Outcome?*, 27(1) FORDHAM JOURNAL OF CORPORATE & FINANCIAL LAW 73 (2022).

¹⁷⁵ *Id.*

¹⁷⁶ *Id.*

supplement. Under the Wyoming DAO Supplement to its LLC Chapter, a DAO LLC is an LLC whose articles of organization contain a statement that the company is a DAO.¹⁷⁷

Tennessee

On April 20, 2022, Tennessee Governor Bill Lee signed into law a bill to permit decentralized autonomous organizations, to incorporate as a type of limited liability company. As the second U.S. state to grant legal status to DAOs (following the similar Wyoming law passed in 2021), Tennessee has become a trendsetter for blockchain-based corporate governance. This new DAO Act is anticipated to significantly increase blockchain investment and job creation in Tennessee's booming IT industry.¹⁷⁸

A DAO was not officially acknowledged as a distinct governance structure before the passage of the DAO Act in Wyoming and, more recently, Tennessee. As a result, there was no easy way to set up a DAO structure that offered the advantages of acknowledged business entity structures, such as restrictions on the liability of the equity owners.¹⁷⁹ Without that protection, a member of a DAO that is not organized as another type of entity could theoretically be held liable for the obligations of the DAO, even though the DAO operations were carried out automatically by a computer-run smart contract on autopilot without any human intervention.¹⁸⁰ The new DAO Act amends the Tennessee Limited Liability Company Act and authorizes an LLC to vote to become a DAO. An entity may register in Tennessee as a DAO and carry-on operations in other jurisdictions just like any other type of business entity.¹⁸¹

The new legislation provides that the Tennessee Revised Limited Liability Company Act¹⁸² applies to DAOs to the extent consistent with the new legislation.¹⁸³ A DAO is an LLC whose articles of incorporation specifically specify that the DAO follows a limited liability framework, according

¹⁷⁷ *Id.*

¹⁷⁸ Baker Donelson, *Tennessee's Statute*, (May 10, 2022), JDSupra, <https://www.jdsupra.com/legalnews/tennessee-s-dao-statute-a-trendsetter-8896789/>.

¹⁷⁹ *Id.*

¹⁸⁰ *Id.*

¹⁸¹ *Id.*

¹⁸² Tenn. Code Ann. 48-249.

¹⁸³ Section 102(a).

to the new legislation.¹⁸⁴ Foreign DAOs may apply for a certificate of authority, but not if such DAOs are “based outside the United States”.¹⁸⁵ The articles of organization must include a statement that is prominently displayed and generally follows the format specified in 48-250-102(c) if an LLC wishes to opt to be a DAO.¹⁸⁶ The statement may define the DAO as a smart contract-managed DAO or a member-managed DAO.¹⁸⁷ A DAO's management is vested in its smart contract if it is smart contract-managed and in its members if it is member-managed unless the operating agreement or articles of incorporation state otherwise.¹⁸⁸ A smart contract-managed DAO may only be founded if the underlying smart contracts can be updated. DAO formation under the new law is similar to LLC formation under the Act.¹⁸⁹

Aside from the precise statement specified above, the articles of incorporation of a DAO must also include a publicly available identity that is directly utilized to govern, facilitate, or operate the DAO.¹⁹⁰ All aspects of a DAO, including its activity, its members' relationships, its members' rights and obligations, the transfers and withdrawals of membership interests, distributions to members before dissolution, and the processes for amending both the articles of organization and the relevant smart contracts,¹⁹¹ are generally governed by both the articles of organization and the underlying smart contracts.¹⁹² To change the smart contracts of a DAO, the articles of organization must be changed.¹⁹³ If the articles of organization conflict with the underlying smart contracts, the smart contracts take precedence unless there is a contrary provision in the Act.¹⁹⁴

Under the new law, membership interests accompany voting rights like under the Act.¹⁹⁵ A member may not dissolve a DAO for its failure to return capital contributed by that member.¹⁹⁶ DAO dissolution under the new law mirrors LLC dissolution under the Act.¹⁹⁷ Unless the operational agreement or articles of incorporation specify otherwise, DAO members have no fiduciary obligations

¹⁸⁴ Ryan McDowell, *Tennessee permits DAOs to organize as LLCs*, (April 20, 2022), Tennessee Bar Associate, https://www.tba.org/?pg=Articles&blAction=showEntry&blogEntry=73474#_ftn2.

¹⁸⁵ Section 115.

¹⁸⁶ Ryan McDowell, *supra note* 184.

¹⁸⁷ Section 103(e).

¹⁸⁸ Section 108.

¹⁸⁹ Section 104.

¹⁹⁰ Section 105(a)(3).

¹⁹¹ Ryan McDowell, *supra note* 184.

¹⁹² Section 105(b). If a DAO's articles of organization do not provide for one of these aspects, then its operation may be supplemented by an operating agreement. Section 107.

¹⁹³ Section 106(3).

¹⁹⁴ Section 114(c).

¹⁹⁵ Section 110. If contributing digital assets to a DAO is not a prerequisite to becoming a member, then each member has one membership interest and is entitled to one vote. Section 110(2).

¹⁹⁶ Section 112(b).

¹⁹⁷ Section 113. A DAO that fails to approve proposals or take actions for one year is dissolved. Section 113(a)(4).

to the DAO or its members, but they are still bound by the implied contractual duty of good faith and fair dealing.¹⁹⁸ The DAO is not required to provide information about its operations, financial standing, or other circumstances if such information is publicly accessible distributed ledger technology (or blockchain), and members are not granted the right under the new law to independently inspect or copy DAO records.¹⁹⁹

Tennessee's transformation into the "Delaware of DAOs" is yet to be seen. DAOs may not be appropriate for every form of business organization, and smart contract governance does not guarantee superior decision-making when compared to traditional corporate governance procedures.²⁰⁰ Yet as digital currencies continue to gain endorsement in the marketplace and regulatory enforcement becomes more evident and predictable, the prevalence of member-managed and smart-contract-enabled DAOs geared toward automation and democratizing corporate governance is likely to be a growing trend for certain types of businesses.²⁰¹

In addition to the previously mentioned jurisdictions, organizations willing to operate within the United States have another couple of feasible states in which to incorporate their DAOs, respectively Vermont and Delaware.

Model Blockchain-Based Limited Liability Company (BLLC) Vermont and Delaware LLC

The first step in this direction in Anglo-American law has already been taken in 2018 by the state of Vermont in the United States.²⁰² Since the mid of 2018, Vermont has allowed the creation of so-called Blockchain-Based Limited Liability Companies (BLLCs), which has made possible the creation of limited liability DAOs for the first time.²⁰³ For this purpose, a Blockchain-Based Limited

¹⁹⁸ Section 109.

¹⁹⁹ Section 113.

²⁰⁰ Matthew S. Miller and Spencer Green, *supra* note 82.

²⁰¹ Matthew S. Miller and Spencer Green, *supra* note 82.

²⁰² Biyan Mienert, *How can a decentralized autonomous organization (DAO) be legally structured?*, (Nov., 2021), Marburg University, Institute for the Law of Digitalization, <https://deliverypdf.ssrn.com/delivery.php?ID=684088071004065001096108101084009109026012051033042091108125103074073025068074108121101122062000122051045126009108019075074077005049095084082027095123119017123096019019005046078001004010011118127071088102114091120029121082095069113085126077120082115065&EXT=pdf&INDEX=TRUE>.

²⁰³ John Biggs, *dOrg Founders Have Created the First Limited Liability DAO*, (June 12, 2019) CoinDesk, <https://www.coindesk.com/markets/2019/06/11/dorg-founders-have-created-the-first-limited-liability-dao/>.

Liability Company (BLLC)²⁰⁴ was registered in Vermont after the deployment of the DAO on the Ethereum Blockchain by dOrg. By linking the DAO to this BLLC, the DAO has an official legal status that allows it to enter into contractual agreements and offer liability protection to participants.²⁰⁵ The BLLC uses smart contracts and the blockchain to offer full governance. Open Law in the U.S. state of Delaware is also taking a similar approach by establishing the LAO (Legal DAO).²⁰⁶

The LAO provides a legal structure to allow members to invest in blockchain-based projects in exchange for tokenized shares or utility tokens. In order to hold the DAO accountable for contracts, taxes, and legal violations but not the associates who represent the business, this structure, called a "legal wrapper," is made possible by structuring the DAO as an LLC.²⁰⁷ The LAO aims to reduce participant drawbacks, clarify the relevant legal framework, and offer tax advantages (flowthrough/single taxation).²⁰⁸

California

Just recently California legislators started considering a new bill that aims to provide legal clarity for DAOs. The Bill will potentially offer regulatory relief from California's recent case law incomprehension. The bill, known as the "DAO Law," seeks to recognize DAOs as distinct legal entities, allowing them to enter contracts, own property, and act within the state.²⁰⁹

Proponents of the bill argue that it will drastically assist the growth and innovation of blockchain technology in the state, while detractors express concerns about the potential downside of fraud and abuse, intrinsic to the decentralized network. The bill defines a DAO as "an unincorporated organization that operates through the deployment of code on a blockchain network and that uses smart contracts to govern its operations." The bill also specifies the requirements and procedures for DAOs to register with the Secretary of State, maintain records and reports, and resolve disputes and

²⁰⁴ See: *Vermont Limited Liability Company Act* (the "Act"), 11 V.S.A. § 4173.

²⁰⁵ Biyan Mienert, *supra note* 202.

²⁰⁶ See at <https://www.openlaw.io>.

²⁰⁷ Biyan Mienert, *supra note* 202, *pg.* 5.

²⁰⁸ Biyan Mienert, *supra note* 202, *pg.* 5.

²⁰⁹ Andrey Sergeenkov, *Proposed California Bill Seeks to Clarify Legal Status of Decentralized Organizations*, (April 25, 2023), Yahoo Finance, https://finance.yahoo.com/news/proposed-california-bill-seeks-clarify-135605826.html?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAEoKnwbPmcmJkK4APqBVUSwIgrPx-bq2-nYbW-42FC38fjWgKmyNBqEVsQ_qAlrt81YbtIaM0Kqqs-FntjecP3qkpU9T1ICJPzKL27cMirixFEzu7O1a3_6Eyjfu8E9i1vJn9KudU6YHpaYcdBdl7SA92uHydBJqd_9VpL00dX.

liabilities. The bill then grants DAOs the right to sue and be sued in their own name, as well as the right to amend their governing code and smart contracts. Finally, the Bill if approved will permit DAOs to incorporate as LLCs, allowing them to transact with third parties while being protected by the limited liability veil.²¹⁰

B. THE DAO CASE

Investment contracts, The Howey Test and The DAO Case

A catch-all category of securities, the investment contract received clarity through the Supreme Court's opinion in the seminal case of Securities and Exchange Commission v. W.J. Howey Co.²¹⁰ Howey concerned the sale of real estate contracts in Florida citrus groves.²¹¹ Under company's the business model, Howey sold sections of the orange groves and the purchasers leased the land back to Howey, whose company would farm the land and market the produce on behalf of the purchasers.²¹² Purchasers would share in the revenue.²¹³ Most purchasers had no experience in agriculture, and none would tend to the land themselves. Howey did not file a statement to register these contracts as securities and the SEC intervened.²¹⁴ In the final decision, the Supreme Court held that these sale- leaseback arrangements were investment contracts under §(2)(a)(1) of the 1933 Act. In doing so, the Court established the test for determining the existence of an investment contract. There are four criteria to this test:

- (1) An investment of money.
- (2) In a common enterprise.
- (3) With the expectation of profits.
- (4) Solely from the efforts of other.

²¹⁰ *Id.*

²¹¹ Michael Mendelson, *From Initial Coin Offerings To Security Tokens: A U.S. Federal Securities Law Analysis*, 22 STAN. TECH. L. REV. 52, 65 (2019).

²¹² See Securities and Exchange Commission (SEC): Release No. 81207, *Report of Investigation Pursuant to Section 21(a) of the Securities Exchange Act of 1934: The DAO*, 25.07.2017 (available under: <https://www.sec.gov/litigation/investreport/34-81207.pdf>).

²¹³ Michael Mendelson, *supra note 211*.

²¹⁴ Securities and Exchange Commission, *supra note 212*.

This jurisprudence of this case remains generally unchanged in over seventy years and is known among securities law practitioners as “The Howey test.” We will take a further look at each of these criteria as applied to digital tokens by the SEC and the courts in the next sections.

The Howey test, The SEC, and The DAO 21A report

“The DAO,” which stands for Decentralized Autonomous Organization, was intended to be just that: a virtual company run by algorithms and smart contracts executed on a blockchain, rather than by the active decisions of human beings. The DAO was conceived as a virtual company and an investment vehicle. As stated in the SEC’s report on the company, The DAO was created by [blockchain software company] Slock.it and Slock.it’s co-founders, with the objective of operating as a for-profit entity that would create and hold a corpus of assets through the sale of DAO Tokens to investors, which assets would then be used to fund “projects”. The holders of DAO Tokens stood to share in the anticipated earnings from these projects as a return on their investment in DAO Tokens. In addition, DAO Token holders could monetize their investments in DAO Tokens by re-selling DAO Tokens on several web-based platforms (“Platforms”) that supported secondary trading in the DAO Tokens.²¹⁵

In an ICO of Ether-based tokens, the DAO raised around \$150 million. Following the sale of the tokens, The DAO was to begin supporting initiatives for investment. Token holders were not barred from reselling their tokens, which were openly traded on cryptocurrency exchanges (essentially, secondary market trading platforms). Unfortunately, The DAO was hacked, and one-third of its cash were taken. These monies were eventually restored to investors via a technological solution known as a "hard fork" in the blockchain. The DAO gained enormous press attention, and eventually the attention of the SEC, as the largest token sale at the time, along with the hack.²¹⁶

The SEC’s investigation into The DAO handled the fundamental question of whether the tokens sold should be classified as securities. In The DAO case, the SEC directly applied the Howey test to the Tokens in its 21A report, deciding that they were, in fact, securities that should have been

²¹⁵ Michael Mendelson, *supra* note 211, pg. 67.

²¹⁶ Michael Mendelson, *supra* note 211, pg. 67.

registered under section 5 of the 1933 Act. Let now examine the four factors of the Howey test under the SEC's analysis of The DAO.

(1) DAO tokens involved the investment of money. DAO investors purchased tokens with fiat currency and other cryptocurrencies. Citing *Uselton v. Comm. Lovelace Motor Freight, Inc.*, 940 F.2d 564, 574 (10th Cir. 1991), the SEC affirmed that an investment of money need not be limited to cash and extended the definition of money to cryptocurrencies.²¹⁷

(2) The DAO was a common enterprise. This is clear from the facts and the SEC felt no need to address this point in its report.²¹⁸

(3) DAO token-holders had a reasonable expectation of profits. The DAO was a commercial, for-profit venture. Citing *SEC v. Edwards*, 540 U.S. 389, 394 (2004), the SEC noted that profits can include an increase in value.¹³⁸ The stated purpose of The DAO was to fund projects in exchange for a return on investment.²¹⁹

(4) DAO profits would be derived from the efforts of others. Although DAO token-holders had a direct vote and therefore a voice in what investments should be pursued and to what extent, the SEC held that such token-holders did not have a genuine say in the running of the virtual business. The SEC declared that token-holders had to rely almost exclusively on the expertise of the Slock.it founders. They were in fact actively overseeing this so-called autonomous organization and choosing investment vehicles for token-holder consideration. Therefore, any profits received were derived not from the efforts of the 11,000 or so individual investors, but from the DAO founders, who were managing the company and were lacking a decentralized framework. In so holding, the SEC effectively questioned the importance of voting rights at all in a blockchain network enterprise. After all, common stock securities generally have voting rights but remain securities, nonetheless. As will be shown in further cases, the main result is that merely using new technology does not exempt financial offerings or products from securities regulation in the United States.

Many DAOs require the communal management of some asset (physical or intangible), in which each member may have a fractional interest. In addition to the tremendous advantages, there are numerous regulatory dangers involved with securities regulations. When an organization invests

²¹⁷ Michael Mendelson, *supra* note 211, pg. 67.

²¹⁸ Michael Mendelson, *supra* note 211, pg. 67.

²¹⁹ Michael Mendelson, *supra* note 211, pg. 67.

and holds valuable assets, the risks, and obligations of holding those assets and running the business must be properly distributed among the partners in that organization, thus the concept of LLC.

Recently, a case in the Southern District of California tested the question of whether a decentralized organization, which delegates decision-making to a computer program, would provide de facto limited liability protection for its members.

C. BZX DAO CASE

The case involves a DeFi application called the bZx Protocol, which was used for “tokenized margin trading and lending” in various cryptocurrencies instead of with traditional fiat currency and securities.²²⁰ To use the bZx protocol, users selected an available blockchain network to use and connected a wallet to deposit crypto. As the court noted, the bZx Protocol claimed to be “non-custodial” because users-maintained control over their own passwords and digital assets. The bZx Protocol’s website also purportedly contained numerous statements about the protocol’s security.²²¹ When the bZx Protocol was first created, it was controlled by bZeroX LLC, an entity co-founded by Defendants Tom Bean (“Bean”) and Kyle Kistner (“Kistner”) (collectively, the “Co-Founders”).²²²

Certain lending and trading products, Torque and Fulcrum, were DeFi platforms built atop bZx and were operated by Leveragebox LLC, which was also co-founded and controlled by Bean and Kistner. In August 2021, the bZx Protocol announced plans to transition control of the protocol from bZeroX LLC to the bZx DAO, a DAO controlled by persons holding BZRX governance tokens issued by the DAO. When the transfer of control was completed in August 2021, bZeroX LLC transferred its assets to the bZx DAO and the LLC dissolved. At that time, the bZx Protocol held \$80 million in assets and the bZx DAO became “the main drivers of governance and decision-making of the bZx platform.”²²³

²²⁰ Jason H. Finger and Jonathan Mollod, *DAO Deemed “General Partnerships” in Negligence Suit Over Crypto Hack, Prompting DAOs to rethink Corporate Formation*, (April 28, 2023), Proskauer, <https://www.proskauer.com/blog/dao-deemed-general-partnership-in-negligence-suit-over-crypto-hack-prompting-decentralized-orgs-to-rethink-corporate-formation>.

²²¹ Jason H. Finger and Jonathan Mollod, *supra note 220*.

²²² Jason H. Finger and Jonathan Mollod, *supra note 220*.

²²³ Jason H. Finger and Jonathan Mollod, *supra note 220*.

In November 2021, an unknown hacker sent a phishing email to a bZx Protocol developer and was then able to transfer all cryptocurrencies held on two specific blockchains out of the bZx Protocol. As a result of the hack, users, including Plaintiffs, identified as bZx Protocol users,²²⁴ asserted that they collectively lost approximately \$55 million worth of cryptocurrency tokens. Subsequently, the bZx DAO approved a compensation plan for affected users which included, in part, “debt tokens,” which the Plaintiffs deemed unsatisfactory. In December 2021, the bZx Protocol encouraged users to transfer to a successor platform called the Ooki Protocol, controlled by the Ooki DAO, and holders of governance tokens are called OOKI tokens. Many BZRX token holders transferred their tokens for OOKI tokens.²²⁵ The plaintiffs brought this putative class action in May 2022.

The plaintiffs’ complaint advanced a negligence claim against a host of parties, including bZx Protocol co-founders Kistner and Bean, and operators bZeroX LLC and Leveragebox LLC (the “Leveragebox Defendants”), as well as certain investors in the bZx protocol and members of the bZx DAO, Hashed International LLC, and AGE Crypto GP, LLC (the “Hashed Defendants”) (collectively, the “Defendants”).²²⁶ The complaint generally alleges that the bZx protocol and its partners owed Plaintiffs a duty to maintain the security of the funds deposited using the bZx protocol and had a duty to supervise developers working on the protocol related to cybersecurity and that the developer targeted by the phishing attack owed Plaintiffs a duty to secure passwords against malicious attacks. Notably, the Plaintiffs alleged that each defendant is a general partner of the bZx DAO and therefore jointly and severally liable for Plaintiff’s losses. In response, Defendants moved to dismiss, which the court granted in part and denied in part.²²⁷

General Partnership Issue

²²⁴ The putative class includes “[a]ll people who delivered cryptocurrency tokens to the bZx protocol and had any amount of funds stolen in the theft reported on November 5, 2021, except for people whose only cryptocurrency stolen was the BZRX token.” As the court noted, the amended complaint provides that “[n]one of the Plaintiffs or proposed class held meaningful stakes of BZRX token.” Interestingly, the Leveragebox defendants argued that the class representatives may have held some BZRX governance tokens and therefore would be considered part of the “general partnership” and equally liable under the Plaintiffs’ own theory of liability, thus making them ineligible to be class representatives. At the motion to dismiss stage, the court put this issue aside for a later time, finding that it was not clear from the complaint whether the Plaintiffs were holders of BZRX tokens and thus at this time, the complaint did not present an “irreconcilable conflict of interest between the named Plaintiffs and the putative class.” However, the court stated that if discovery reveals actual conflicts of interest between the named Plaintiffs and the putative class, Defendants could renew their motion to strike, or Plaintiffs could amend the definition of the putative class.

²²⁵ Jason H. Finger and Jonathan Mollod, *supra note 220*.

²²⁶ Jason H. Finger and Jonathan Mollod, *supra note 220*.

²²⁷ Jason H. Finger and Jonathan Mollod, *supra note 220*.

The crux of the court’s statement scrutinized the Plaintiffs’ theory of partnership liability for the members of the DAO detaining BZRZ governance tokens.²²⁸ California law states that the “association of two or more persons to carry on as co-owners a business for profit forms a partnership, whether or not the persons intend to form a partnership.” Cal. Corp. Code § 16202(a).

The court stated that a plaintiff can plead the existence of a partnership by making specific factual allegations demonstrating: (1) the right of the purported partners to participate in the management of the business; (2) the sharing of profits and losses among the purported partners; and (3) contributions of money, property, or services by the purported partners to the partnership.²²⁹ Applying the language of the statute, the court discovered that the complaint sufficiently alleged that the DAO is an association of two or more persons that operates as a business for profit through its margin trading and lending products.²³⁰ As to whether DAO token holders are “carrying on as co-owners” and have sufficient governance rights, the court found the complaint plausibly alleged that the BZRZ token holders possessed governance rights over the DAO since token holders can both propose and vote on governance proposals and spend treasury funds on suggestions that gathered enough votes. The complaint further asserted that token holders participated in the DAO's profits by voting to divide treasury assets among themselves or by using an interest-generating token, supporting the claim that the DAO should be recognized as a general partnership. The court also took note of this information.²³¹

The Leveragebox Defendants objected that it would be a "radical expansion" of state corporate laws to define the DAO as a general partnership and subject BZRZ token holders to joint and several liabilities for DAO torts. The court disagreed. It's interesting to note that the Co-Founders refused to register the DAO as an LLC or other type of legal company with limited liability while transferring ownership of the bZx Protocol from bZeroX LLC to the bZx DAO.²³² Taking judicial notice of the order in the CFTC bZeroX enforcement matter, the court stated that it appeared that at the timing of the bZx DAO’s formation, the Co-Founders had professed that the DAO would “insulate” the bZx Protocol from regulatory oversight. With this backdrop, and implicitly noting that the Defendants must now face the products of these past decisions, the court

²²⁸ Jason H. Finger and Jonathan Mollod, *supra* note 220.

²²⁹ Jason H. Finger and Jonathan Mollod, *supra* note 220.

²³⁰ Jason H. Finger and Jonathan Mollod, *supra* note 220.

²³¹ Jason H. Finger and Jonathan Mollod, *supra* note 220.

²³² Jason H. Finger and Jonathan Mollod, *supra* note 220.

found that Plaintiffs “have stated facts sufficient to allege that a general partnership existed among the BZRX token holders.”²³³

On September 22, 2022, the Commodity Futures Trading Commission (CFTC or Commission) (1) issued an order settling charges against protocol creator bZeroX, LLC and its founders, and (2) filed a federal civil enforcement action against the Ooki DAO, the unincorporated decentralized autonomous organization (DAO) that was the successor to bZeroX and was governed through the votes of BZRX Token holders.²³⁴

According to the complaint, the Ooki DAO operates — and bZeroX operated — the bZx Protocol, a decentralized blockchain-based protocol that allegedly offered, entered into, accepted, and executed digital asset transactions that constituted “retail commodity transactions” in violation of the Commodity Exchange Act (CEA) and Commission regulations.²³⁵

The CFTC Settled Order

As a predicate to CEA liability, the CFTC’s order first finds that virtual currencies traded on the bZx Protocol, including ETH and DAI, are “commodities” under the CEA. According to the CFTC, commodities that are offered to or entered into by retail customers on a leveraged or margined basis, where such commodities are not “actually delivered” within 28 days, are considered “retail commodity transactions” which are regulated more like derivatives than physical commodity transactions.²³⁶

The order finds that bZeroX and its founders designed, deployed, and marketed the bZx Protocol, which allowed users to contribute margin and open leveraged positions whose value was determined by the price difference between two digital currencies. According to the CFTC, such activities must be performed by a registered designated contract maker or a registered futures commission merchant. Since bZeroX and the Ooki DAO never registered with the CFTC, the order finds that they violated Sections 4(a) and 4d(a)(1) of the CEA.²³⁷

²³³ Jason H. Finger and Jonathan Mollod, *supra* note 220.

²³⁴ Alexander C. Drylewski et al., *CFTC Settles Claims Against Founders of a Decentralized Protocol and Sues Its Successor DAO and Its Members*, (Oct. 5, 2022), Skadden, <https://www.skadden.com/insights/publications/2022/10/cftc-settles-claims>.

²³⁵ Alexander C. Drylewski, *supra* note 234.

²³⁶ Alexander C. Drylewski, *supra* note 234.

²³⁷ Alexander C. Drylewski, *supra* note 234.

As a result, the order requires bZeroX and its co-founders to pay a \$250,000 civil monetary penalty and to cease further violations of the CEA and associated regulations. The order further finds that the Ooki DAO failed to adopt a customer identification program, in violation of the Bank Secrecy Act and the Commission regulations promulgated thereunder.²³⁸

The CFTC order is particularly noteworthy in that it finds that, in addition to being liable as bZeroX controlling persons, the founders are also personally liable as individual members of the Ooki DAO. The order finds that the Ooki DAO is an unincorporated association pursuant to federal law because it is (1) a voluntary group of persons, (2) without a charter, (3) formed by mutual consent, (4) to promote a common objective. Under federal law, members of an unincorporated association can be held personally liable for the actions of an association.²³⁹

The CFTC relied on a series of state partnership law cases to find that individual members of an unincorporated association organized for profit are personally liable for the debts of that association. Thus, the CFTC order finds that “[o]nce an Ooki Token holder votes his or her Ooki Tokens affect the outcome of an Ooki DAO governance vote,” that person can be found personally liable for their voluntary participation in the Ooki DAO — an interpretation of novel issues that arguably could apply to many if not all DAOs, especially since the CFTC does not distinguish between the type of DAO votes that could trigger such liability.²⁴⁰

The CFTC Complaint

While the CFTC order settles claim against bZeroX and its founders, its complaint brings the same claims against the Ooki DAO for continuing to violate the law in an analogous manner as bZeroX. Specifically, the CFTC alleges that bZeroX transferred control of the bZx Protocol to the bZx DAO, which was later renamed as the Ooki DAO in an attempt to render the organization “enforcement-proof.”

As in the settled order, the CFTC complaint alleges that the Ooki DAO and its members are liable based on the existence of the unincorporated association, and seeks an order (1) finding that the Ooki DAO, by and through its members (i.e., those Ooki Token holders who have participated in

²³⁸ Alexander C. Drylewski, *supra* note 234.

²³⁹ Alexander C. Drylewski, *supra* note 234.

²⁴⁰ Alexander C. Drylewski, *supra* note 234.

governance votes) violated Sections 4(a) and 4d(a)(1) of the CEA, (2) permanently restraining the Ooki DAO and its members from further violations of the CEA, and (3) ordering disgorgement, rescission, restitution, and civil monetary penalties, among other relief.²⁴¹

The claims asserted against the Ooki DAO and token holders who have partaken in governance votes reflect a novel approach to holding individual members of the alleged unincorporated association liable for regulatory misconduct.

D. Ooki DAO Class Action Lawsuit

On May 2, 2022, fourteen international plaintiffs who are citizens of a number of countries including China, France, Italy, Kazakhstan, the United States, and the United Kingdom filed a putative class action lawsuit against bZx DAO, the DAO's two co-founders, two limited liability companies that invested in the DAO and contributed to governance decisions, and other defendants in the Southern District of California, alleging simple negligence. The various individual plaintiffs lost from \$800 to \$450,000 as a result of the attack.

The main grievance was that despite bZx's repeated assurances of the protocol's security, the DAO's operators had not yet put in place the security precautions they knew were ostensibly required for the Polygon and Binance Smart Chain.²⁴² Those measures were never implemented, according to plaintiffs, even in the wake of three separate hacks of the bZx protocol in 2020 with total losses of approximately \$9 million, of which \$8 million was apparently recovered.²⁴³ Notably, bZx had moved the Ethereum version of the protocol away from any single developer possessing a key that would provide access to all of the funds, but had not yet done so for the Polygon and Binance Smart Chain implementations at the time of the phishing assault. Thus, the plaintiffs alleged a claim of negligence against bZx DAO, and the other defendants based on the following:²⁴⁴

²⁴¹ Alexander C. Drylewski, *supra* note 234.

²⁴² Stuart D. Levi & Anita Oh, *Putative Class Action Lawsuit Alleges DAO Members are Jointly and Severally Liable for Crypto Hack*, (May 22, 2022) Skadden, <https://www.skadden.com/insights/publications/2022/05/putative-class-action-lawsuit-alleges-dao-members>.

²⁴³ Stuart D. Levi & Anita Oh, *supra* note 242.

²⁴⁴ Stuart D. Levi & Anita Oh, *supra* note 242.

- The bZx protocol and its partners owed users a duty to maintain the security of funds deposited using the protocol, including supervising developers and those working on the protocol so that important passwords or security details could not be obtained through a single person.²⁴⁵
- The unnamed developer working on behalf of bZx, as the holder of the private keys, owed users a duty to secure such passwords against malicious attacks.²⁴⁶
- The defendants are liable for the developer's actions under a theory of respondeat superior, through which an employer can be held legally responsible for the wrongful acts of an employee or agent acting within the scope of such employment or agency. Although unstated, the implication is that even though control of the Polygon and Binance Smart Chain implementations of bZx had not yet been handed over to the DAO, the DAO was nonetheless responsible for the actions of the developer who was a member of the core team.²⁴⁷

The complaint claims that because the DAO lacks any legal formation or recognition, it is a general partnership and as such, its members are exposed to joint and severally liability for "making good" to the plaintiffs for their collective loss of approximately \$1.6 million. This is crucial information for those debating whether to implement a DAO structure. The plaintiffs are seeking full compensation for their losses, along with putative damages and attorneys' fees.²⁴⁸

The complaint demands a jury trial, and the plaintiffs propose to certify the class as all people who delivered cryptocurrency tokens to the bZx protocol and had any amount of funds stolen in the theft reported on November 5, 2021, except for people whose only stolen cryptocurrency was the protocol's native BZRX token. The law firm representing the plaintiffs in this class action lawsuit previously filed a case in New York, alleging that a decentralized finance operator is operating an illegal lottery in New York.²⁴⁹ Although that case does not mention a DAO, it also seeks to charge individual investors in the protocol.²⁵⁰

Case Round-up

²⁴⁵ Stuart D. Levi & Anita Oh, *supra* note 242.

²⁴⁶ Stuart D. Levi & Anita Oh, *supra* note 242.

²⁴⁷ Stuart D. Levi & Anita Oh, *supra* note 242.

²⁴⁸ Stuart D. Levi & Anita Oh, *supra* note 242.

²⁴⁹ Kent v. PoolTogether, Eastern District of New York, No. 21-cv-6025

²⁵⁰ Stuart D. Levi & Anita Oh, *supra* note 242.

As a round-up of the case, based on today's available information, two separate key takeaways can be drawn, one concerning the CFTC enforcement and the other concerning the token holder's putative class action.²⁵¹

The CFTC's recent measures highlight several critical issues for those who participate in Web3 and decentralized protocols. First, the CFTC's order and complaint underscore that the Commission stands ready to pursue enforcement actions for perceived CEA violations, including activity by those who design, deploy and market decentralized protocols that are seen as giving rise to infractions.²⁵²

Second, the CFTC's order and complaint highlight the critical importance of defining the legal form of a DAO at the outset, because failing to do so could result in a legal form being constructively imposed on it after the fact that is incompatible with the DAO's goals and functions. Indeed, a putative class action lawsuit was recently filed alleging that the bZx DAO, its co-founders, and its members are jointly and severally liable for negligence by failing to adequately secure the bZx Protocol, resulting in the theft of \$55 million in cryptocurrency.²⁵³

Third, the matter raises thorny issues concerning the service of process, including the fairness and constitutionality of the CFTC's approach to attempting to serve members of the Ooki DAO, as highlighted in the LeXpunK amicus brief.²⁵⁴

Finally, the CFTC's actions and Commissioner Mersinger's disagreement bring into sharp focus the ongoing controversy regarding how to appropriately handle novel technologies and structures in the decentralized protocol network. The SEC has been criticized for engaging in what many have called "regulation by enforcement" without providing clear formal guidance, and the CFTC's actions in this matter have already prompted similar reactions, including by one of its commissioners.²⁵⁵ This debate continues against the backdrop of recent efforts to craft new legislation that would seek to more clearly delineate the regulatory status of various digital assets and digital asset participants, as well as the role of agencies like the CFTC and SEC to oversee them. Proponents

²⁵¹ Alexander C. Drylewski, *supra* note 234.

²⁵² Alexander C. Drylewski, *supra* note 234.

²⁵³ Alexander C. Drylewski, *supra* note 234.

²⁵⁴ Alexander C. Drylewski, *supra* note 234.

²⁵⁵ Alexander C. Drylewski, *supra* note 234.

of these efforts will undoubtedly point to the CFTC's actions regarding bZeroX and the Ooki DAO as further proof of the need for greater legislative clarity.²⁵⁶

As for the Putative class action final remarks I considered the following thought based on the most recent literature available. The bZx lawsuit emphasizes the dangers of running a DAO outside of an established legal framework. Without such a structure, DAO members may be held jointly and severally accountable in some circumstances, and culpability may even extend to members who may not have been part of the choices that are supposedly to blame for losses or other problems.²⁵⁷ The jurisdictional issues, in this case, could also be intriguing. California generally does not recognize jurisdiction over all of the members of a general partnership merely because one member resides in the state. Most likely because of this, the complaint mainly relies on the claim that DAO operations were managed from California. Jurisdictional considerations may become a source of conflict as this case moves toward completion.²⁵⁸

The plaintiffs' class in DAO cases may also be illuminating because those who were harmed by a DAO's acts and so qualified plaintiffs were likely also DAO members who were responsible for the DAO's behavior. Whether a general partner can sue another general partner for the activities of the general partnership will likely be a point of dispute in the bZx lawsuit.²⁵⁹

Practical Ramifications and Recommendations

There are a few significant outcomes stemming from this decision, that will influence the future of DAO's legal recognition.

- Investors as well as other owners of governance tokens were all responsible for the hack's associated losses. Although plaintiffs, the CFTC, and courts have compared DAOs to general partnerships, this ruling extends that conclusion by stating that all governance token holders—not just the DAO

²⁵⁶ Alexander C. Drylewski, *supra* note 234.

²⁵⁷ Stuart D. Levi & Anita Oh, *supra* note 242.

²⁵⁸ Stuart D. Levi & Anita Oh, *supra* note 242.

²⁵⁹ Stuart D. Levi & Anita Oh, *supra* note 242.

founders or active, voting participants—are accountable for all the DAO's successes and failures.²⁶⁰ All holders of governance tokens, both active and passive holders, should be concerned about the effects of this decision. It also highlights how important it is for governance token owners, especially the main DAO "leaders," to own and control any tokens through appropriate corporate or foundation structures rather than on an individual basis. DAOs should similarly consider implementing legal structures with liability protection; this decision reinforces the importance of not only doing so but doing so quickly.

- DAOs should continue to develop and maintain robust controls surrounding phishing attacks, password protection, etc., to guard against theft of API keys and other sensitive information.²⁶¹
- DAOs should regularly implement security enhancements, recommendations, checks, and tests to ensure that all on-chain activity is protected by the most up-to-date security features.²⁶²
- DAOs should not make any statements that could be construed as guaranteeing or overselling the security of its protocol or its ability to make victims whole.²⁶³
- DAOs should review their location and visibility conditions of use. In order to conclude that the Plaintiffs were bound by the agreement, the court deemed the terms of use to be insufficiently displayed. DAOs should think about hiring a legal expert to analyze their terms of use and placement to reduce the risk in the event that the terms of use are deemed to be non-binding.²⁶⁴

²⁶⁰ Grant P. Fondo, Zoe Bellars, Karen Ubell, *Court Holds All DAO Governance Token Holders Can Be Held Responsible for the Actions and Inactions of the DAO*, (April 10, 2023), GoodWin, https://www.goodwinlaw.com/en/insights/publications/2023/04/04_10-court-holds-all-dao.

²⁶¹ For example, a DAO could use multi-sig functionality and control mechanisms to prevent any single point of vulnerability to a phishing attack like the one in this case. DAOs should similarly ensure that any DAO member who has access to sensitive security information is engaging in practices to securely safeguard the information.

²⁶² Grant P. Fondo, Zoe Bellars, Karen Ubell, *supra* note 260.

²⁶³ Grant P. Fondo, Zoe Bellars, Karen Ubell, *supra* note 260.

²⁶⁴ Grant P. Fondo, Zoe Bellars, Karen Ubell, *supra* note 260.

IV. THE GAP BETWEEN TECHNOLOGICAL EXPECTATIONS AND LEGAL REALITY

The widespread history underpinning DAOs has always hinged on their autonomy from national jurisdictions and legal order. Said that it is evident that a broad array of legal issues needs to be solved before their climb toward scalability and widespread adoption. This section briefly focuses on the already mentioned legal issues at stake, ranging from the lack of limitation of liability to governance concerns and the definition of token-holders rights.²⁶⁵

By looking at these legal nuisances, it becomes clear that the traditional issues faced by corporate governance over the last century are not set to disappear once we will join a DAO-friendly environment.

A. (Un)limited liability

According to the mantra, “code is law”, DAOs are meant to be wholly self-sufficient from a legal perspective. No intermediation is required to enable their smooth functioning. This role is covered by smart contracts, whose function ensures the partial uselessness of judicial enforcement.²⁶⁶ The confidence intrinsic to the crypto network, made crypto evangelists believe that there is no need to create an underpinning legal entity.²⁶⁷ Unfortunately, this approach prevents and prevented DAOs from enjoying the advantages that usually come with the recognition of a legal entity, namely the ability to shield the personal funds of an organization’s directors and owners from creditors. If on one side DAOs mimic to a certain extent the functioning and structure of corporations (such as governance rights conferred to token holders along the lines of equity stakes), on the other they still lack the automated qualification as legal entities. Generally, in fact, when two or more individuals engage in

²⁶⁵ For an up-to-date overview of the legal wrappers that DAO developers could rely on, see: Chris Brummer, Rodrigo Seira, *Legal Wrappers and DAOs*, (2022), Working Paper.

²⁶⁶ M. Raskin, ‘*The Law and Legality of Smart Contracts*’, (2017) 1 *Georgetown Law Technology Review* 305, at 306, DOI <http://10.2139/ssrn.2842258>; P. Cuccuru, ‘Beyond Bitcoin: An Early Overview on Smart Contracts’, (2017) 25 *International Journal of Law and Information Technology* 179, at 185, DOI <http://10.1093/ijlit/eax003>.

²⁶⁷ Oscar Borgogno, *Making decentralized autonomous organizations (DAOs) fit for legal life: mind the gap*, (Oct. 2022), Banca D’Italia occasional paper.

even a tenuous economic or business relationship, they are deemed a “general partnership” (a sort of de facto company). That is to say that the partners of an organization that lacks any corporate form are exposed to unlimited liability towards the creditors of the organization itself.

One could contend that the actual exposure to unlimited liability is fairly small because well-structured DAOs would offer particular compensation plans and resources to swiftly resolve any on-chain transaction issues that might arise. Having said that, however, there is a wide range of potential risks which in principle may trigger legal liabilities to DAOs members. For instance, the court of California recently ordered the members of an unregistered DAO, recognized as a general partnership, to provide impairment reimbursements as the DAO has been not recognized as an LLC. As to avoid similar scenarios in the future, a portion of a DAO’s treasury could be specifically allocated to work as a self-insurance fund to weather unforeseen circumstances generating liability. However, if DAOs scaled up outside the limited circles of crypto enthusiasts, they would be improbable to have sufficient funds to cover potential liabilities.

Under an unlimited liability regime, creditors can request the payment of the whole due amount from any DAO member that they would be able to reach.²⁶⁸ Unsurprisingly, the ones with the deepest pockets (or perceived as such) would naturally be the preferred prey of creditors. The risk that members could put their assets at an unlimited risk would naturally discourage individuals and legal entities with significant assets on hand (institutional investors and financial institutions) to join or otherwise support unregistered DAOs' developing framework.

B. The struggle towards decentralized governance

DAOs promise to streamline voting schemes and pledge a larger number of participants in governance and decision-making is leveraged by the use of smart contracts. Yet, in line with the mantra of the crypto community, this would encourage the decentralization of entrepreneurial governance. As a greater number of business decisions could be taken by token-holders, DAOs are expected to avoid any reliance on central managers and directors to manage the organization.

²⁶⁸ There are also important unresolved questions about this theory, including whether each DAO member would be deemed to be a general partner just by virtue of being a token holder, or whether more formal involvement by DAO token holders is required to be liable as a general partner (for example, participating in governance). However, in a worst-case scenario, a DAO member could be responsible for all of the liabilities facing a DAO.

Having said that, we are still in the early days of DAOs, and an optimal governance structure is far from being settled, especially if they consider their currently missing legal framework.²⁶⁹ Despite all the enthusiasm that comes with decentralized governance and straightforward decision-making, such aspects do not solve the issue regarding the need for corporate governance. It is not even clear whether complete transparency and decentralization within a business organization are desirable from an incentive-framework perspective.²⁷⁰ As long as participatory DAOs are concerned, it seems unlikely that a large array of token-holders would have the time and skills to meaningfully engage with the management choices of the organization. Indeed, the process of direct voting requires a constant alignment between token holders and the DAO itself. Potential social friction among partners could even lead to higher inefficiencies compared to traditional hierarchical organizations. Indeed, the concepts of “direct democracy” and active member participation applied to DAOs, emphasized the intrinsic limits of such a framework, even when faced with the old-fashioned issue of voter apathy.²⁷¹ To solve these concerns, several methods have been applied to facilitate participation in governance-related decisions and relieve voter apathy.²⁷²

For instance, one possible solution is 'WEIGHTED VOTING'. In this DAOs votes are weighted according to how long a token-holder support a specific proposal to take into account individuals' conviction.²⁷³ An alternative solution is the so-called “quadratic voting” which is based on the members' willingness to pay.²⁷⁴ Finally, developers tried to tackle the problem by replicating traditional corporate law mechanisms too, such as proxy and quorum voting. This is an arguably disappointing result if tested against the promises of disruptive decentralization extolled by crypto enthusiasts. A more extreme way to circumnavigate frictions related to individuals' limited rationality and information asymmetries is to rely on algorithmic DAOs. This kind of DAOs implies that token holders should fully trust the functioning of the system to an underlying code. The only governance tool in their hand would be the choice to acquire or not, the related tokens.²⁷⁵ In particular, such a

²⁶⁹ Edoardo Martino and Simone Spijkerman, *How Decentralized are 'Decentralized Autonomous Organisations' (DAOs)?*, (Nov., 2021), Oxford Business Law Blog, arguing that “DAOs' governance structure largely depends on the initial distribution and the protocol-specific voting mechanisms”.

²⁷⁰ Edmund Schuster, *Cloud Crypto Land*, 84 *Modern Law Review* 5 (2020), noting that “It is hardly surprising that the challenges posed by blockchain technology can be avoided by adopting a design which removes the very feature of blockchain technology which distinguishes it from other, existing, and widely available systems, i.e., the reliable establishment of consensus between parties who do not necessarily know or trust each other”. Martin C. W. Walker, “*Unnecessary complexity: the crypto industry's continuing efforts to avoid regulation*”, *LSE Business Review* (2021).

²⁷¹ LimeChain, “*DAO Voting Mechanisms Explained*”.

²⁷² Oscar Borgogno, *supra note 267*.

²⁷³ Jeff Emmett, “*Conviction Voting: A Novel Continuous Decision Making Alternative to Governance*”, Medium (2019).

²⁷⁴ Santiago Siri, “*Polish, Test and Deploy a Quadratic Voting DAO*”.

²⁷⁵ Carla L. Reyes, “*(Un)corporate Crypto-Governance*”, 88 *Fordham L. Rev.* 1875 (2020).

concept automatically implies the trust of members to rely on artificial intelligence systems able to automatically manage a complex organization, ultimately making self-driven companies possible.²⁷⁶

In case of software bugs or problems due to unpredictable circumstances which cause the DAO to experience technical disruptions, members could either abandon it or adjust the underlying software thereby giving rise to a “fork” of the DAO with updated rules.

C. Defining token-related rights

There is no clear-cut separation between governance tokens and traditional securities, which are broadly categorized into debts, equity, or a combination of the two. Economic rights, participation rights, governance rights, and utility rights can all be associated with tokens which are then sold to the masses in manners that are similar to a traditional initial public offering.

Jurisdictions around the world are still grappling with the question of whether tokens should be treated as financial securities from a regulatory perspective. An example is the United States, where the distinction is drawn referring to the 1946 Howey test. In the case in which tokens are defined as securities, it follows that the issuer must comply with disclosure requirements and disclosure obligations.²⁷⁷

While the EU still lacks a fully-fledged legislative strategy targeting DAOs, on the other side of the Atlantic, certain jurisdictions have passed Bill amendments to favor the incorporation of DAOs. On 7 June 2022, Senator Kirsten Gillibrand (D-NY) and Senator Cynthia Lummis (R-WY) introduced the Responsible Financial Innovation Act (RFIA). The Act intended to establish a comprehensive regulatory framework for digital assets in the United States.²⁷⁸ As the Securities and Exchange

²⁷⁶ This essay does cover the fascinating relationship between AI and business organization. For a complete overview of the matter see: John Armour and Horst Eidenmüller, “*Self-Driving Corporations?*”, Harvard Business Law Review (2020).

²⁷⁷ In the US, Section 12(g) of the Securities Act of 1934 provides that a company is required to register with the SEC and comply with ongoing disclosure requirements if it has more than \$10 million in assets and a class of equity securities that are “held of record” by either 2,000 persons or 500 persons who are not accredited investors.

²⁷⁸ This proposal defines DAOs as organizations (i) which utilize smart contracts to effectuate collective action for a business, commercial, charitable, or similar entity, (ii) the governance of which is achieved primarily on a distributed basis, and (iii) which are properly incorporated or organized under the laws of a State or foreign jurisdiction as a decentralized autonomous organization, cooperative, foundation, or any similar entity. See: <https://www.gillibrand.senate.gov/news/press/release/-lummis-gillibrand-introduce-landmark-legislation-to-create-regulatory-framework-for-digital-assets>.

Commission (SEC) and the Commodities Futures Trading Commission (CFTC) lack explicit authority on the issue, they are currently implementing a “regulation-by-enforcement”²⁷⁹ approach with the goal of shaping the legal framework for crypto assets.²⁸⁰

V. Conclusion

DAOs prospect is to build on a technology that promises to be more efficient and useful than current centralized procedures to launch and run businesses. One could legitimately wonder whether DAOs are a truly authentic breakthrough able to change social dynamics or yet another attempt by the crypto community to achieve the “promised land” of decentralization and transparency that they crave so much. Having said that, it is undeniable, as we have previously mentioned, that DAOs rises fascinating questions for policymakers and market supervisors as to the interplay between technological automation and business organization. Interestingly enough is the fact that this narrative goes directly against the exact premises of modern corporate law, which over the centuries evolved towards the separation of ownership and control of the firm. However, at a more practical level, we have seen that being characterized by informality could expose DAO members to meaningful legal risks in terms of unlimited liability, governance dynamics, and token legal status. The bZx DAO court opinion is nevertheless establishing a precedent in favor of the idea that a DAO's operations can qualify as a general partnership under California law, albeit only in the context of a motion to dismiss. DAO governance token holders should take note of the court's ruling that claims of simple ownership of governance tokens — regardless of whether they were utilized to cast votes or not — is sufficient to defeat a motion to dismiss. We'll have to wait and watch if this ruling prompts more DAO members to put forth attempts to impose a corporate structure, like an LLC, under the "DAO LLC" statutes of

²⁷⁹ By the concept “regulation-by-enforcement” is usually meant the willingness of Government agencies to extend the boundaries of existing laws into new areas (such as the crypto industry), even in the absence of perfectly fitting regulation providing market players with legal certainty and predictability. Nizan Geslevich Packin, “*Regulation By Enforcement And Crypto Assets*”, (Feb. 8, 2022), Forbes.

²⁸⁰ Oscar Borgogno, supra note 267.

Tennessee, Wyoming, or Vermont. A DAO by itself is not a legitimate company structure. Before the SEC's 2017 DAO Report examined a DAO's functioning, the general public knew nothing about the notion of a DAO. Still, the regulators continue to insist that a DAO may be categorized as an unincorporated association even six years after the SEC intervention.

From a legal perspective, what we are witnessing is a new era of regulatory competition among jurisdictions, as occurred in the early 19th century all over the US, with the aim of squeezing in any crypto-related economic growth. Policymakers and scholars seem to be more habitual as to create a crypto-friendly environment. Unsurprisingly, many proposals (like the one from Wyoming) attempt to redirect the general partner arrangements now used by DAOs toward more conventional legal entities (foundations or limited liability companies). As it has been demonstrated throughout the paper, DAOs still suffer from several drawbacks, and it is still highly unlikely that the common core of modern corporate governance will be overcome by blockchain-related organizations.

We can argue that DAOs can benefit from the solutions provided by corporate law over the past decades in coping with management and moral hazard problems involving all complex organizations (as already demonstrated by the issue of voter apathy). Finally, this analysis reaffirmed the need for regulatory humility by warning policymakers against the temptation to duplicate current company structures solely for the sake of luring new investors and increasing the concentration of the cryptocurrency industry. Furthermore, it's important to remember that traditional legal entities were created to serve the needs of brick-and-mortar businesses and were based on people's imperfect collective coordination abilities in the 20th century. This is why new empirical and legal research is still needed in order to figure out whether existing (or new) legal wrappers can suit DAOs features, ultimately putting blockchain to good use for society.

However, one thing is certain: a DAO is not a shield just because DAO members can remain anonymous and avoid facing legal consequences. Anyone setting up a DAO should use prudence.

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