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Towards Legal Recognition of Decentralised Autonomous Organisations

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Abstract: Decentralised Autonomous Organizations (DAOs) are a typical organisation form in the web3 economy. DAOs are internet-native organisations that are coordinated and governed by pseudonymous community members through a nexus of blockchain-based digital assets and smart contracts. There is over US$26 billion locked in over 2300 active DAOs globally. This article examines the legal recognition of DAOs in an Australian context. A recent Australian Senate Inquiry recommended DAOs be recognised as a distinct business structure. This article makes three contributions towards this goal: (1) critically evaluate options for DAO recognition under Australian law; (2) a comparative analysis of United States DAO laws; and (3) an analytical outline of the key design features of an Australian DAO law.

Keywords: Blockchain**;** Business structures; Corporate law; Decentralised Autonomous Organizations; Web3.

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1. Introduction

In November 2021, 17,437 people pooled US$47 million of cryptocurrency to bid on a rare copy of the United States Constitution at auction at Sotheby's. They lost.[1] The would-be constitution-owners didn't pool their funds in a traditional legal corporate form. There was no appropriate legal vehicle for thousands of dispersed pseudonymous people. Rather, they used a new type of blockchain-based digital organisation: a Decentralised Autonomous Organization (DAO). 'ConstitutionDAO' was rapidly spun-up as economic infrastructure to achieve a shared mission: to bid in the auction. Despite losing the auction, ConstitutionDAO demonstrates the capacity for fast, open, global coordination using new decentralised digital infrastructure. Following interest from legislators, regulators, and courts, this article examines the avenues towards recognising DAOs as separate legal entities in Australia.

The mechanics of ConstitutionDAO were deceptively simple. Participants in ConstitutionDAO donated cryptocurrency (e.g. $ETH) into a smart contract on a blockchain network (Ethereum). New digital assets, known as $PEOPLE tokens, were proportionally minted to each individual donor. People could also buy and sell $PEOPLE tokens directly using decentralised exchanges (e.g. Uniswap). Holding $PEOPLE tokens represented membership in the DAO. The pooled funds would be used to bid in the auction and then, if successful, the members would make decisions through on-chain token-based voting (e.g. where would the DAO purchase insurance?).[2] But there are several complex legal issues that arise. Let us imagine briefly that ConstitutionDAO had been successful. What was the legal entity made the bid? Did members own the property as a type of partnership or association? If poor decisions were made that created legal challenges such as breach of contract, who is directly liable? What liability do members carry for the debts of the organisation? Without a management hierarchy, who is ultimately responsible for the activities of the DAO in the real world?

DAOs are internet-native governance structures underpinned by blockchain technology.[3] Their core operations are pre-determined in code through smart contracts. These software-based rules are complemented by a range of formal and informal off-chain rules and norms. The core of a DAO sits on transparent infrastructure, and many collective governance decisions are also made in public, such as through online discussion forums and voting. These digital organisations have been deployed widely to build out a Web3 stack of open, composable decentralised infrastructure. In practice, DAOs have a wide variety of goals (e.g., governing a protocol, managing shared investments). Each DAO is also structured for a given governance problem, with variations in voting rights, organisational structure, and treasury structure. While some DAOs like ConstitutionDAO are ephemeral, others will be more long-lasting institutional structures.[4] Today over 2400 DAOs collectively hold over US$35 billion in digital assets in their treasuries.[5]

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[1] Patel N, "From a meme to $47 million: ConstitutionDAO, crypto, and the future of crowdfunding" *The Verge*, 8 December 2021, https://www.theverge.com/22820563/constitution-meme-47-million-crypto-crowdfunding-blockchain-ethereum-constitution.

[2] Some of the implications of DAOs as bidders in auctions have been studied formally. See e.g. Bahrani M., Garimidi P, and Roughgarden T, "When Bidders Are DAOs" (2023) arXiv preprint arXiv:2306.17099.

[3] See *infra,* Section 2.

[4] Taani I and Pahuja A, "From constitution to disbandment: ephemeral decentralized autonomous organizations" (2022) *International Conference on Information Systems* https://eprints.soton.ac.uk/483117/.

[5] DeepDAO, *Organisations* (Web Page) https://deepdao.io/organizations (current as February 2024).

Just as we can trace firm-like structures back 5000 years to ancient Mesopotamia, DAOs today emerge to solve specific coordination and trust problems that groups of people face. Various economic theories have shed light on the reasons why hierarchical firms exist. These include the reduction of transaction costs[6], the collaborative and skill-complementing teamwork[7], and the development of organisational routines and capabilities in an evolutionary context.[8] This ability of firms to align incentives, establish clear lines of authority, and create a common culture and identity among team members has led to the endurance of the firm throughout our institutional history.

On a long-enough time scale, the firm and the corporate form have evolved. Early organisations facilitated trade, managed resources, and pooled risks among their members. Mesopotamian enterprises allowed for the pooling of resources to finance trade at a distance.[9] During the Middle Ages, the growing complexity of trade and commerce led to the emergence of more advanced corporate structures, which enabled merchants to pool resources and share risks in their trading ventures. This evolution provided a more formalised structure for managing the contributions of individual members and distributing the proceeds of their joint efforts.[10]

The joint stock company, which emerged in the sixteenth and seventeenth centuries, advanced the firm by introducing features such as limited liability and transferable shares. The Dutch East India Company, founded in 1602, is often cited as the first joint stock company. By allowing investors to purchase shares in the company, these entities provided a more stable capital base and facilitated the participation of a wider range of individuals in the production process. The Dutch East India Company was incorporated by a royal charter issued by the States General of the Netherlands on March 20, 1602.[11] The charter gave the company a monopoly on trade with Asia and issued registered and transferable shares of ownership.

The birth of the modern corporation centred around the introduction of comprehensive legal frameworks such as the *Joint Stock Companies Act* 1844 (UK) and the *Limited Liability Act* 1855 (UK). These laws formalised key aspects of the corporate form, including the separation of ownership and management and the creation of a perpetual legal existence separate from its owners. Throughout the late nineteenth twentieth century, the corporate form continued to evolve, albeit slowly, as it became subject to increasing legal formalisation and constraints. This growing body of corporate law aimed to protect shareholders, employees, and the public interest, but also served to entrench the existing corporate form and limit the scope for innovation. This increasing legal formalisation can be seen as both a response to, and a constraint on, the ongoing need to coordinate and govern complex production processes.

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[6] See Coase RH, "The Nature of the Firm" (1937) 4(16) *Economica* 386.
[7] See Alchian AA and Demsetz H, "Production, Information Costs, and Economic Organization" (1972) 62(5) *The American Economic Review* 777.
[8] Nelson RR and Winter SG, *An Evolutionary Theory of Economic Change* (Harvard University Press, 1985).
[9] Jursa M, "Babylonia in the first millennium BCE– economic growth in times of empire". In Neal L and Williamson J (eds), *The Cambridge History of Capitalism* (Cambridge University Press, 2014).
[10] Moore KJ and Lewis DC, "Multinational Enterprise in Ancient Phoenicia" (2000) 42(2) *Business History* 17; Veenhof K, "'Modern' Features in Old Assyrian Trade" (1997) 40(4) *Journal of the Economic and Social History of the Orient* 336.
[11] Gelderblom O, de Jong A and Jonker J, "The Formative Years of the Modern Corporation: The Dutch East India Company VOC, 1602–1623" (2013) 73(4) *The Journal of Economic History* 1050.

The structure of the firm, and the legal formalisation of it, have evolved over time. DAOs can be understood as an evolution of the firm and the corporate form, enabled through technological development. Just as the joint stock company was enabled through transportation technologies four hundred years ago, DAOs are enabled by today's frontier technologies, including most notably blockchains and smart contracts. These technologies have enabled a new type of organisation to emerge on blockchain-based infrastructure.

Traditional corporate law is predicated on centralised governance and clear hierarchies, such as directors. These concepts are fundamentally challenged by the decentralised and flat governance structures of DAOs, including the lack of identity layer. There are several questions. How can corporate law recognise non-hierarchical and borderless organisations? What kind of legal rights and responsibilities should be ascribed to a DAO? How can the dynamic membership of a DAO be reconciled with the legal need for clear ownership and governance structures? Accordingly, legislatures are grappling with the appropriate corporate law vehicles to formalise and recognise the evolution of DAOs as a distinct legal entity.

In Australia, the Senate Select Committee on Australia as a Technology and Financial Centre has undertaken an inquiry into matters including "opportunities and risks in the digital asset and cryptocurrency sector".[12] In this context, the Senate Committee's final report in October 2021 recommended that the Australian Government establish a new Decentralised Autonomous Organisation company structure".[13] In December 2021, the (previous) Liberal National government agreed in principle with this recommendation.[14] However, following a change of government, the (new) Labor government has not progressed this recommendation.

The aim of this article is to consider how best to move towards legal recognition of DAOs in Australia. Note that our focus is not to introduce blockchain and cryptocurrencies and their legal implications. There is an emerging but substantial literature in this area.[15] Our focus is not on Australia's regulation of digital currency exchanges.[16] Instead, our focus is to critically analyse how the legal recognition of DAOs might plausibly and practically occur. We proceed as follows. In Section 2 we introduce and define DAOs, including a comparison between DAOs and traditional firm structures. In Section 3 we use first principles to critically evaluate whether existing common business structures – company, trust, partnership, unincorporated association – are appropriate for DAOs given the unique characteristics of the Web3 operating environment. In Section 4 we undertake a comparative analysis of DAO recognition legislation in the United States jurisdictions of Vermont, Wyoming, Tennessee, Utah, and New Hampshire. In Section 5 we turn to the strategic ways forward for Australia, proposing options for corporate law reform. Section 6 concludes noting avenues for future research.

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[12] Parliament of Australia, "Australia as a Technology and Financial Centre – Terms of Reference" (Web Page) https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Financial_Technology_and_Regulatory_Technology/AusTechFinCentre/Terms_of_Reference.

[13] Senate Select Committee on Australia as a Technology and Financial Centre, *Final Report* (Parliament of Australia, 2021), recommendation 4, [6.36].

[14] Treasury, "Transforming Australia's Payment System" (2021) Australian Government, 12.

[15] See De Filippi P and Wright A, *Blockchain and the Law: The Rule of Code* (Harvard University Press, 2018); Giancaspro M, "Cryptocurrency and the Consideration Conundrum: Does Crypto Have Legal Value under Contract Law?" (2022) 33(1) *Journal of Banking and Finance: Law and Practice* 3; Lane AM and Adam L, "Crime and Cryptocurrency in Australian Courts" (2022) 48(3) *Monash University Law Review* 146; Monichino A, "Cryptocurrency and interim court relief: 'Chen v Blockchain Global Ltd', 'CLM v CLN' and 'Fetch.ai Ltd v Binance'" 50(3) *Australian Business Law Review* 205.

[16] See: Treasury, "Regulating Digital Asset Platforms" (2023) Australian Government.

2. Decentralised Autonomous Organisations

This section critically examines the concept and governance of DAOs in the broader context of Web3. We begin by defining DAOs as digital entities underpinned by blockchain technology, focusing on their role as innovative institutional forms. The analysis explores how DAOs diverge from traditional organisations, including in their reliance on digital assets blockchain-based smart contracts for governance. We understand DAOs not merely technological phenomena but as part of the evolution of organisational governance. We then address the distinct governance challenges faced by DAOs, emphasising pseudonymity, openness, and composability inherent in the Web3 environment.

2.1. Defining a DAO

Web3 is a stack of digital technologies, underpinned by permissionless and censorship-resistant blockchain networks. Those networks enable the coordination of digital assets and internet-native value. Web3 is commonly distinguished from previous generations of the internet: Web1 users could read data; Web2 users could read and write data; and in Web3 users can read, write and own data.[17] Focusing less on the resources and capital of Web3, Kelsie Nabben argues that Web3 "... refers to the practices of participating in digital infrastructures through the ability to read, write and coordinate digital assets."[18] From this perspective, Web3 is the result of a process of "self-infrastructuring", which reveals the nature of Web3 as a privately or collectively governed space. Focusing on the shift in institutional structure, Jason Potts and Ellie Rennie describe Web3 as "... an evolution of digital infrastructure, whereby protocol-enforced consensus mechanisms facilitate the direct (that is, peer-to-peer) exchange of value between users, removing the need for trusted intermediaries."[19]

The technologies that underpin the Web3 stack include blockchains, smart contracts, digital assets and zero-knowledge proofs. Applications and infrastructures commonly understood to comprise the Web3 stack include identity, financing, digital assets, data storage, data markets, virtual environments (e.g., the metaverse), social networks and communications infrastructure. As we explore in this section, blockchains and Web3 are institutional innovations that reduce transaction costs in different ways, enabling individuals to digitally coordinate and exchange.[20] Blockchains are both a technology that enables new forms of governance to emerge (i.e. governance by blockchain), and a technology that needs to be governed (i.e. governance of blockchain networks).[21]

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[17] Sadowski J and Beegle K, "Expansive and extractive networks of Web3" (2023) 10(1) *Big Data & Society* 1.

[18] Nabben K, "Web3 as 'Self-infrastructuring': The Challenge is How" (2023) 10(1) *Big Data & Society* 1, 1.

[19] Potts J and Rennie E, "Web3 and the Creative Industries: How Blockchains are Reshaping Business Models" In: Cunningham S and Flew T (eds) *A Research Agenda for Creative Industries* (Edward Elgar, 2019) 93-111, 93.

[20] On blockchains as institutional governance innovations see: Davidson S, De Filippi P and Potts J "Blockchains and the Economic Institutions of Capitalism" (2018) 14(4) *Journal of Institutional Economics* 639; Berg C, Davidson S and Potts J, *Understanding the Blockchain Economy: An Introduction to Institutional Cryptoeconomics* (Edward Elgar, 2019); Allen DWE et al "Blockchain and the Evolution of Institutional Technologies: Implications for Innovation Policy" (2020) 49(1) *Research Policy* 103865.

[21] Fischer A and Valiente M, "Blockchain governance" (2021) 10(2) *Internet Policy Review* 1.

Decentralised Autonomous Organisations (DAOs) are digital organisations operating on Web3-based infrastructure. DAOs have been described as "a blockchain-based system that enables people to coordinate and govern themselves mediated by a set of self-executing rules deployed on a public blockchain, and whose governance is decentralised (i.e., independent from central control)."[22] They have also been described as "autonomous entities using governance rules that conform to the business logic of the blockchain."[23] The processes of these organisations enable peers to use "mechanisms of governance that support community decision-making and drive distributed trust among peers."[24]

Building on these definitions, we define a Decentralised Autonomous Organisation (DAO) as an internet-native organisation that is coordinated and governed by pseudonymous community members through a nexus of blockchain-based digital assets and smart contracts, as a form of team production. Internet-native, in the sense that governance occurs online (e.g., governance tokens) in digital rather than physical spaces. Organisation, in the sense that members participate in furthering a shared goal or mission amongst their community. They are, following the previous section, a new institutional form that uses blockchain-based smart contracts to coordinate a process of team production.[25] Just as with companies, the purpose of that team production varies widely, including governance protocols (e.g., decentralised finance protocols), coordinating buying physical assets (e.g., ConstitutionDAO, LinksDAO), to facilitate public goods funding and grants (e.g., VitaDAO, GitcoinDAO), to make joint investments (e.g., FlamingoDAO) and to coordinate a social club (e.g., ApeDAO).

The mechanisms and processes of governing DAOs is the subject of a burgeoning literature.[26] Defining an analytical approach to DAO governance has been difficult because they represent unique institutional firms that have some characteristics of firms, markets, clubs, states and commons. Indeed, these decentralised networks and organisations have variously been described as resembling: the governance of a corporate firm[27]; the self-governance of a

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[22] Hassan S and De Filippi P, "Decentralized Autonomous Organization' (2021) 10(2) *Internet Policy Review* 1, 2.

[23] Beck R, Müller-Bloch C and King JL "Governance in the Blockchain Economy: A Framework and Research Agenda" (2018) 19(10) *Journal of the Association for Information Systems*, 1.

[24] Santana C and Albareda L, 'Blockchain and the Emergence of Decentralized Autonomous Organizations (DAOs): An Integrative Model and Research Agenda' (2022) 182 *Technological Forecasting and Social Change*, 121806.

[25] Smart contracts are "agreements—or parts of agreements—that are coded to operate within a decentralised or distributed blockchain network, and that can be automatically executed by that network when specific conditions are validated.": Allen, DWE, Lane AM and Poblet M, "The Governance of Blockchain Dispute Resolution" (2019) 25 *Harvard Negotiation Law Review* 75.

[26] See generally, Liu et al "A Systematic Literature Review on Blockchain Governance" (2022) 197 *Journal of Systems and Software* 111576; Van Pelt R et al, "Defining Blockchain Governance: A Framework for Analysis and Comparison" (2021) 38(1) *Information Systems Management* 21.

[27] See e.g., Yermack D "Corporate Governance and Blockchains" (2017) 21(1) *Review of Finance* 7; Kaal WA "Blockchain Solutions for Agency Problems in Corporate Governance" In: Balachandran KR (ed) *Information for efficient decision making: Big Data, Blockchain and Relevance* (World Scientific, 2021) 313-329; Davidson S and Potts J, "Corporate Governance in a Crypto-World' (2022) Available at SSRN 4099906; Allen DWE and Berg C "Blockchain Governance: What Can We Learn From the Economics of Corporate Governance?" (2022) 3(1) *Journal of the British Blockchain Association* 1.

common-pool resource[28]; co-operatives[29]; political governance through constitutions[30], among others. While DAOs have some parallels to existing institutions (such as a joint-stock company without hierarchical management), the unique context and structure of DAO governance constitutes a new institutional form.

2.2. Governance Challenges in DAOs

The characteristics of the digital environment that DAOs operate in is important for understanding their potential comparative advantage as an organisation, their unique governance challenges, and thereby their regulatory context. There are at least four unique aspects of Web3 that form an important context for DAO governance. First, pseudonymity. The pseudonymity of accounts enables individuals to participate in DAOs without revealing their real-world identity. Second, openness. Web3 ecosystems tend to be comparatively open, and so governance must occur in a global environment of capital and labour markets. Third, permissionlessness. As Kelsie Nabben and Michael Zargham describe, a system is permissionless "... if it is possible to participate in the use, development, and governance of that system or infrastructure without requiring permission from an authority, by adhering to publicly stated procedures."[31] Fourth, composability. Because digital assets can be composable across ecosystems, this enables more complex adaptive governance structures to emerge, with potentially unintended consequences (e.g. through wrapping of governance tokens).[32]

Flowing from this unique context are specific governance challenges, including voter apathy, concentrated voting power, and efficiency.[33] The challenges that DAOs face are different across stages of a project, such as the design, operation and crisis phases.[34] Indeed, some of the most obvious challenges relate to crises, such as the Bitcoin block size crisis and The DAO hack, among others.[35] Challenges in DAO governance and evolution range from voter concentration and apathy to the costs and security risks of on-chain governance.[36]

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[28] Howell BE and Potgieter PH, "Governance of Blockchain and Distributed Ledger Technology Projects: A Common-Pool Resource View", *Workshop on the Ostrom Workshop (WOW6) conference*, (Indiana University Bloomington, 2018); Murtazashvili I et al "Blockchain Networks as Knowledge Commons" (2022) 16(1) *International Journal of the Commons* 108; Herminio Bodon et al "Ostrom Amongst the Machines: Blockchain as a Knowledge Commons" (2019) 10(3) *Cosmos + Taxis* 1.

[29] Mannan M, "Fostering Worker Cooperatives with Blockchain Technology: Lessons from the Colony Project" (2018) 11(3) *Erasmus Law Review* 190.

[30] Rajagopalan S, "Blockchain and Buchanan: Code as Constitution" In Wagner RE (ed), *James M. Buchanan: A Theorist of Political Economy and Social Philosophy* (Palgrave Macmillan 2018), 359-381; Alston E "Constitutions and Blockchains: Competitive Governance of Fundamental Rule Sets" (2020) 11 *Journal of Law, Technology and the Internet* 131.

[31] Nabben K and Zargham M, "Permissionlessness" (2022) 11(2) *Internet Policy Review* 1, 2

[32] Alen DWE et al, "The Exchange Theory of Web3 Governance" 76(4) *Kyklos* 659.

[33] Nabben K and Zargham M, "The Ethnography of a 'Decentralized Autonomous Organization'(DAO): De-mystifying Algorithmic Systems' (2022) *Ethnographic Praxis in Industry Conference Proceedings* 74.

[34] Rikken O, Janssen M and Kwee Z, "Governance Challenges of Blockchain and Decentralized Autonomous Organizations" (2019) 24(4) *Information Polity* 397.

[35] E.g., on the politics of bitcoin see De Filippi P and Loveluck B "The Invisible Politics of Bitcoin: Governance Crisis of a Decentralized Infrastructure" (2016) 5(3) *Internet Policy Review* 1.

[36] Feichtinger R et al, "The Hidden Shortcomings of (D)AOs – An Empirical Study of On-Chain Governance" (2023) *arXiv preprint arXiv:2302.12125*.

2.3. Comparing DAOs and Companies

Before examining the legal challenge of DAOs in the following section, it is first worthwhile to examine some of the key differences between DAOs and more traditional hierarchical organisational structures. These differences are generalised given that both DAOs and companies have a range of organisational structures and processes.

First, DAOs are naturally global-first digital organisations, unmoored from geographical locations or jurisdictions. As Aaron Wright notes "Instead of operating in one or a handful of jurisdictions, DAOs seek to stretch across the globe, stitching together thousands—if not tens or hundreds of thousands—of members regardless of their physical location, background, or creed."[37] Because of the prevalence of pseudonymous DAO token holders, even if those members are concentrated in a particular jurisdiction, it is difficult to verify that concentration. Furthermore, there is a lack of transparency over the location and other demographic information of DAO members. The global-first nature of DAOs contrasts with the strong jurisdictional ties of typical organisations.

Second, the ownership of DAOs comes not through equity shares, but through governance tokens on Web3 infrastructure. Token-denoted ownership differs from the shares of traditional companies. The rights attached to shares can typically include clearly defined rights such as dividends and company assets in the case of liquidation. By contrast, the rights attached to DAO governance tokens are significantly looser, focusing much more on democratic governance processes. Governance tokens to not typically provide cash flow rights, but rather enables participation in decision-making processes (see below). Part of the distinction between the rights attached to shares and the rights attached to governance tokens is expected regulatory enforcement (i.e., projects seeking for their governance tokens to not be defined as a security or some other financial assets).

Third, DAOs have decentralised decision-making processes. The decision-making processes of DAOs are comparatively decentralised and democratic compared to traditional companies. While DAOs have a diversity of decision-making processes, but there is a clear focus on more democratic and decentralised decision making compared to companies. As Aaron Wright explains: "DAOs are not run by boards or managers, but rather aim to be governed by democratic or highly participatory processes or algorithms."[38] The process of decision-making in DAOs often occurs through a combination of off-chain deliberation, on-chain multi-signature wallets, and DAO member voting. More specifically, the decision-making processes of DAOs focus less on hierarchical authority, although authority may be delegated in various ways by tokenholders (e.g., by electing committees or working groups). Many DAOs implement a public process of governance proposals (e.g., Ethereum Improvement Proposals), followed by a period of token holder voting. Typically, voting is conducted through online platforms where participants directly connect their own self-custody wallets bypassing the need for centralised intermediaries like digital currency exchanges. These governance processes can include decision-making around treasury spending (e.g., on ecosystem incentives, on grants programs), protocol upgrades, or other decisions (e.g., on integrations, mergers or acquisitions with other protocols and projects). The decision-making processes of DAOs and

[37] Wright A, "The Rise of Decentralized Autonomous Organizations: Opportunities and Challenges" (2021) 4(2) *Stanford Journal of Blockchain Law & Policy* 152, 152.
[38] Wright A, n 38, 152.

blockchain networks also increasingly integrate *polycentric* governance structures -- that is, where there are many centres of decision-making within some overarching set of rules.[39]

Fourth, DAOs have different margins of transparency. Owing to the nature of public blockchain-based smart contracts, DAOs are typically understood as having more transparent processes than companies (e.g., through their operational processes, financial activities and decision-making). That is on a technical level the rights of members are publicly available, and transactions can be traced and tracked. On other margins, however, DAOs have different levels of transparency. This discrepancy particularly relates to the distinction between on-chain and off-chain governance -- that is, what decisions are made in transparent public forums, and what decisions are made off-chain. While some DAOs focus mainly on on-chain governance processes (that are typically more transparent), other DAOs implement off-chain governance processes (which are not necessarily more transparent than companies, particularly where there is a lack of reporting requirements).

3. Application of Australian Business Structures

In Australia, organisations can employ various legal structures. Some structures may be an active decision or otherwise deemed from the circumstances of the case, such as a partnership or unincorporated association. Other structures may involve active commercial choices on the part of the business' participants, such as a decision to incorporate a company or execute a trust deed. Indeed, some organisations may deploy a combination of business structures (e.g., corporate trustee of a trust). The business structure will have legal implications for both business participants and third parties contracting with the business. In the absence of specific legislation covering DAOs as a business structure, DAO participants seeking legal recognition in Australia must consider existing structures. This section examines four common business structures from a first principles perspective under Australian law and discusses the appropriateness for DAOs given the unique characteristics of the Web3 operating environment.

3.1. Company

The predominant business structure in Australia are companies incorporated under the *Corporations Act* 2001 (Cth). As of March 2023, there are a total of over 3.1 million companies currently registered – with an average of approximately 22,000 new company registrations each month,[40] although around a third of these companies are trading as businesses.[41] The benefits of companies as a business structure are obvious – separate corporate legal identity,[42] perpetual succession,[43] and limited liability for members of the company[44]. However, there are two reasons why this structure is not suitable for DAOs.

First, companies require directors. In Australia, there is no member-managed corporate structure akin to LLC entities in the United States. Specifically, a proprietary limited company

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[39] Alston E et al, "Blockchain Networks as Constitutional and Competitive Polycentric Orders" 18(5), *Journal of Institutional Economics* 707.

[40] Australian Securities and Investments Commission, "2023 Company registration statistics" (Web Page) https://asic.gov.au/regulatory-resources/find-a-document/statistics/company-registration-statistics/2023-company-registration-statistics/.

[41] See Australian Bureau of Statistics, *Counts of Australian Businesses, including Entries and Exits July 2018 - June 2022* (Catalogue No 8165.0, 25 August 2022).

[42] *Corporations Act* 2001 (Cth) ss 124.

[43] *Corporations Act* 2001 (Cth) s 119, ch 5A.

[44] *Corporations Act* 2001 (Cth) ss 516-518.

requires at least one director (who must ordinarily reside in Australia), or two directors if the company has crowd-source funding (one of whom must ordinarily reside in Australia), while a public company requires at least three directors (two of whom must ordinarily reside in Australia).[45] This requirement is problematic because decision-making in DAOs is decentralised. That is, operational decisions are made through the consensus of DAO members participating in formal governance processes.

If a person was willing to act as director for the purposes of registration, what would be the legal position in the case of a conflict between the DAO's decision on-chain and the director's actions off-chain? The company structure offers a high degree of flexibility for members to adopt a constitution tailored to their needs and preferences.[46] The default position, however, is that "the business of a company is to be managed by or under the direction of the directors".[47] If the on-chain decisions were seen as merely advisory to the company's directors, it would undermine the purpose of a DAO for members to create automated binding decisions amongst themselves. More significantly, on-chain decisions may not have legal effect given that Australian corporate law jurisprudence has strictly enforced a separation of powers between company directors' powers over operational-level decisions and company members' decisions over constitutional-level decisions.[48]

Practically, however, collective decision-making makes it difficult to identify individuals – as directors must be natural persons – willing to accept the role of director with the significant liabilities that the office holds. Of course, directors are subject to fiduciary and statutory duties. For instance, under the *Corporations Act* these duties include acting with care and diligence, exercising powers and making decisions in good faith and in the best interests of the company, and not misusing positions or information.[49] These duties can be privately and publicly enforced. But even if it was technically possible for a company's constitution to state that the directors are not liable for these duties so long as they execute the decisions of the DAO's members, other statutes pierce the corporate veil and impose personal liability on directors. As examples, company directors may be held personally liable for contraventions of employment obligations[50], occupational health and safety requirements[51], or unpaid withholding taxes.[52] Indemnities for personal liability can never completely absolve directors.

Second, companies regulate membership. As a starting point, the *Corporations Act* imposes a limit of 50 non-employee shareholders in a proprietary limited company.[53] This restriction is problematic for DAOs, which typically have thousands of participants. Although it is noted that this limitation can also be an issue for crowd-source funding (CSF) and CSF shareholders do not count towards this limit following 2018 amendments to the Act.[54]

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[45] *Corporations Act* 2001 (Cth) s 201A.
[46] *Corporations Act* 2001 (Cth) s 136.
[47] *Corporations Act* 2001 (Cth) s 198A.
[48] See e.g., *Australasian Centre for Corporate Responsibility v Commonwealth Bank of Australia* (2016) 248 FCR 280.
[49] See *Corporations Act* 2001 (Cth) ss 180-184, 191.
[50] See *Fair Work Act* 2009 (Cth) s 550.
[51] See *Work Health and Safety Act* 2011 (Cth) s 256.
[52] See *Taxation Administration Act* 1953 (Cth) sch 1.
[53] *Corporations Act* 2001 (Cth) s 113.
[54] *Corporations Act* 2001 (Cth) s 113(2)(c). See generally *Corporations Amendment (Crowd-sourced Funding for Proprietary Companies) Act* 2018 (Cth).

The *Corporations Act* assumes that a company's members are identifiable individuals. For example, companies must maintain a register of members that includes members' names and addresses.[55] The register must be held at a physical location, such as the company's registered office, principal place of business.[56] The register of members is the proof of who is a member of the company, in the absence of evidence to the contrary.[57] Given the dynamic nature of DAO membership, and the ease to which DAO governance tokens could be technically transferred on-chain without complying with any restrictions under the Act or the company's constitution, there could easily be a discrepancy between the on-paper register and the on-chain register. Another example of the assumption that a company's members are identifiable individuals is a member's right to attend, participate, and vote at general meetings.[58] Indeed, there still remains a legislative preference for physical meetings, as corporate law scholars have noted.[59] This is problematic for DAOs as internet-native organisations that are and are governed by pseudonymous participants. While member meetings are important forums for transparency between the executive and the members, DAOs provide transparency in different ways and are unable to physically convene meetings.

In summary, the requirement to have directors and the regulation of company membership poses practical challenges for DAOs to structure as an Australian company.

3.2. Trust

A second common business structure is a trust. A trust is not a separate legal entity, but a legal mechanism that separates legal ownership and management of property (transferred from the 'settlor' to the 'trustee') from the equitable ownership and enjoyment of that property (by the 'beneficiaries'). The advantage of trusts as a business structure is that beneficiaries are shielded from any personal liability arising from the trustee's actions or the trust's debts and, similarly, the trust's assets are safeguarded from any claims made against the beneficiaries. The equitable interests of beneficiaries are enforceable as "trusts law imposes duties on the property's title-holder or controller which require that person to deal with the property for the benefit of others or a limited class of purposes in a particular way."[60] Trust law relies on three key certainties. Business trusts are typically created through a trust deed evidencing the certainty of intention to create a trust. As of July 2022, there were 487,261 registered businesses operating as trusts in Australia.[61]

Scholars contend that developers of public blockchains act as fiduciaries.[62] In short, this argument is based on: (a) a small number of developers and validators provide specialist

[55] *Corporations Act* 2001 (Cth) ss 168-169.
[56] See *Corporations Act* 2001 (Cth) s 172(1).
[57] *Corporations Act* 2001 (Cth) s 176.
[58] *Corporations Act* 2001 (Cth) pt 2G.2.
[59] See Boros E, "Virtual Shareholder Meetings: Who Decides How Companies Make Decisions?" (2004) 28(2) *Melbourne University Law Review* 265, 266; Freeburn L and Ramsay I, "Virtual Shareholder Meetings in Australia" 32(2) *International Company and Commercial Law Review* 53.
[60] De Silva et al, "Current issues with trusts and the tax system" (Report, 2019), 27 citing *Glenn v Commissioner of Land Tax (Cth)* (1915) 20 CLR 490, 503 (Isaacs J) referring to *Re Williams* [1897] 2 Ch 12, 18 (Lindley LJ).
[61] Australian Bureau of Statistics, *Counts of Australian Businesses, including Entries and Exits July 2018 - June 2022* (Catalogue No 8165.0, 25 August 2022).
[62] Walch A, "In Code(rs) We Trust: Software Developers as Fiduciaries in Public Blockchains" in Phillipp Hacker et al. (eds), *Regulating Blockchain: Techno-Social and Legal Challenges* (Oxford University Press, 2019), 58-82; see also Reyes CL, "If Rockefeller Were a Coder" (2019) 87(2) *George Washington Law Review* 373.

service to users of the network; (b) this group holds power in making decisions amongst themselves that have a significant financial impact on those relying on the network; (c) this group may be opportunistic or incompetent; and (d) it is difficult for users of the network to protect themselves against those fiduciary risks.[63]

A similar argument could be made for DAOs. Typically, each DAO has a founder or relatively small founding team, which may include smart contract developers. This group is placed in a position of trust and confidence as they must make governance decisions for the future of the organisation. After other participants join the organisation, the founding team typically retains some level of power over other general participants. While the decision to upgrade the DAO's smart contract infrastructure or spend the DAOs treasury, as examples, may be governed by a vote of governance token holders, in practice it will be the signatories or custodians to the "multisig" account that ultimately will approve and execute the upgrade.[64] The validity of the argument matters because in the context of DAOs as fiduciary duties may extend to individuals or entities fulfilling the role of custodians or signatories, ensuring that they act in the best interests of the DAO and its participants rather than in their own best interests.

An opposing argument is that governance token holders can submit and vote on governance proposals – acting as both trustees and unit holders simultaneously.[65] In this scenario, no participant is placed in a position of trust and confidence over another. While this argument may hold true regarding on-chain decision making power, it does not hold for the off-chain coordination that takes place.[66] In any case, these arguments concern the ability of aggrieved parties to invoke trust law and equity for relief in the context of dispute resolution. This article is principally concerned with how DAOs can structure themselves in a way to achieve legal recognition at the front end. We turn now to those specific challenges.

First, a trust requires property to be vested with specific and identifiable trustees in order to fulfil the certainty of intention to create a trust.[67] As with companies, practical difficulties exist with identifying individuals that are willing and have the legal capacity to take legal ownership of the DAO's assets, power to enter into contracts with third parties, the associated legal risk in these dealings and the risk that results from the duties owed to the beneficiaries. Of course, it is now commonplace to appoint a corporate trustee, but this then introduces the complexities of the company structure discussed above.

Next, a trust requires reasonable certainty over the trust property or assets.[68] It seems that the trust assets would constitute the digital assets held by the DAO and also the smart contract infrastructure. There is debate amongst legal scholars as to whether smart contracts[69] and cryptocurrencies[70] – and by extension other blockchain-enabled tokens – constitute valuable consideration to satisfy the formation requirements of a contract. For our purposes, these

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[63] Walch, n. 63, 63-64.
[64] Reynes, n 63, 414-415.
[65] Rong CW, "The Legal Status of DAOS in Singapore: Company, Partnership or Business Trust?" (2020) 38 *Singapore Law Review* 213, 237.
[66] See Walch, n. 63, 63-64.
[67] Bryan MW, Vann VJ and Barkehall Thomas S, *Equity and Trusts in Australia* (Cambridge University Press, 3rd ed, 2022), [14.3].
[68] Bryan et al., n 68.
[69] McKinney SA, Landy R and Wilka R, "Smart Contracts, Blockchain, and the Next Frontier of Transactional Law" (2018) 13(3) *Washington Journal of Law, Technology and Arts* 313.
[70] Giancaspro, n 16.

concerns would extend to the formation requirements of a trust. We note though that DAOs have held, or propose to hold, tangible property as well.

Finally, the trust must sufficiently define the beneficial owners.[71] Broadly, business trusts are structured either as discretionary trusts or unit trusts. For discretionary trusts, beneficiaries can be a class of people (i.e., a DAO's token holders) which is an advantage for a pseudonymous and dynamic membership. However, the key drawback is that trust distributions are at the discretion of the trustees – anathema to the decentralised and governance processes of DAOs. Instead, DAOs require mechanisms that allow for transparent, automated, and enforceable governance rules (i.e., on-chain) rather than relying on discretionary decisions by trustees (i.e., off-chain). For unit trusts, beneficiaries (or 'unit holders') hold fixed entitlements to the trust's assets and income distributions based on the number of units held. There is no limit to the number of beneficiaries, however the *Corporations Act* may require registration for unit trusts with more than 20 members as a managed investment scheme (MIS).[72] A registered entity is required to be a public company and hold an Australian Financial Services License.[73] Conceptually, an MIS is a category error as DAOs do not have a central manager. Practically, MIS regulatory treatment would introduce unworkable complexity.

Trust law's broader relevance for other blockchain and cryptocurrency organisations should not be dismissed. For instance, a discretionary trust may be an appropriate and workable structure for a blockchain foundation, which serves as a for-purpose organisation providing financial support to projects and entities within a specific blockchain community. However, when it comes to DAOs, the applicability of trusts is questionable. In summary, the inherently decentralised and "trustless" nature of DAOs grates against trustees with discretionary powers or regulated corporate trustees.

3.3. Partnership

Another popular business structure in Australia is a general partnership, although in modern times there has been a decline in its popularity in favour of companies. As of July 2022, there were 248,070 registered businesses operating as partnerships in Australia.[74] The main comparative benefit of a partnership is the absence of formal approval and registration processes, which means that there are lower costs of initial structuring and lower ongoing disclosure and reporting costs.

The threshold question is whether DAOs are capable of fitting within the definition of a partnership. Partnership is defined as "the relation which subsists between persons carrying on a business in common with a view of profit".[75] Although this will be a question of fact, it is worth unpacking the three constituent parts of this definition.

First, "business" is defined broadly as "[including] every trade occupation or profession".[76] The High Court has held that business "denotes activities undertaken as a commercial enterprise in the nature of a going concern, that is, activities engaged in for the purpose of profit on a

[71] Bryan et al., n 68.
[72] *Corporations Act* (2001) Cth, s 601ED.
[73] Corporations Act 2001 (Cth), s 601FA.
[74] Australian Bureau of Statistics, *Counts of Australian Businesses, including Entries and Exits July 2018 - June 2022* (Catalogue No 8165.0, 25 August 2022).
[75] *Partnership Act* 1958 (Vic), s 5.
[76] *Partnership Act* 1958 (Vic), s 3(1).

continuous and repetitive basis."[77] Although, the High Court has held that one-off transactions may also be held to be a partnership which "suggests that the emphasis which will be placed upon continuity may not be heavy".[78] This caveat is significant because DAOs may be spun up for a particular transaction (e.g., ConstitutionDAO). But to be a partnership, the DAO's purpose must have some commercial character. The definition of business would seem to exclude hobbies, even those where significant revenue is generated[79] or where significant costs are incurred[80].

Second, the business must be "in common". Partners are *mutual* agents and "unless there is that mutuality…there can be no partnership."[81] This distinguishes a partnership from both a joint venture, where separate businesses operate in tandem, and a mere principal-agent relationship, where an agent is appointed to act for and on behalf of the business. Whether mutual agency exists is a factual test. In most DAOs, however, it is unlikely that one participant could bind another participant to a contract with an external third party. This is because the socio-technical nature of the DAO – including decentralised and transparent direct decision-making through blockchain-enabled smart contracts – allows limited scope for agency. Indeed, a core part of blockchain's value proposition in a business context is reducing agency costs and opportunities for opportunism.[82] While the DAO may appoint persons to act on the DAOs behalf or appoint persons to a multi-signature wallet to authorise and execute the DAOs transactions with a third party, these are examples of mere agency not mutual agency.

Nevertheless, the possibility of mutuality raises the issue of joint and several liability inherent in partnerships. Such liability poses a significant risk for DAO participants as the traditional justification (i.e. known partners are in the best position to acquire knowledge and manage risk regarding scope and authority of other partners)[83] does not hold for a large number of pseudonymous participants.

Further, partnership law assumes that partners are known and identifiable individuals. For instance, as McPherson JA held in *Rushton (QLD) Pty Ltd v Rushton (NSW) Pty Ltd,* "[i]t is an axiom of partnership law that any change in the membership of a partnership occurring, whether by reason of the retirement, expulsion, death or otherwise of a partner, has the consequence of dissolving the partnership".[84] This does not align with the pseudonymous and fluid nature of DAO membership. It would be unworkable for a new partnership to form whenever governance tokens were transferred to a new party.

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[77] *Hope v Bathurst City Council* (1980) 144 CLR 1, 8-9 per Mason J (Gibbs, Stephen and Aickin JJ agreeing) considering the definition of business in the context of the *Local Government Act* 1919 (NSW).
[78] *United Dominions Corporation Ltd v Brian Pty Ltd* (1985) 157 CLR 1, 15 (Dawson J) citing *Canny Gabriel Castle Jackson Advertising Pty Ltd v Volume Sales (Finance) Pty Ltd* (1974) 131 CLR 321. See also: Partnership Act 1958 (Vic) s 36.
[79] See Evans *v Federal Commissioner of Taxation* (1989) 89 ATC 922 considering the definition of business in the context of the *Income Tax Assessment Act* 1936 (Cth).
[80] See *Hart v Commissioner of Taxation (Cth)* (2003) 131 FCR 203 also considering the definition of business in the context of the I*ncome Tax Assessment Act* 1936 (Cth).
[81] *Duke Group Ltd (in liq) v Pilmer* (1999) 153 FLR 1, 206 (the Court).
[82] See Berg C, Davidson S and Potts J, "Proof of Work as a Three-Sided Market" (2020) 3 *Frontiers in Blockchain* 2.
[83] See Landes WM and Posner RA, "Joint and Multiple Tortfeasors: An Economic Analysis" (1980) 9(3) *Journal of Legal Studies* 517.
[84] *Rushton (QLD) Pty Ltd v Rushton (NSW) Pty Ltd* [2003] 1 Qd R 320, 323 citing *S. J. Mackie Pty Ltd v. Dalziell Medical Practice Pty Ltd* [1989] 2 Qd R 87, 90–91 (McPherson J); see also *Partnership Act* 1958 (Vic), s 37(1).

Third, there must be a "view to profit". This does not mean the business must realise a profit, but rather it must be the purpose of the relationship. This necessarily excludes DAOs from considering this structure if the DAO is not operating for a profit. Some DAOs clearly have for-profit purposes (e.g. investment DAOs) while others have clear not-for-profit purposes (e.g. environmental action DAOs). However, many DAOs exist for the purpose of governing, maintaining, and developing open-source collective infrastructure. Each DAO, therefore, would need to be assessed on its function and token economic design to assess whether it was for-profit – and there will be a difference between businesses that profit from using this infrastructure and the infrastructure itself.

In summary, the requirement to operate a business, in common, and with a view to profit, significantly restricts the number of DAOs that would be able to structure their operations as a partnership.

3.4. Unincorporated Association

Unincorporated associations provide a default option for organisations that have not yet decided to incorporate as a company or establish a trust, but also lack the profit motive required for partnerships. The main comparative advantage of this structure is in its flexibility and simplicity – no formal registration is required and there are no ongoing compliance requirements. The main comparative drawback, however, is that it is not a separate legal entity and cannot enter into contracts – meaning founders and members must take on these liabilities while any assets (e.g., land, assets, intellectual property) are held on trust. The significance of legal recognition as an unincorporated association is that all property held on trust for the association will vest in a successor body when the association decides to incorporate (either into a company or an incorporated association).[85]

In *Kibby v Registrar of Titles* [1999] 1 VR 861 the Court held that the

> …the essence of an "association" may be described as some form of combination of persons (with a common interest or purpose) with a degree of organisation and continuity at least sufficient to distinguish the combination from an amorphous or fluctuating group of individuals and with some clear criteria or method for the identification of its members.[86]

The Court will look to the facts of each case to consider the degree of organisation and continuity of membership. In *Kibby,* Mandie J considered that the existence of formalities such as a written constitution or contract governing the organisation as factors going both to organisation and continuity, while the existence of office-bearers, a committee and a bank account were relevant factors in considering the degree of organisation.[87] This provides some guidance for DAOs wanting to be recognised as an unincorporated association.

Applying these principles for DAOs, the existence of smart contracts, governance tokens defining DAO membership, a DAO treasury, and other documentation such as white papers, and the integration and use of other DAO tools by DAO members, are all factors that will go to establishing the requisite degree of organisation and continuity. However, pseudonymity poses challenges in identifying specific individuals as members and may weigh against continuity of membership. Implementing measures such as "whitelisting" or conducting "Know

[85] See e.g., *Associations Incorporation Reform Act* 2012 (Vic), s 9.
[86] *Kibby v Registrar of Titles* [1999] 1 VR 861, [50] (Mandie J).
[87] *Kibby v Registrar of Titles* [1999] 1 VR 861, [51].

Your Customer" (KYC) procedures before issuing governance tokens may help address these challenges and strengthen the basis for maintaining membership and legal recognition.

In conclusion, DAOs face considerable challenges fitting within the existing business structures under Australian law. Companies, trusts, partnerships, and unincorporated associations all possess certain characteristics that are incompatible with the unique features of DAOs, such as decentralisation, pseudonymity, and reliance on smart contracts. These challenges encompass issues of limited liability, asset control, membership fluidity, and mutual agency, which are significant to the operation and sustainability of DAOs. The discussion in this section has shown that Australia's existing business structures and regulatory environment are not adequately equipped to accommodate DAOs. There is a clear need for legislative reform to provide a structure that acknowledges the unique features of DAOs, protects participants, and enhances legal certainty for these emerging entities. The examination of DAO statutes in the United States, which is the focus of the next section, will provide insights and potential solutions to address these issues.

4. Legal Comparative Analysis of DAO Structures in the United States

Business structures in the United States are primarily legislated at the state level. In theory, this results in a more dynamic and competitive environment compared to a unified federal corporations law, where states compete for corporations to register and domicile in their jurisdiction in return for tax revenue and other economic benefits, such as employment opportunities.[88] Although, whether this occurs in practice is a debated empirical question and the economic benefits of jurisdictional competition may be curtailed by other economic and political barriers.[89] Broadly, US state laws recognise DAOs as legal entities in three ways – by extending Limited Liability Company (LLC) structures to DAOs, by the application of existing structures without legislative changes, or by providing standalone legal recognition. This section offers a legal comparative analysis of these three possibilities as a guide to the options available in the Australian context.

4.1. Limited Liability Company Statute Amendments

In recent years, US states of Vermont, Wyoming and Tennessee have undertaken corporate law reform by amending existing statutes to extend the operation of LLC structures to DAOs. LLCs are an entity that combines the operational flexibility and tax treatment of partnerships with the limited liability protection of a corporation.[90] LLCs are separate legal entities as distinct from its members allowing it to own property and enter into contracts in its own right. Further, LLCs can be “member-managed” in that it does not require a board of directors.[91]

4.1.1. Vermont

In 2018, Vermont became the first US state to enact LLC legislative amendments that encompass DAOs but adopt the broader nomenclature of “blockchain-based limited liability

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[88] See e.g. Romano R, “Law as a Product: Some Pieces of the Incorporation Puzzle” (1985) 1(2) *Journal of Law, Economics and Organization* 225; Roe MJ, “Delaware’s Competition” (2003) 117(2) *Harvard Law Review* 225.

[89] Kahan M and Kamar E, “The Myth of State Competition in Corporate Law” (2002) 55(3) *Stanford Law Review* 679.

[90] Ribstein LE, “The Emergence of the Limited Liability Company” (1995) 51(1) *Business Lawyer* 1, 2; See also: Keatinge RR et al., “The Limited Liability Company: A Study of the Emerging Entity” (1991) 47(2) *Business Lawyer* 375.

[91] Ribstein, n 91, 10-12.

company (BBLLC)". In January 2018, Democratic State Senator Alison Clarkson introduced "an act relating to blockchain business development" known as Senate Bill 269 (SB 269).[92] On 30 May 2018, after debate and passage through the General Assembly, Republican Governor Phil Scott signed SB 269 into law with effect from 1 July 2018.[93] The legislation amends Chapter 25 of Title 11 of the Vermont Statutes – the enabling corporate law for establishing LLCs. SB 269 also legislated a broader blockchain adoption agenda – amending several other statutes to integrate blockchain technology in various sectors, including court procedures, personal data laws, and financial studies, while also promoting its benefits in economic development and assessing its potential for public recordkeeping.

4.1.2. Wyoming

In 2021, Wyoming enacted legislation specifically focused on DAOs. In January 2021, the Select Committee on Blockchain, Financial Technology and Digital Innovation Technology sponsored an Act "providing for the formation and management of decentralized autonomous organizations" known as Senate Bill 38 (SB 38).[94] The Select Committee was a bipartisan effort – co-chaired by Democratic State Senator Chris Rothfuss and Republican State Representative Jared Olsen. On 21 April 2021, following passage through the legislature, SB 38 was signed into law by Republican Governor Mark Gover with effect from July 2021.[95] Now known as Wyoming Decentralized Autonomous Organization Supplement (Chapter 31 of Title 17 of the Wyoming Statutes) - the legislation effectively adds to the *Wyoming Limited Liability Company Act* (Chapter 29 of Title 17 of the Wyoming Statutes).[96] Minor amendments to insert further definitions into the Supplement were passed in 2023.[97]

4.1.3. Tennessee

In 2022, Tennessee passed legislation modelled on Wyoming's statute, although opting for the term "Decentralized Organization". In February and March 2022, Democratic State Representative Jason Powell introduced House Bill 2645 (HB 2645) and Republican State Senator Paul Bailey introduced Senate Bill 2854 (SB 2854), respectively.[98] The Bills were co-sponsored by a bipartisan coalition. In a similar manner to Wyoming, the Tennessee legislation inserts a new chapter 250 into Title 48 of the Tennessee Code as a supplement to the *Tennessee Revised Limited Liability Company Act* (Chapter 249 of Title 48). On 20 April 2022, the Bill was signed by Republican Governor Bill Lee with immediate effect.[99]

4.1.4. Comparison of Provisions

DAOs operating as LLCs are subject to the general statutory provisions in the respective Limited Liability Company Acts.[100] This means, for example, that registration is affected by

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[92] State of Vermont, *Journal of the Senate*, 3 January 2018, 30.

[93] 'S.269 (Act 205)', *Vermont General Assembly* (Web Page) <https://legislature.vermont.gov/bill/status/2018/S.269>.

[94] 'SF0038 - Decentralized autonomous organizations', *State of Wyoming Legislature* (Web page) <https://www.wyoleg.gov/Legislation/2021/SF0038>.

[95] Wyoming Laws 2021, ch. 162, § 2.

[96] W.S.A. § 17-31-103

[97] Wyoming Legislature, Act No. 53, 2023.

[98] 'SB 2854', *Tennessee General Assembly* (Web page) <https://wapp.capitol.tn.gov/apps/BillInfo/Default.aspx?BillNumber=SB2854&GA=112>.

[99] "SB 2854", *Tennessee General Assembly* (Web page) <https://wapp.capitol.tn.gov/apps/BillInfo/Default.aspx?BillNumber=SB2854&GA=112>.

[100] 11 V.S.A. § 4176; W.S.A. § 17-31-103; T.C.A. § 48-250-102.

filing an application with the respective Secretary of State,[101] that LLCs must maintain a registered office for receiving notices and an agent for service,[102] and that LLCs must comply with annual reporting.[103] The supplementary DAO statutes differ in three material respects. First, the Vermont structure is limited to organisations that utilise blockchain technology for a material portion of its business activities, whereas the Wyoming and Tennessee structures do not have this limitation. Second, Wyoming and Tennessee statutes clarify that members do not owe fiduciary duties to other members. Third, recognising the fluidity of these structures, Wyoming and Tennessee statutes provide for a range of dissolution triggers. Table 1 summarises the Vermont, Wyoming, and Tennessee statutes.

Table 1 - Vermont, Wyoming and Tennessee LLC Supplements

	Vermont	**Wyoming and Tennessee**
Structure	"Blockchain-based Limited Liability Company" (BBLLC)	"Decentralized Autonomous Organization" (WY) and "Decentralised Organization" (TN).
Company Name	Not specified – refer to general LLC provisions.	Name must contain "Decentralized Autonomous Organization" (WY) or "Decentralised Organization" (TN) or approved abbreviations.
Eligibility	LLC can elect through its articles of organization if it utilizes blockchain technology for a material portion of its business activities.	LLC can elect through its articles of organization.
Formation requirements	Must have an operating agreement that meets the requirements (see below).	Articles of organization (which must contain publicly available smart contract address) filed with the Secretary of State. DAO must have and maintain a registered agent.
Notice to members	Not applicable.	Articles of organization must contain a prescribed notice to members that DAOs may differ materially from the rights of members in other LLCs.
Corporate Rules including Membership and Voting	A BBLCC's operating agreement must detail the nature of the decentralized ledger, voting and governance procedures including the use of smart contracts, protocols for security breaches, membership, and the rights and obligations of various participants.	DAOs articles of organization and its smart contracts govern members' relationships, rights, and duties (including voting, transferability, withdrawal, and distributions), activities and conduct of activities, procedures for amendments to articles and smart contracts, and dispute resolution mechanisms. May be supplemented by an operating

[101] 11 V.S.A. § 4026; W.S.A. § 17-28-106; T.C.A. § 48-249-201.
[102] 11 V.S.A., § 4007. W.S.A. § 17-29-113; T.C.A. § 48-208-101.
[103] 11 V.S.A. § 4033; W.S.A. § 17-29-209; T.C.A. § 48-288-203.

		agreement (which may be a smart contract).
Management	A BBLLC may provide for its governance, in whole or in part, through blockchain technology – and adopt any reasonable algorithmic means. A member or manager of a BBLLC may interact with the BBLLC in multiple roles.	Management of a decentralized autonomous organization shall be vested in its members or the members and any applicable smart contracts (which must be able to be updated, modified, or upgraded).
Fiduciary Duties	Not specified – refer to general LLC provisions.	No member has any fiduciary duty to the organization or any member, unless provided for in the articles of organization or operating agreement. Members are bound by good faith and fair dealing.
Dissolution	Not specified – refer to general LLC provisions.	DAOs can be dissolved by the expiration of a predetermined duration, by a majority vote by its members, if dissolution conditions are met in smart contracts or organizational documents, one year of inactivity, the absence of a lawful purpose or natural person's control, the withdrawal of all its members, the failure to provide or update public address.

4.2. Existing Structures

Most US states have not yet formulated legislation specifically tailored to DAOs. Nevertheless, DAOs have used existing legal structures to provide limited liability "wrappers". Two examples from Delaware and Colorado suffice. In Delaware, DAOs have been incorporated as LLCs. This is not surprising given that Delaware has long dominated US corporate law – historically for public company incorporations but now too for LLCs.[104] There are various reasons for this phenomenon. For example, Delaware is known for specialist chancellery courts, privacy-preserving features and favourable tax treatment.[105] There may also be path dependency, with lawyers and other advisors recommending Delaware structures because those are what they are most familiar with.[106] Two DAO examples include 'The LAO', which describes itself as being "organized as a legal entity (a Delaware limited liability company) primarily administered via an online application (a "DApp") and related smart contracts",[107] and 'Flamingo DAO' which is "organized as a Delaware limited liability company" and is "member-managed and rel[ies]

[104] See Romano R, "The States as a Laboratory: Legal Innovation and State Competition for Corporate Charters" (2006) 23(2) *Yale Journal on Regulation* 209, 212.
[105] For recent criticism of these features see Weitzman H, *What's the Matter with Delaware?* (2002, Princeton University Press).
[106] Carney WJ, Shepherd GB and Bailey JS, "Lawyers, Ignorance, and the Dominance of Delaware Corporate Law" (2012) 2(1) *Harvard Business Law Review* 123.
[107] "About", *The LAO* (Web Page) <https://thelao.io/about>.

on a DApp and related smart contracts to facilitate the purchase of NFTs."[108] Similarly, in Colorado, DAOs have utilised other organisational structures. A Limited Cooperative Association (LCA) is a hybrid entity used most prevalently in the agricultural industry, combining features of traditional cooperatives (e.g., one-member-one-vote) with features of LLCs (e.g., limited liability).[109] For example, SporkDAO – whose subsidiary ETHDenver LLC runs an annual Ethereum event in Denver, Colorado – has been incorporated as a LCA.[110]

4.3. DAO Recognition Statutes

A new wave of legislation is emerging. The state legislatures of Utah has passed[111] (2023) and New Hampshire has introduced[112] (2023) laws that will recognise DAOs as a separate legal entity and afford limited liability for participants, without requiring incorporation – both based on the model law drafted by the Coalition of Automated Legal Applications (COALA). The COALA model law (Model Law) "aims to create uniformity and legal certainty, while, unlike other regulatory frameworks for DAOs, still accommodating flexibility for further innovation by not imposing formal registration requirements."[113] Accordingly, these recognition statutes overcome key limitations of extending LLC statutes or adopting existing structures without amendment, being that DAOs are tied to those legacy structures which exist for other purposes.

The core thrust of the Model Law is to deem legal personality where a DAO meets certain requirements. Specifically, Article 4(1) of the Model Law provides that for the DAO to benefit from legal personality, it must fulfil the following:

a. The DAO must be deployed to a permissionless blockchain;

b. The DAO must provide a unique Public Address through which anyone can review the DAO's activities and monitor its operations;

c. The whole software code of the DAO must be in Open-Source Format in a Public Forum to allow anyone to review it;

d. The software code of the DAO must have gone through Quality Assurance;

e. There must be at least one GUI that will allow a layperson to read the value of the key variables of the DAO's Smart Contracts and monitor all transactions originating from or addressed to any of the DAO's Smart Contracts...;

f. The DAO must have By-Laws that are comprehensible to a lay person…publicly accessible via a GUI or a Public Forum…;

g. The governance system of the DAO must be technically decentralized, although not necessarily operationally decentralized…;

h. …there must be at least one Member of the DAO at any given time;

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[108] "Organization", *FlamingoDAO* (Web Page) <https://docs.flamingodao.xyz/Organization>.
[109] See Dean JB and Geu TE, "The Uniform Limited Cooperative Association Act: An Introduction" (2008) 13(1) *Drake Journal of Agricultural Law* 63.
[110] "Backstory", *SporkDAO* (Web Page) <https://www.sporkdao.org/backstory>.
[111] 'H.B. 357', *Utah State Legislature* (Web Page) <https://le.utah.gov/~2023/bills/static/HB0357.html>.
[112] 'HB645', *General Court of New Hampshire* (Web Page) <https://gencourt.state.nh.us/bill_status/legacy/bs2016/bill_status.aspx?lsr=561&sy=2023&sortoption=&txtsessionyear=2023&txtbillnumber=HB645>.
[113] Coalition of Automated Legal Applications, "Model Law for Decentralized Autonomous Organisations (DAOs)" (2022) https://coala.global/wp-content/uploads/2022/03/DAO-Model-Law.pdf, 2.

i. There must be a publicly specified mechanism that allows a layperson to contact the DAO. All Members and Administrators of the DAO must be able to access the contents of this communication mechanism;

j. The DAO must refer to or provide a Dispute Resolution Mechanism that the DAO, Members and Participants will be bound by;

k. The DAO must refer to or provide a Dispute Resolution Mechanism to resolve any disputes with third parties that, by their nature, are capable of being settled by alternative dispute resolution.

Flowing from legal personality are matters commonly found in corporate statutes (i.e., limited liability, subscription, members rights[114], internal organisation and disclosure[115], and restructuring and failure[116], application of general business law[117], and taxation[118]). There are also matters specifically related to DAOs (i.e., forks in the underlying blockchain[119]).

4.4. Discussion

In summary, there are three broad approaches in the United States jurisdictions. Each have costs and benefits.

First, the approach of extending LLC statutes provides a "legal wrapper" for DAOs (i.e., endowing the socio-technical reality of the DAO with legal personhood) so that the DAO can legally own property and contract with third parties. An LLC wrapper also limits the legal liability of participants to contribute to the DAO's debts if it fails. In this approach, the onus is on the DAO participants to proactively decide on a jurisdiction and seek incorporation – and ongoing corporate compliance is required. The onus of incorporation seems to cut against the decentralised intention of DAOs by requiring ongoing points of centralisation to avoid dissolution. While there may be economic benefits that accrue to the state in fostering blockchain-enabled businesses there are costs that will be worn by taxpayers in two respects – (i) incorporation processes require public administration; and (ii) if a dispute arises because of a conflict between the rules under the LLC statute and the DAO's smart contracts, for example, resolution will be required from state courts.

Second, the approach of DAOs – without legislative intervention – existing business structures. This also requires DAO participants to proactively seek out a jurisdiction. The additional barrier, over LLC extension statutes is cost. The general purpose of such corporate law is to lower the transaction costs of forming, participating in, and contracting with companies.[120] LLC extensions, therefore, provide for a form of standard contract for DAOs.[121] Indeed, in reflecting on the Wyoming laws, the co-chair of the Select Committee on Blockchain and Financial Technology, State Senator Chirs Rothfuss (D-Laramie), was explicit about this point. Senator Rothfuss explained that "the law doesn't do what a tech-savvy contract attorney couldn't have already done but it does make the process of a DAO becoming an LLC easier

[114] Model Law, Articles 5-10.
[115] Model Law, Articles 11-15.
[116] Model Law, Articles 17 and 18.
[117] Model Law, Article 19.
[118] Model Law, Article 20.
[119] Model Law, Article 16.
[120] See generally Easterbrook FH and Fischel DR, *The Economic Structure of Corporate Law* (Harvard University Press, 1996), 34; Posner RA, *The Economic Analysis of Law* (Wolters Kluwer, 9th ed, 2014).
[121] Posner, n 121, 15.3.

and cheaper."[122] Accordingly, incorporating under existing business structures is likely to be a more costly exercise to incorporating under LLC extension statutes due to the legal expertise required. That said, business structures such as cooperative associations may be more appropriate for not-for-profit DAOs.

Third, the approach of legislation to legally recognise DAOs as separate legal entities and provide limited liability to participants, provided that specific conditions are met. The benefit of this approach is its simplicity compared with the above. Recognition laws provides for "regulatory equivalence" of traditional companies in that corporate information is available to participants, third parties and corporate regulators on public, open source blockchain networks and public websites rather than in corporate registries.[123] It has the effect of bringing DAO activity inside the legal confines of the jurisdiction that otherwise may sit out of bounds. As such, this approach provides the benefit of legal certainty to both DAO participants and to third parties interacting with DAOs, compared to if DAOs were not incorporated. However, the drawback of this approach is that on-going monitoring and due diligence is required to ensure that the DAO continues to meet the requirements of recognition. An area for future empirical research as these statutes are passed and operational is comparing these monitoring costs with the transaction costs of the other approaches.

5. Strategic directions for DAOs in Australia

What are the strategic ways forward for Australia to legally recognise DAOs? Our focus is on facilitating legal recognition in the context of the unique characteristics of DAOs including their coordination through decentralised governance tokens, alternative margins of transparency, composable governance rights, and their emergence as global-first digital organisations outside of existing jurisdictions. We outline two main paths forward: a passive approach recognising the options of: (1) a passive approach that involves registering foreign corporations (e.g. leveraging recognition elsewhere); or (2) a more active strategy of developing a new legal entity in Australia for DAOs.

5.1. Passive Strategy

The first strategic direction for Australia is to continue as currently exists. As we have found in section three above, DAOs face considerable challenges fitting within the existing business structures under Australian law – and lawmakers may be tempted to wait for courts to decide on DAOs when disputes arise.

The immediate problem is that our review of existing Australian business structures concluded that these structures are unlikely to be suitable for DAOs. A less obvious problem with a passive strategy is that, while a "wait and see" approach may be a legitimate strategy in isolation, in a globalised digital economy it is possible that DAOs could register in Australia under a different basis. That is, a DAO seeking to carry on a business in Australia could incorporate as an LLC in Wyoming, for example. The foreign entity could then either (i) register with ASIC as a foreign corporation (requires an Australian agent and a registered office)[124]; or

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[122] DiCamillo N, "State Lawmaker Explains Wyoming's Newly Passed DAO LLC Law", *CoinDesk,* 23 April 2021, https://www.coindesk.com/policy/2021/04/22/state-lawmaker-explains-wyomings-newly-passed-dao-llc-law/.

[123] De Filippi P, Mannan M and Reijers W, "The Alegality of Blockchain Technology" (2002) 41(3) *Policy and Society* 358.

[124] *Corporations Act* 2001 (Cth), ss ch 5B divs 2-3.

(ii) incorporate a proprietary company as a wholly owned subsidiary (requires at least one director resident in Australia and a registered office)[125].

As such, in a passive strategy, Australia effectively outsources the difficulty of incorporation and limited liability to other jurisdictions with established DAO-friendly frameworks. This strategy, however, presents several challenges. The major challenge is the complex interplay between foreign legal structures and Australian regulatory requirements. That is, compliance with both foreign and Australian laws may lead to conflicting obligations and operational challenges.

5.2. Active Strategy

The second strategic direction is for Australia to undertake active corporate law reform to accommodate DAOs as separate legal entities. This is preferable to a passive strategy because it is a more tailored solution and retains control over business structures operating in Australia. It is also the strategy foreshadowed by the Senate Select Committee and the Australian government.[126]

The comparison of approaches in the United States provides a useful starting point. The immediate challenge is that Australia does not have an LLC entity. Australia would therefore need to introduce a new type of corporate structure to accommodate DAOs. As we explored in the introduction of this article, the history of corporate law demonstrates its ability to innovate and adapt to emerging business structures. This evolution is also evidenced by the specialised entities that already exist in Australia under the *Corporations Act* 2001 (Cth) (e.g., No Liability Company for mining purposes)[127] and the *Venture Capital Act 2002* (Cth) (e.g., Early Stage Venture Capital Limited Partnership and Venture Capital Limited Partnership providing tax exemptions for investors). A distinct DAO structure – along the lines of US LLC extension statutes – is therefore not without precedent. Alternatively, Australia could pass recognition statutes that do not require formal incorporation or registration based on the COALA Model Law.

Either through a new type of entity or recognition, legislation would need to establish a set of foundational legal principles that are attuned to the specificities of DAO operations. Our suggested key features of an Australian DAO entity are summarised in Table 2. These features would form the basis for a regulatory framework that is both adaptable and aligned with the evolving landscape of digital governance.

Table 2 – Key Features of an Australian DAO entity

Feature	**Description**
Member managed	Member management is essential to reflect the decentralised nature of DAOs. Ensures DAOs' operational model aligns with Australian legal recognition not available in current legal entities.

[125] *Corporations Act* 2001 (Cth), ss 142 and 201A.
[126] Senate Select Committee on Australia as a Technology and Financial Centre, n 13.
[126] Treasury, n 14.
[127] See *Corporations Act* 2001 (Cth), s 112.

No membership limit	DAOs are dynamic organisations. An appropriate legal framework accommodates the potential for global reach and diverse participation. This is crucial for ensuring DAOs are not constrained by entity size limitations in Australian proprietary limited companies.
Limited liability	Aligns DAOs with established legal norms, providing member protection against personal financial risks and encouraging wider participation. This feature is critical for balancing innovation with member security.
No fiduciary duties	No fiduciary duties by default reflects the transparency and accountability inherent in DAOs. Legal recognition without traditional fiduciary duties acknowledges the decentralised decision-making process of DAO members, ensuring the legal framework is adaptable to DAOs' unique operational model.
Local agent and office	A physical point of reference for legal and regulatory purposes bridges the gap between DAOs' virtual operations and the territorial nature of Australian law. This requirement ensures accountability and accessibility of DAOs within the legal system.
Legal transparency	Limited liability entities in Australia are required to used "Limited" (or an abbreviation) at the end of its name. This is important information for anyone dealing with the company, especially creditors. Similarly, third parties should be put on notice that they are interacting with a DAO.

5.3 Future Research

There are several issues regarding the integration of DAOs into Australian law that merit further research but are beyond the scope of our current analysis. We briefly note four of these issues here.

First, the scope beyond blockchain or cryptocurrency-related businesses. Should a Limited Liability DAO be confined exclusively to native blockchain or cryptocurrency-related businesses, or could it encompass a broader range of digital enterprises? This question is partly a recognition that DAOs themselves have different underlying organisational structures, and many of these structures will blend with existing ones as the technology and environment evolves.

Second, imposing minimum capital requirements. In a more traditional hierarchical context, some organisations face minimum capital requirements to ensure that an organisation has adequate capital to meet its liabilities. How might minimum capital requirements apply to different types of digital assets held by a DAO? Do minimum capital requirements achieve the same regulatory objective in the transparent on-chain context of a DAO treasury?

Third, technical requirements. This includes requirements about public open source blockchains and the potential for smart contract auditing requirements for DAOs. Smart contract exploits and other failures will likely continue to be a major risk in the effective governance of DAOs. Audit requirements could recognise the technical complexity and frontier nature of the technologies underpinning DAOs. They also create challenges around the supply of auditing expertise in Australia, as well as the boundaries of what is to be audited.

Fourth, developing replaceable rules equivalent for DAO governance structures. Replaceable rules are basic sets of basic principles or rules that can be adopted or replaced by companies. In the context of a DAO, replaceable rules might enable them to have some governance flexibility within certain bounds and could be potentially beneficial to reduce the compliance burdens of a new regime. This would include the disclosure requirements and access to information for members.

6. Conclusion

In 2021, the Senate Select Committee into Australia as a Technology and Financial Centre recognised that existing corporate law frameworks may be ill-suited to address the unique characteristics of DAOs. DAOs are now a $35 billion industry. Of course, the Committee's report also made other recommendations, such as the more immediate challenge of regulating digital currency exchanges. Arguably, the case for exchange regulation took on urgency following the collapse of FTX, the world's third-largest exchange and the ultimate trial and conviction of FTX's former CEO for fraud and money laundering.[128] Treasury's consultation on this regulation has continued to progress following the change of government in 2022.[129] The unfinished business of regulating DAOs will be more difficult than regulating exchanges, given blockchain-based governance, pseudonymous memberships, and global reach. As the Web3 ecosystem continues to develop, and DAOs continue to be legally recognised in various jurisdictions worldwide, it will become increasingly important for Australia to adapt its corporate law frameworks to embrace these frontier digital organisations. A pathway is needed.

This article's contribution in forging a pathway forward began by examining the integration of DAOs into Australian law as separate legal entities, highlighting the significant ways that DAOs differ from traditional organisational structures. Our analysis revealed that existing business entities in Australia, including companies, trusts, partnerships, and unincorporated associations, are ill-suited to the characteristics of global-first decentralised organisations. Our comparative examination of legal frameworks in the United States, particularly the amendments to LLC statutes in states such as Vermont, Wyoming, and Tennessee, offers insights into potential legal pathways for Australia – identifying the key matters for determination. In the United States the legislative efforts have been bipartisan and have passed quickly through the legislative process. However, the lack of an LLC equivalent in Australia underscores the need for innovative, tailored legislative solutions. We propose that Australian legislative reforms should focus on establishing a new legal entity specifically designed for DAOs, addressing their unique characteristics while providing legal certainty and liability protection. Such a proactive approach is crucial for integrating DAOs into Australian law, ensuring their effective operation and contribution to the evolving digital economy amidst the challenges of decentralised governance and Web3.

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[128] U.S. Attorney's Office, Southern District of New York, *Statement of U.S. Attorney Damian Williams on The Conviction of Samuel Bankman-Fried* (Press Release), 2 November 2023.
[129] Treasury, n 17.