Law Commission
Reforming the law

Decentralised autonomous organisations (DAOs)

A scoping paper

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The Law Commission

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Glossary

We recognise that many of the entries in the glossary describe complex or technical terms or concepts which are not easy to summarise in short definitions and that the meaning or interpretation of some of the terms remain disputed by market participants, academics, and other commentators.

As such, the glossary provides a high level, accessible explanation of some of the key terms used in this paper for readers who may be unfamiliar with DAOs and the technologies they use. The definitions are intended as guidance to help readers understand these terms in the context of our discussion and we therefore would not suggest that readers begin by reading the glossary out of context.

Term	Definition
Airdrop	A method of distributing crypto-tokens. Users might receive crypto-tokens directly to their wallet in an unsolicited manner or need to go through a process to claim the tokens. Airdrops may be used to increase decentralisation of participation in a DAO or incentivise participation in a DAO. The use of the term “airdrop” in this paper is distinct from “AirDrop” which is a proprietary file sharing system used by Apple Inc.’s iOS and macOS operating systems.
Algorithm	A set of mathematical instructions that can be used by a computer to perform an operation (such as calculate an answer to a mathematical problem).
Automaticity/automation	In the context of a smart contract, “automaticity” describes how a smart contract is capable of running programmatically and deterministically according to pre-specified functions triggered by certain events (such as user inputs or on-chain transactions).
Autonomous	In the context of a DAO, “autonomous” has no single authoritative meaning. Some suggest that “autonomous” refers to the fact that the DAO has (a degree) of automaticity; that is, it relies in part on software code which is capable of running automatically according to pre-specified functions. Others suggest that “autonomous” is a broader, descriptive term used to encapsulate the idea that DAOs are capable of operating in a censorship-resistant manner without undue

Term	Definition
	external interference or internal (or centralised) control. In this paper we allow for both meanings.
Bitcoin	The archetypal example of a public, permissionless crypto-token system and a communications channel which creates a system for electronic transactions. The transactions are recorded in a structured way using a blockchain. The system allows individuals to communicate with one another without the need for a centralised intermediary to authenticate the integrity of any communication or message.
bitcoin	The native notional quantity unit (that is, the crypto-token) that exists within, and as a result of the operation of, the Bitcoin network.
Blockchain	A method of recording data in a structured way. Data (which might be recorded on a distributed ledger or structured record) is usually grouped into timestamped “blocks” which are mathematically linked or “chained” to the preceding block, back to the original or “genesis” block.
Blockchain system	A DLT system that uses a blockchain to record data.
Censorship-resistance	In the context of DAOs and distributed ledger technologies, “censorship-resistance" refers to the inability of actors (either external or internal) to interfere with the operation of a system in a manner that disrupts the typical or intended functions of that system.
Code	Instructions represented in a form usable by computers to perform operations. Code might take various forms of abstraction (for example, source code written in a human-readable programming language or numeric codes) depending on how the code is created by software developers, its usage (for example, in DLT systems), and/or whether it is intended for direct execution by a computer.
Computer program	A collection of instructions written in code that are executed by a computer.

Term	Definition
Consensus mechanism	The process by which participants on a DLT system reach consensus that a new data entry should be recorded on the ledger. The consensus mechanism is set by the software underlying the DLT system.
Constitution	In the context of DAOs, a set of processes or guidelines to determine the conduct of on-chain and/or off-chain operational and governance matters. Parallels may be drawn with constitutional documents in more traditional organisational forms. A fundamental distinction is that the former are intended to support the operation of the software as the primary governance mechanism, whereas the latter are generally the exclusive means of governance.
Cryptoasset Crypto-token Token	In this paper, we prefer the term “crypto-token” or “token” but we use “cryptoasset" in certain circumstances, such as where this is the term used in financial regulation, caselaw or commentary. We do not distinguish between “token” and “cryptoasset” in the same way as we did in the Digital Assets Report (where we used “cryptoasset” to refer to a crypto-token which has been “linked” or “stapled” to a legal right or interest in another thing). A crypto-token exists as a notional quantity unit manifested by the combination of the active operation of software by a network of participants and network-instantiated data.
Decentralised Autonomous Organisation (“DAO”)	The term decentralised autonomous organisation (“DAO”) describes, in very broad terms, a new type of online organisation using rules set out in computer code. A DAO will generally bring together a community of (human) participants with a shared goal – whether profit-making, social or charitable. The term DAO does not necessarily connote any particular type of organisational structure and therefore cannot on its own imply any particular legal treatment.
Decentralised	Decentralisation in the context of DAOs relates to the dispersal of control and decision-making power, but there is no one single way in which an organisation can be decentralised. It is also not a term that is defined in law or that has a single agreed meaning in legal as well as non-legal commentary. There is, for example, no test that can be applied to confirm if an organisation is decentralised.

Term	Definition
Decentralised finance ("DeFi")	A general term for decentralised and/or disintermediated applications providing financial services on a (generally decentralised and often blockchain-based) settlement layer, including payments, lending, trading, investments, insurance and asset management. Disintermediated applications allow individuals to transact directly, without intermediaries.
Deployment	For a smart contract, sending a (series of) transaction(s) to the nodes within a DLT system to store the smart contract in the state of the system. In a blockchain system this typically includes an offer to pay a transaction fee to nodes that mine or validate groups of transactions (for example, blocks in a blockchain system). The blockchain system stores a copy of those smart contracts on the distributed ledger. For a crypto-token or cryptoasset, deployment is the means of creating an operation asset within a network. See Digital Assets: Final Report (2023) Law Com No 412 at para 4.16, available at: https://www.lawcom.gov.uk/project/digital-assets.
Developer Software developer	An engineer involved in the development of software: broadly, this might include contributing code, designing or architecting software, business, or other support.
Distributed ledger	A digital store of structured data regarding transactions and other operations performed within a DLT system. A distributed ledger is replicated amongst a network of computers (known as "nodes") and may be visible or accessible to other participants. Nodes approve/validate and eventually synchronise valid additions to the ledger through an agreed consensus mechanism. A blockchain is a data structure that represents one form of a distributed ledger.
Digital legal entity	Arrangements where an incorporated legal entity adopts digitalisation through the use of smart contracts or distributed ledger technology ("DLT") in its operations or governance.

Term	Definition
Distributed ledger system (“DLT system”)	Technology systems that enable the operation and use of a distributed ledger.
ether	The native notional quantity unit (that is, the crypto-token) that exists within, and as a result of the operation of, the Ethereum network.
Ethereum	A public, permissionless blockchain-based software platform which serves as a foundation upon which decentralised applications can be built using smart contracts.
Fiat currency	Currency that is accepted to have a certain value in terms of its purchasing power which is unrelated to the value of the material from which the physical money is made or the value of any cover which the bank (often a central government or state bank) is required to hold.
Fungible	A subjective quality of things that parties are willing to accept as mutually interchangeable with other things of a similar kind, quality and grade. For example, pound coins are generally treated as a class of fungible things because one pound coin is generally accepted by counterparties as equivalent to and interchangeable with another pound coin. Other classes of things that are generally treated as fungible include gold, crude oil, shares in a company and goods stored in bulk.
Governance proposal	A suggested change or series of changes to the governance and operation of the DAO, often voted on by the holders of governance tokens. Types of proposal will generally include modifications to on-chain code such as interest rates and liquidity ratios in a DeFi system/product; and off-chain operational and governance matters. A DAO will often establish processes or guidelines to determine the process for drafting, submitting and (where applicable) voting and implementing a governance proposal. Commonly a DAO will have guidelines written in natural language that cover the form of governance proposals, any voting processes that may be encoded in the software, plans for future development, and principles/rules for managing these off-chain processes and the guidelines themselves. Formulation and/or adoption of such guidelines may itself be achieved using the DAO smart contracts.

Term	Definition
Hybrid arrangement	Arrangements combining smart contract-based coordination with deliberate use of one or more legal forms or separate legal entities.
Know your customer/client (KYC)	Requirements for a business to verify the identity of a customer or client including for anti-money laundering purposes.
Miner Mining	The process by which a participant on a DLT system (a "miner") solves a computationally intensive mathematical problem so that data can be added to the distributed ledger. Mining is typically a feature of permissionless DLT systems, which require participants to solve mathematical problems as part of the consensus mechanism (this is known as a proof-of-work consensus mechanism). Permissioned DLT systems may use different consensus mechanisms, and so may not necessarily involve mining.
Multi-signature	Multi-signature arrangements are also referred to as "multi-sig" and "M of N" arrangements, with M being the required number of signatures from private keys associated with specified public addresses to authenticate an operation and N being the total number of signatures or keys involved in the arrangement. Multi-signature arrangements are used for various purposes including to limit single points of failure that may otherwise lead to loss of access to funds or to otherwise execute the operations of a smart contract by segregating responsibility for security and access between multiple parties. As such, multi-signature arrangements are often used in basic DAO governance processes (for example, basic treasury management).
Non-Fungible Token ("NFT")	A token, generally a crypto-token, that has a unique identification number (or mechanism) such that each token is not replaceable or interchangeable with another identical token. For further description, see Digital Assets: Final Report (2023) Law Com No 412.

Term	Definition
Off-chain On-chain	Off-chain refers to actions or transactions that are external to (or are undertaken on a distinct secondary protocol such as a Layer 2 that operates on top of or interacts with) the distributed ledger, structured record or blockchain. On-chain refers to actions or transactions where the data is recorded by the distributed ledger, or blockchain.
Open-source software	Software that is released under a licence in which the copyright holder grants users the rights to use, study, change, and distribute the software and its source code to anyone and for any purpose.
Permissioned	Requiring authorisation to perform a particular activity.
Permissionless	Not requiring authorisation to perform a particular activity.
Private key	See “Public-private key cryptography”.
Product/System	See discussion of Product/System in definition at “Protocol”.
Protocol	Software developers develop code that includes smart contracts that are deployed to a DLT system. Those smart contracts may interoperate such that, in combination, they manifest a set of rules which specify how certain functionality may be performed on DLT systems. This set of rules is often referred to as a “software protocol” or “protocol”. In the context of DAOs, protocols can be used to specify rules for DAO governance. They can also be used to specify the rules for the operation of systems or products governed by a DAO (for example, a DeFi product). The protocol is not an active product in itself. Protocols must be implemented by a network of participants who choose to follow the rules — a “network”. The active operation of a protocol by a network of participants will allow for the manifesting of the particular product specified in the protocol.

Term	Definition
Pseudonymity	Anonymity is the quality or state of being unknown or unidentified. In the context of blockchain systems, anonymity generally refers to the anonymity of a particular participant, because while activity on the blockchain is recorded, such activity is recorded by reference to participant controlled public addresses (which are often represented as strings of characters rather than direct association with other identifying participant data). Pseudonymity is a related concept. It is a near-anonymous state in which a participant has a consistent identifier that is not their “real” identifier: a pseudonym. In this sense, were public addresses considered to be an identifier, blockchain systems that rely on public addresses could be considered to facilitate pseudonymous, as opposed to anonymous participation.
Public key	See “Public-private key cryptography”.
Public key cryptography	Also known as asymmetric cryptography. An encryption scheme that uses two mathematically related, but not identical, keys (normally structured as long strings of data) – a public key and a private key. The generation of such key pairs depends on cryptographic algorithms which are based on mathematical problems. Each key performs a unique function. The public key is used to encrypt and the private key is used to decrypt. So, in a public key cryptography system, any person can encrypt a message using the intended receiver's public key, but that encrypted message can only be decrypted with the receiver’s private key.
Pure DAO	Arrangements implemented through smart contracts with very limited off-chain activity, no incorporated legal structure and, often, a rejection (deliberately or otherwise) of dependence on law and legal institutions for their existence (although they may well still attract legal and regulatory consequences.
Smart contract	Computer code that, upon the occurrence of a specified condition or conditions, executes on a DLT system automatically and deterministically according to pre-specified functions.
Smart legal contract	A legally binding contract in which some or all of the contractual terms are defined in and/or performed automatically or deterministically by a computer program.

Term	Definition
Stablecoin	Crypto-tokens with a value that is intended to be pegged, or tied, to that of another asset, currency, commodity or financial instrument. The peg might be based on assets held by the issuer, or on a mathematical algorithm and is generally intended to remain on a stable (often 1:1) basis over time.
State	The chronological order of events as recorded within the distributed, transaction-based ledger or structured record of DLT system. “Change of state” refers to changes of the data stored in the system when a transaction has occurred. The transaction operation, once confirmed, results in a change of state of the distributed ledger or structured record according to the protocol rules.
Sub-DAO	A DAO operating within a broader DAO structure. For example, a sub-DAO might, in some cases, function as a working group pursuing a particular project of the wider DAO or, in other cases, as roughly analogous to a subsidiary or related company in a group of companies. Sub-DAOs, like DAOs, do not necessarily connote any particular type of organisational structure and therefore the label cannot on its own imply any particular legal treatment.
Token	See “cryptoasset”.
Treasury	A DAO’s treasury, which is a pool of crypto-tokens used to fund the operations of the DAO. DAO treasuries may contain a number of different types of crypto-tokens, for example, the DAO’s native tokens, any NFTs that the DAO may have invested in, as well as commonly used cryptoassets such as Bitcoin, which are received as payments and investments, and are likewise used for these purposes by the DAO. DAO treasury assets are held on-chain in a wallet (which may be a multi-signature wallet) which is controlled by smart contracts.
Validator Validation	Validation is the process by which a participant on a DLT system (a “validator”) constructs and proposes a new block (in blockchain implementations) so that data can be added to the distributed ledger. Validation is a feature of DLT systems, which use a proof-of-stake consensus mechanism which requires validators to participate in the consensus mechanism if they have “staked” tokens. A validator is chosen (often at

Term	Definition
	random) to construct and propose a new block. Most validators construct and propose blocks such that the block reward (if any) for creating the new block, and any transaction fees included in that block, are paid to them. Conversely, if a validator acts in a “bad” or “malicious” way (for example, by inappropriately interfering with the consensus mechanism) the validator risks forfeiting their stake (either through penalties or by a process called slashing). The consensus mechanism is focussed on penalising bad behaviour, meaning that network participants do not interfere with the consensus process for fear of receiving a penalty because to do so would be economically irrational. So, while proof-of-work consensus mechanisms (see “Miner” and “Mining”) focuses on maintaining a high computational resource cost of overriding the consensus mechanism, proof-of-stake relies on maintaining high economic costs of override through the destruction of staked tokens as a consequence of bad behaviour.
Web3	Used to very generally describe the next iteration of the internet based upon decentralised technologies following from Web 1.0 (static content on web pages) and Web 2.0 (interactive web pages).

Table of abbreviations

AML	Anti-money laundering
CCBSA	Co-operative and Community Benefit Societies Act 2014
CFTC	The Commodity Futures Trading Commission, regulator of the US "designated contract markets" including over-the-counter and exchange traded derivatives
CIS	Collective investment scheme
COALA	Coalition of Automated Legal Applications, a non-governmental working group which has published a draft model law for DAOs[1]
DBT	Department for Business and Trade
DeFi	Decentralised finance
DLT	Distributed ledger technology
DUNA	Decentralized unincorporated non-profit association, a legal form available in Wyoming
FCA	Financial Conduct Authority, the UK's independent regulator of financial services firms and financial markets
FMLC	Financial Markets Law Committee
HMRC	HM Revenue and Customs
HMT	HM Treasury
LLC	Limited Liability Company, a legal form available in several US states
LLP	Limited Liability Partnerships (under the Limited Liability

[1] See https://coala.global/wp-content/uploads/2022/03/DAO-Model-Law.pdf.

	Partnerships Act 2000)
MLRs	Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 as amended
RFCCBS	Financial Conduct Authority, “Registration Function under the Co-operative and Community Benefit Societies Act 2014 Guide” in the FCA Handbook
SEC	US Securities and Exchange Commission, an agency of the US government responsible for regulating US securities markets
UNA	Unincorporated Non-profit Association, a legal form available in several US states

Law Commission documents frequently referred to

Document	Link
DAOs call for evidence (November 2022)	https://lawcom.gov.uk/project/decentralised-autonomous-organisations-daos/
Digital assets: final report (2023) Law Com No 412	https://lawcom.gov.uk/project/digital-assets/
Digital assets and ETDs in private international law: which court, which law? Call for evidence (February 2024)	https://lawcom.gov.uk/project/digital-assets-and-etds-in-private-international-law-which-court-which-law/
Electronic execution of documents (2019) Law Com No 386	https://lawcom.gov.uk/project/electronic-execution-of-documents/
Smart legal contracts: advice to Government (2021) Law Com No 401	https://lawcom.gov.uk/project/smart-contracts/

All websites last visited on 9 July 2024.

Chapter 1: Introduction

1.1 The term decentralised autonomous organisation ("DAO") describes, in very broad terms, a new type of online organisation using rules set out in computer code. A DAO will generally bring together a community of (human) participants with a shared goal – whether profit-making, social or charitable.

1.2 At least originally, DAOs were conceived of as an alternative to traditional business structures.[1] They were said to offer a more equitable and transparent model, relying more on technology than on humans and institutional intermediaries, thereby removing or limiting human discretion and centralised control. They were intended to offer participants the opportunity to determine the direction of the organisation's activities by voting on governance and operational matters using this model.

1.3 Today, structures that demonstrate some or all of the features described here come in a wide range of forms. Their legal and/or organisational structure, size, rules and goals may vary very significantly between different DAOs. In particular, the term DAO does not necessarily refer to any particular type of organisation (legally speaking) and therefore cannot on its own imply any particular legal treatment or consequences. DAOs could not be said to be, for example, the online equivalent of a limited company, to which a discrete set of legal rules applies. Instead, the legal, regulatory and tax treatment of a particular DAO will depend on how its own arrangements are structured. There is debate and disagreement in the market about the terminology and what can properly be regarded as constituting a "DAO".

1.4 And yet, many thousands of so-called DAOs exist today. Huge amounts of value flow through,[2] are created, extinguished, used and sometimes lost by such structures. This raises questions about the legal status and liabilities of the participants in what might be called a DAO. The Law Commission was asked to investigate these questions, and to consider whether any further work could or should be undertaken to put these arrangements on their own legal footing, or to give more certainty to market participants.

1.5 In this paper, we give an introduction to the broad concept of a "DAO" and explain some of the practical and legal questions they raise. We identify a spectrum along which different types of "DAOs" will fall depending on how formalised their structures are. That spectrum includes (in our own terminology):

(1) "pure" DAOs: arrangements implemented online through computer code with very limited real world activity, no formal legal structuring and rejecting

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1 W A Kaal, "Blockchain-Based Corporate Governance" (December 2019), https://ssrn.com/abstract=3441904.

2 According to the World Economic Forum, the total value locked in "DAO treasuries" increased in 2021 by a factor of 40, from $380 million to $16 billion: World Economic Forum, Decentralized Autonomous Organization Toolkit: Insight Paper (January 2023), p 3. In July 2024, the analytics site DeepDAO estimated that DAO treasuries total $23.5 billion, having reached a peak of $42.5 billion in March 2024: https://deepdao.io/organizations.

(deliberately or otherwise) dependence on law and legal institutions for their existence (although they may well still attract legal and regulatory consequences);

(2) hybrid arrangements: arrangements combining code-based coordination with deliberate use of one or more forms of legal entity; and

(3) digital legal entities: arrangements where an incorporated legal entity adopts digitalisation through the use of technology at the heart of its operations or governance.

1.6 Different issues and considerations arise depending on where on that spectrum a particular arrangement sits. We identify opportunities and challenges that government or other policy-makers may want, or need, to investigate further, to ensure an appropriate reaction to DAOs. We do not make any formal recommendations for law reform.

BACKGROUND TO THIS PROJECT

1.7 Since 2020, we have been working on a range of projects aimed at improving certainty around the legal status of certain emerging technologies, including smart (legal) contracts and digital assets such as crypto-tokens. The case for a project on DAOs emerged from our work on digital assets in particular. Many decentralised finance ("DeFi") and crypto-token market participants describe their organisational structures as DAOs, and/or have exposure to, or interact with, DAOs or other digital or decentralised organisations.

1.8 In September 2022, we were asked by the Department for Business and Trade (formerly the Department for Business, Energy and Industrial Strategy) to undertake a scoping project on DAOs. The Department for Business and Trade is the sponsoring department, given its responsibility for company law and the corporate forms within that legal framework. HM Treasury also has an interest as the broader approach to crypto-tokens from both a private law and regulatory perspective is within its remit.

1.9 The DAOs project complements our existing work on emerging technologies and making the law of England and Wales a clear and reliable choice in an increasingly online and decentralised world.

1.10 In summary, we were asked to:

(1) explain what a DAO is, and how a DAO might be categorised in law; and

(2) identify the main options for legal reforms or innovations that might be required to existing company law and other legislation in England and Wales to clarify the status of DAOs and facilitate their uptake.

1.11 DAOs have become closely associated with discussions about DeFi. However, this is only one kind of activity that a DAO can engage in. In this project we consider DAOs more generally and will not be looking in detail at regulation of DeFi or cryptoassets.

1.12 We have not been asked at this stage to develop recommendations for reform.

1.13 Our terms of reference are set out in full in Appendix 1.

Call for evidence

1.14 In November 2022 we published a call for evidence which asked for information on how DAOs are structured and operate, how the law might best accommodate different types of DAO structures and how DAOs might integrate into existing legal frameworks. We also asked where the law of England and Wales might be inhibiting the establishment and operation of DAOs, compared to other jurisdictions.

1.15 We received 27 responses, principally from lawyers, technologists and academics. Those responses, together with subsequent discussions with stakeholders, have informed the content of this paper. A full list of respondents and people we have met to discuss this project is set out at Appendix 2.

Territorial extent

1.16 As the Law Commission for England and Wales, we have jurisdiction to consider only the law of England and Wales, and not of Scotland and Northern Ireland. However, some legislation of potential relevance to this project extends to the whole of the UK (for example, much of the Companies Act 2006[3]), and some relevant policy areas are within the legislative competence of Westminster.[4] On the other hand, there may be some differences of law and practice in devolved jurisdictions.

1.17 As set out above, the purpose of our current work is to produce a scoping study rather than formal recommendations for reform, meaning that questions of legislative territorial extent and competence do not arise at this stage. Notwithstanding this position, we are keen to ensure that our work is alive to any relevant issues pertaining to Scotland or Northern Ireland, but have not had any drawn to our attention in the course of this project. In the event of any future work culminating in law reform, due consideration would need to be given to its territorial application, in consultation with the appropriate parties.

International aspects of DAOs

1.18 The decentralised and global nature of some DAOs can make it difficult to associate a DAO with any particular jurisdiction. This poses challenges for private, public and criminal law. While we consider DAOs from the perspective of the law of England and Wales, it may be that the cross-border nature of a particular DAO means that the laws of this jurisdiction do not apply. We touch on some issues of private international law and extra-territoriality in this paper. We are also looking separately at questions of

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3 Companies Act 2006, s 1299.

4 Eg, in Scotland, “money laundering” and “business associations” are reserved to the UK Government: Scotland Act 1998, sch 5, paras A5 and C1 respectively. In Northern Ireland, the subject-matter of the Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692 (in relation to any type of business) is a reserved matter, which means that legislative authority generally rests with the UK Government in Westminster but the Northern Ireland Assembly can legislate with the consent of the Secretary of State: Northern Ireland Act 1998, sch 3, para 25.

private international law as it applies to digital assets, some of which may be relevant to DAOs.[5]

THE AIMS OF THIS PAPER

1.19 In this paper, we aim to give a clear introduction to what DAOs are, and to situate them within the legal framework of England and Wales (to the extent possible), identifying how the current law might respond to, or facilitate, DAOs. We also identify areas where further work might be useful to accommodate these new types of arrangement, if this were thought desirable, and to ensure that their activities are within the reach of the regulatory regime where appropriate.

1.20 The Law Commission is a law reform body; our role is to review areas of the law and make recommendations for change, with the aim of ensuring that the law is as simple, accessible, fair, modern and cost-effective as possible. Our work is addressed primarily to the Government and focuses on the aspects of DAOs that are significant for policy and legal purposes. As such, we do not aim to provide overly detailed or technically precise descriptions of the technical features of DAOs, but rather explain the technological features to the extent necessary in that context. It is designed to be an introduction to the topic, rather than a comprehensive review of everything going on in the market, with all the intricacies of practice.

1.21 We emphasise that how a DAO, or its participants, will be regarded in law or, for example, for tax purposes, will depend entirely on the exact arrangements in any particular DAO. We do not seek to advise participants in DAOs how they should structure their affairs. These questions are properly for legal and other professional advisors based on the requirements of the particular arrangement. There are also other public resources available that seek to give guidance to DAOs directly. For example, in January 2023 the World Economic Forum published a paper about DAOs aimed at helping DAOs to "develop effective operational, governance and legal strategies".[6]

1.22 We hope that our work will also be of interest to market participants and advisors. We set out our understanding of the features that might lead to something being called a DAO, and the ways in which such organisations arrange themselves. We identify some of the implications of different structures, and identify situations in which stakeholders involved with such arrangements may be exposed to risk, to raise awareness and encourage participants to consider their exposure.

1.23 Although a few other jurisdictions have introduced legislation purporting to create bespoke "DAO" organisations, we do not, at least at this relatively early stage in the development of DAOs, recommend the development of a bespoke legal framework for DAOs in England and Wales. This is largely because there is no consensus on what a DAO is, how it should be structured, or what a DAO-specific entity could or should

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5 See the project page for updates on this work: Private international law Digital assets and ETDs in private international law: which court, which law? https://lawcom.gov.uk/project/digital-assets-and-etds-in-private-international-law-which-court-which-law/.

6 World Economic Forum, "Decentralised Autonomous Organization Toolkit Insight Report" (January 2023), p 3. See also Organisation for Economic Co-operation and Development, "Blockchain Technology and Corporate Governance" (June 2018).

look like. That said, the law of England and Wales already provides a range of options for structuring, which could accommodate increased use of code for governance and other activities (potentially with some targeted law reform, which we discuss in Chapter 5). This jurisdiction also offers the flexibility of common law, reliable courts, and excellent quality legal and other professional advisors. These come with what some might consider to be constraints: tax liabilities; a tendency towards transparency (for example in terms of beneficial ownership of entities); regulation to protect employees, consumers, and investors, and the integrity of the financial system through measures such as anti-money laundering and KYC ("Know Your Customer") requirements. These are fundamental to our legal, political, economic and social landscape.

1.24 Our work focuses on principles of private law and, in particular, the law relating to organisations and business associations. We do not cover in any detail issues relating to, for example, financial regulation (including anti-money laundering) or tax. Nevertheless, we recognise that these are highly relevant to the structuring and operation of organisational arrangements, and summarise the key points as they apply to DAOs, and areas for further work, in Chapter 6.

INITIATIVES ON CRYPTOASSETS

1.25 We are aware of a number of initiatives and projects which have considered cryptoassets under the law of England and Wales. These do not consider DAOs specifically, but are relevant to certain aspects of DAOs including taxation and regulation of DeFi and other crypto activities. They include:

(1) HM Treasury proposals for future cryptoasset regulation, published in October 2023;[7]

(2) HM Revenue and Customs consultation on the taxation of Decentralised Finance involving the lending and staking of cryptoassets, which closed in June 2023;[8]

(3) the HM Revenue and Customs Cryptoassets Manual, which covers the taxation of decentralised finance and was last updated on 21 August 2023;[9]

(4) Financial Conduct Authority guidance on cryptoassets in relation to the regulatory perimeter (that is, the boundary that separates regulated and unregulated financial services activities), published in July 2019;[10] and

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7 HM Treasury, *Future financial services regulatory regime for cryptoassets: response to the consultation and call for evidence* (October 2023), https://www.gov.uk/government/consultations/future-financial-services-regulatory-regime-for-cryptoassets.

8 HMRC, *The taxation of decentralised finance (DeFi) involving the lending and staking of cryptoassets* (April 2023), https://www.gov.uk/government/consultations/the-taxation-of-decentralised-finance-involving-the-lending-and-staking-of-cryptoassets.

9 https://www.gov.uk/hmrc-internal-manuals/cryptoassets-manual.

10 FCA, *Guidance on Cryptoassets: Feedback and Final Guidance to CP 19/3, Policy Statement PS19/22* (July 2019), https://www.fca.org.uk/publication/policy/ps19-22.pdf.

(5) Financial Conduct Authority guidance on cryptoasset financial promotions, published in November 2023.[11]

STRUCTURE OF THIS PAPER

1.26 This paper is separated into six further chapters as follows.

(1) In Chapter 2 we provide a "beginners' guide" to DAOs which explains their philosophical development and the underlying technology, and also introduces some of the issues we discuss in more detail later in the paper.

(2) In Chapter 3 we consider "pure DAOs" in terms of their possible legal characterisation including how liability might be attributed to a pure DAO or its participants.

(3) In Chapter 4 we explain hybrid arrangements and look at the different legal entities that might be used as part of a hybrid DAO's structure.

(4) In Chapter 5 we consider the overall attractiveness of England and Wales as a jurisdiction in which to set up DAOs and digital legal entities, identifying areas of further work that could increase the range and flexibility of legal entities available in this jurisdiction.

(5) In Chapter 6 we look briefly at different areas of regulation that may affect DAOs including money laundering and financial services regulation, and at taxation, and identify areas for work on related matters.

(6) Chapter 7 contains a list of next steps relating to the further work we identify at various points in the paper.

1.27 The document also contains six appendices.

(1) Appendix 1 sets out our terms of reference.

(2) Appendix 2 contains a list of stakeholders on this project.

(3) Appendix 3 discusses issues of private international law as they may arise in the context of DAOs.

(4) In Appendix 4 we look at how DAOs might satisfy the features for general partnerships or unincorporated associations.

(5) In Appendix 5 we consider how the rules of contract formation might be satisfied in the context of DAOs.

(6) Appendix 6 contains a reading list for those interested in reading more about the topic of DAOs.

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[11] Financial Conduct Authority, *FG23/3 Finalised non-handbook guidance on Cryptoasset Financial Promotions* (November 2023), https://www.fca.org.uk/publication/finalised-guidance/fg23-3.pdf.

ACKNOWLEDGMENTS AND THANKS

1.28 During the course of this project, we have met or corresponded with the individuals and organisations listed in Appendix 2. We are very grateful to those who gave us their time either in meetings on in responding to our call for evidence or both, allowing us to draw on their experience and expertise.

1.29 At the early stages of this project we also received valuable feedback and direction from an Advisory Panel of experts whose names are listed in Appendix 2. The contents of this paper have not been reviewed by the Advisory Panel are not intended to represent, and may not be reflective of, the views of its members.

THE TEAM WORKING ON THIS PROJECT

1.30 The following members of the Commercial and Common Law team have contributed to this project: Laura Burgoyne (team manager); Teresa Trepak (team lawyer); Peter Hunn (team lawyer); Matthew Kimber (team lawyer); Thomas Wingfield (research assistant); Nathan Twibill (research assistant); and Amelia-Rose Edwards (research assistant).

Chapter 2: A beginners' guide to DAOs

2.1 In this chapter we provide an introduction to DAOs and to the issues to which they give rise. As well as an introduction or "beginner's guide" to DAOs, this chapter also introduces some of the issues we discuss in more detail later in the paper.

2.2 Decentralised autonomous organisations or "DAOs" are often described as a new kind of internet-based collaborative organisation that coordinate people and resources using rules expressed in computer code. They are part of what might be called the "crypto ecosystem".

2.3 So-called DAOs control billions of dollars of assets.[12] They have already been the subject of litigation,[13] and potentially expose participants to significant liabilities. And yet, beyond the very high-level description above, they are difficult to describe, practically or legally, largely because the term "DAO" does not connote any one type of arrangement. Commentators disagree over what characteristics an arrangement must have in order properly to be called a DAO, and many arrangements using the term look very different to the DAO ideology as originally conceived.

2.4 We begin this chapter by explaining where the concept of a DAO came from in the first place. We then summarise the features that one might expect to find, to some extent, in organisations that use the term "DAO", such as the types of participants, key governance mechanisms and economic arrangements. We include a high-level introduction to the relevant technology – particularly distributed ledger technology and smart contracts – and explain how that technology is used in DAOs.

2.5 We then discuss some of the challenges that DAOs may face: legal characterisation; liability of participants; ability to enter contracts and hold property; assessment for tax purposes and applicability of financial regulations; and jurisdictional/territorial issues. We note that the challenges relating to a particular DAO, and the extent of those challenges, often depend on whether or not the DAO has chosen to use a recognised legal entity (such as a limited company) as part of its structure. We introduce three categories of DAO-type arrangement and explain if and how they use legal entities: pure DAOs, hybrid arrangements and digital legal entities. We consider briefly the legal entities that DAOs might adopt, while noting that such adoption might in many cases mean compromising on certain features that some people may consider central to the DAO ideology.

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[12] DeepDAO is a self-named DAO that claims to "list, analyze and present financial and governance DAO data to the widest, most accurate and detailed extent as possible". In July 2024, DeepDAO estimated that DAO treasuries total $23.5 billion, having peaked at $42.5 billion in March 2024: https://deepdao.io/organizations.

[13] DAO litigation in the United States includes *Commodity Futures Trading Commission v Ooki DAO*, 3:22-CV-05416-WHO, (N.D. CAL. DEC. 20, 2022) and *Joseph Van Loon v Department of Treasury* 1:23-CV-312-RP.

A HIGH-LEVEL INTRODUCTION TO THE CONCEPT OF A "DAO"

A mechanism for collaboration

2.6 DAOs are, fundamentally, a way of facilitating the coming together of individuals to realise certain shared goals (commercial or otherwise) and, in many cases, to be rewarded for their efforts. Of course, this is not a new concept; people have worked together for centuries, using structures of varying formality to manage their relationships.

2.7 Conducting business or other activities can give rise to significant liabilities and financial risk. In some circumstances, the individual participants are personally liable for those risks and face personal bankruptcy if something goes wrong. For this reason, the vast majority of enterprises have sought some form of limited liability through incorporation since it became a viable option in the 19th century. The limited company rose to prominence more than a century ago.[14]

2.8 Limited liability has been described as a "privilege",[15] to be exercised subject to creditor safeguards. For participants, the privilege is that any downside loss is limited to the amount of capital they have invested in the organisation. In return, creditors are provided with transparency. Therefore, in most if not all jurisdictions, to obtain limited liability status, a company or other incorporated organisation such as a limited liability partnership (LLP) must be registered with the state. It must disclose the names of its officers and, in the case of companies, "people with significant control",[16] and must usually file annual accounts.

2.9 There are also a range of structuring options for "not for profit" organisations, including companies limited by guarantee; co-operatives; charitable incorporated organisations; and community interest companies, which also have registration requirements.

2.10 In general, all have a "legal personality" separate from their participants and provide their participants with limited liability, in exchange for registration and disclosure/reporting requirements. Many are subject to sophisticated legal and regulatory regimes. In most cases, a small group of people (often a board of directors or similar) is responsible for making decisions about how the entity is run and for ensuring that it complies with its legal and other requirements.

2.11 DAOs, to some extent, seek a different way of facilitating collaboration, and grew out of a desire to operate outside of this highly regulated, state-controlled environment.

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14 For a detailed history, see J D Turner, "The development of English company law before 1900" (2017) *Queen's University Centre for Economic History Working Paper Series*. See also see S Wheeler, "The Business Enterprise: A Socio-Legal Introduction", in *A Reader on the Law of the Business Enterprise* (1994).

15 See, for example, Harman J in *Re Crestjoy Products Ltd* [1990] BCLC 677 at 681.

16 People with significant control are those who control more than 25% of the shares: see Companies House, People with significant control (PSCs) (last updated February 2022), https://www.gov.uk/guidance/people-with-significant-control-pscs.

Background to the development of DAOs: an aspirational idea

2.12 The DAO idea started from the proposition that particular technological developments could be used to make organisations more transparent, democratic and equitable. The idea was that organisations could be community built, owned and operated, without centralised leadership.

2.13 Web3 is a vision of a new iteration of the internet, intended to be controlled (and monetised) by its users rather than by a few centralised corporations.[17] The proposal for an organisation based on these ideals first came to prominence in 2013 as a decentralised autonomous corporation ("DAC"). A DAC was conceived as a new form of organisation; one that could do many of the things that a traditional company might do – raise capital, pay dividends, provide services and so on – but entirely by means of automated software programs, with little or no human involvement. These programs were to run across a distributed network of computers, often using distributed ledger technology (DLT), which we explain in more detail below. The distribution of information and control is key to the concept of "decentralisation" (the "D" in "DAO"): there should be a distribution of power within the organisation such that participants can contribute to the function and operation of the DAO rather than control being vested in a single, central authority such as an executive board.

2.14 The concept took inspiration from Bitcoin, where the rules for the operation of a cryptocurrency system are determined by auditable open-source software run on DLT, intended to be largely free of outside influence and centralised authority, including that of governments and banks. This "self-sufficient" existence, free from outside laws or real-world intervention is a central tenet of the "autonomous" element of the DAC and DAO philosophy (the "A" in "DAO").[18]

2.15 "Autonomous" can also be used to refer to the perceived self-executing, automated nature of "smart contracts": computer programs that run automatically, in whole or in part, without the need for human intervention. This feeds into the idea that outside laws are unnecessary and inappropriate: "code is law".[19] This element, together with other features of the technology underpinning the idea of a DAO, is said to make the arrangement "trustless". This is the idea that participants do not have to trust each other, or a central authority, because the technology ensures that things are run as intended and that participants are disincentivised from interfering with it. We discuss these concepts further below.

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17 As Charles Kerrigan has put it, "[a] simplified explanation of Web3 would say: Web1 enabled reading on the internet – online newspapers; Web2 enabled reading and responding on the internet – social media platforms; Web3 enables user-owned platforms where work is rewarded in proportion to value created". In C Kerrigan, "DAOs", in C Kerrigan, *Crypto and digital assets law and regulation* (1st ed 2024), para 38-001.

18 This is also sometimes known as "censorship resistance". Taken to the extreme, some participants in the crypto ecosystem have taken the view that digital assets such as crypto-tokens, and related concepts and structures including DAOs, are so new and different that they sit (and should sit) outside of national law and are therefore beyond the reach of legislatures, tax authorities, regulators and other enforcers. Various moves, including regulatory enforcement action against DAOs in the United States and guidance on the legal and regulatory status and taxation of digital assets in a range of jurisdictions including the UK, has shown that that is not the case.

19 The phrase was coined as long ago as 2000: L Lessig, "The code is law", Harvard Magazine (January 2000), https://www.harvardmagazine.com/2000/01/code-is-law-html.

2.16 The original idea was that all of the entity's assets, funding and actions would be held or executed online and "on-chain"[20] to ensure transparency at all times (rather than, for example, the "snapshots" that shareholders and other creditors get of traditional organisations such as companies, which publish annual statements). This would mean that the organisation's assets would almost certainly be cryptoassets, whether issued by the organisation itself or by a third party, with no "real-world" assets or transactions. In contrast to the transparency intended for operational and financial information, participants may be anonymous or pseudonymous, and even the original software developers are not necessarily known to each other. Participants may simply be identified by online identifiers or addresses, as is the case for Bitcoin. Individual privacy is often seen as a central tenet in the crypto ecosystem.

2.17 The original DAC concept has been developed and largely superseded by two related constructs: DAOs (a generalised extension of the DAC relying less on the corporate analogy), and Decentralised Organisations ("DOs"), being more like traditional entities but making use of DLT and smart contract technology for particular aspects of their operation.[21]

Common philosophical goals of DAOs

2.18 DAOs, at least as originally conceived, would likely share some or all of the following features and philosophical goals.[22] Note that some of these features are aspirational and may not represent how such organisations have operated in practice.

(1) A group of people with common interests or goals – whether commercial or otherwise.

(2) Use of self-executing computer programs (smart contracts run on DLT) to implement the rules of the organisation and control its activities, rather than human actors.

(3) Use of open-source software, which a community of software developers use, contribute to and develop.

(4) The decentralisation of decision-making, often involving the issue of native crypto-tokens that give the holders voting and governance rights.

(5) Fully online, "on-chain" operations; no real-world assets.

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20 "Off-chain" refers to actions or transactions that are external to the distributed ledger (i.e. in the "real world"). "On-chain" refers to actions or transactions that are recorded on the distributed ledger.

21 DOs therefore generally emphasise a greater degree of human involvement in their operation: L Metjahic, "Deconstructing The DAO: The Need for Legal Recognition and the Application of Securities Laws to Decentralized Organizations" (2018) 39(4) *Cardozo Law Review* 1533. For an early description of the concept of the DAO see D McKinnon, C Kuhlman and P Byrne, "Eris – The Dawn of Distributed Autonomous Organizations and The Future of Governance" (17 June 2014), https://archive.is/2014.11.08-075607/http:/hplusmagazine.com/2014/06/17/eris-the-dawn-of-distributed-autonomous-organizations-and-the-future-of-governance.

22 See J Burnie and C Fraziero, "DeFi, Decentralised Finance", in C Kerrigan, *Crypto and digital assets law and regulation* (1st ed 2024), para 19-004.

(6) A treasury in the form of a fund often composed of various crypto-tokens held in smart contracts, used to support the organisation's operations. The treasury is often managed by a multi-signature arrangement that requires multiple signatures to make a transaction, to limit opportunities for theft or misuse.

(7) Transparency at an operational/governance level, including decision-making and asset holding, so that participants and third parties know what is happening at any particular time.

(8) "Censorship resistance" – technical and social resistance to outside control (including the avoidance of existing legal forms). For some DAOs this could extend as far as an ambition to be entirely free from outside oversight such as national governments and regulators.[23]

(9) Owners and decision-makers being the same people rather than a separation between, for example, shareholders and directors in a traditional company structure.

(10) Incentivising and rewarding participants in the community who contribute towards the DAO's creation, development, and/or operation (often by the distribution of governance or other crypto-tokens).

(11) Participants being distributed, potentially around the world, not necessarily known to each other, and potentially continuously changing as members invest and divest.

(12) Participants being capable of pseudonymous involvement.

2.19 Some of these features may be (or appear to be) at odds with each other but it is important to remember that a DAO may not aspire to all of these features or will aspire to them but to varying degrees. Different DAOs may prioritise different features and so exhibit some but not others, as appropriate to fit with their personal take on the DAO philosophy.

Practical implementations of DAOs

2.20 Whatever the label given to, or the precise features of, any particular arrangement, much of the discussion is highly aspirational. In reality, most "DAOs" do not operate in a fully autonomous or decentralised manner. Organisations of all types rely on individuals to perform certain tasks that automated processes cannot. DAOs envisage voting by (human) participants to determine how the organisation will develop. In many cases, a central group of people – often the original software developers who set up the organisation – will have a significant degree of control over the DAO's governance and operations (and potentially gain the greater financial profit). Sometimes this more centralised control is increasingly dispersed over time in a move towards "increased decentralisation".

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[23] We discuss this further at paras 2.34(4), 2.38 and in Chapter 3. We note that DAOs are subject to law because it is not possible for any entity unilaterally to declare otherwise, however, existing law in this jurisdiction can leave some questions unanswered when it comes to characterisation of a pure DAO and the legal basis of relationships between its participants.

2.21 Many so-called DAOs now have dealings with the off-chain environment, purportedly entering contracts and holding real-world (off-chain) assets as well as assets held on-chain. Particularly in these circumstances, it is not possible to "opt out" of national and international laws merely by setting up a novel form of organisation. Indeed, many such organisations have started to use existing legal forms, such as limited companies, to benefit from the separate legal personality and limited liability they afford. This process is sometimes known as "wrapping" the DAO. As EY have noted:

> A legal wrapper inevitably leads to a degree of centralisation, but it also introduces accountability, clarifies tax and reporting obligations for DAO members and the DAO and can improve regulatory compliance.[24]

2.22 This model has become particularly prevalent due to the outcome of litigation in the United States, where participants in a "DAO" were found to be members of an unincorporated association.[25] The court rejected arguments made on behalf of the DAO that it is a technology rather than an entity or group of persons.[26] The finding that it was an unincorporated association meant that it could be sued and that members were potentially liable for regulatory breach.[27] In addition, while DACs and DAOs may have started out as somewhat anarchic arrangements, the objectives of many users have evolved. DAOs are now of interest to a much broader category of user, attracted to different features of DAOs and, perhaps more importantly, their underlying technology, to different extents and in different ways. At one end of the spectrum could be an informal group of people organising themselves through a WhatsApp or Discord chat and motivated by the original aims of DAOs. At the other end, a sophisticated organisation or even a multi-jurisdictional conglomerate may wish to make increased use of DLT and smart contracts for their potential efficiency savings, while maintaining centralised management and decision-making. At this more extreme end, the term DAO may be inappropriate, but some of the same considerations, such as how the law accommodates the use of technology, may apply.

2.23 As we explain in more detail below, we identify three broad types of arrangement that could appear along this spectrum. The legal characterisation of each is likely to be very different. At one end is a "pure DAO", that keeps as closely as possible to the original philosophical aims of DAOs, eschewing legal forms and arrangements. At the other is a "digital legal entity" – an incorporated organisation in a recognised legal form, but with a particular focus on the use of DLT and smart contracts in its governance and/or operations. In between – and representing a potentially vast range of different structures – there are hybrid arrangements. These make some deliberate

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24 EY Global, "How to navigate tax and legal complexity associated with DAOs", August 2023, https://www.ey.com/en_gl/insights/tax/how-to-navigate-tax-and-legal-complexity-associated-with-daos#:~:text=For%20example%2C%20in%202017%2C%20the,securities%20law%20within%20the%20US.

25 See, eg, *Commodity Futures Trading Commission v Ooki DAO*, 3:22-CV-05416-WHO, (N.D. CAL. DEC. 20, 2022); *Joseph Van Loon v Department of Treasury* 1:23-CV-312-RP.

26 In amicus briefs filed by organisations including Andreessen Horowitz (known as a16z crypto), https://fingfx.thomsonreuters.com/gfx/legaldocs/byvrlonrnve/frankel-CFTCvbZeroX--andreessenhorowitzamicus.pdf.

27 The legal definition of unincorporated association and the legal consequences of such a characterisation are not identical between United States law and the law of England and Wales. We explain the position in England and Wales in Chapter 3.

use of legal forms and/or legal entities but also retain a component that reflects the original aims of DAOs, such as aligning the interests of participants through on-chain decentralised control and, where possible, automating management through smart contracts.

Common questions arising with respect to DAOs

2.24 DAOs – broadly seen as organisations or arrangements of participants coming together for a common purpose and using particular technologies for aspects of their governance – vary considerably in their size and structure, giving rise to a range of questions for any particular DAO, including:

(1) What, legally speaking, is the DAO? For example, does it use a limited company or trust structure? Or, if it has not actively adopted a recognised legal form, how can it be characterised in legal terms? For example, could it be characterised as a general partnership or is it simply an arrangement of multi-lateral contracts between different participants?

(2) Who is liable for the actions of the DAO, and how can they be held accountable?

(3) Which jurisdiction's laws apply to determine the answers to these and other questions? If the DAO exists only online and has not adopted a recognised legal structure that links it to a particular jurisdiction, it may not be tied to, or associated with, any particular place.

(4) Which jurisdiction's tax and regulatory rules is the entity subject to? Even if a DAO can be associated for private law purposes with a particular jurisdiction, it or its participants may have tax, regulatory or other liabilities beyond that jurisdiction.

2.25 The answers, and the ease of finding them, will depend on where a particular DAO sits on the "spectrum" that we identify above, as well as the peculiarities of the particular DAO. The analysis is therefore highly fact specific. In this paper, we consider factors that will affect the answers to these questions for different types of arrangement. Because of the wide variety of arrangements, there are no answers of universal application.

What do DAOs do?

2.26 A DAO could, at least theoretically, exist in any sphere of activity from the commercial (for example, dealing in crypto-tokens) to the charitable (for example, raising money to help victims of war) or social (for example, managing sports club finances). At one extreme, the label has been applied to a small group of artists involved in creating NFTs. At the other, it is used by a DeFi lending platform with over 100,000 token holders that has tokenised $2.5 billion in real-world assets.

2.27 One commentator references the following basic categorisations.[28]

(1) **DAO operating systems:** providing the technology on which DAOs are built, a kind of off-the-shelf toolkit for builders.

(2) **Protocol DAOs:** dealing with matters of governance (like a constitution or by-laws for a project) – such as UniSwap (note that all DAOs must have some system of governance whether operated through a protocol DAO or in some other way on the blockchain).

(3) **Investment DAOs:** funds pooled by members to invest in other crypto (often DAO) projects – such as BitDAO.

(4) **Grants DAOs:** providing funds on a non-commercial basis for the development of projects or infrastructure – such as Gitcoin.

(5) **Service DAOs:** teams that provide consulting and professional services to other DAOs – including "Legal DAOs" such as Lex DAO and Thing3.

(6) **Social DAOs:** a membership club where an NFT is often the "membership card" – such as Bored Ape Yacht Club (but also including informal forums without established structure where enthusiasts meet and talk online but do not create financial or technology products or systems – these may be no more than a branded Discord channel).

(7) **Media DAOs:** connected to media firms as a method of brand extension consistent with their target market, usually crypto native firms like crypto websites and newsletters – such as Decrypt DAO.

2.28 DAOs are often associated with decentralised finance or "DeFi" services. DeFi is an umbrella term which refers to the provision of traditional financial services – such as lending, exchange, asset management and insurance – without the use of traditional financial intermediaries.[29] DeFi aims at decentralisation; instead of interacting with intermediaries, users interact with smart contracts. While in practice the level of decentralisation can vary widely across applications,[30] it has been suggested that protocol DAOs are found behind almost all major DeFi products.[31] As explained by the European Securities and Markets Authority (ESMA):

> Decentralisation in DeFi refers not only to the absence of intermediaries or central authorities for implementing financial services, thanks to the use of smart contracts […], but also to decentralised governance structures. Indeed, DeFi protocols purport to have decentralised governance structures, meaning that control and power over

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28 C Kerrigan, "DAOs", in C Kerrigan, *Crypto and digital assets law and regulation* (1st ed 2024) p 481.

29 HM Treasury, "Future Financial Services Regulatory Regime for Cryptoassets: Consultation and Call for Evidence" (February 2023) para 11.1. For more information about DeFi, see our "Digital assets and ETDs in private international law: which court, which law?" Call for Evidence (February 2024), paras 3.119-3.122 and 7.15-7.27.

30 Bank of England, "Financial Stability in Focus: Cryptoassets and decentralised finance" (March 2022), Box A, https://www.bankofengland.co.uk/financial-stability-in-focus/2022/march-2022.

31 E Naudts, "The future of DAOs in finance", European Central Bank No 331, p.11.

the protocol, such as how decisions on changes to the protocol are made, are decentralised. DeFi protocols use different mechanisms for that purpose, including novel decentralised autonomous organisations (DAOs).[32]

Aave is one example of a DeFi platform which relies on governance via a DAO. This structure releases governance to the user community, by allowing holders of the AAVE token to "vote on matters such as adjustments of interest rate functions, addition or removal of assets, and modification of risk parameters such as margin requirements".[33]

2.29 All that said, what a particular DAO does is less relevant for our purposes than what it *is*, legally speaking, and what that means for its rules of operation, liabilities and so on. The same is true of any legal study of a particular type of organisation: a paper looking at companies or charities as legal entities would focus on law applicable to the legal structure, rather than considering the business or other activities of any particular company or charity.

2.30 Nevertheless, it is of course necessary to be aware of the ramifications of particular commercial or other activities, and in this paper we do recognise this in some instances. For example, if a DAO is involved in DeFi it may be undertaking a regulated activity under UK financial services law and therefore must be authorised by the Financial Conduct Authority (FCA). This then engages the question of what the DAO is – what entity/person has to be authorised? If it is not authorised and the FCA wishes to take action for regulatory breach, who can the regulator pursue and who is liable? If the DAO purports to hold assets as part of its activities, who/what actually holds them? And, fundamentally, does UK regulatory law even apply if the DAO has no "base" in the jurisdiction and does not necessarily direct its activities at the UK in particular?

EXPLAINING THE FEATURES OF DAOS

2.31 Here, we give a high-level introduction to the features we have identified as common, at least to some extent, across most if not all DAOs. We explain:

(1) the concepts of decentralisation and autonomy (that is, why DAOs exist);

(2) the (very) basics of DLT and smart contracts (how DAOs operate);

(3) key participants in a DAO (who is involved in the use and operation of a DAO); and

(4) the core functions of DAOs, focused on decentralised governance/voting (what the DAO is doing).

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32 European Securities and Markets Authority (ESMA) TRV Risk Analysis, "Decentralised Finance in the EU: Developments and Risks" (2023) p.5.

33 J Chiu, E Ozdenoren, K Yuan and SZhang, "On the Fragility of DeFi Lending" (2023), p.9.

Decentralisation and autonomy

2.32 The concepts of decentralisation and autonomy are at the heart of the DAO philosophy and are inextricably linked with the technology that underpins DAOs. Here, we develop our explanation of these concepts before explaining the technology and how it supports them.

Decentralisation

2.33 As mentioned above, decentralisation in the context of DAOs relates to the dispersal of control and decision-making power, but there is no one single way in which an organisation can be decentralised. It is also not a term that is defined in law or that has a single agreed meaning. There is, for example, no definitive test that can be applied to confirm if an organisation is decentralised.

2.34 As such, it is more of an ideological concept than a specific set of characteristics. However, it is possible to identify different ways in which a DAO can try to be decentralised, including the following.[34]

(1) Technically decentralised: the organisation is not dependent upon single points of failure, such as a single computer or server.

(2) Politically decentralised: political power or agency is dispersed within the organisation through dispersion of information and decision-making capabilities beyond just a few decision makers.

(3) Economically decentralised: ownership and control are distributed to a broad group of stakeholders.

(4) Legally decentralised: this has been described as when the "decentralisation of a system eliminates the risks that a specific regulation may be intended to address".[35] The result may be that regulation is not required because the problems that regulation is trying to address do not materialise in a system where knowledge, control and decision-making power are distributed rather than being concentrated in a particular person or small group.[36] Another conception of "legal decentralisation" could mean effectively "jurisdictional decentralisation", that is, an organisation is so decentralised that no nation state or body of law has jurisdiction over it.

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[34] M Jennings, S Wink and A Zuckerman, "Factors of Decentralization of Web3 Protocols: Tools for Planning Greater Decentralization" (31 May 2023), https://a16zcrypto.com/posts/article/decentralization-factors-web3-protocols-tables/ (emphasising technical, economic, and legal factors of decentralisation) and V Buterin, "The Meaning of Decentralisation" (6 February 2017), https://medium.com/@VitalikButerin/the-meaning-of-decentralization-a0c92b76a274 (emphasising the technical – or "architectural" and "logical" –and political factors of decentralisation).

[35] M Jennings, S Wink and A Zuckerman, "Factors of Decentralization of Web3 Protocols: Tools for Planning Greater Decentralization" (31 May 2023), https://a16zcrypto.com/posts/article/decentralization-factors-web3-protocols-tables/.

[36] The prototypical example is a system that may be considered sufficiently decentralised to avoid or render the application of United States securities laws inapplicable. See W Hinman, "Digital Asset Transactions: When Howey Met Gary (Plastic)" (2018), https://www.sec.gov/news/speech/speech-hinman-061418. Of course, law and regulation may in fact still apply if the relevant activities are being conducted.

2.35 It has been said that these different types of decentralisation must be viewed holistically.[37] They are interdependent.

2.36 Decentralisation exists on a spectrum, with complete decentralisation likely to be more aspirational than attainable in reality. For a DAO that wishes to be decentralised, there is no checklist or set of steps that it can apply to ensure that it achieves this. There are, however, examples of approaches that some organisations have taken to incorporate decentralisation within their structure, including:

(1) use and deployment of smart contracts and open-source code to DLT systems (explained below), particularly in the development and deployment of software protocols;

(2) open-sourcing intellectual property, that is, DAOs do not (generally) take steps to protect their intellectual property in their source code in the same way as proprietary software;

(3) opting for full transparency or disclosure in all off-chain activities with a view to minimising information asymmetry and the presence of confidential and non-public information;

(4) design of governance mechanisms to prevent concentration of control, for example, by incentivising high levels of participation by a large number of participants; and

(5) use of flexible and open participation mechanisms, which generally result in a constantly shifting, changeable and unidentified body of software developers and participants.

Autonomy

2.37 As with decentralisation, autonomy has no specific legal meaning. As touched on above, the term is used in two different ways in market commentary: to indicate that an organisation has freedom from outside control; and to refer to automation of processes and functions using software code. There is disagreement as to the proper (non-legal) meaning of the term. From our perspective, both possible meanings are relevant to understanding the concept in the context of DAOs and we therefore explore both below.

Censorship resistance

2.38 The term “autonomy” can refer to an organisation being secure from undue external interference or internal, centralised control.

2.39 This censorship resistance also operates on a spectrum. At one end of the spectrum are DAOs whose participants consider any form of external influence to be “censorship”, including, for example, the state, regulators, courts, financial intermediaries and internet service providers. DAOs that wish to be autonomous from

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[37] M Jennings, S Wink and A Zuckerman, “Factors of Decentralization of Web3 Protocols: Tools for Planning Greater Decentralization” (31 May 2023), https://a16zcrypto.com/posts/article/decentralization-factors-web3-protocols-tables/.

the state will try to exist outside of the law. This means, for example, that they may seek to rely on the organisation's rules to govern relations between participants rather than relying on the law of a particular jurisdiction to do so.

2.40 Other DAOs may be more willing to accommodate some external or centralised internal influence. This could simply be the ongoing influence of the DAO's founders or, towards the other end of the spectrum, the use of incorporated legal entities within the DAO structure, with their associated registration and other legal requirements. Censorship resistance is, at least theoretically, enabled by the automated or "trustless" capabilities of the technology.

Automation

2.41 "Autonomy" can also refer to the fact that key processes within a DAO are carried out automatically; that is, the organisation relies in part on software code that is capable of running programmatically and deterministically according to pre-specified functions triggered by certain events. The outcome of a vote by decision makers, for example, could result in the code automatically executing a particular action. This is distinct from a situation in which a decision would need to be actioned by humans within an organisation or intermediaries outside that organisation.[38]

2.42 This element, together with other features of the technology used by DAOs, is said to make the arrangement trustless. That is, participants do not have to trust each other, or a central authority, because the technology ensures that processes run as agreed and that participants are unable to or disincentivised from interfering.

2.43 A DAO would be fully automated if its key processes are carried out automatically by software code. For example, a certain event occurs that triggers the code to respond in a particular way as it has been pre-programmed to do. At the moment, more complex situations and functions will need to be dealt with by humans as there are certain tasks that code cannot carry out. Most DAOs currently in existence are likely to rely heavily on individuals within their organisational structure to perform certain tasks that automated processes cannot. Such organisations may use code for some processes but humans are likely to continue to be involved in a number of roles, such as software development (including changing the code itself), legal advice, accounting, public relations and general administrative work.

DLT and smart contracts

2.44 The ability of DAOs to claim to be – to whatever extent – decentralised and autonomous, comes from their use of smart contracts and DLT. Indeed, facilitation of decentralisation and autonomy was the ideological force behind the development of these technologies in the first place.[39]

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[38] As a matter of fact, in many situations, the results of DAO votes are not implemented automatically and involve some active steps to be taken by humans, often the software developers.

[39] This is evident from the original Bitcoin whitepaper: Satoshi Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System" (2008).

Smart contracts

2.45 Smart contracts are computer programs that run deterministically, largely without the need for human intervention after they have been coded and set to run. Smart contracts tend to follow a conditional logic with specific and objective inputs: "if X occurs, then execute step Y".

2.46 Smart contracts are not in themselves contracts in the legal sense, although they can be used to define and perform the obligations of a legally binding contract. We call these "smart legal contracts".[40] DAOs might use a combination of smart contracts and smart legal contracts.

2.47 Performance of a smart contract, or a smart legal contract, is "guaranteed" in the sense that human intervention is not required to facilitate performance. Participants can at least in theory be assured that things will happen as they are coded to happen.[41] In these cases there may be a need to change the code and potentially reverse the consequences. Smart contracts often include control mechanisms to enable their management, including their modification.

DLT

2.48 A distributed ledger is a digital store of information or data. It is shared (that is, "distributed") among a network of computers (known as "nodes"). The nodes may be located anywhere in the world. DLT enables the operation and use of a distributed ledger. Blockchain is a particular type of DLT.[42]

2.49 The distinguishing feature of DLT compared to traditional, centralised databases is that the ledger can function without maintenance or control by a central administrator or entity. This means that network participants do not have to reconcile their local databases with a ledger maintained by a central administrator or trusted third party. Instead, in DLT systems, participants approve and eventually synchronise additions to the ledger through an agreed "consensus mechanism". The consensus mechanism is set by the software underlying the DLT system. In general, it requires some or all of the participants to determine the validity of a proposed data entry.[43] In some DLT systems, the consensus mechanism involves "miners" – participants on a DLT system who solve a computationally intensive mathematical problem so that data can be

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40 We looked at these in detail in our paper Smart Legal Contracts: Advice to Government (2021) Law Com No 401.

41 Note that such guarantees are dependent upon numerous technical and social factors including, but not limited to, the continued operation of the DLT system, the network implemented by participants running the DLT system software, maintenance by software developers, accurate and intended operation of the smart contracts implementing the DAO and any associated software. There may be instances where the smart contract does not perform as expected for a variety of reasons, such as human error or bugs in the code: see Smart Legal Contracts (2021) Law Com No 563.

42 It is called blockchain because the validated information is stored in blocks linked by cryptographic techniques (essentially requiring the resolution of complex mathematical processes before data will be accepted as valid). The consensus mechanism operates, among other things, to verify that all the data on the blockchain is and remains mathematically linked in a particular sequence.

43 This is a "proof-of-work" consensus mechanism. See further explanation in World Bank, "Distributed Ledger Technology and Blockchain" (2017) p 6, https://documents1.worldbank.org/curated/en/177911513714062215/pdf/122140-WP-PUBLIC-Distributed-Ledger-Technology-and-Blockchain-Fintech-Notes.pdf.

added to the distributed ledger. These miners do not have to (and often will not) be involved in the substance of the DAO's activity or governance decisions, but instead verify the technological and procedural integrity of the activity or decision. They will usually receive some reward for the effort required to provide this validation of the data entries.

2.50 The consensus mechanism is typically designed so that, once data is added to the ledger, it cannot (for practical purposes) be amended; it is said to be "immutable". This immutability is intended to mean that participants can trust its validity and transact with one another with confidence, on the basis that the system will operate in accordance with the rules encoded in the system.

2.51 DLT systems can be permissioned or permissionless and private or public. A permissioned DLT system is generally one in which authorisation to perform a particular activity on the DLT system is required. Permissioned systems tend to be private, meaning that the DLT system is only accessible for use by a limited group of participants. In a permissionless system, no such authorisation to perform activities on the DLT system is required. Permissionless DLT systems tend to be public, meaning that the DLT system is accessible for use by the public. Mining is typically a feature of permissionless DLT systems. Permissioned DLT systems may use different consensus mechanisms which do not involve mining. There is not a binary distinction between permissioned and permissionless systems, but rather various degrees and types of permissioning to consider.

2.52 Computer programs such as smart contracts can be recorded on a distributed ledger and performed by the computers on the network. Smart contracts, and smart legal contracts, can be deployed on a distributed ledger so that actions or contractual obligations expressed in computer code are performed automatically by the computers on the network. This enhances the automated or deterministic functioning of smart contracts, because the decentralisation of a DLT dramatically reduces the ability to intervene in the operation of a smart contract.

DLT and smart contracts as used in DAOs

2.53 Smart contracts in DAOs will generally be used to set out, in code, the DAO's governance framework, including its purpose, the roles and responsibilities of participants, and its incentive structure, as well as controlling the DAO's treasury (discussed further below). These can be referred to as "DAO smart contracts" or "governance level smart contracts".

2.54 Although not all smart contracts use DLT, those used in DAOs are likely to be deployed on DLT because of its decentralised nature.

2.55 Ethereum, a major blockchain system that can be used to host smart contracts, describes the arrangement for a DAO as follows:

> The backbone of a DAO is its smart contract, which defines the rules of the organization and holds the group's treasury. Once the contract is live on Ethereum, no one can change the rules except by a vote. If anyone tries to do something that's not covered by the rules and logic in the code, it will fail. And because the treasury is defined by the smart contract too that means no one can spend the money without

> the group's approval either. This means that DAOs don't need a central authority. Instead, the group makes decisions collectively ... This is possible because smart contracts are tamper-proof once they go live on [the ledger]. You can't just edit the code (the DAO's rules) without people noticing because everything is public.[44]

2.56 DLT is also the means by which DAOs can make financial and operational information publicly accessible.

2.57 Beyond the DAO smart contracts addressing governance, there may be a further "layer" of smart contracts that facilitates the business or other activities of the DAO, particularly if these are conducted on-chain. We call these the "protocol smart contracts".[45] In this context, a "protocol" is a set of rules by which a particular system is to operate. Developers may develop a protocol that might be implemented using smart contracts deployed to a DLT system to perform a particular activity, such as holding tokens, or to achieve a particular outcome, such as managing or distributing capital. For example, DeFi software (often referred to as a "DeFi protocol") may use smart contracts to implement a system for performing various financial operations.

2.58 Charles Kerrigan has suggested that:

> the legal analysis of a DAO or other Web3 or blockchain project involves tasks such as breaking down the operation of the smart contracts into their constituent parts, in particular, to show the flow of value created and transferred, and then applying a legal analysis to these.[46]

2.59 Smart contracts used by DAOs and the DLT systems on which they operate will generally be based on open-source software. Open-source software is software code that can be used, studied, changed and distributed by anyone.[47] This allows for and encourages iterative development of the software itself by (often unrelated) developers in a collaborative and public manner. Open-source software is also transparent and verifiable by anyone. It can therefore be audited by third parties to check it will do what it is claimed it will do and identify any vulnerabilities.

2.60 As mentioned above, the combination of smart contracts and DLT means that DAOs are said to be "trustless". This concept is central to these technologies. They reduce or eliminate the need for parties to a transaction to trust one another because assurance is provided by the existence and operation of the software. This is particularly important when dealing with parties you have only interacted with on the

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44 Ethereum, "What are DAOs?" (22 May 2024), https://ethereum.org/en/dao/.

45 Protocols can be used to specify rules for many different activities, including DeFi products, games, DAOs, data storage, media publishing etc. However, the software that implements a protocol is not an active product in itself. Protocols (whether a DLT system or composed of smart contracts) must be implemented by a network of participants who choose to follow the rules – a "network". The active operation of a protocol by a network of participants will facilitate the particular functionality specified in the protocol.

46 C Kerrigan, "DAOs", in C Kerrigan, *Crypto and digital assets law and regulation* (1st ed, 2024), para 38-004.

47 By contrast, proprietary software may be distributed as "closed-source" or "source available". Closed-source software is not viewable and is often contractually governed by an end-user license agreement (EULA) between the distributor and the user.

internet, who may be anonymous or pseudonymous, and with whom you have no personal or trust-based relationship.

2.61 Because of the complexity of the underlying protocol and system software, developers or other unrelated persons might also make a front-end website which allows people to access information relating to the DAO and its underlying code. Importantly, the website is distinct from the smart contract rules and is normally subject to explicit terms which make this very clear.[48] These websites present information to users about the data on the relevant blockchain and smart contracts and enables users to interact with them. Those interactions may vary considerably based upon the factual circumstances, but may include acquiring governance tokens, proposing or voting on proposals and/or interacting with the DAO's business or other activities.

Governance

2.62 At least as originally conceived, a key feature of DAOs is decisions made by community voting, rather than a centralised authority or management team. As the Ethereum website explains it:

> There is no CEO who can spend funds on a whim or CFO who can manipulate the books. Instead, blockchain-based rules baked into the code define how the organization works and how funds are spent.
>
> [DAOs] have built-in treasuries that no one has the authority to access without the approval of the group. Decisions are governed by proposals and voting to ensure everyone in the organization has a voice, and everything happens transparently on-chain.

2.63 This community governance in DAOs is often conducted via governance tokens. A governance token is a cryptoasset – fungible or non-fungible depending on the particular DAO[49] – that grants voting powers or rights to the holders of those tokens. Governance smart contracts provide a means by which members of the DAO who hold governance rights (token holders) can propose and vote on operational decisions and alter variants in the smart contracts. There may also be governance smart contracts which are used to manage the treasury and tokens (including issuance and buying back tokens) and registering new members. Depending on the rules of the DAO, there will be a process for making proposals for a vote, generally to change the smart contract code. Holding more governance tokens is likely to mean greater voting power. Whether a governance token creates a contractual right to be asked to vote on a particular issue will depend on the rules of the organisation.

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[48] For example, many websites require users to read, understand and accept explicit terms or disclaimers before proceeding to access the website. For a detailed discussion on this point, see *Risley v. Universal Navigation Inc.*, 1:22-cv-02780, (SDNY. Aug 29, 2023) ECF No. 90 at p 15.

[49] An NFT is a token, generally a crypto-token, that has a unique identification number (or mechanism) such that each token is not replaceable or interchangeable with another identical token. NFTs are contrasted with fungible tokens which are essentially identical and interchangeable, such as those which are designed for use in place of currency. For further description, see Digital Assets: Final Report (2023) Law Com No 412.

2.64 Votes may be on anything to do with the governance or activities of the organisation as far as this is permitted by the rules of the DAO. For example:

(1) At the level of the DAO smart contract(s) (the governance level), voting may relate to a change of the purpose of the DAO or the rules of its operation.

(2) At the level of the protocol smart contract(s) (the activity/product/system level), voting could determine, for example, how to allocate funds collected for charity by a charity DAO, how to use an asset that a DAO has purchased, or how to allocate grants.

2.65 Smart contracts may be used to give effect to the outcome of a vote. This may be direct ("on-chain") and automatic, with the options built into existing code so that the outcome of the vote is automatically implemented. Alternatively, it may be some version of indirect ("off-chain") voting and implementation. In the latter case, votes may be cast on-chain or simply in message boards or chat groups, and the smart contract code must then be updated to reflect the result by one or more developers. Here, the reliance on human actors – and therefore the need for trust among participants – is obvious.[50] In some cases, the rules of the DAO may say that the results of all or certain types of votes are "advisory" only, rather than there being an undertaking to implement the outcome.

2.66 Whether the effect of votes is automatically implemented, or relies on implementation by human actors, affects how certain the rights of the token holders are, how "decentralised" and "autonomous" the arrangement is, and how "trustless".

2.67 Token-based governance may mean that decisions are slower and less efficient than in a traditional organisation when a single officer or central board is empowered to make quick decisions when necessary. Particularly at the beginning, when there are many decisions to make, decision-making may be limited to a small group (such as the original developers), before voting rights are distributed more widely over time in what is referred to as "progressive decentralisation".

2.68 Another risk is the concentration of power in situations where individuals retain or accumulate large numbers of tokens with corresponding voting power, which would frustrate the supposed aim of distributed and decentralised control. In one study of "decentralised finance DAOs", token holding was shown to be highly concentrated in a small population of holders.[51]

2.69 As in many other situations where individuals are asked to vote, voter participation in DAOs is often low. This may be due to voter apathy and/or lack of understanding when decisions are on complex and technical matters. Low participation could compromise the functionality of the organisation as well as affecting the veracity of claims to distributed control. If this is an issue, a DAO may allow for delegation of voting power to another party, or the setting up of sub-committees to determine

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50 For a particular perspective on different types of votes, see G Shapiro, 'How protocol DAOs should work from a cryptolaw-ish_ perspective, Lex_Node, (22 October 2022), https://lexnode.substack.com/p/how-protocol-daos-should-work-from.

51 In 2022, research by Chainalysis into 10 major governance tokens suggested that less than 1% of token holders held 90% of the voting rights: https://www.chainalysis.com/blog/web3-daos-2022/.

matters on a particular topic requiring specialist knowledge. In some cases, voting is rewarded with additional governance tokens.

Token holders

2.70 It is likely that the original developers of the DAO will keep some – potentially a majority – of the tokens. Other participants might acquire tokens in various ways, including by:

(1) investing directly (often by providing early-stage investment directly to developers) and being given tokens in return for their investment;

(2) buying them from existing token holders;

(3) being given them as a result of their contribution to the DAO (for example, participation in code updates, or even simply by voting on a governance decision).

(4) transfer via an unsolicited airdrop. Some products/protocols comprised of smart contracts are designed to distribute tokens in this manner, whereby tokens are sent, by operation of the smart contracts, to certain public addresses that may be controlled by multiple different users. This may be motivated by, for example, a desire to increase the number of token holders, perhaps to ensure a spread of control or to raise the profile of the DAO.

Governance and other tokens: functions and status

2.71 As indicated above, tokens may be sold to participants as potential investments, purchased in the hope that the tokens will increase in value, or may be marketed simply as an opportunity to participate in the DAO and its governance. They might be given away for free for the reasons listed above. If the DAO offers a product or service, it might be a pre-condition of access to that product or service that one is a token holder.

2.72 A DAO may issue more than one type of crypto-token.[52] For example, it may issue governance tokens, discussed above, which allow participation in votes on how the DAO operates. In addition, it might separately issue another type of token native to the DAO which, for example, gives access to products or services, or may transfer non-native tokens such as ether from its treasury in return for participation. The DAO may, as its business activity, issue native tokens which can be used as a form of "currency" to exchange for other goods or services, or may otherwise deal in or with other tokens (particularly those organisations which are set up to provide decentralised finance (DeFi) or crypto-wallet services).

Tokens as objects of personal property rights

2.73 Governance tokens that give the holder voting/governance rights may, depending on the terms and conditions of the particular DAO, represent contractual rights. DAO tokens are also likely to be transferable and therefore tradable, and to have a price. In this way, tokens give participants a way to share in the success of the DAO: if the

[52] An example is Bored Apes. They have ApeCoin (governance) and Bored Ape NFTs (a product).

DAO does well, the value of the tokens goes up, and participants may be able to sell their tokens for profit. In our digital assets report,[53] we explained that crypto-tokens can be the object of property rights in themselves, regardless of whether or not they attach to another right (such as a contractual right to vote).

2.74 A governance token may therefore be the object of a property right as an asset in its own right, as well as evidencing a contractual right. Property rights are, in principle, recognised against the whole world, whereas personal rights such as contractual rights are recognised only against someone who has assumed a relevant legal duty (in this case, for example, potentially the DAO and other participants).

2.75 We discuss the process of transferring tokens in detail in our work on digital assets. In brief, tokens can be transferred on-chain between participants on a distributed ledger by effecting a "state change".[54] They could also potentially be moved off-chain by a "change of control".[55]

Tokens in the regulatory context

2.76 It is beyond the scope of our work to look in any detail at regulation, but we make some key observations here and develop them in Chapter 6.

2.77 Cryptoassets are generally unregulated in the UK.[56] However, activities relating to cryptoassets are regulated in this jurisdiction under three regulatory frameworks:

(1) Anti-money laundering framework

Cryptoasset businesses that fall within the scope of the Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 (MLRs)[57] must register with the FCA before starting business.[58] The FCA must determine that the applicant's management and owner are "fit and proper"[59] and that the applicant has satisfactory anti-money laundering systems and controls in place.[60] The MLRs apply depending on

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53 Digital Assets: Final Report (2023) Law Com No 412, Ch 3.

54 We use the term "state" to refer to the canonical and chronological order of events as recorded within the distributed, transaction-based ledger or structured record of a crypto-token system (and "change of state" to refer to changes to that record).

55 For example, through the physical transfer of hardware. See Digital assets: Final report (2023) Law Com No 412, Ch 6.

56 Unless they fall into certain categories such as specified investments (discussed below), electronic money or financial instruments under MIFID II. See FCA, Guidance on Cryptoassets (2019), Appendix 1, https://www.fca.org.uk/publication/policy/ps19-22.pdf.

57 SI 2017 No 692. See in particular Regulations 8, 9 and 14A.

58 FSMA authorised firms are generally not required to register by the MLRs because they appear on the Financial Services Register once their applications for FSMA authorisation have been approved. However, cryptoasset exchange providers and custodian wallet providers must register under the MLRs even if they are already registered or authorised with the FCA for other activities.

59 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 58A.

60 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 56.

what is done with the cryptoassets and whether this creates a money laundering risk.

(2) Financial promotions framework

This framework sets out what financial promotions are and are not permitted and is relevant where certain products or activities are aimed at or otherwise "capable of having an effect in" the UK. Cryptoassets have recently been brought within this regime, as we explain below.

(3) The regulated activities framework

This framework sets out all the activities that fall within the financial services regulatory framework under the Financial Services and Markets Act 2000 (FSMA). It applies to cryptoassets where the features of a cryptoasset mean that it falls within the definition of a "specified investment". If so, firms are required to obtain FCA authorisation in order to operate where they undertake "specified activities" in relation to "specified investments". The specified activities and investments are set out in Schedule 2 to FSMA and in the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 (the RAO).[61] In some ways, governance tokens might look like company shares in that they may be issued in exchange for investment into the DAO, and give corresponding voting rights, which could result in their being regarded as specified investments.[62]

2.78 DAOs may fall within these frameworks as a result of activities linked to their governance tokens: for example, advertising their tokens to potential participants and issuing governance tokens to participants. These activities are common to many DAOs in terms of how DAOs are set up at an organisational/governance level (that is, token-based governance). In Chapter 6, we explain how these areas of regulation might apply to DAOs at this level. For our purposes, these issues are separate from the activities that occur at the product level, which relate to the interaction between the DAO and users of its business or service. Activities which are carried out at that level are activities that may fall within these regulatory frameworks in the same way as if they were being carried out by a traditional organisation. DeFi DAOs are the most obvious example where this would be the case.

Participants

2.79 Here, we describe the main categories of participants that might be found in the DAO ecosystem, some of which we have already touched on. As mentioned above, the personal identity and location of some or all of these participants may be anonymous or pseudonymous. Challenges in identifying individuals give rise to various difficulties, from compliance with law or regulation requiring personal data (such as money

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61 SI 2001 No 544.

62 By virtue of being "security tokens"; see further at para 6.76 below and Financial Conduct Authority, "Guidance on Cryptoassets, Feedback and Final Guidance to CP 19/3 Policy Statement PS19/22" (July 2019), Appendix 1, https://www.fca.org.uk/publication/policy/ps19-22.pdf.

laundering regulations) to identifying responsible persons when enforcement action is required.

(1) **Software developers:** DAOs are all likely to involve software developers (software engineers who design and write software) developing computer code that is used to create distributed ledger/blockchain systems and smart contracts. These individuals may operate through an incorporated development company ("DevCo") established to hire software developers and manage the day-to-day operations of the project or may exist as a more ad-hoc group of loosely related contributors.[63] In the crypto space, including for DAOs, developers may work together without ever meeting or knowing each other's real identities, and it is possible that aspects of the software may be developed without the full knowledge of all developers.

(2) **Token holders:** The developers or founders are likely to reserve some tokens for themselves, but token holders may also include people who have bought, earned or been given tokens at a later date. Some DAOs allow anyone to participate by becoming a token holder, while others may have conditions or require an application or commitment to contribute in some way to the operation of the DAO. Token holders are likely to have the right to vote on changes to the smart contracts, effectively voting on decisions as to how the DAO is run, but often do not in fact use those rights.

(3) **Investors/shareholders:** Particularly in DAOs using recognised legal entities such as limited companies, there may be other investors, including potentially equity shareholders, instead of or as well as governance token holders.

(4) **Operators/contributors:** Depending on the type of DAO, these may include:

(a) Contributors, who are individuals who participate in and contribute to the organisation. Software developers are one form of contributor. Others may participate in operational functions such as treasury management and voting oversight. Contributors are often paid for their work, usually in native tokens, stablecoins, or other crypto-tokens. This could be in the form of grant funding (to an individual who has proposed a project to the DAO which has been approved), a bounty (which is automatically distributed to the contributor upon completion of a task), a salary or revenue sharing (where contributors are compensated according to the revenue generated by a product they create). Contributors may or may not hold tokens.

(b) Node operators (miners/validators) who support the underlying distributed ledger/blockchain. They may be token holders as a result of receiving tokens as payment for their role in the functioning of the DLT system. Unless they are also governance token holders, they are unlikely

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63 See the contributions from software developers to Bitcoin Core (the leading implementation of the Bitcoin protocol): https://github.com/bitcoin/bitcoin/graphs/contributors. The incentives for contribution to open-source software may be borne out of a particular interest, altruistic, benefit an organisation that uses the code, to influence the direction (for example, the features and functionality) of the software, or economic (for example, through sponsorship or via grant DAOs such as GitCoin).

to have any right to participate in the operational or governance decisions of the DAO.

(c) Managerial operators that operate the day-to-day functioning of the DAO such as multi-signature signers who oversee treasury or other wallets, deploy code changes to smart contracts, manage voting by token holders, and other operations in accordance with the DAO's purpose. They may be employees and/or rewarded for this contribution with tokens.

(d) Executives such as directors, partners etc if using a legal structure.

(5) **Customers/clients:** if the organisation offers an external service or product, such as DeFi.

Funding/treasury

2.80 Most DAOs will require some kind of funding to build their community and further their aims, even if these are not profit-making, and will often obtain this by selling tokens to investors. They may also, for example, seek sponsorship from individuals or organisations, and ultimately may make money from their business or other activities. The proceeds of the sale or other profit will not necessarily be distributed to the founders (as would be the case with a company or partnership). Depending on the particular DAO, proceeds or profit may be distributed to token holders or used, as determined by member voting, to further the DAO's objectives.

WHAT IS A DAO, LEGALLY SPEAKING?

2.81 Above, we have described the key concepts relating to DAOs and in particular how they are generally driven by the operation of software code. Beyond this, there remain important legal questions as to the proper legal characterisation of any particular DAO, and the relationships between various participants in such arrangements.

2.82 A DAO may choose to adopt traditional, legally-recognised organisational structures, such as limited companies, partnership models, offshore funds or DAO-specific legal entities (which have recently been introduced in some jurisdictions), or a combination of several of these. It could register as a charity or co-operative, if it meets the requirements for such vehicles. The entity could be co-extensive with the DAO, or it may be used only for a specific function, such as to employ the developers, or to hold real world property. If only part of the DAO is "wrapped" in a legal entity, there may be questions about the nature of the relationship between the legal entity and the non-wrapped part of the DAO, and about the legal characterisation of the non-wrapped part.

2.83 It may be easy to say what a particular DAO is if it has chosen to use one or more recognised legal entities and is therefore a hybrid arrangement or digital legal entity according to our "spectrum" approach introduced above.[64] Where there is a legal

[64] See para 2.23 and longer discussion from para 2.112.

entity in any capacity, the legal entity or entities in question will be subject to the usual legal, tax and regulatory requirements of the jurisdiction in which they are set up.

2.84 But a DAO may have taken no active steps to set up a legal entity. A group of people – developers, token holders etc – may have worked together or interacted with each other without giving any thought to their collective legal status or legal liability, or may have chosen to avoid existing legal forms for philosophical reasons. We call these "pure DAOs". Critically for our purposes, where the participants have not made a positive choice as to status, it may be necessary to work out retrospectively what the arrangement is or was from a legal perspective. Whether the participants like it or not, the arrangement still exists in the real world with its rules and liabilities. This could be a difficult exercise, especially if the DAO does not fit easily within existing structures that can arise as a matter of law (rather than requiring active registration), such as general partnerships or unincorporated associations, discussed further in Chapter 3.

2.85 Particularly in the case of pure DAOs which may have no particular link with any single jurisdiction, it may be difficult to identify which country's laws or regulatory regimes apply to determine these issues – but that is a separate question which will have to be answered on a fact-specific basis.[65] We include more explanation of the private international law issues in Appendix 3.

2.86 What a particular DAO is from a legal perspective will affect a great deal of its potential analysis, including the rules for its operation, the liability of participants, how it can enter contracts and own property, and how it is taxed. DAOs that have taken active steps to include a recognised legal entity within their structure are therefore very different from those that have not. The difference in the kinds of issues that arise between these different types of arrangement is so great that in some respects it is difficult to talk about them together, even if they are all "DAOs" according to our very broad definition.

2.87 Our impression is that, as DAOs have developed over the past few years, more or perhaps most DAOs are proactively adopting legal entities with separate legal personality. As discussed further below, this will aid their ability to transact in the "real world" (for example, by opening bank accounts and entering into contracts) as well as limiting participants' potential personal exposure to legal liabilities, but inevitably moves them further away from their original goals.

Why does it matter what a DAO is?

2.88 It may be necessary to characterise the legal relationship between various actors within a DAO for a variety of reasons. For example, to answer key questions such as: Who is liable if something goes wrong? How can a DAO enter into contracts and hold funds? The are no answers of universal application for DAOs because answers to these questions will be fact-specific and relevant to the DAO in question. Below we introduce some key areas in which characterisation will be relevant.

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65 Conflict of laws provisions, in general, fall outside of the scope of private law and so outside the scope of this project. The Law Commission is undertaking a separate project, "Digital assets: which court, which law?" which will consider the current rules on private international law as they may apply in the digital context. See https://lawcom.gov.uk/project/digital-assets-and-etds-in-private-international-law-which-court-which-law/.

Liability

2.89 A key question for DAOs and their participants is who will be liable if something goes wrong. What happens when actions by or on behalf of the DAO give rise to liability in tort (such as negligence), or if there are any regulatory breaches or criminal conduct? Who or what is responsible for the actions of the DAO?

2.90 The issue is particularly stark when the use of open-source software allows unscrupulous actors to identify and exploit weaknesses. In such circumstances, other participants and users of the DAO may be harmed, and/or the actions may breach regulatory or legal requirements, giving rise to civil actions or criminal prosecutions. In such circumstances, can and should the DAO (or some/all of its participants) be held liable?

Civil liability

2.91 The prospect that all, or certain types of, DAO participants could be held personally liable for acts of or associated with the DAO (either individually or on a joint and several basis) might seem somewhat shocking given the actual level of control that any individual might have and the lack of trust-based relationship between participants.[66] But where the DAO has no separate legal personality and does not use an incorporated form, it is a distinct possibility.[67]

2.92 As we discuss in Chapter 3, a legal analysis of a DAO could conclude that all or certain participants within a DAO are part of a general partnership or unincorporated association, or part of a network of contractual and/or agency relationships. This may in turn give rise to individual participants having personal liability for the actions of the DAO, because the DAO does not have its own legal personality that can shoulder these liabilities. For example, in a general partnership, all partners are jointly liable for the debts and obligations of the partnership.[68] This also raises questions about whether some participants (such as a DAO's founders, or those who hold most tokens or have the power to amend the code) can be held "more liable" than other participants whose involvement is more passive or who in practical terms have less control.[69]

2.93 If the DAO has used a formal legal entity such as a company with a legal personality separate from that of its participants, the answers are likely to be more straightforward and the DAO itself will shoulder much of the burden since, as a legal person, it can

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66 For example, it is sometimes suggested that a DAO which has not actively chosen a legal entity could be a general partnership, which can arise as a matter of fact/law (that is, there is no need for eg registration) when two or more people conduct business for profit. All partners in a general partnership are jointly liable for each other's actions. But in a traditional partnership, the partners are generally known to each other and partners have a say over who can join the partnership. In a DAO, to be held jointly liable for the acts of pseudonymous token holders seems a very different prospect.

67 As we have said above, in the United States case *Commodity Futures Trading Commission v Ooki DAO*, 3:22-CV-05416-WHO, (ND CAL DEC 20, 2022), participants in a DAO were found to be members of an unincorporated association.

68 See from para 3.34 and in particular para 3.48.

69 The answer depends on the type of liability eg contractual, tortious/negligence based. The standard legal inquiries would be applied to relevant individual(s) in the absence of another legal entity, on a fact-specific basis.

hold property, enter contracts and sue and be sued in its own name, and the "corporate veil" is only lifted in limited circumstances.

Criminal liability

2.94 The situation in criminal law is similar but there are some important differences and distinctions. Most criminal offences are created with natural persons in mind, but such offences may explicitly or implicitly extend to associations (such as companies).[70] How a particular offence committed by a DAO or a DAO participant could be prosecuted therefore depends both on how the DAO is characterised and the nature of the offence itself.

2.95 Some statutes include provisions which acknowledge that at least some of the offences created are intended to apply to bodies corporate. For instance, it is common for legislation creating offences to include provisions whereby if the offence is committed by a body corporate, directors or other senior officers can be guilty if the offence is committed with their consent or connivance or is attributable to their negligence. Some statutes provide that an unincorporated association or general partnership can be guilty of an offence in its own name, despite its lack of legal personality.

2.96 Many offences that apply explicitly to non-natural persons are regulatory offences, and often these are "strict liability" offences that do not depend on whether the act was intentional.

2.97 However, most general criminal offences require a particular state of mind (or "mental element"), such as an intention to carry out the act or to bring about some result, knowledge of certain matters, recklessness or dishonesty. When an organisation can be prosecuted for an offence requiring a particular mental element, the question arises as to whose state of mind is to be attributed to it.

2.98 In England and Wales, the general rule for attributing liability to companies is the "identification principle". This states that where a particular mental state is required, only the acts of a senior person representing the company's "controlling mind and will"[71] can be attributed to the company – usually a small number of directors and senior managers. However, under the Economic Crime and Corporate Transparency Act 2023, section 196, where a senior manager of a body corporate or a partnership, acting within the scope of their actual or apparent authority, commits one of a number of economic crimes (including theft, fraud, false accounting, money laundering, or bribery) the organisation is guilty of the offence.[72]

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70 The Interpretation Act 1978, sch 1, states that in a statute passed in or after 1889, unless the contrary intention appears the word "person" includes "a body of persons corporate or incorporate".

71 *Tesco v Nattrass* [1972] AC 153.

72 This provision reflected an option contained in our Options Paper on Corporate Criminal Liability; Law Commission, *Corporate Criminal Liability: an Options Paper* (June 2022).

Provisions to extend this to all criminal offences were included in the Criminal Justice Bill introduced into Parliament in November 2023. However, this Bill was not passed as a result of the calling of the General Election of July 2024.

2.99 There are other rules for general partnerships and unincorporated associations, discussed in Chapter 3.[73]

2.100 The particular legal characterisation of any DAO could have potentially serious consequences for the criminal liability of the DAO as an entity, and of its individual participants. However, the liability of both the DAO and its members will be highly dependent upon the particular offence alleged to have been committed, and whether explicitly or implicitly it extends to the particular type of entity (if any) that the DAO uses or is found to be.

Capacity to enter contracts, own property or hold funds

2.101 For example, if a party purports to contract with a DAO, they need to know with whom or what they are contracting. If a DAO has not used some formalising element such as a limited company, it is likely to have no separate legal personality and therefore no ability to, for example, enter contracts or own assets. How then is property owned or a contract entered? And if the DAO holds money on behalf of its token holders, in what capacity is that money held?

Roles and responsibilities

2.102 What duties do the various participants (including developers, token holders, and potentially miners/validators) owe each other, third parties and the world? Those who participate in DAOs in various capacities, including in governance and/or software development for example, need to know the content and extent of their duties. Might they, for example, have duties to token holders akin to those of a company director to shareholders? And might developers owe a duty to other participants in the organisations to safeguard their economic interests, either as fiduciaries[74] or through a tortious duty of care?

Regulation and tax

2.103 If a DAO requires authorisation for its activities – for example, if it carries out regulated financial services – it will be necessary to know what the organisation is in order to determine who or what must apply for authorisation.

2.104 The starting point for determining the tax liabilities of a DAO will be its legal characterisation.[75] For example, companies and general partnerships (in England and Wales at least) are subject to differing tax treatment,[76] and if the DAO is not found to be a single entity, it may be that individual participants must carry the tax liability.

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73 See para 3.61 (in relation to general partnerships) and from para 3.90 (in relation to unincorporated associations).

74 The question of the fiduciary duties owed by software developers to users of open-source software was raised in *Tulip Trading v Van der Laan* [2023] EWCA Civ 83, [2023] 4 WLR 16, although not in the particular context of a DAO.

75 EY Global, "How to navigate tax and legal complexity associated with DAOs" (2 August 2023), accessible at https://www.ey.com/en_gl/insights/tax/how-to-navigate-tax-and-legal-complexity-associated-with-daos#:~:text=Summary,digital%20assets%20sector%20and%20beyond.

76 General partnerships are "tax transparent", meaning that the individual partners are taxed rather than the partnership as an entity. By contrast, a company itself is taxed (shareholders may also be liable for tax on dividends, but that is individual rather than entity income).

Individual participants may also have personal tax liability. A DAO's tax liabilities must be assessed on a case by case basis, and the issues are complex. Particularly in cases where the legal characterisation is unclear, Ernst & Young has noted that:

> it's likely to be difficult for both taxpayers and authorities to determine whether individuals and entities have properly self-reported taxable income. … This increases the level of complexity faced by DAO participants, with legal status open to various interpretations by courts, creating mismatches and potential double taxation, tax risks and liabilities.[77]

2.105 The borderless nature of a DAO also raises questions about where tax is payable – but these questions arise (albeit with perhaps easier answers) with many types of organisation that operate across jurisdictions. They are the subject of international agreement and again will be easier to answer in respect of a recognised legal entity.

JURISDICTION AND EXTRA-TERRITORIALITY

2.106 Companies and other traditional organisations are usually required to establish in a particular location, for example by registering with a domestic registrar in the relevant jurisdiction and/or by establishing a head office in that country in order to carry on business there. The assumption is that the organisation will be subject to the legal, regulatory and tax provisions of the jurisdiction in which they are set up. For example, a company registered in the UK at Companies House will be subject to UK company law and other applicable laws, and will be liable for UK corporation tax. If it wishes to offer financial services such as dealing with investments or offering insurance in the UK, it must be authorised by the relevant UK regulator, the FCA. The FCA also has arrangements in place for international firms providing financial services in the UK.[78]

2.107 As we have touched upon above, a DAO that has not used a domestic legal entity in its structure or otherwise established itself in any one jurisdiction may not be tied to, or associated with, any particular place.[79] This is not entirely novel; it is possible for people in different countries to have an unregistered business partnership and still carry on business.[80] DAOs do however present some additional challenges. The underlying DLT system may be said to exist "everywhere and nowhere";[81] there may be nodes all over the world. The participants in a DAO – its creators and users – may equally be spread all over the world and, perhaps uniquely, may be difficult to identify

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77 EY Global, "How to navigate tax and legal complexity associated with DAOs" (2 August 2023), accessible at https://www.ey.com/en_gl/insights/tax/how-to-navigate-tax-and-legal-complexity-associated-with-daos#:~:text=Summary,digital%20assets%20sector%20and%20beyond.The first part of this quote is attributed to Dennis Post, EY Global Blockchain Tax Leader.

78 FCA, 'Our approach to international firms', last updated 19 March 2024, https://www.fca.org.uk/publications/our-approach-international-firms#lf-chapter-id-our-process-for-authorising-international-firms.

79 P de Filippi et al, 'The Alegality of Blockchain Technology' (2022) 41(3) *Policy and Society* 358, 365.

80 They should however register it somewhere for tax purposes. The business still exists independently of registering in a particular jurisdiction.

81 P de Filippi et al, 'The Alegality of Blockchain Technology' (2022) 41(3) *Policy and Society* 358, 365.

or locate. In response to our call for evidence, European Crypto Initiative (EUCI) suggested that:

> The decentralised nature of a DAO and particular ways of user interactions with the underlying protocol make it impossible to know how many individuals engage with the protocol and smart contract from a particular jurisdiction.
>
> There are three main points why it may be hard to claim a DAO belong[s] to one particular jurisdiction: (1) DAO participants can engage in governance and operations through self-custodial wallets, which do not necessarily provide the regular personally identifiable information but rather pseudonymous information, (2) DAO members may use several different interfaces through which they access the protocol and use smart contract (which is more on the backend of the system), and (3) the websites/interfaces through which one can access DAO smart contract can be deployed and operated on decentralised hosting systems, which do not collect IP addresses.

2.108 The international or borderless nature of some DAOs may mean that it is challenging to know to which laws it is subject. This may give rise to different questions and answers in different areas of law. For example:

(1) Private law. Private law concerns relationships between private parties (including individuals and businesses). Most of what we have discussed above, and the main focus of our paper, is private law. What an organisation is for legal purposes – for example, a company, a general partnership, a collection of contracts – is a question of private law. So too are questions such as how or when civil liability applies, for example negligence or breach of contract. When there is an international element to a private law question, as will often be the case with DAOs, a body of law called private international law will be used to determine (a) which country's courts can rule on the questions and (b) which jurisdiction's laws those courts should apply. Broadly, private international law will look to identify a jurisdiction with which the dispute has a connection. This is a complex area of law, particularly in the context of the crypto ecosystem, and we are looking at it separately.[82] However, it is worth remembering that if a DAO has no obvious link to England and Wales, then the courts in this jurisdiction may not necessarily be able to hear a dispute relating to that DAO, and/or may not be able to apply the laws of England and Wales to determine the answer.[83] We include further detail about private international law in the context of DAOs in Appendix 3.

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82 In our project, "Digital Assets and ETDs in private international law: which court: which law?" Updates are available at https://lawcom.gov.uk/project/digital-assets-and-etds-in-private-international-law-which-court-which-law/.

83 Although, as we have discussed in our "Digital Assets and ETDs in private international law: which court, which law?" project, the courts of England and Wales have so far generally accepted jurisdiction in crypto-related cases where the claimant has a connection to England and Wales, although this is not entirely uncontroversial. None of the cases considered so far have specifically involved a DAO.

(2) Public law. Public law is concerned with the actions and activities of public bodies. It includes, for example:

(a) Regulatory law. Regulatory law – such as financial services regulation or health and safety regulation – concerns the exercise of functions by a public agency. It sets out the regulations and allows the relevant agency to enforce regulations, investigate breaches and bring enforcement proceedings or prosecutions. Regulation is broadly a matter of public law. Whether domestic regulatory rules apply in an international or quasi-international context will depend on the terms of the regulatory rule itself. For example, depending on its drafting, a regulatory rule may apply only to businesses based in England and Wales, or may apply more broadly, to all businesses having some operations or customers in England and Wales.

(b) Criminal law. The starting principle in this jurisdiction is that the criminal law of England and Wales applies only to acts committed in England and Wales.[84] Where no part of the conduct takes place in England and Wales, a specific statutory provision is usually required for acts committed wholly outside the jurisdiction to be able to be prosecuted here.[85] Typically, this will depend on either the act or the defendant having a particular connection with England and Wales (or the UK). There are a number of serious offences that can be prosecuted in England and Wales where the criminal act took place abroad, if the perpetrator is a UK national or habitually resident in the UK. In the case of some offences applying to bodies corporate or unincorporated associations, the necessary connection might be whether the body is incorporated under domestic law or carries on business in England and Wales.

It may be difficult to say that the activities of a DAO are "committed" in England and Wales – or indeed in any one jurisdiction – if the DAO has no physical presence and is distributed across an international network of computers, with most activity happening online. However, it may be – depending on the particular offence in question – that the DAO would be caught by provisions allowing for extraterritorial application, for instance as a result of the DAO engaging in business within England and Wales, or where a gain or loss occurs in England and Wales as a result of fraudulent activity carried out by the DAO.

(c) Tax law. Taxes are imposed by public authorities on individuals, businesses and other entities. They are generally a matter for state governments. In the context of a DAO with no obvious jurisdiction, it may be difficult to know where it or its participants should be taxed and in

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84 For offences covered by the Criminal Justice Act 1993, s 1 (generally economic offences such as theft, fraud, and blackmail), it is sufficient that any act or omission required to be proved took place in England and Wales. It is possible to prosecute fraud offences where all the relevant conduct takes place outside England and Wales if the result is a gain or loss which transpires in England and Wales: Criminal Justice Act 1993, s 2.

85 See eg the discussion in Intimate image abuse: a final report (2022) Law Com No 407, para 15.7.

what capacity (as this will depend on its legal characterisation). The doubt can lead to "potential double taxation, tax risks and liabilities".[86] Andersen LLP has noted that, from the perspective of taxation, concepts such as the location of "central management and control",[87] remain key to determining tax residence. However, they also note that "this approach remains rooted in a time that is far removed from the way that businesses operate today."

2.109 Some of these questions are interconnected – for example, a DAO's tax treatment may fall to be determined by its legal characterisation, which is generally a matter for (domestic) private law. But to a large extent, each of these areas of law is separate and has its own rules for dealing with questions of an international or extraterritorial nature, and they are not straightforward. Although the questions might concern the same DAO, the assessment of the applicable law and its extra-territoriality may be quite different under different areas of law.

2.110 In many cases, DAOs may not have given any thought to the laws to which they might be subject. However, if the point were to be considered, individuals and entities have some choice as to which law applies for private law purposes to govern their relationships with other private parties. For example, a valid contractual choice of law will determine the law governing the private law relationship between the parties under a contract. However, that choice of law will not affect the regulatory regime that applies to the parties as a matter of public law, because parties cannot contract out of mandatory rules.

2.111 Because of the very wide variety of arrangements that could constitute a DAO, it is not possible to draw general conclusions about which laws DAOs might be subject to, and across how many different jurisdictions. In this paper, we talk about how various aspects of the private and public law of England and Wales might apply to DAOs. It must always be kept in mind, however, that, depending on the arrangements of the particular organisation and the detail of the relevant law or regulation, those rules may simply not apply.

A SPECTRUM OF DAOS: PURE DAOS, HYBRID ARRANGEMENTS AND DIGITAL LEGAL ENTITIES

2.112 As indicated, we use the term "DAO" to cover a wide range of technology-mediated structures or organisations of participants that use smart contracts, DLT and, usually, some kind of community voting. While the original idea of a DAO was somewhat anarchic, our understanding is that DAOs are increasingly using legal entities within their structure. This may be partly due to litigation in the United States revealing that DAOs may attract legal characterisation and liability as an entity (or as a collection of individuals) in any case. It could also be attributed to increased interest in the benefits of DLT and smart contracts among individuals and organisations who do not

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86 EY Global, "How to navigate tax and legal complexity associated with DAOs" (2 August 2023), accessible at https://www.ey.com/en_gl/insights/tax/how-to-navigate-tax-and-legal-complexity-associated-with-daos#:~:text=Summary,digital%20assets%20sector%20and%20beyond.

87 *De Beers Consolidated Mines Ltd v Howe* [1906] AC 455: "A company, for purposes of income-tax, resides in the court in which its real business is carried on, which means the country in which its central management and control are actually located".

necessarily hold to the original DAO ideologies. And in general, as the idea of a DAO has been tested and expanded, their activities and legal implications have begun to resemble those of traditional organisations. They have started to hold off-chain, real world assets, and have sought to formalise arrangements such as employment contracts for employees.

2.113 Using a legal entity within the structure of a DAO will connect the DAO with a particular jurisdiction and can provide a variety of benefits including:

(1) separate legal personality giving the DAO the capacity to enter contracts and hold assets in its own name (and to sue and be sued in its own name);

(2) limited liability for their participants, so that participants cannot be held liable for an amount larger than their current and promised investment in the DAO;

(3) (potentially) clearer characterisation of relationships between participants and with the outside world;[88]

(4) the ability to interact more easily in the off-chain world more generally, such as by opening bank accounts;

(5) increased certainty about tax status and jurisdiction; and

(6) clearer integration in frameworks for compliance and regulation.

2.114 For some DAO participants, using a legal structure might involve significant compromises in their philosophy. This could include an inevitable and significant degree of centralisation, loss of anonymity or pseudonymity for some or all of its participants, the introduction of reporting requirements, and the addition of duties (such as directors' duties) which may frustrate the focus on community voting. As has been noted:

> Many traditional legal entity structures require hierarchies (e.g., officers and boards of directors) and include concepts (e.g., stockholders, fiduciary duties, etc.) that are antithetical to notions of decentralisation.[89]

2.115 Whatever the philosophy or priorities behind a particular DAO, whether it does or does not actively incorporate a legal entity can make a significant difference to its legal implications. Here, we introduce (in our own terminology) some different ways that a DAO might be arranged, sitting along a spectrum:

(1) **"pure" DAOs:** arrangements implemented through smart contracts with very limited off-chain activity, no incorporated legal structure and, often, a rejection (deliberately or otherwise) of dependence on law and legal institutions for their

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88 In a hybrid arrangement there may still be questions about the relationship between the entity and the "residual" DAO, for example if the DAO still has token holders who vote on decisions, but they are not members of the legal entity.

89 M Jennings and D Kerr, "A legal framework for decentralised autonomous organisations, part II: entity selection framework" (June 2022), https://api.a16zcrypto.com/wp-content/uploads/2022/06/dao-legal-framework-part-2.pdf.

existence (although they may well still attract legal and regulatory consequences);

(2) **hybrid arrangements:** arrangements combining smart contract-based coordination with deliberate use of one or more legal forms or separate legal entities; and

(3) **digital legal entities:** arrangements where an incorporated legal entity adopts digitalisation through the use of smart contracts or DLT in its operations or governance.

2.116 This wider spectrum allows for variations and/or subcategories to be identified now or over time as the concepts mature and new technologies develop. Technological innovations may also change the nature of the forms available and/or practices used. The proliferation of artificial intelligence (AI) technologies represents one such path of potential change, with the suggestion that "the broader notion of an autonomous organisation entirely run by (centralised) AI is likely to outlive the decentralised nature of the underlying infrastructure that supports it".[90]

Pure DAOs

2.117 Pure DAOs sit at the more decentralised and autonomous end of our spectrum: they are decentralised (in some or all of the various ways described at paragraph 2.34 above) and reject dependence on law and legal institutions for their existence.[91]

2.118 The key characteristic of a pure DAO is that it deliberately does not use any legal entities within its structure. Instead, it relies on technology (code, smart contracts and DLT) to set the rules according to which participants in the organisation interact (including for the purposes of governance) and to automate certain processes and functions. Its governance processes are designed to allow for decentralised governance, for example, decision-making within the organisation is dispersed amongst participants rather than sitting with a central decision-making body.

2.119 Despite not actively choosing to use a legal entity within its structure – and perhaps consciously hoping to avoid legal characterisation entirely – a pure DAO may be found to include a general partnership or unincorporated association, or involve a collection of legally-enforceable contracts between participants, or even a trust structure. This is because these legal characterisations can arise under the law of England and Wales without the need for incorporation or registration.[92] Some pure DAOs take steps to structure their rules and decision-making processes to try to avoid such legal characterisations. This may be for ideological reasons (rejection of dependence on or interference by law and legal oversight) or it could be for practical reasons (the rules relating to these legal entities are not attractive to participants).

2.120 Pure DAOs represent – or hope to represent – DAOs as originally conceived. However, although there are many organisations currently in existence that call themselves DAOs, few, if any, are likely to be pure DAOs at the most decentralised

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90 Stirling & Rose LLP, in their response to our DAOs call for evidence.

91 Although, as we discuss in Chapter 3, they may well still attract legal and regulatory consequences.

92 We discuss this further in Chapter 3.

and autonomous end of the spectrum. Some pure DAOs may intentionally structure themselves so as not to be fully decentralised and autonomous (because, for example, the founders and/or software developers want to retain some control over the direction of the organisation). Alternatively, this may be a temporary situation because the organisation aspires to become more decentralised and autonomous as it matures. This could occur where the founders and/or software developers progressively decentralise the organisation by taking steps such as permitting more decision makers to join or introducing new smart contracts to perform different processes. It may also arise as a matter of circumstance – for example, because not enough other participants buy/receive tokens, or because they do not use their tokens to vote, leaving control factually centralised among a few active participants.

Hybrid arrangements

2.121 Hybrid arrangements combine smart contract-based coordination (that is, a pure DAO arrangement) with one or more legal forms or entities. The pure DAO elements of the hybrid arrangement's governance will exhibit characteristics of decentralisation and autonomy while those relating to the legal entities within the arrangement are likely to be more centralised and less autonomous. Encompassing some of the functions of a DAO within a legal entity is sometimes known as 'wrapping'.

2.122 Different hybrid arrangements use legal entities in different ways as part of their structure. They may use them just for specific functions, for example, to hold intellectual property rights relating to software or to employ staff. Where legal entities are used in this way, the greater part of the hybrid arrangement's governance is likely to remain within the pure DAO element. As such, the hybrid arrangement will be more towards the decentralised and autonomous end of the spectrum. Alternatively, a hybrid arrangement may use legal entities in such a way that some or all major governance decisions are made by the governing body of the legal entity. One reason for adopting this approach may be where the arrangement wants to ensure limited liability for participants making governance decisions; whether this is fully successful may depend on how the residual technological features are operated and the relationship between the wrapped entity and non-wrapped residual part of the DAO.[93]

Digital legal entities

2.123 A digital legal entity is an incorporated legal entity which makes use of technology such as DLT and smart contracts in its formal governance and/or operational arrangements. The use of this technology is enshrined in the rules of the legal entity. These types of entities are largely theoretical in this jurisdiction due to statutory restrictions on the form of, for example, shareholdings and fund interests, but a potential example could be a limited company that issues shares in the form of tokens recorded on a distributed ledger (tokenised securities), conducts formal decision-making processes, such as shareholder resolutions, and/or maintains registers such as shareholder registers on-chain.

2.124 Digital legal entities are distinct from hybrid arrangements because the use of technology is exhaustively formalised as part of the governance of the incorporated

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[93] For example, if the "non-wrapped" part of the DAO incurs liabilities, the participants may still find themselves personally liable depending on the precise circumstances of the arrangement and the functions of the non-wrapped DAO.

legal entity. In contrast, hybrid arrangements include incorporated legal entities in their structure but also retain some smart contract-based coordination which is in addition to those legal entities (the pure DAO elements), which a digital legal entity would not.

2.125 DLT-based systems (either exclusively or in conjunction with non-DLT-based systems) may be applied to digitalise the operation and administration of the entity. For example, a private company limited by shares may wish to use various technologies to issue tokenised shares,[94] substantially automate shareholder voting, or use DLT-based rather than centralised registers.[95] While there are some points of close association with hybrid forms which may use the term "DAO" as part of their structure, we use the term "digital legal entity" to refer to an entity that is not associated with any pure DAO, as we have defined this. Rather, a "digital legal entity" is simply a legal entity such as a company that employs extensively the technology which underpins DAOs in its governance or operations.

Analysing DAOs along the spectrum

2.126 For any organisation seeking clarity on issues of liability and legal characterisation, the answers will depend on the precise arrangements within that organisation, including its structure. The approach to answering the key legal questions above will differ for each of pure DAOs, hybrid arrangements and digital legal entities:

(1) Digital legal entities are likely to be the most straightforward to understand legally. As an incorporated legal entity, a digital legal entity's characterisation and associated rules will be contained in statute and/or case law.

(2) In contrast, pure DAOs do not consciously use legal entities and therefore it may be necessary to consider the roles and relationships between participants in any particular pure DAO, as well as the role of code and the interaction between participants and the code.

(3) For hybrid arrangements, both of the above approaches will need to be followed as well as considering the relationship between participants, the code and the legal entities used. The relationship between the legal entity and the "residual" DAO will also be important, including whether and to what extent the DAO participants are able to direct the actions and decisions of the legal entity.

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94 UKJT, "Legal statement on the issuance and transfer of digital securities under English private law" (2023): https://ukjt.lawtechuk.io/. At the moment, it may be possible to "tokenise" a share by issuing tokens purporting to represent company shares. However, holding that token would not make one a shareholder; the register of shareholders determines the shareholder. A token could evidence the shareholding, in the form of a certificate.

95 Note that law reform would potentially be required to allow this in companies incorporated in the UK. See discussion in Chapter 5.

What kind of entity to use, and where?

2.127 For hybrid arrangements and digital legal entities, key questions will be what type of legal entity or entities to use, and in which jurisdiction? Depending on the priorities of the DAO's decision-makers, both give rise to important considerations such as:

(1) What benefits does a particular legal entity give (such as limited liability) and at what cost (for example, loss of anonymity; reporting requirements; directors' duties?)

(2) What are the laws (including, for example, employment law), regulatory requirements and tax arrangements in a particular jurisdiction?

2.128 There are a range of different legal entities in this jurisdiction and abroad that could be used, although there does not appear to be any "perfect" entity fit. Few if any DAOs are currently set up under the laws of England and Wales. Some other jurisdictions provide more flexible options which may be better able to accommodate the novel features of such arrangements. Some jurisdictions including Wyoming have introduced DAO-specific forms of legal entity, designed to attract DAOs to the jurisdiction, but these have sometimes been criticised for being more onerous on DAOs rather than less. Most DAOs using legal entities are established in US states where the founders are based or, in some cases, offshore locations such as Cayman Islands or Guernsey, which provide greater levels of anonymity for participants, plus tax and other benefits.[96]

NEXT STEPS

2.129 We have not been asked to make formal recommendations for law reform at this stage, and in any case we think consideration of DAO-specific reforms such as the introduction of a DAO-specific legal entity would be premature at this stage, for reasons we explain in Chapter 5. However, we have identified a few areas where further work would be useful to explore how some of these new types of arrangements for collaboration could be accommodated under the law of England and Wales, including:

(1) proceeding with the Law Commission's planned review of trust law. This will consider – in general terms rather than in the DAO context specifically – the arguments for and against the introduction of more flexible trust and trust-like structures in England and Wales;

(2) considering the case for the introduction of a limited liability, not-for-profit association with separate legal personality similar to the unincorporated non-profit association structure sometimes used by DAOs (along with other organisations) in the United States; and

(3) a review of company law to identify reforms to make it easier for organisations to leverage DLT and other technology at the governance level of a legal structure, potentially facilitating the establishment of digital legal entities.

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96 See discussion in Chapter 4.

We expand on these in Chapter 5. In Chapter 6, we identify options for possible further work in the context of regulation and tax. A full list of next steps relating to further work that we have identified can be found in Chapter 7.

Chapter 3: Pure DAOs: legal characterisation and liability of participants

3.1 A pure DAO is an arrangement implemented through smart contracts deployed to a DLT system intended to adhere closely to the original ideological conception of a DAO introduced in Chapter 2. It is not in its own right a recognised legal entity in this jurisdiction and it does not intentionally use any legal entities within its structure. Instead, it relies on code (smart contracts and DLT) to implement and enforce the rules according to which participants in the organisation interact (including for the purposes of governance) and to automate certain processes and functions. In a prototypical arrangement, a series of smart contracts set out the rules as to how a system or product (that is, the activity of the pure DAO) will function, such as a DeFi protocol, for example. Governance smart contracts then provide a means by which members of the pure DAO who hold governance rights (token holders) can propose and vote on various operational and constitutional decisions as well as alter variants in the smart contracts. There may also be governance smart contracts which are used to manage the treasury and tokens (including issuance and redemption of tokens) and to register new members.

3.2 Participants interact with the protocol or governance smart contracts using DLT and with each other using online modes of communication. Some participants will be involved daily while others only rarely. Commentators often talk about a DAO ecosystem or community when referring to DAOs and their participants. This is a reflection of the pervasive narrative among some commentators and market participants that a pure DAO is not a single entity and is not controlled by a centralised decision-making body; instead it is better understood as an ecosystem containing code, smart contracts and a community of participants who interact with each other and with smart contract code in different roles.

3.3 Indeed, some commentators and participants suggest that this ecosystem is outside the scope of law and regulation. The theory goes that this is because power, control and decision making are dispersed between the smart contracts and participants to such a degree that there is no single person or group of people working together or in control of the system or product to which a pure DAO is linked. Further, some commentators argue that the ecosystem has no need for outside control and interference from, for example, the law of a particular jurisdiction, because the rules of the game are contained in automated smart contracts and recorded on transparent, immutable distributed ledgers. For these commentators, this level of decentralisation and autonomy is the ultimate expression of a DAO.

3.4 However, pure DAOs are of course subject to law because it is not possible for any entity unilaterally to declare otherwise. That is not to say, however, that the law is always able neatly to make sense of such organisations. What we have found is that existing law in this jurisdiction leaves some questions unanswered when it comes to characterisation of a pure DAO and the legal basis of relationships between its participants.

3.5 While a pure DAO is not a recognised legal entity in its own right, it is nevertheless possible (and arguably necessary) for a group of people who organise themselves as a pure DAO to attract some form of legal characterisation. This could happen retrospectively – for example, if questions arise about the locus and allocation of liability. There are a vast number of DAOs and therefore any assessment of their structure and characterisation will be fact specific. It is not possible to reach conclusions about DAOs in general, given their variations. In this chapter we therefore provide a legal analysis of common features of DAOs and discuss whether these could result in certain participants within a DAO being part of a general partnership or unincorporated association, or part of a network of contractual relationships or some other arrangement. We also consider various ways of allocating liability to pure DAOs or to some/all of their participants.

A SIMPLE EXAMPLE OF A PURE DAO

3.6 We begin this chapter with a simple example of how a pure DAO can come into existence. This example is designed to help readers who are new to the topic.

3.7 Alinie, Bartek and Clara are software developers who want to create a pure DAO to govern a DeFi platform. They plan to use smart contracts and DLT to create a financial services product that automates certain processes and reduces reliance on actors that function as intermediaries.

3.8 They want to make their pure DAO as decentralised and autonomous as possible. As a first step, they design and write computer code together[97] and develop a protocol for a DeFi product. The protocol sets out the rules as to how the computer software they have written (including smart contracts) operate together to allow that system to function and to perform various financial transactions. They also write a governance smart contract which provides a means to alter the protocol smart contracts and a treasury smart contract that will manage the operation of the treasury. The treasury is a wallet which will hold funds invested in the pure DAO or earned by it as fees from the DeFi product. The treasury is intended to be used to fund bug fixes and system upgrades when needed, to incentivise users through staking/liquidity mining and by rewarding contributors (such as, for example, participants who are involved in the promotion of the DAO's product).

3.9 Alinie, Bartek and Clara implement their protocol by deploying the smart contracts they have designed on an open-source basis to a public DLT system.

3.10 The protocol has been designed to generate software protocol-specified crypto tokens called "ABC tokens". Holders of ABC tokens have governance rights over the protocol. This means that they can suggest changes to the smart contract code making up the underlying protocol and also vote on changes suggested by other token holders. They can propose and vote on a range of operational decisions, such as interest rates and liquidity ratios in the DeFi system/product. If a change is voted on and accepted by token holders, the governance smart contracts then effect changes to the smart contracts of the underlying protocol. They also manage the DAO treasury.

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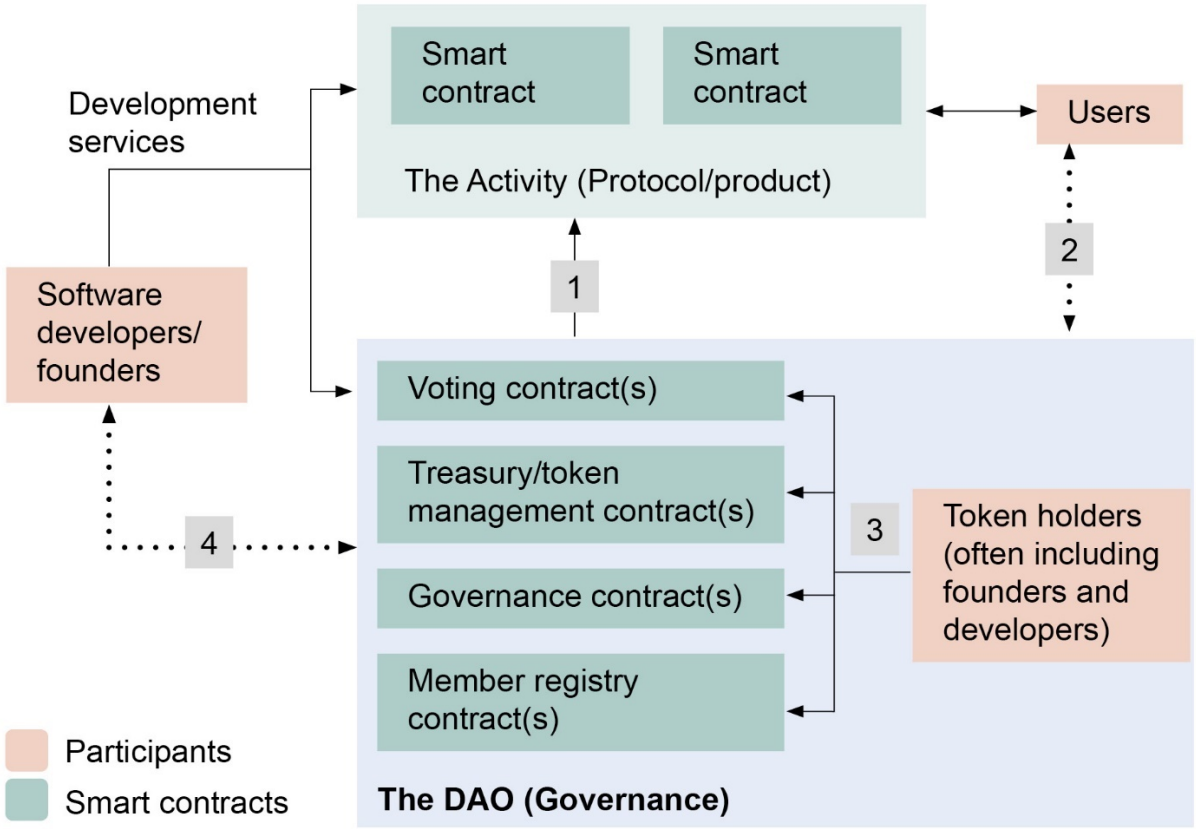
[97] As mentioned in para 2.79(1), the founders/software developers sometimes do this through a development company or "DevCo", which would be a separate legal entity.

3.11 Some ABC tokens have been allocated to Alinie, Bartek and Clara, and others have been offered to potential investors. Several people accept their offer and become holders of ABC tokens in exchange for depositing crypto tokens into ABC DAO's treasury. ABC DAO now has treasury funds and a small number of token holders operating out of a range of different jurisdictions.

3.12 Alinie, Bartek and Clara have designed ABC DAO with the goals of decentralisation and autonomy in mind. They do not want ABC DAO to be under the control of any single individual or group of individuals or to be subject to the external influence of state laws and regulations. To this end, decision making within ABC DAO is dispersed amongst all token holders; there is no centralised decision-making body or group of token holders with additional decision-making powers. Where possible, processes and functions of the pure DAO are automated or governed by smart contracts; for example, the results of certain votes are implemented automatically by the smart contracts rather than requiring one or more developers to actively make changes to the smart contracts.[98] The developers have made a conscious decision not to use any legal entities within ABC DAO's structure and all of its processes and activities are carried out online on the DLT system for all participants to see. They hope that ABC DAO will become further decentralised as the number of token holders increases and are actively seeking out further investors and considering giving away tokens in order to achieve this goal. Diagram 1 shows one example of how participants may interact in a pure DAO such as that set up by Alinie, Bartek and Clara.

[98] In some DAOs the outcome of votes may require changes to the code to be implemented manually. This will have to be the case where the nature of the issues is not something that can be pre-coded and involves more nuance (eg is not simply a question of changing an interest rate). For a particular perspective on different types of votes, see G Shapiro, 'How protocol DAOs should work from a cryptolaw-ish perspective, Lex Node, 22 October 2022, https://lexnode.substack.com/p/how-protocol-daos-should-work-from.

Diagram 1: An example of a pure DAO



1	Alterations to the protocol smart contracts or product offering are determined automatically as a result of the outcome of governance votes, or in some cases, by development work commissioned for the DAO as a result of voting by token holders.
2	The relationship between token holders in the governing DAO and users of its protocol or product will depend on the factors discussed in chapter 3 of our scoping paper.
3	Token holders hold governance tokens that allow them to participate in the DAO. Their capacity to participate is determined by the DAO's smart contracts. The governance contract allows token holders to alter those contracts. In some pure DAOs there will be "sub-DAOs" or committees, a smaller group of people accountable to the DAO but responsible for particular aspects of the organisation, such as treasury management. For simplicity, here we present a completely decentralised DAO in which all governance authority rests with all token holders.
4	When a pure DAO engages a counterparty to perform work on its behalf, who is liable on the contract will depend on the factors discussed in chapter 3 of the scoping paper.

The components used above are indicative and non-exhaustive examples that may be used.

The actual composition and functionality of the smart contracts will be fact specific.

ISSUES ASSOCIATED WITH PURE DAOS

3.13 We have explained that pure DAOs sit at one end of our "spectrum": purely on-chain entities that stick closely to the purist philosophy that they are, or should aspire to be, truly "decentralised" and "autonomous". This approach would not support an arrangement incorporating, for example, a limited company.

3.14 As a result of these features, the questions/challenges associated with pure DAOs are likely to include:

(1) What is the DAO, legally speaking?

(2) What is the relationship among the participants, and between the participants and third parties? Are there, for example, fiduciary as well as contractual duties owed by the developers?

(3) How can the DAO hold assets, including its treasury?

(4) Who is liable if things go wrong? Are all participants personally liable regardless of the extent of their actual participation and/or control?

(5) Can it apply for regulatory authorisations?

(6) What are the tax liabilities of the DAO and its participants?

3.15 The answers will depend on the precise arrangements of the pure DAO in question and may be difficult to arrive at. We do not therefore seek to answer these questions comprehensively but instead explain some of the key considerations.

3.16 In particular, the legal characterisation of a DAO will help to answer some of these questions. In the next section, we therefore look at some of the different ways that a pure DAO might be characterised in law.

3.17 As we have explained in Chapter 2, it may not always be clear which jurisdiction's laws apply to a pure DAO. We discuss questions of private international law in more detail in Appendix 3. For the purposes of this chapter, we assume that the applicable law is that of England and Wales.

CHARACTERISING A PURE DAO UNDER THE LAW OF ENGLAND AND WALES

3.18 We have said that a pure DAO deliberately does not use any legal entities within its structure and is not a recognised legal entity in its own right. It may even be the case that participants are working together or interacting with each other without giving any thought to their collective legal status or personal legal liability. However, situations may arise in which it is necessary to characterise the legal relationship between various participants within a DAO and determine what a DAO is as a matter of law.

3.19 The question of what a DAO is as a matter of law may arise, or require definitive answers, only retrospectively and in a particular context; for example, if legal action is taken against the pure DAO or some or all of its participants. This could involve, for example, a civil action by an injured third party, enforcement action by a regulator or prosecution under criminal law. We focus particularly on civil actions as we think these

are more likely to result in a court being asked to define the legal status of a pure DAO or answer questions about the relationship between various participants.

3.20 For example, could developers be liable to participants if a product or system goes wrong or if their expectations of participation are not met? Could developers or token holders be liable to users of the DAO's services if governance or operational decisions cause users to suffer loss?

3.21 It has sometimes been suggested that certain DAOs are so decentralised and autonomous that no single person or group of people can control or direct the DAO or be held liable for its activities. Take the example of a DAO in which the code does what it is programmed to do and developers and token holders have very little control over the operation of the code day-to-day; the code is designed to require little or no maintenance for its continued operation and votes on changes to the code are rare. Some people may argue that this is merely code operating autonomously rather than a business being operated by token holders; a DAO is a technology and not an entity.

3.22 Arguments along these lines were made[99] in litigation in the United States in which a regulator took enforcement action against a DAO. The argument was rejected, broadly on the basis that it was the actions of the participants that the regulator sought to regulate, not the technology itself, and that the DAO was not merely technology.[100]

3.23 We think it is very unlikely that a DAO, or its participants, would (or should) be found to be beyond the reach of the law merely because of the technology used in their arrangement. At some point, choices are made by someone about the purpose of the DAO and what the code should do. Furthermore, in reality, there is usually a group of people who have the technical ability to stop or make changes to the smart contract code.

3.24 That is not to say, however, that any loss or dispute will be actionable. As in any dispute, it will be necessary to show that, for example, there has been a breach of a contract that exists between the parties, or that a party has breached a fiduciary or tortious duty, or that there has been an unjust enrichment.

3.25 These questions are, of course, not unique to pure DAOs, or to DAOs at all. We look at the questions in the specific context of pure DAOs because of the particular challenges to which they give rise. If a DAO uses, for example, a company structure, company law will assist in answering many questions that might otherwise arise. For example, in most cases, the company shoulders the liability if it breaches a contract or causes harm that is actionable in tort,[101] and it is the company itself that is liable for tax. Where this is not the case, as in a pure DAO, it may be necessary to look more closely at the roles of the different participants and the relationships between them.

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99 In amicus briefs filed by organisations including Andreessen Horowitz (known as a16z), https://fingfx.thomsonreuters.com/gfx/legaldocs/byvrlonrnve/frankel-CFTCvbZeroX--andreessenhorowitzamicus.pdf.

100 *Commodity Futures Trading Commission v Ooki DAO*, 3:22-CV-05416-WHO, (ND CAL DEC 20, 2022).

101 This is the effect of the company having separate legal personality, and affording limited liability to shareholders who are only liable to the extent of their unpaid shareholdings. In certain very limited circumstances, company law allows the "corporate veil" to be lifted and individual company directors held directly accountable. See eg *Prest v Petrodel Resources Limited* [2013] UKSC 34, [2013] 2 AC 415.

This can assist in determining the status of participants, and their rights and responsibilities, both to each other and to third parties (either as a individuals or members of an organisation).

3.26 The court will first need to ascertain how the particular DAO operates, as far as this is relevant to the dispute it is considering. It may need to know, for example, the roles and responsibilities of different participants, which participants have decision making and governance rights, what those rights are and how they have been exercised. The court may also need to consider issues of agency between participants. The governance mechanisms, participation levels of token holders and precise details of the relationships between participants will vary between different DAOs.

3.27 After the facts are established, existing legal principles will be applied to the novel situation: a group of participants who interact and operate with decentralised control over what are often largely automated operations. There is also the question of who or what is the defendant – has the claim been brought against the DAO itself (and is that possible if it has no legal personality), individually named participants (such as the founders), or some or all categories of participants in the DAO? This question may itself be something the court has to decide.[102]

3.28 How a particular pure DAO is characterised will be a fact-specific enquiry decided based on the application of long-established, technology-neutral tests under the general law. As a consequence, the legal duties that members of a particular DAO may have to each other and to any counterparties will not arise from some arbitrary designation and are not, for lawyers at least, wholly unpredictable.

3.29 Because these tests are technology neutral, they do not cease to apply because DAO participants operate on a blockchain rather than through in-person interactions. DAOs will neither be unfairly exposed to, nor unfairly protected from, the relevant characterisation and legal consequences in England and Wales merely because of their use of novel technology. With that said, some of the common features of DAOs make it less likely that the tests for some of these legal characterisations will be met.

3.30 The application of established law to disputes relating to pure DAOs raises questions which, to date, the courts in this jurisdiction have not yet been asked to consider. The issue has, however, arisen in litigation in the US, with DAO token holders found to be members of an unincorporated association as defined under specific pieces of US legislation.[103] General partnerships and unincorporated associations can come into being through a combination of factual circumstances and legal attributes, without the participants making an active choice to form an entity. This differs from, for example, a

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[102] In the case of *Commodity Futures Trading Commission v Ooki DAO*, 3:22-CV-05416-WHO, (N.D. CAL. DEC. 20, 2022, a United States regulator brought a case against the DAO itself, arguing (successfully) that it was an unincorporated association. The relevant rules provided that it was unlawful for any "person" to engage in activities that did not confirm to the regulatory regime. The definition of "person" included "individuals, associations, partnerships, corporations, and trusts". The court rejected the argument that the DAO was merely a technology and not an entity, on the basis that it was the actions of the token holders that the regulator was seeking to regulate, not the protocol itself.

[103] For example, *Commodity Futures Trading Commission v Ooki DAO*, 3:22-CV-05416-WHO, (N.D. CAL. DEC. 20, 2022; Joseph Van Loon v Department of Treasury 1:23-CV-312-RP and *Sarcuni v bZx DAO*, Case no: 22-cv-618-LAB-DEB (27 March 2023 order).

limited company, the establishment of which requires active steps, including registration with a company registrar (such as Companies House in the UK).

3.31 This, together with the United States decisions mentioned above, has led to intense interest in the market about whether participants in a pure DAO could be found to be partners in a general partnership or members of an unincorporated association in other jurisdictions or contexts.

3.32 Given the prevalence of these questions in DAO commentary, we start by considering whether either of these characterisations is likely under the law of England and Wales, and what the consequences of them would be. Although there are some commonalities, the differences between jurisdictions mean that the reasoning in the United States case law will not necessarily be instructive in this jurisdiction.[104] We conclude that such characterisations may be possible in this jurisdiction in the case of a particular DAO under consideration, depending on its precise arrangements, but may put a strain on the general conception of such organisations. General partnerships do not seem to be a good fit for the archetypal DAO for many reasons and it might be unfortunate (for DAOs/DAO participants and, potentially, for the law of general partnerships) if they were routinely characterised in this way. An unincorporated association (as described in this paper as a not-for-profit arrangement) may be a better fit for some DAOs given that it has fewer strict default rules.

3.33 In this chapter we also look at other ways in which a pure DAO and the relationships between its participants could be categorised, and at how liability could be attributed where a pure DAO does not include a general partnership or unincorporated association.

DAOS AS GENERAL PARTNERSHIPS?

3.34 General partnerships have existed in the UK for hundreds of years. They are now defined in the Partnership Act 1890 (the Partnership Act), and a general partnership exists when the definition in the Act is fulfilled. From the statutory definition, three conditions must be satisfied for a general partnership to exist:[105] (1) there must be a business; (2) which is carried on by two or more persons in common; (3) with a "view of profit".

3.35 Business is defined in the Partnership Act 1890 to include "every trade, occupation, or profession".[106] This wide definition encompasses almost all commercial activities.[107] A general partnership may arise in relation to a business generally or for a particular

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104 For example, the definition of a partnership under the United States Uniform Partnership Act 1997 differs from that under the Partnership Act 1890 in this jurisdiction. Similarly, unincorporated associations in the United States can be for profit as well as not for profit. For example, in California, an "unincorporated association" is defined as an "unincorporated group of two or more persons joined by mutual consent for a common lawful purpose, *whether organized for profit or not*": 2011 California Code Corporations Code, s 18035(a) (emphasis added).

105 Partnership Act 1890, s 1. This section also excludes from the ambit of the Partnership Act 1890 companies registered under the Companies Act 2006 and companies formed or incorporated by or in pursuance of any other Act of Parliament or letters patent, or Royal Charter.

106 Partnership Act 1890, s 45.

107 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-05.

transaction, area, or project.[108] However, the fact alone that some activity is profitable does not necessarily turn the activity into a business.[109]

3.36 For a partnership to exist, the persons[110] must carry on their business "in common".[111] That is, "together".[112] This implies the following:[113]

(1) There must be a single business. This may, however, involve different and unrelated activities or divisions.[114]

(2) Members must be carrying on that single business *together* for their common benefit, accepting some level of mutual rights and duties between themselves.[115] Persons carrying on wholly separate businesses or else seeking only to improve their own individual profitability will not be partners.[116] Equally, activity by a person in their individual capacity does not form part of a partnership business.[117] However, the business can be a benefit for someone else, for example, where partners decide to apply all profits to a charitable purpose.[118]

Members must have accepted (expressly or impliedly) some mutual rights and obligations between themselves, in particular:[119]

(a) the existence of a duty of good faith may be "highly indicative" that a partnership exists;[120]

(b) the absence of mutual rights and obligations indicates that no partnership exists; but

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108 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 5-107. A "sub-partnership" may also arise, that is a partnership in a share of another partnership (R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* paras 5-109–5-115).

109 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-02.

110 The term "persons" includes bodies corporate: Interpretation Act 1978, sch 1. This means that an individual and a body corporate or a group of bodies corporate may form a partnership together.

111 Partnership Act 1890, s 1.

112 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-13.

113 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) paras 2-13 to 2-17.

114 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-16.

115 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-16. (emphasis in original).

116 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-07, 2-11.

117 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-08.

118 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-25 and fn 94.

119 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-16.

120 *Campbell v Campbell* [2017] EWHC 182 (Ch) at [90(e)].

(c) the mere acceptance of *some* mutual rights and obligations is not, alone, sufficient to show that a partnership exists.[121]

(3) Members must be carrying on that single business (at least in part) on their own behalf. If they all run the business entirely on behalf of a single third party, there is no partnership; but if they run the business on behalf of themselves *and* one or more third parties, there may be a partnership.[122]

The business must be carried on with "a view of profit".[123] That is, the participants must intend to make a profit. This feature distinguishes partnerships from societies or clubs.[124] A partnership will only exist if the profits are intended to be realised for the common benefit of the participants.[125] This does not mean that there must be equal profit sharing between partners and does not even preclude the partners from carrying on a business with the object of applying the profits towards a charitable purpose.[126] However, if a number of firms associate together with a view to promoting high standards in the professional services which they supply to their respective clients and, thereby, to improve the individual profitability of each firm's business, this will not be sufficient.[127]

3.37 Whether the three conditions are satisfied in a particular instance is a mixed question of fact and law.[128] The three conditions are the only essential preconditions to the existence of a general partnership.[129] Various evidentiary aids to determine whether a particular relationship constitutes a general partnership are also provided by legislation[130] and case law; but these aids are subsidiary to the three conditions set out in section 1 of the Partnership Act itself. The three conditions therefore represent the "ultimate test" of whether a general partnership exists.[131]

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121 See R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-16: "If, on a true analysis, each supposed partner is carrying on a separate business wholly independently of the other(s), as in the case of a mutual insurance society … or one is actually supplying … services to the other, there can in law be no partnership between them. Equally, joint venturers will not necessarily be partners." Mutual societies are also discussed by R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-71 as societies in which each member acts only for himself.

122 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-13.

123 Partnership Act 1890, s 1(1).

124 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) paras 2-23 and 2-70.

125 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-24.

126 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-25.

127 As was made clear in *Brostoff v Clark Kenneth Leventhal*: R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-24.

128 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 7-15.

129 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-30.

130 Principally, Partnership Act 1890, s 2.

131 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 5-01.

When would a DAO be a general partnership?

3.38 A frequent concern of stakeholders is that pure DAO participants will be characterised as a general partnership, making them jointly liable for liabilities incurred by one another and subjecting them to onerous duties to act on each other's behalf, contrary to participants' expectations. It is possible for a pure DAO to meet the statutory test for a general partnership: use of novel technical features, such as on-chain voting, does not preclude this. Nonetheless, many DAOs have organisational characteristics that may make it unlikely that a court would conclude that the participants agreed to carry on a business in common with a view to profit and bear mutual duties as partners as a result. These include the decentralisation of governance to an often pseudonymous and changing membership, the nature of the activities of archetypal pure DAOs, and the means by which participants are able to make financial gains.

3.39 There could be significant differences between how different pure DAOs are set up and for what purpose. Depending on the details of a particular arrangement, it is possible that some or all participants in a pure DAO could be characterised as partners in a general partnership under the law of England and Wales. However, several things must come together in order for that characterisation to arise.

3.40 At first glance, some DAOs could appear to be a natural fit for characterisation as a general partnership: where participants are exercising governance rights over a DAO's activities and are making financial gains as a result of their involvement with the DAO. What we have observed, however, is that some of the features common to many pure DAOs strain the usual understanding of general partnerships. Similarly, some of the usual features of general partnerships contrast with how a pure DAO is likely to operate in practice and with how DAO participants see themselves. None of this means, however, that the legal test for a general partnership is not or cannot be satisfied by a pure DAO, rather that the ways DAOs usually operate may make it unlikely in many cases.

3.41 Here, we summarise some features of pure DAOs that appear to strain the usual idea of a general partnership. For readers who would like more detail about how these features of pure DAOs could interact with the legal test for a general partnership, we include further discussion and analysis in Appendix 4.

(1) In most traditional partnerships, individual partners will be carrying out similar roles and may be expected to have similar expertise, to have received similar legal advice, and to participate in a relatively similar way with shared responsibility. In a pure DAO, despite the ideological emphasis on decentralisation and equality, it may be that certain participants – for example, the founders and/or developers – may be more involved in determining the purpose of the DAO and its business aims, and to have influence over what the DAO does. They might also be more likely to be known to each other and might reasonably be expected to know about the legal and regulatory environment in which they are operating (for example, if they decide to set up a DAO that provides DeFi services) than token holders who become involved at a later date. And other participants – such as miners and validators – perform certain functions but may not be involved in decision making. There might therefore be a case for arguing that only some of the DAO participants should be regarded as partners. Indeed, any general partnership might have users or administrators

or other third parties whom they interact with but who are not partners or members. However, which if any participants could be regarded as partners will depend on the facts of the particular case.

(2) Members of a general partnership must be carrying on a single business together for their common benefit. In a pure DAO, this may not be the case even where DAO participants are financially motivated, if, for example, they are individually interacting with code solely for their own personal financial gain rather than for a common benefit. Token holders could see a benefit from a capital value increase in their token holdings, they could receive further DAO tokens or they could benefit from the DAO buying back their tokens. They may also use their tokens to earn fees and interest by participating in lending or staking. Miners/validators may be rewarded with DAO tokens or other cryptoassets for their involvement in supporting the infrastructure and/or functioning of a DAO and users of a DAO's services may do so with a view to a profit. This kind of arrangement may not align with the requirements for a general partnership (but may still be an unincorporated association, as we discuss from paragraph 3.67).

(3) Holding a token in a pure DAO is what gives the holder a right to be involved in its governance. A token holder can freely transfer their token holdings to outsiders on the secondary market. Any new token holder would have all the power of the previous token holder. A share of a partnership is not generally transferrable in this way. Rather, the organisation's rules will set out how a partner or member can leave, and how a new one can join. These are generally two separate processes and not a matter of the outgoing person being automatically replaced by a new person as a result of the outgoing person transferring their partnership position or membership to the new person.

(4) As we discuss in more detail in Appendix 4, when a partner leaves a general partnership, the partnership technically dissolves and a new one is formed. In the DAO context, this could technically mean that the partnership is being dissolved and re-constituted multiple times a day as token holders trade their tokens. Further, unless agreed otherwise, a former partner will remain liable to third parties for any liabilities incurred during their time as partner and a new partner will not take on these liabilities. It is unlikely that DAO token holders will realise that they could retain liability after they have sold their tokens.

(5) Pure DAOs can have a very large number of participants (including hundreds or thousands of token holders) who are not known to each other. This is in contrast to the classic characterisation of a general partnership as a relatively small group of people who know each other and may even be bound together by ties of friendship and mutual confidence. Even in, for example, a large law firm with hundreds of partners, there will be a rigorous process for admitting new partners such that partners are expected to trust and have confidence in each other even if they do not have direct personal relationships. The shared trust between the partners is reflected in the fact that partners are jointly liable for the actions of the other partners. Holding DAO participants liable for the acts of a huge number of unknown participants is potentially more difficult to justify

from a policy perspective (but again, it may well be the legal result and is not necessarily incompatible with the statutory definition).

(6) General partnerships (and unincorporated associations) usually have rules dealing with key aspects of the organisation's existence and activities.[132] This is because the partners (or members) are likely to be aware that they are part of the relevant organisation and want to set out clearly the "rules of the game". These may include an explanation of how partners can join and leave and how any funds will be used or distributed. It is possible for pure DAOs to have a set of natural language rules which set out some information about how the pure DAO operates and the roles and responsibilities of different participants. However, this will not always be the case and any rules that do exist (either in natural language or in the code of smart contracts) may not cover some of the key aspects one would usually expect to find in the rules of a general partnership.

Legal consequences of characterisation as a general partnership

3.42 Being characterised as a general partnership would have the benefit of legal certainty: there is a wealth of case law and guidance concerning how partnerships operate and the rights and liabilities to which they give rise. Participants would not have to navigate a new set of legal requirements and expectations. That said, there are clear disadvantages associated with this classification, most notably the lack of limited liability and the fact that every partner is bound by, and potentially liable for, the actions of another partner, and difficulties in compliance with requirements such as transparency as to membership. Here, we pick out some of the key consequences of being a general partnership and consider their potential impact in the context of a pure DAO.

No separate legal personality

3.43 A general partnership is not a distinct entity from the individual partners composing it.[133] It has no separate legal personality. This creates a number of inter-related problems for partners.

3.44 Because it is not a legal person, a partnership cannot itself own assets, grant security or enter contracts. Nor can it acquire rights or obligations. The rights and liabilities of a partnership are the rights and liabilities of the partners and are enforceable by and against them as individuals.[134]

3.45 The inability for a pure DAO in its own name to own property and contract with third parties could obviously be problematic for those DAOs who wish to do any of these things. At the very least, a pure DAO is likely to hold cryptoassets in its treasury and

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132 Although many partnerships do not have written agreements: R I Banks, *Lindley & Banks on Partnership* (20th ed 2017), para 10-01

133 *Sadler v Whiteman* [1910] 1 KB 868, 889, per Farwell LJ. The position is different in Scotland, where the partnership firm is "a legal person distinct from the partners of whom it is composed" (Partnership Act 1890, s 4(2)), and also unlike a Limited Liability Partnership (an "LLP"). For a brief introduction of the position in Scotland, see R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 3-08 and for further see our report Partnership Law (2003) Law Com No 283; Scot Law Com No 192, paras 2.7–2.8.

134 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-58.

will therefore need to be able to hold assets as a matter of law, and may wish to contract directly with users of its services.

3.46 Of course, partnerships have developed solutions to the challenge of having no separate legal personality. In particular, contract and agency can enable the partners legally to achieve in practical terms what the partnership itself cannot do in strict legal terms. Every partner is an agent of the partnership and of the other partners, and a partner's acts bind the partnership and the other partners, provided that they have acted in the usual course of business.[135] A partner can, for example, enter into a contract on behalf of the partnership. For instance: a third party and the original partners may agree that the contract is to be performed by the partnership as from time to time constituted;[136] and certain partners might legally own partnership assets on trust for all the partners.[137] Thereby, a law firm partnership might own an office, contract with services providers, have bank accounts, employ staff, and engage with clients.

3.47 Some of these typical workarounds adopted by traditional partnerships may be more burdensome and/or less ideologically attractive to DAOs. For example, owning assets via trustee(s) and contracting via agent(s) both involve entrustment to a small number of persons – while, by contrast, DAOs are conceived of as "trustless" and decentralised. That said, given that the treasury is likely to be controlled in fact by a small number of participants acting through a multi-signature arrangement, and that only a small number of participants are likely to be involved in third-party interactions, the reality of a DAO may be mapped relatively easily onto this legal analysis.

Civil liabilities

3.48 As a consequence of a partnership having no independent legal existence from its partners, the default position is that partners share joint liability for the "debts and obligations" (such as contractual liabilities) of the partnership.[138] The unprotected position of partners contrasts with the protected position of shareholders in a limited company: the shareholders are liable only for the amount unpaid on the nominal value of their shares (not the market value) and so, for fully paid-up shares, shareholders have no further liability for the company's debts. Similarly, for a company limited by guarantee, liability is limited to the amount each guarantor agreed to guarantee.

3.49 Partners are also jointly and severally liable for "any wrongful act or omission of any partner acting in the ordinary course of the business of the firm, or with the authority of [their] co-partners".[139] This extends to liability for "loss or injury" to any person who is not a partner in the firm, "or any penalty incurred". This could include, for example, tortious acts, regulatory liability or breaches of contract, but only to the extent that the acts were carried out in the ordinary course of business or with the partners' authority.

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135 Partnership Act 1890, s 5.

136 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 3-66. Note that partners individually have no direct interest in the partnership assets although collectively they are entitled to them beneficially.

137 Or to hold the real property in a company controlled by the partnership, so avoiding the need to transfer title on the death or retirement of a trustee.

138 Partnership Act 1890, s 9.

139 Partnership Act 1890, s 10.

An injured party could sue one or more individual partners or, as discussed below, the partnership itself.

3.50 This risk of personal liability may be even more problematic for DAO participants than for partners in a traditional partnership because traditional partners may be better able to control or understand their potential liability. For instance: (i) a partner in a small law firm partnership may be in a stronger position to trust and influence their fellow partners' decision-making than a token holder in a large decentralised DAO; (ii) a traditional partnership may be better advised and as a result may, for example, have good insurance and/or have liability limited by contract as far as possible; (iii) a DAO may operate in a more nascent and uncertain regulatory and liability landscape than, say, a law firm or farming partnership; (iv) a partner in a traditional finance firm may have a deeper understanding of the relevant law and regulation than a token holder in a DeFi DAO; and (v) the identities of token holders may not be known to other token holders or to third parties, meaning that certain token holders who happen to be prominent or known may be held liable for the entire liability without a realistic prospect of contribution from their fellow token holders.

Change in partners

3.51 When there is any change in the identities of partners, the 'old' partnership is technically dissolved and 'new' partnership is formed even if the name is the same. Any partnership name is merely a convenient way to describe the group of persons associated together at that point in time.[140] When a partner joins or leaves, that name takes on a new meaning.[141]

3.52 When a partner joins or leaves, the new partnership and leaving partners may agree contractually between themselves to take on the rights and obligations of the old partnership. However, transferring an obligation owed to a third party generally requires the consent of the third party, and cannot be done unilaterally by the partners. In other words (unless the parties agree otherwise):

(1) a new partner does not become liable to third parties for debts, contractual obligations or tortious liability incurred before they became partner;[142] and

(2) a former partner remains liable to third parties for debts, contractual obligations and tortious liability incurred during their time as partner.[143]

3.53 When token holders join or leave a DAO, participants tend to think of the DAO itself as pre-existing and continuing to exist – this is inherent in the language of "joining" and "leaving" a DAO. In practice, people talk of large partnerships in the same way. For example, the law firm Slaughter and May[144] would describe itself as having existed since 1889 not 2024 when the last change in partners occurred. Hence, the real

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140 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 3-17.

141 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 3-20.

142 Partnership Act 1890, s 17(1).

143 Partnership Act 1890, s 17(2).

144 Slaughter & May is still a general partnership; unlike the vast majority of other (large) law firms, it has not opted to become a limited liability partnership (LLP).

question for a DAO is not linguistic, but rather the extent to which it can replicate the effect of being a continuing entity despite no such entity existing at law.

3.54 Regarding contractual rights and liability, a DAO might achieve the effect contractually, that is in the terms of agreements (i) between the participants themselves and also (ii) between the DAO (in reality, the participants) and third parties. Contractual solutions, however, may require a conscious effort to be made, and might not assist members of a DAO who were unaware of the issue.[145]

3.55 Further, there are limits to what can be achieved contractually: contractual arrangements could not pass primary responsibility for tortious liability to non-counterparties or pass regulatory liability to a particular participant (as the regulation itself will determine who or what category of person is subject to it). As a consequence, even with careful drafting between participants, an outgoing DAO participant may not leave behind primary liability for torts and regulatory breaches committed by the DAO (that is, by the participants at the time) during their time as a participant.[146]

Suing and being sued

3.56 The Civil Procedure Rules of England and Wales permit a partnership to sue and be sued in the partnership's name.[147] The name of the partnership, however, remains only a shorthand for the names of the individual partners at the time when the cause of action accrued. Suing in the name of the partnership does not abrogate the need to identify the correct parties to the claim; that is, the partners at the time when the cause of action accrued (which may be different from the partners at the time of the proceedings).

3.57 To this end, the other side has the right to receive "a written statement of the names and last known places of residence of all the persons who were partners in the partnership at the time… ."[148] Known token holders may be liable to sanction by the court, including striking out their claim or defence unless they comply. Many DAOs would struggle, or find it impossible, to comply with this obligation due to having a large, shifting and/or pseudonymous membership. If a defendant partnership does not produce all names, the claimant can still sue the partnership and the partners whose names are known, increasing the exposure of those few individuals.

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145 Relatedly, a change in the partnership may constitute a breach or repudiation of some contracts – because the third party in reality contracted only with the partners at the time when the contract was entered into. There is often, however, a contractual solution to this contractual problem – in particular, the third party and original partners may agree (either expressly or implicitly) that the contract is to be performed by the partnership as from time to time constituted, and the new partner may agree to take on the contractual rights and obligations of the contract.

146 The drafting of DAO membership agreement(s) could give a former member a right of contribution from current members. However, such an agreement would not shift primary liability to the injured third party or regulator and would be more problematic for a DAO than for a conventional partnership: for instance, a DAO's membership will often be free-flowing and pseudonymous meaning that it would be (i) more arbitrary who happens to be holding the tokens at the time of subsequent proceedings and (ii) harder for a former member to identify, and enforce against, current members.

147 Civil Procedure Rules, Practice Direction 7A, para 7.3.

148 Civil Procedure Rules, Practice Direction 7A, para 8.

Disputes between partners

3.58 Partners owe their fellow partners fiduciary duties; that is, duties of loyalty and utmost good faith.[149] For example, a partner must: (i) not make a profit which should have been the firm's;[150] (ii) disclose conflicts of duty; (iii) not compete with the partnership business without the partnership's consent;[151] and (iv) not profit personally from information received in the course of the partnership business.[152]

3.59 Some DAO participant agreements expressly exclude fiduciary duties between token holders. Where this has not been done, however, the courts have no power to relieve partners from liability. Unlike company directors and trustees,[153] partners who face claims arising from breach of duty cannot apply to the court for relief on the ground that they have acted honestly and reasonably.

3.60 In DAOs where participants agree to exclude completely *all* fiduciary duties between themselves, it becomes increasingly questionable whether the token holders can truly be said to be a carrying on a business "in common", and so whether the token holders are in partnership in the first place.

Criminal liability

3.61 Under section 10 of the Partnerships Act 1890, where a penalty is incurred as a result of a wrongful act or omission by a partner acting in the ordinary course of the business of the firm, the firm is liable to the same extent as the individual partner. Therefore, where a criminal offence extends to a partnership, the partnership may be liable where the act was committed by an individual partner.

3.62 In the case of common law offences, a partnership has no existence separate from the partners and it has been suggested that the partnership cannot therefore itself commit an offence.[154] Criminal liability might be attributable to individual partners. For statutory offences, the position will depend on the wording of the relevant provision, some of which provide that a partnership can commit an offence in its own right. For instance, the offence of corporate manslaughter can be committed by a corporation; certain departments and public bodies; a police force; or a partnership or trade union which is an employer.[155]

3.63 Some offences that extend to partnerships will be "strict liability" offences that do not depend on whether the act was intentional. Others will require particular participants in a partnership to have a particular state of mind (or "mental element"). This could be an

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149 *Aas v Benham* [1891] 2 Ch 244; *Snell's Equity* (34th ed 2019) para 7-004.

150 Partnership Act 1890, s 29.

151 Partnership Act 1890, s 30.

152 For further description of partners' duties, see Partnership Law (2003) Law Com No 283; Scot Law Com No 192, paras 11.1–11.13.

153 Companies Act 2006, s 1157; Trustee Act 1925, s 61.

154 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 14-02.

155 Corporate Manslaughter and Corporate Homicide Act 2010, s 1(2).

intention to carry out the act in question or to bring about some result; knowledge of certain matters; recklessness; or dishonesty.

3.64 Where an offence explicitly extends to partnerships, provision will generally be included to enable the prosecution of the partnership (typically providing, for example, that it should be prosecuted in the name of the partnership and any financial penalty will be payable from the funds of the partnership and not by individual partners).[156] There may also be provision so that where the partnership is convicted of an offence, an individual partner will be guilty if they consented to or connived in the offence or (sometimes) where commission of the offence was attributable to their negligence.[157]

3.65 Although members of a partnership are jointly liable for the debts and obligations of the partnership, individual partners who are not a party to the criminal conduct would not have any individual criminal liability (unless there is provision in the statute for them to be individually liable on the basis of consent, connivance or negligence).

Tax and financial regulation

3.66 General partnerships are transparent for tax purposes, meaning that the individuals are taxed rather than the partnership itself. A general partnership can be a "firm" or "person" for the purposes of financial regulation. We discuss the application of tax rules and financial regulation to DAOs in more detail in Chapter 6.

DAOS AS UNINCORPORATED ASSOCIATIONS?

3.67 Unincorporated associations are not a creation of statute. There is therefore no statutory definition or statutory test for their existence.[158] The courts have provided a description on numerous occasions[159] but there is no singular definition arising out of case law which operates as a test. Where the courts have provided a description, this is often to distinguish an unincorporated association from some other arrangement such as a general partnership or straightforward contractual arrangement between parties.

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156 See for instance Bribery Act 2010, s 15, which concerns the liability of a partnership for the offence of failure to prevent bribery created in s 7 of that Act.

157 See for instance Financial Services and Markets Act 2000, s 400(3), which provides for liability of individual partners where commission of an offence under that Act by the partnership is done with the consent or connivance of that partner, or is attributable to any neglect on their part.

158 Despite not being defined in statute, the term "unincorporated association" does appear in some statutes, for example, example, s 992 of the Income Tax Act 2007, Part 7 of the Corporation Tax Act 2010 and s 32 of the Serious Crime Act 2007.

159 For example, *Conservative and Unionist Central Office v Burrell* [1982] 1 WLR 522, 525 by Lawton LJ; *The National Federation of Occupational Pensioners v The Commissioners for Her Majesty's Revenue & Customs* [2018] UKFTT 26 (TC), [2018] SFTD 691, particularly [104] onwards; *Latify v Alumyar* [2017] EWHC 3053 (Ch); *Eastbourne Town Radio Cars Association v Commissioners of Customs & Excise* [2001] UKHL 19, [2001] 1 WLR 794 particularly [26] and [32] onwards; and *Jane Sarah Williams (A representative Claimant for 20 others comprising "The Sustainable Totnes Action Group") v Devon County Council* [2015] EWHC 568 (Admin), [2015] LLR 624.

3.68 In what is considered the leading case of *Conservative and Unionist Central Office v James Robert Samuel Burrell (HM Inspector of Taxes)*, Lord Justice Lawton described an unincorporated association as:[160]

> … two or more persons bound together for one or more common purposes, not being business purposes, by mutual undertakings each having mutual duties and obligations, in an organisation which has rules which identify in whom control of it and its funds rests and on what terms and which can be joined or left at will.

3.69 According to this description, an unincorporated association is (broadly) a group of people who have agreed a set of rules to collaborate for a purpose other than a common business purpose. The classic characterisation of an unincorporated association fitting this description is that of a local sports club or society. However, it would be incorrect to assume that unincorporated associations are only used for small-scale operations. Unincorporated associations can be used by larger clubs or, for example, by (unincorporated) charities to receive grants from local authorities to carry out services. In *Burrell*, the Conservative and Unionist Central Office was found to be an unincorporated association which spanned the whole country and in *Weinberger v Inglis*,[161] the original form of the London Stock Exchange was found to be an unincorporated association, as we discuss below.

3.70 While Lord Justice Lawton's description of an unincorporated association in *Burrell* is widely accepted, it is not the only way in which this term is used and is not accepted by all commentators to be a definition of the term.[162] The term appears sometimes to refer to a residual category of organisation, covering arrangements that are not incorporated entities or partnerships but are something more than a group of disparate individuals. Where the term is deployed in this way, it is not always limited to non-business associations. For example, the Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 apply to firms providing certain services by way of business. "Firm" is defined as "any entity that, whether or not a legal person, is not an individual and includes a body corporate and a partnership or other unincorporated association".[163] In *Spree Engineering & Testing Limited v O'Rourke Civil & Structural Engineering Limited*,[164] an arrangement was found not to be a general partnership (because it did not satisfy the statutory requirements) but was described variously as a "non-integrated joint venture" and "unincorporated venture" to be treated as an unincorporated association despite the fact that it was an arrangement for business purposes.

3.71 Characterisation as an unincorporated association by the courts may not be determinative in establishing the mutual duties of participants: these derive from the contractual, trust or agency relationships between them and therefore much depends on the specific facts of their collaboration and agreements. This differs from general

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160 *Conservative and Unionist Central Office v Burrell* [1982] 1 WLR 522, 525 by Lawton LJ.

161 [1919] AC 606 (HL) 622.

162 See eg V Baker, "Conservative and Unionist Central Office v Burrell (1981) A Case of Hidden Significance", in J Snape and D de Cogan (eds), *Landmark Cases in Revenue Law* (2019).

163 This is discussed further from para 6.22.

164 [1999] 5 WLUK 230.

partnerships, for which meeting the statutory definition under the Partnership Act 1890 results in the application of the default and mandatory duties the Act includes. We discuss the legal consequences of characterisation as an unincorporated association below.

When would a DAO be an unincorporated association?

3.72 It has sometimes been suggested by DAO commentators that a DAO with a for-profit purpose will be a general partnership and where a DAO has a non-profit purpose it cannot be a general partnership and will therefore be an unincorporated association. However, a relationship that fails to satisfy the test of a general partnership will not necessarily satisfy Lord Justice Lawton's description of an unincorporated association. Similarly, a relationship that looks like an unincorporated association but that has a business purpose will not automatically be a general partnership. In any legal analysis being carried out, the characteristics of a specific pure DAO will need to be carefully checked against the criteria for each type of organisation. Such an analysis may identify a general partnership or an unincorporated association or may conclude that the pure DAO is neither of these and that it is some other kind of arrangement.[165]

3.73 There are some features of pure DAOs which will require careful review when considering whether participants of a particular DAO form an unincorporated association. We summarise these here and provide further discussion and analysis in Appendix 4:

(1) If an analysis adheres strictly to the description in *Burrell*, then much is likely to turn on the common purpose of DAO participants, and whether this is a business purpose. This may be obvious where the activities of a DAO are not business or profit oriented, for example where the purpose is a social club, to build a community or provide advocacy or lobbying. However, where participants are able to make a financial gain as a result of their involvement with the DAO, a careful assessment will be required to understand the nature of the common purpose (if any) between these participants. Even applying the requirement for a non-business purpose, it may be possible for participants to be members of an unincorporated association despite individually profiting from their participation in the DAO.

A situation could arise where, for example, DAO participants have agreed to co-operate for the non-business purpose of governing a DAO according to the rules set out in the DAO's smart contracts but they are also able to make a financial gain. This could be analogous to the situation in *Weinberger v Inglis*.[166] In that case, membership of the original form of the London Stock Exchange entitled the members to have entry to and trading rights within the Stock Exchange building. Although this had the appearance of being part of a business venture, close examination of its true purpose showed that members were merely entitled to use the exchange for individual pursuit of profit.

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165 And arguably not an organisation at all but only a collection of individual contracts. We discuss other possible characterisations of a pure DAO from para 3.97.

166 [1919] AC 606 (HL) 622.

Similarly, token holders with governance rights in a pure DAO may be acting for individual pursuit of profit rather than running a business together.

(2) Another key consideration is the existence of rules. An unincorporated association will arise where a group of people agree to co-operate for a mutual purpose. The resulting association will have rules which deal with key aspects of the organisation's existence and activities. By interacting with the code associated with a pure DAO, token holders could be seen as agreeing to co-operate for the mutual purpose of governing the pure DAO. The code (and any natural language documentation associated with the pure DAO) could be the source of the rules of the unincorporated association. There is no prescribed list of topics which should be covered in the rules, although Lord Justice Lawton's description refers to "rules which identify in whom control of it and its funds rests and on what terms and which can be joined or left at will". If the code and natural language associated with a particular pure DAO do not cover some of the key aspects one would usually expect to find in the rules of an unincorporated association, then taken together they may not be sufficient to function as rules of an unincorporated association.

(3) Holding a token in a pure DAO is what gives the holder a right to participate in its governance. A token holder can freely transfer their token holdings to outsiders on the secondary market. Any new token holder would have all the power of the previous token holder to participate in the pure DAO. Similarly, an unincorporated association can accommodate a changing membership and its rules will generally set out how a member can leave and how a new one can join. However, membership of an unincorporated association is not generally transferrable in the same way as for token holders in a pure DAO. This method of joining and leaving a pure DAO may not prevent it being characterised as an unincorporated association, but it appears at odds with the approach traditionally taken in such associations. This could arguably strain the characterisation as applied to pure DAOs.

Legal consequences of characterisation as an unincorporated association

No separate legal personality

3.74 An unincorporated association does not have a legal identity separate from its members.[167] This causes many similar problems for an unincorporated association as for a partnership. For instance, an unincorporated association cannot itself own assets or enter contracts because there is no legal entity to own the assets or enter the contract.[168] However, as with partnerships, these difficulties can be overstated, and in practice unincorporated associations hold property and enter contracts through trust and agency relationships.[169]

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[167] "the Courts consider… the named society or association being in truth only a compendious or conventional designation for the aggregate of the members" (*Re Smith, Johnson v Bright-Smith* [1914] 1 Ch 937, 948).

[168] N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 1.09 and 1.14.

[169] N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), ch 3 (Unincorporated associations and property) and ch 7 (Contracts with third parties).

Civil liabilities

3.75 Unlike partners in a partnership, members of an unincorporated association do not necessarily or generally have liability for the liabilities of the organisation. Members are not generally liable for each other's acts.[170] Instead, members are generally only liable for their own acts or the acts of their agents.[171] Unlike in general partnerships, members are not automatically agents of the other members or the association, but it may still be the case that a member is found, on the facts, to be an agent of one or more other members and therefore able to bind them and expose them to liability.

3.76 In traditional unincorporated associations, members normally have no further liability beyond paying their subscription fees (if any).[172] For example, members do not become liable under an association's contracts simply because of their membership.[173] Again, the normal rules of agency apply to determine which association members are liable as principals under the particular contract.[174] For instance, the association rules may authorise a member to sign on behalf of the association as a whole; if so, all members will be liable for a breach. Alternatively, the signatory may be authorised by the management committee; if so, the members of the management committee may be liable (assuming the rules do not state otherwise).

3.77 Questions of agency and related questions may be difficult when applied to a pure DAO. A pure DAO's white paper, member agreements, or governance rules (to the extent any of these exist) are less likely directly to cover questions of agency or liability. DAOs do not tend to have "executive committees" like a traditional club, although many include smaller groups such as working groups or teams with particular responsibilities.

3.78 Those members who are found to be contractually liable are jointly and severally liable, allowing a creditor to pursue just one member for the whole debt or damages.[175] This liability is unlimited, unless liability is limited by contract, for example to the amount of the association's funds.

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170 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017), para 2-70.

171 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017), para 2-70.

172 "Clubs are associations of a peculiar nature. They are societies the members of which are perpetually changing. They are not partnerships; they are not associations for gain; and the feature which distinguishes them from other societies is that no member as such becomes liable to pay to the funds of the society or to anyone else any money beyond the subscriptions required by the rules of the club to be paid so long as he remains a member. It is upon this fundamental condition, not usually expressed but understood by everyone, that clubs are formed; and this distinguishing feature has been often judicially recognised." *Wise v Perpetual Trustee Co Ltd* [1903] AC 139 (PC), 149 (emphasis added).

173 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 7.08.

174 The question is whether the contract was authorised by the membership as a whole or a subset of members: N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 7.04.

175 Although a member who finds themselves in this position may be seek an indemnity or contribution from further members (N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 7.21; Civil Liability (Contribution) Act 1978 s 1(1)).

3.79 As with departing partners, a liable member's departure from an unincorporated association will not necessarily free that member from liability; similarly, an incoming member will not necessarily take on liability for existing contracts.[176]

3.80 In terms of non-contractual liability, members of an unincorporated association are also not automatically liable for each other's torts, crimes or regulatory offences. Generally, if members are liable, it is for their own acts or the acts of their agents.

3.81 A claimant cannot sue the unincorporated association itself for harm caused (since there is no entity to sue),[177] even if the harm has apparently been caused by the acts of the association as a whole. Instead, the claimant must establish which members of the association are liable for the harm done to the claimant. A member's tortious liability may either be primary – that is, for the member's own acts or omissions – or secondary, that is for the acts or omissions of their agents or employees.[178]

3.82 No special rules apply to determine whether a tortious claim exists against members of an unincorporated association, and, if so, which members.[179] The identity of the liable party or parties is fact sensitive and dependent upon the tort in question. The answer may depend, for instance, on which individuals undertook the tortious activity or assumed responsibility, and in what capacity they did so. A claimant may therefore have to prove that the particular member or group of members owed them a duty of care: for example, the members of a sub-committee responsible for a football stand were personally liable when it collapsed.[180]

3.83 All members of a DAO can therefore be liable for a certain harm if this is established by the claimant in the usual way. For example, all the members of an association may be liable for harm of a single type that they have collectively caused.[181] A member who is pursued for on the basis of such joint and several liability may seek contributions from other liable members.[182]

Suing and being sued

3.84 The starting point is that the unincorporated association itself cannot be a defendant (or claimant) to a private law claim. In some cases, civil judgments have been made against associations in their own name, without reference to any individual representatives.[183] Although the weight of judicial reasoning to date supports that an unincorporated association cannot be sued in its own name, the issue is not entirely

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176 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 7.14.

177 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 8.02.

178 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 8.03.

179 *Halsbury's Laws of England*, Tort (Volume 97A (2021)), 27.

180 *Brown v Lewis* [1896] 12 TLR 455.

181 *Kennaway v Thompson* [1980] EWCA Civ 1.

182 Civil Liability (Contribution) Act 1978, s 1(1). *The Law of Unincorporated Associations*, para 8.50.

183 For instance, in *University of Oxford v Broughton* [2004] EWHC 2543 (QB), an injunction relating to the university's new bio-medical research lab was continued against certain named individuals in their own right alongside a number of animal rights and anti-vivisection associations, including the Animal Liberation Front (ALF). Grigson J considered that "an injunction can be ordered against unknown members of loosely formed unincorporated association," but did not consider this issue at any length.

settled: there remains some scope to argue that an association can be sued in its own name, particularly if the claimant is not seeking damages from the association[184]

3.85 In principle, all the liable members could or should be joined as defendants in any claim.[185] In practice, however, most claims against unincorporated associations are brought against representatives of the liable members:[186] the Civil Procedure Rules provide that a claim can be brought by or against one or more individual members as representatives of the remainder, provided the representatives have the same interest in the claim.[187] A judgment against representatives binds the members represented, but may not be enforced against any member who was not a party to the proceedings, except with the permission of the court.[188]

3.86 For a claim by or against a representative, it is essential that the representative has the "same interest" in the claim as the other members represented.[189] This does not depend upon the person(s) represented giving consent or "even [being] aware of the existence of the action, in order to be bound by the result".[190] But a judgment or order may only be enforced by or against a person who is not a party to the claim with the permission of the court. These matters could be relevant in the case of a DAO if only some participants are named as defendants, but all participants (or a particular subset of them) have "the same interest".

Disputes between members

3.87 The duties and liabilities between members of an unincorporated association derive from the rules of that association. Members may sue for breaches of the contract underlying the association as they might any other contract, for instance, seeking damages for the losses caused by a breach, an injunction to prevent a breach or a declaration of the correct legal position.

3.88 As a general rule, association members do not owe each other an additional duty of care beyond any specifically agreed between members or undertaken by an individual member.[191] For example, a member could decide to assume a particular duty, in

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184 See *University of Oxford v Broughton* [2004] EWHC 2543 (QB), *University of University v Webb* [2006] EWHC 2490 (QB) and *EDO MBM Technology Ltd v Campaign to Smash EDO* [2005] EWHC 837.

185 *Everett v Tindall* (1804) 5 Esp 169; *Halsbury's Laws of England*, Clubs (Volume 13 (2021)), 275. Although if some liable members are omitted as defendants, this is not a bar to further proceedings against those originally omitted (Civil Liability (Contribution) Act 1978, s 3 (proceedings against persons jointly liable for the same debt or damage)). The normal rules of agency may also modify the starting point. For instance, if a member contracts in his or her own name (having been authorised by the association to contract on behalf of the members generally), the other party may elect either to sue the individual member or to sue all the members (a normal rule of agency) (*Duke of Queensbury v Cullen* (1787) 1 Bro Parl Cas 396, HL; *Halsbury's Laws of England*, Clubs (Volume 13 (2021)), 277).

186 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 8.04.

187 Civil Procedure Rules, r 19.6(1).

188 Civil Procedure Rules, r 19.6(4).

189 *Google LLC v Lloyd* [2021] UKSC 50, [2021], 3 WLR 1268 at [71].

190 *Google LLC v Lloyd* [2021] UKSC 50, [2021], 3 WLR 1268 at [75].

191 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 8.29.

which case they should perform that duty with reasonable care and skill;[192] or the rules of the association could assign duty for certain matters to a particular group of members, in which case those members should perform the duty with reasonable care and skill.[193]

3.89 Nor do members generally owe each other fiduciary duties, unlike partners in a partnership.[194] This may be welcome to the many DAO participants who desire not to have fiduciary duties between themselves.

Criminal liability

3.90 Liability of an unincorporated association or its officers or members for criminal offences or failure to comply with regulatory requirements will depend on the terms of the offence or requirement.

3.91 In contrast to the position for civil liability where the unincorporated association itself cannot be a defendant, some criminal statutes provide that the association itself can be liable.[195] The statute may provide that the officers of the association can be liable.[196] The term "unincorporated association" is not defined in statute but does not appear to be restricted to non-business associations.[197] For offences of strict liability,[198] all individual members of the association may be liable;[199] for other offences, it may be that only those members who had the requisite mindset, for example those who intended to carry out the illegal act, may be liable.

3.92 In *R v RL and another*, the Court of Appeal held that the fact that individual members of a body corporate are not criminally liable for an offence committed corporately (unless they were a party or were made liable by a "consent or connivance" provision) does not mean that the same was true of members of an unincorporated association.[200] The court said:

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192 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 8.30.

193 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 8.31.

194 As discussed from para 3.58.

195 For example, the Political Parties, Elections and Referendums Act 2000, s 153(1), provides that proceedings for an offence under the Act will be brought against the association on its own name (not that of any of the members). Section 21 of the Criminal Justice and Courts Act 2015 provides that a "care provider" committing an offence can be an individual or a body corporate or unincorporated association.

196 For some examples, see N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 8.51.

197 For example, para 258 of the explanatory memorandum to the Criminal Justice and Courts Act 2015 states that: "Section 24 makes provision to ensure that the offence of ill-treatment or wilful neglect caused by a care provider can be properly applied to unincorporated associations, such as general practice or dentistry partnerships."

198 Strict liability means that there is no need to prove that the defendant has any particular mental state (for example, there is no need to prove that the defendant intended a particular action or was reckless).

199 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 8.52.

200 [2008] EWCA Crim 1970.

> It is a necessary consequence of the different nature of an unincorporated association that all its members remain jointly and severally liable for its actions done within their authority.[201]

3.93 The trial judge had therefore wrongly ruled that there was no case to answer in respect of the two officers who were being prosecuted alongside the association (although it held that a fresh trial of the individuals was not in the interests of justice and directed their acquittal).[202]

3.94 The offence in *RL* was an offence of strict liability. However, there are some offences which can be committed by an unincorporated association (that is not a partnership) and which require a mental element, but there is no authority as to which natural person's mental state is to be attributed to the association. Given that the offence was intended to apply to an unincorporated association, whose knowledge or state of mind was for this purpose intended to count as that of the association? Smith and Hogan previously suggested that:

> When an unincorporated association is prosecuted, presumably the court must proceed by analogy to the law relating to corporations. Such associations have officials corresponding to the controlling officers of corporations and it is inconceivable that the association is liable for the act of any one of its members who has no part in the general management of its affairs.[203]

3.95 Following *RL*, it is clear that the Court need not operate by analogy with the law relating to corporations when considering the liability of individual members for actions of the unincorporated association. However, if the court is considering which natural person's mental state constitutes that of the unincorporated association for the purposes of criminal law, proceeding by analogy with corporations is still likely to be the only viable approach.

Tax and financial regulation

3.96 An unincorporated association is taxed separately to its members, meaning that corporation tax is payable by the association itself. An unincorporated association can be a "firm" or "person" for the purposes of financial regulation. We discuss the application of tax rules and financial regulation to DAOs in more detail in Chapter 6 and note that "unincorporated association" is not restricted to non-business associations in these contexts.

OTHER POSSIBLE CHARACTERISATIONS OF A PURE DAO

3.97 As we have discussed above, it may be possible to find that participants in a pure DAO have formed a general partnership or unincorporated association. However, if neither characterisation is possible or appropriate for a pure DAO, what else might it be? Below, we consider whether a pure DAO could be a collection of contracts, a trust

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201 [2008] EWCA Crim 1970, para 33.

202 [2008] EWCA Crim 1970, para 37.

203 D Ormerod (ed), *Smith and Hogan's Criminal Law* (11th ed 2005), p 243.

structure, or whether the actions of participants in a DAO could give rise to standalone liabilities in fiduciary duties or tort.

A collection of legally binding contracts

3.98 General partnerships and unincorporated associations both have their foundations in contract. But participants in a DAO may have obligations to one another under contract, even if their relationship does not amount to a general partnership or unincorporated association. One example would be where a DAO is carrying on an activity to directly make money for its token holders (so it is not an unincorporated association according to Lord Justice Lawton's description) but the relevant contractual arrangements fall short of the intention to create mutual rights and duties required for a business in common and a general partnership. One commentator has described such DAOs as "contractarian joint ventures".[204] In any event, there are a number of relationships and interactions within a pure DAO which have the potential to be the subject of legally binding contracts.[205]

3.99 If a pure DAO has no separate legal personality, it cannot itself enter contracts with other parties. And contracts require an agreement between legal persons: it is not possible, for example, for a smart contract to enter into a contract in its own right, although a smart contract can of course operate to bind a legal person. There may, however, be contracts between the various participants in a DAO. If a participant contracts with a third party, purportedly on behalf of the DAO, they may either be liable to the counterparty solely and personally (if the DAO is not classified as a general partnership or unincorporated association), or may be found to be agents of some or all of the other participants (on the basis of standard agency principles). Whether developers could be liable in contract to participants if a product or system goes wrong, or whether token holders could be liable to each other or to users in contract, will, of course, depend on whether a contract exists.

3.100 Examples of participants who might wish to demonstrate contractual relationships include:

(1) Token holders. Does holding a token give the token holder a contractual right to vote on proposed changes or, for example, to share in the profits of the DAO? Against whom could this right be enforced?

(2) Users interacting with a DeFi App.[206] In the normal course of things, terms of service would set out the nature of a user's rights and responsibilities vis-à-vis a business or other organisation with which they are interacting. This may be less

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204 C Reyes and C Hurt "The Contractarian Joint Venture" (Feb 2024), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4739274.

205 See para 5.1 of Appendix 5 for examples of various relationships within a DAO that have the potential to be the subject of a legally binding contract. Some of these relationships could be understood as joint ventures involving parties coming together for the purposes of collaboration. However, as we discuss briefly from para 5.2 of Appendix 5, the term "joint venture" is not a term of art or a term with a specific legal meaning or treatment under the law of England and Wales.

206 DeFi applications (DeFi Apps) are programs built on top of DeFi Protocols that allow users to access protocols. In general, DeFi Apps provide a graphic user interface or application programming interfaces (APIs) or both. DeFi protocols are software programs consisting of smart contracts that provide the functionality for peer-to-peer lending, borrowing, and other financial transactions.

clear in the context of a DAO. What rights do users have against "the DAO", and/or some or all of the DAO decision makers (that is, the token holders and/or developers) if, for example, services are not provided in the way they expect?

(3) DAO contributors. A contributor may do something for the pure DAO (such as miners and validators verifying transactions and adding new blocks to the blockchain) in the expectation that they will receive tokens on the completion of their task. Do they have a contractual right to receive the reward? Against whom could they enforce it if the smart contract does not issue the reward as expected?

3.101 Pure DAOs rely on code (smart contracts and DLT) to implement and enforce the rules according to which participants interact (including the capabilities associated with the pure DAO's tokens), automate certain processes and functions and incentivise good behaviour. Pure DAOs also have very limited off-chain activity and often do not seek to rely on law and legal institutions (some actively reject such dependence). As a result, where one might expect a natural language contract to exist to govern a relationship, including in the examples given above, there may just be participants interacting with code or interacting with each other via code. What does this mean from the perspective of contract law? Importantly, it does not necessarily mean that there is no contract; only that the contract may look a bit different to the natural language contracts we are used to seeing.

3.102 As discussed above, questions about the characterisation of a pure DAO and the relationship between participants may only arise retrospectively and in a particular context. A court could be asked to consider whether one or more legally binding contracts exist between participants in a pure DAO. In doing so it will apply the normal rules of contract formation under the law of England and Wales: that is, there must be (a) agreement (offer and acceptance), (b) consideration, (c) certainty and completeness of terms, and (d) intention to create legal relations.[207] The code in a smart contract can constitute a legal contract, as we discuss in detail in our separate advice to Government on smart legal contracts.[208] Therefore the absence of any natural language documentation will not preclude the existence of a legally binding contract. However, there are other reasons why these requirements might not be satisfied in relation to a particular pure DAO.

3.103 In particular, the intention to create legal relations may be absent. Participants in a pure DAO may see no need to have legally binding contracts because they are confident that the technology will ensure that things will run as intended and therefore contractual liability and recourse to the courts is not necessary. In some pure DAOs participants may articulate their ideological opposition to oversight by courts or a legal regime and state that they do not intend to create legal relations through their interactions. In both situations, the courts may accept that the participants did not intend to enter binding contracts – but a mere statement that no contract exists is not necessarily decisive. Another source of uncertainty as to the existence of a legally binding contract arises where the use of technology may result in novel interactions

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207 *Blue v Ashley* [2017] EWHC 1928 (Comm) at [50]. For detail, see *Chitty on Contracts* (35th ed) Part 2 (Formation of Contract), in particular ch 4 (The agreement) and ch 6 (Consideration).

208 See Smart legal contracts Advice to Government (2021) Law Com No 401.

which do not easily satisfy the requirements. For example, identifying offer and acceptance where unsolicited airdropped tokens are transferred to a public wallet. For readers who would like more detail about how the elements of contract formation can be satisfied in the context of DAOs, we include further discussion in Appendix 5.

3.104 To establish the existence of a contract, it will also be necessary to identify, at least in general terms, the other party. As we have said above, that party must be a legal person but it is possible for a participant or user to establish that they have a contract with one or more developers (for example, particular parties with whom they have been interacting), even if the developer or developers are only identifiable by a public address rather than personal details.[209] There might also be questions of agency as mentioned above – could one developer or participant be regarded as the agent of others, such that they are all co-principals and an action could be brought against any one of them?[210] It could be that a general partnership is a party to the contract, or the members of an unincorporated association. This engages the rules about liability of partners/members that we have discussed above.

Legal consequences of the existence of a contract

3.105 If contractual relationships can be identified, this will answer some questions of liability if, for example, there has been a breach of contract that is actionable by a pure DAO participant or third party such as a user of the pure DAO's services. It may still, however, be challenging to establish exactly what the terms of the contract are if they are not written down (whether in code or otherwise), or to enforce any resulting judgment if participants are pseudonymous.

3.106 Where contractual relationships are consciously created, the terms of the contract are likely to exclude liability for certain things, explicitly or implicitly. For example, a service agreement for users may provide that changes to the code may be made from time to time, including those that may negatively impact upon users, and that the pure DAO (or its participants) excludes contractual liability for loss caused as a result.

Trust arrangements

3.107 A trust arises when one person (the settlor) transfers property to another person (the trustee) to hold for some other person (the beneficiary).[211] In essence, trusts are asset management structures and are ways of holding property such that the property's management is separated from its benefits.[212]

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209 Although the usual principles of mistake will of course apply: if the specific identity of the counterparty is material and there has been a mistake about with whom the contract was in fact made, that contract will be void. See *Chitty on Contracts* (35th ed), 5-035–5-045.

210 Under the Civil Liability (Contribution) Act 1978, s1(1), "any person liable in respect of any damage suffered by another person may recover contribution from any other person liable in respect of the same damage (whether jointly with him or otherwise)".

211 G W Keeton and L A Sheridan, *The Law of Trusts* (12th ed 1993) p 3.

212 L Smith, "Mistaking the Trust" (2010) 40 *Hong Kong Law Journal* 787, 793.

3.108 For a particular arrangement to be effective as a trust it needs to satisfy the "three certainties" necessary to create a trust under the general law:[213]

(1) certainty of intention;

(2) certainty of subject matter; and

(3) certainty of objects.

3.109 As we discuss in Chapter 4,[214] a hybrid arrangement might actively include a trust as part of its structuring and in general there may be good reasons for trust arrangements to be put in place in respect of crypto-tokens or other objects of property rights. However, a trust does not necessarily need to be set up by a trust deed. It can be created informally, including by an oral declaration in respect of property other than land.[215] If a person, by words or conduct, evinces an intention to hold or transfer property to be held for someone else's benefit, that can be sufficient to demonstrate the intention to create a trust ("certainty of intention"), regardless of whether the word "trust" is used.[216]

3.110 Crypto-tokens and most other assets which a DAO might hold in its treasury are capable of being property.[217] They will therefore be capable of being held on trust so long as they can be identified ("certainty of subject matter").[218]

3.111 For a non-charitable trust to be established in England and Wales, there needs to be certainty as to which persons are intended to benefit from the trust ("certainty of objects"). We do not consider it clear that pseudonymity of token holders would always prevent a trust from arising due to a lack of certainty of objects. We discuss the reasons for this in greater detail in Chapter 4.[219]

3.112 In some circumstances, a pure DAO may be found to include a trust relationship. If control of a DAO's assets is truly democratic and fully decentralised, it is very unlikely that any trust relationship will exist between participants. Although the word "trust" does not need to be used to generate a trust, one will not be imposed unless there is an intention to create such a relationship. It is unlikely that this can be established

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213 These "three certainties" were first set out in *Knight v Knight* (1840) 49 ER 58.

214 Discussed from para 4.59.

215 J McGhee, S Elliott, S Bridge, M Conaglen, P Davies, *Snell's Equity* (34th ed 2019) paras 21-018 to 21-021, 22-035, 24-001. A declaration of trust respecting any land or any interest therein must be manifested and proved by some writing signed by some person who is able to declare such trust or by his will, see the Law of Property Act 1925, s 53(1)(b).

216 *Paul v Constance* [1977] 1 WLR 527.

217 In our Report on Digital Assets we considered in detail these three certainties in the context of how trust arrangements could be constituted in respect of crypto-tokens as objects of property: See Digital Assets (2022) Law Commission Consultation Paper No 256, Chapter 16.

218 *Hunter v Moss* [1994]; *Re Lehman Brothers International (Europe)* [2010] EWHC 2914 (Ch) at [225]; [2011] EWCA Civ 1544 at [74] to [77], "A trust of part of a fungible mass without the appropriation of any specific part of it for the beneficiary does not fail for uncertainty of subject-matter, provided that the mass itself is sufficiently identified and provided also that the beneficiary's proportionate share of it is not itself uncertain".

219 Discussion from para 4.67.

where assets are managed and distributed by smart contracts according to the votes and distribution entitlements of token holders. This is because it is not usual for a token holder to intend that they exercise their rights for someone else's benefit.

3.113 However, where token holders delegate management of particular assets to "sub-DAOs" or "committees" (for example, to a small group with multi-signature arrangements in respect of the treasury), with the expectation that those assets be managed for the benefit of members of the broader DAO, it is possible that those assets could be viewed by the courts as held on trust, applying general principles of trust law.

3.114 Whether a trust exists can only be assessed on a case-by-case basis. Not all circumstances in which assets are contributed for investment purposes will constitute a trust. If a right to be repaid (including with interest or a particular return) is maintained, but the contributed assets are otherwise at the free disposal of the transferee, the relationship will be one of contract, rather than trust.[220] This is because the settlor has not communicated the intention that the assets transferred be held or managed by the transferee for the benefit of someone other than themselves, which, as noted above, is necessary to create a trust. If a person is held to be a trustee with respect to particular assets, they must manage those assets in good faith in the interests of the beneficiaries in accordance with their fiduciary duties and the general law.[221] The beneficiaries will be entitled to apply to court to ensure that they do so, seeking due administration of the trust.[222]

Joint ownership of assets

3.115 It is possible for legal title to objects of property to be held by two or more persons. This can either be as a joint tenancy, where both persons jointly hold title to the entire property, or as a tenancy in common, where each person owns a specified share.[223] A joint tenancy will arise where there are no indications of an intention to sever the interest in the property and where the "four unities" are present:[224]

(1) unity of possession, meaning each tenant is equally entitled to possession of any part of the property;

(2) unity of interest, meaning the interest of each tenant is of the same extent, nature and duration as that of the others;

(3) unity of title, meaning each tenant holds under the same document or act; and

(4) unity of time, meaning the interests all vest at the same time.

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220 *Foley v Hill* (1848) 2 HLC 28; *Barclays Bank Ltd v Quistclose Investments Ltd* [1970] AC 567; *Twinsectra Yardley* [2002] 2 AC 164; *In Re Farepak Food and Gifts Ltd (in administration)* [2006] EWHC 3272 (Ch).

221 *Target Holdings v Redferns (a Firm)* [1996] AC 421, 434.

222 *Armitage v Nurse* [1997] 3 WLR 1046.

223 J Farrand and A Clarke, *Emmet and Farrand on Title* (2022) vol 1, paras 11.079 to 11.086.

224 J Farrand and A Clarke, *Emmet and Farrand on Title* (2022) vol 1, paras 11.080 to 11.081.

3.116 A tenancy in common will arise where there is an indication of an intention to sever in the grant of property, either through explicit words or when construing the document as a whole. It can also arise where an equitable presumption applies or where there is subsequent severance.[225]

3.117 If a pure DAO holds property, it might be characterised not as a form of organisation, but as the participants holding property in one of the ways described above. However, in most cases a pure DAO would not hold property without a specific purpose. Participants usually pool tokens and other property to deploy particular aims. We therefore think it is more likely that some pure DAOs will choose to use joint ownership arrangements as a constituent part of their organisational structuring, and not as a joint ownership arrangement with nothing more.

Arrangements falling short of legally binding contractual agreements etc

3.118 If a pure DAO is not characterised as a general partnership or unincorporated association and there are no legally binding contracts or trust arrangements between the participants, this does not of course mean that they are outside the reach of the law. The relationships between participants, and between participants and third parties will still be subject to other legal analyses and so participants may still have liability, for example, in torts such as negligence,[226] by way of fiduciary duties,[227] or unjust enrichment.[228] Criminal and regulatory law will also still apply.[229]

3.119 In all such cases it will be necessary to establish the relevant facts giving rise to legal liability according to existing rules. The novel questions to which pure DAOs give rise will concern which legal person or persons can be pursued or held responsible. This will potentially give rise to questions such as whether there are agency relationships between different participants, or whether the requisite grounds for vicarious liability

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225 J Farrand and A Clarke, *Emmet and Farrand on Title* (2022) vol 1, para 11.086.

226 On the facts of a particular pure DAO, a participant may owe another a duty of care in the common law in negligence.

227 A trustee will owe a fiduciary obligation (as well as a variety of non-fiduciary obligations) to its beneficiary: *Keech v Sandford* (1726) 25 ER 223; Agents generally owe fiduciary duties to their principles: *De Bussche v Alt* (1878) 8 Ch D 286; *Snell's Equity* (34th ed 2019) para 7-004.

228 Where a payment is made to someone without that payment resulting in a contract or creation of a trust, the law of unjust enrichment may be relevant if a dispute arises. As Birks has written, we often make payments to others for a particular purpose or to achieve a certain outcome. He called these "voluntary participatory enrichments": "voluntary" because they are not made out of legal obligation, and "participatory" because they are made with the consent of the payer. When we make these payments, we do so subject to conditions: we do not generally pay money to others for no reason. The law of unjust enrichment says that if a condition to which a payment is subject fails, then the recipient of the payment must give the money back: they must make restitution. The right to restitution is subject to various bars (such as the recipient being legally entitled to retain the payment) and defences (such as change of position); P Birks, *The Law of Unjust Enrichment* (2nd ed 2005) pp 140–148.

229 Individual participants would still be liable in respect of any criminal conduct that they personally engaged in, including where this was part of a joint enterprise with others. We discuss tax and financial regulation in Chapter 6.

are made out on the facts.[230] Questions of private international law may also arise where participants are in more than one jurisdiction.[231]

FIDUCIARY DUTIES FOR SOFTWARE DEVELOPERS?

3.120 One question currently being asked in the market is whether software developers owe fiduciary obligations to users of their software and owners of cryptoassets manifested by that software. This question has received attention as a result of the recent *Tulip Trading* litigation, which concerned software developers albeit not in the context of a DAO.[232]

3.121 Put (very) simply, a fiduciary is an individual upon whom the law imposes an obligation of "single-minded loyalty" to another — their principal. This obligation exacts a unique and significant constraint on the fiduciary's personal autonomy. Importantly, it forbids any self-interested behaviour by the fiduciary, where the fiduciary's personal interests conflict with their duty to their principal. The remedy for breach of a fiduciary obligation is not designed to repair any harm to the principal; rather, it generally requires the fiduciary to disgorge the disloyal benefits the fiduciary has acquired. Such obligations are imposed in certain settled categories of relationship, such as between trustee and beneficiary or between partners in a partnership (and exceptionally in other cases), in order to give the principal the protection the relationship demands. Development of fiduciary duties outside of these categories may occur but is uncommon.[233]

3.122 Given the significance of software in the crypto ecosystem including DAOs, it gives rise to questions such as the potential liability of developers to users of the software and/or owners of cryptoassets that rely on that software. Below, we look briefly at the power that developers have to change software generally and in the DAO context. We then consider the duties and liabilities to which this might give rise, focusing on fiduciary duties.

Developer publishing power and its limitations

3.123 In general, developers exercise a very significant power over software: the ability to publish that software in the first place and the ability to change it on an ongoing

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230 Again, if an individual or small group is pursued, they may be able to seek a contribution from others in their same position: Civil Liability (Contribution) Act 1978, s 1(1).

231 We discuss this in Appendix 3.

232 *Tulip Trading Limited v Van der Laan* [2022] EWHC 667 (Ch); *Tulip Trading v Van der Laan* [2023] EWCA Civ 83, [2023] 4 WLR 16. We discuss this case further from para 3.120.

233 See *Al Nehayan v Kent* [2018] EWHC 333 (Comm), [2018] 1 CLC 216 at [157], by Leggatt J: "it is exceptional for fiduciary duties to arise other than in certain settled categories of relationship. The paradigm case of a fiduciary relationship is of course that between a trustee and the beneficiary of a trust. Other settled categories of fiduciary include partners, company directors, solicitors and agents. … While it is clear that fiduciary duties may exist outside such established categories, the task of determining when they do is not straightforward … .". For an overview see S Worthington, "Fiduciaries then and now" (2021) *Cambridge Law Journal* 154, 155–156.

basis.[234] Where complex software is published on an open-source basis, there might be more than one developer who has the power to publish (or publish updates to) that software. However, even where developer software publishing power is held by more than one developer, it tends to remain centralised in a relatively small number of developers. For example, only a few individuals have "merge authority" over the official code repositories for Bitcoin Core and Geth.[235]

3.124 For the purposes of this paper we focus only on developer publishing powers in relation to open-source code (as opposed to closed-source code),[236] because DAOs make use of at least some form of open-source code. One of the primary purposes of open-source software is to distribute it widely to facilitate and encourage further development and iteration of that code.[237] Therefore, it is generally expected — and is in general also a good thing — that open-source code is updated throughout its lifecycle. Developer software publishing power must therefore be exercised at some point in that lifecycle. This means that there is inevitably some level of discretion on the part of developers as to how to exercise that software publishing power.[238] Conventionally, developers have considerable control over the content of software that is developed and released. This is neither surprising nor novel: developers have designed and published open-source software for many years.

3.125 Outside of a DAO context, developer software publishing power is limited to the ability to publish software to a public open-source repository. For example, in general (that is, outside of the DAO context), a developer does not have the power to push a software update to the participants who can choose whether (or not) to run the software as part of the network. Nor does a developer have the power otherwise to compel persons who choose (not) to run the software to adopt a software update.

3.126 In practice, this means that the broader community of participants that run the open-source software, such as miners / validators, exchanges, individuals, and other developers that build on top of networks, *also* have some degree of power.[239] The

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234 In short, developers have the ability to make changes to the source code of software and release (updated or new) versions of the software for use by others, which can in turn affect users' rights and assets. Generally, a distinction is drawn between: (i) 'maintainers' that have the ability to make changes to the source code and (ii) 'contributors' that include those with access to the code to propose changes that maintainers review and may elect to incorporate into the source code.

235 Bitcoin Core and Geth ("Go-Ethereum") are open-source software protocols used to validate the Bitcoin and Ethereum blockchains respectively.

236 Closed-source software (such as proprietary software like Microsoft Word) cannot be altered or modified except by those with the relevant permissions (usually an exclusive group, selected by the copyright holder). For the purposes of this scoping paper, we focus only on open-source code, because DAOs make use of at least some form of open-source code.

237 See, for example, the GNU General Public License, https://www.gnu.org/licenses/gpl-3.0.en.html. See also the MIT License, https://opensource.org/license/mit/.

238 See Delphi Labs, "Assimilating the BORG: A New Framework for CryptoLaw Entities" (2020), https://delphilabs.medium.com/assimilating-the-borg-a-new-cryptolegal-framework-for-dao-adjacent-entities-569e54a43f83.

239 G Shapiro, "Defining Decentralization for Law" (2020), https://lex-node.medium.com/defining-decentralization-for-law-58ca54e18b2a.

users must voluntarily and affirmatively accept any new version of the software.[240] While new versions of software are highly influential, participants also have a real and viable alternative: they can continue to run the prior version of the open-source software.[241] Significantly, this means that developers lack the ability to operationalise changes alone.

3.127 In the DAO context, the situation is slightly different. Because a DAO is founded on its smart contracts, any changes to those contracts will take effect for all participants/users. If someone does not like the changes, their principal option is to exit the DAO, for example by divesting themselves of their tokens or by otherwise not dealing with the DAO any further. This is sometimes known as "rage quitting".[242]

3.128 However, the ability of developers in a DAO to change the code in the first place should be curtailed by the governance rules of the DAO; that is, developers should not generally make changes unless the change has been proposed and voted on according to the governance rules. Developer power might also be limited by the technology. It may be that votes on whether to change the smart contracts are conducted on-chain and that the options are pre-coded, so that the results of a vote are implemented deterministically by the code rather than manually by developers. However, this will only be possible with some types of votes, whose results are pre-programmable (such as, for example, a vote to change an interest rate in a DeFi protocol). Other types of votes will necessarily concern more complex or nuanced changes which have to be effected manually. In such cases, the results of a token holder vote are effectively the developers' mandate to change the code in accordance with the vote.

3.129 Limits on developer power in a DAO may change over time. For example, the founders/core developers may retain a lot of control at the outset, gradually relinquishing it as the DAO beds in and as tokens are issued to other participants giving them the right to vote. Of course, if the developers retain a large proportion of the issued tokens then in fact they will retain a lot of the voting power and therefore de facto power over the code.

A developer fiduciary obligation?

3.130 In *Tulip Trading,*[243] the High Court and the Court of Appeal considered whether a software developer of open-source software used by network participants in four Bitcoin networks might owe a fiduciary duty to owners of the assets (such as bitcoin)

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240 See B S Srinivasan, "Quantifying Decentralization" (2017), https://news.earn.com/quantifying-decentralization-e39db233c28e.

241 The system is designed to protect against developer self-interest because unfavourable changes will not be implemented or, where there is no consensus between network participants, the system might "fork". This might either be a "soft fork" (where code changes are made, but they are backwards compatible, meaning the same blockchain is used) or a "hard fork" (where the changes create a copy of the blockchain and a separate network that operates according to the changes to the code).

242 Because the smart contracts are open source, such a person could theoretically copy the original coding and set up a new DAO based on those (unchanged) smart contracts, but that would be a new DAO rather than a forked version of the existing one.

243 *Tulip Trading Limited v Van der Laan* [2022] EWHC 667 (Ch); *Tulip Trading v Van der Laan* [2023] EWCA Civ 83, [2023] 4 WLR 16.

in that system. The case did not concern a DAO, however, it is still of some relevance because of its consideration of the existence of fiduciary duties for developers in the crypto ecosystem.

3.131 In that case, the claimant alleged that it owned certain bitcoin associated with two public addresses, and that the private keys to access those bitcoin (that is, to transact or perform other operations in respect of those bitcoin within the system) were inaccessible due to a hack.[244] The claimant alleged that the defendants, as software developers, controlled the systems upon which the bitcoin existed and thereby owed fiduciary duties to the claimants.[245]

3.132 While breach of a fiduciary obligation can give rise to the remedy of disgorgement of profits,[246] the claimant in *Tulip Trading* did not seek disgorgement of profits (likely because no profit was made by developers). Instead, the claimant sought an order that the defendants take certain steps which would effectively restore control of the claimed bitcoin to the claimant — a remedy which falls outside the scope of remedies for breach of fiduciary obligation. Unlike in most well-recognised status-based relationships which give rise to fiduciary obligations, in *Tulip Trading* there was no entrustment of property from the owners of bitcoin to the developers.[247] Instead, the basis of the claimant's claim was that no person (except possibly the alleged hacker) had access to those bitcoin due to a hack.

3.133 These issues were considered as part of a procedural question as to whether service out of the jurisdiction against the defendants was permitted so that the substantive claim could be brought before the courts of England and Wales. The facts and merits of the substantive claim were therefore not fully considered by either the High Court or the Court of Appeal. However, in allowing the claimant's appeal and allowing the claimant to effect service out of the jurisdiction, the Court of Appeal did find that there was an arguable case that a developer might owe an obligation of single-minded loyalty to the users of bitcoin software. In particular, the Court of Appeal found that there was an arguable case that:[248]

> The content of the duties includes a duty not to act in their own self interest and also involves a duty to act in positive ways in certain circumstances. It may also,

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244 Technically, the "unspent transaction outputs" on the Bitcoin network. For an analysis of the nature of crypto-token systems such as Bitcoin see Digital Assets (2023) Law Com No 412, paras 5.27-5.30 and 6.21-6.38.

245 The claimant also alleged breach of tortious duties that were, somewhat curiously, argued to only arise in the event that fiduciary duties were established. The Court of Appeal therefore only focused on the fiduciary duty claims.

246 Where the profits are identifiable, the funds might be held on constructive trust for the benefit of the principal: *FHR European Ventures LLP v Cedar Capital Partners LLC* [2014] UKSC 45, [2015] AC 250. Otherwise, the fiduciary will be personally liable: *Regal (Hastings) Ltd v Gulliver* [1967] 2 AC 134; *Murad v Al-Saraj* [2005] EWCA Civ 959, [2005] WTLR 1573.

247 In *Tulip Trading v Van der Laan* [2023] EWCA Civ 83, [2023] 4 WLR 16 at [77]-[78] and [86], Lord Justice Birss acknowledged the argument that because only the developers, rather than bitcoin owners, can implement a fix to the code, this could in some ways be considered an "entrustment" of property to the developers by the owners. Any such entrustment is very different from the entrustment of property to other well-established status based fiduciaries.

248 *Tulip Trading v Van der Laan* [2023] EWCA Civ 83, [2023] 4 WLR 16 at [83], by Birss LJ.

realistically, include a duty to act to introduce code so that an owner's bitcoin can be transferred to safety in the circumstances alleged by Tulip.

3.134 If a developer exercising developer software publishing power could have a fiduciary obligation imposed on them for doing so, then that might theoretically also be true of a DAO or its participants that either exercised similar power or provided oversight or checks on that power.

3.135 The current law of England and Wales does not recognise such a developer fiduciary obligation. Indeed, as the Court of Appeal noted:[249]

> For [the claimant's] case to succeed would involve a significant development of the common law on fiduciary duties.

3.136 As the Court of Appeal acknowledged, the strength of the arguments in favour of a developer fiduciary obligation is likely to be highly fact-specific and differ significantly depending on a variety of factual considerations, including the nature of the protocol, network, blockchain system, smart contract and/or token in question, as well as their respective levels of decentralisation.[250] Other factors that are likely to be material are the terms of any relevant licence(s), and the extent to which developers have relinquished practical and legal control over core parts of the protocol, network, blockchain system smart contract and/or token in question.

3.137 There is little to suggest that such a development would be a positive one from a legal or practical perspective.[251] The lack of proximity between a developer and an owner of bitcoin[252] and the significant limits on developer publishing power[253] discussed above are likely to make an obligation of "single-minded loyalty" to a particular owner (or class of owners) extremely difficult to describe and delineate. In particular, the way in which developer publishing power works (and is limited) encourages and incentivises developers to act in their own interests (or at least in accordance with their own mind) when developing and publishing code. Developers do not in general act or participate in a relationship that requires self-denial or that owners' interests are placed ahead of their own.[254] Moreover, even if such an obligation of "single-minded loyalty" to a

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249 *Tulip Trading v Van der Laan* [2023] EWCA Civ 83, [2023] 4 WLR 16 at [86], by Birss LJ.

250 *Tulip Trading v Van der Laan* [2023] EWCA Civ 83, [2023] 4 WLR 16 at [15] and [91], by Birss LJ.

251 R S Haque, R S Silva-Herzog, B A Plummer, N M Rosario, "Blockchain Development and Fiduciary Duty" (2019) from p 173, https://ssrn.com/abstract=3338270. For arguments to the contrary, see: A Walch, "In Code(rs) We Trust: Software Developers as Fiduciaries in Public Blockchains" in P Hacker, I Lianos, G Dimitropoulos, and S Eich, *Regulating Blockchain: Techno-Social and Legal Challenges* (2019) ch 3.

252 An owner need never run or interact with the software in question in order to own bitcoin. Indeed, an owner could legally acquire bitcoin completely "off-chain" — that is, without ever using the blockchain, participating in the Bitcoin network or using any related software at all. For more discussion on off-chain transfers see Digital Assets (2023) Law Com No 412, paras 6.39-6.47.

253 R S Haque, R S Silva-Herzog, B A Plummer, N M Rosario, "Blockchain Development and Fiduciary Duty" (2019) pp 158-159.

254 Indeed, the explicit purpose of "Bitcoin Satoshi's Vision" (one of the forked networks in question in *Tulip Trading*) is to reflect "Satoshi's vision" — that is the unique and unconstrained vision of one single developer as to the desirable features of the software in question.

particular owner (or class of owners) did exist, it would likely lead to intractable conflicts for developers, given the potential multiplicity of their interests.

3.138 In the context of a DAO, the developers' publishing power is further limited by the distributed control effected by token holder voting. And by the nature of a DAO, which the developers may have set up with a particular commercial or other goal in mind, it would seem inappropriate to impose fiduciary duties which would forbid the exercise of self-interest where the risk of conflicting interests is obvious. The same arguments apply in respect of DAO token holders. Although there might be alternative arguments in respect of DAOs, we have discussed in this chapter various other ways in which a DAO or its participants might be held liable for actions causing loss, which are likely to be sufficient.

3.139 *Tulip Trading* was discontinued by the claimant in April 2024.[255] Although this of course alleviates the threat of liability for the relevant developers, it means that the High Court will not consider the issue in more detail. Clarification of the existing common law position in respect of fiduciary duties of the type that may have resulted from *Tulip Trading* would likely help make England and Wales a more legally certain jurisdiction for market participants to use open-source code to structure their organisations and operations. The potential imposition of fiduciary duties is particularly important for contributors to the ongoing development of open-source software, including those in the crypto ecosystem and DAOs. The imposition of fiduciary duties in these circumstances would likely have a major chilling effect, and potentially be extremely destructive, for open-source software development in the jurisdiction.[256] Developers of open-source software protocols would benefit from clear guidance as to their legal position, but this would go significantly beyond the scope of our current work. Lack of certainty on this issue could significantly reduce the willingness of software developers/engineers to contribute to technological developments under the law of England and Wales.[257]

Providing clarity on the scope for fiduciary duties of software developers

3.140 While any decision on the matter that the High Court might have made in *Tulip Trading* would have been highly fact-specific, a judgment would have presented an opportunity for the court to review in detail the law of fiduciary duties and to consider how it could be applied to developers of open-source software. The common law analysis of this point will now be delayed until future litigation provides the appropriate vehicle.

3.141 Although the issue is not specific to DAOs or even to DLT/smart contract-based software development, it is clearly of relevance to the potential liability of DAO developers (and possibly even other DAO participants) and their willingness to operate in this jurisdiction. Given the uncertainty left by the questions raised in *Tulip*

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255 See eg Bitcoin Legal Defense Fund, "Craig Wright discontinued *Tulip Trading* case in major win for bitcoin developers" (17 April 2024), https://bitcoindefense.org/craig-wright-discontinues-tulip-trading-case-in-major-win-for-bitcoin-developers/.

256 This is equally so for proprietary software, which almost always incorporates some open-source elements.

257 See eg R S Haque, R S Silva-Herzog, B A Plummer, N M Rosario, "Blockchain Development and Fiduciary Duty" (2019), https://ssrn.com/abstract=3338270.

Trading, we have considered whether and how further clarification could be achieved on this matter.

3.142 We do not think that the mere fact of being a developer of open-source software (whether in a DAO or otherwise) could or should give rise to fiduciary duties. There would be no policy or legal justification for such a characterisation merely on the basis of the act of software development (without something more in terms of the particular relationship between particular parties), and it would have a severely chilling effect on the development of open-source software. We do not think therefore that there is a case for the introduction of a statutory fiduciary duty on software developers. Rather, we think this is properly a matter for the common law, and that, just as in non-DAO situations, the application of existing legal principles might, in some specific situations, lead to a particular developer or group of developers being found to be a fiduciary in a particular set of circumstances. We think such situations are likely to be very rare.

3.143 We think it would be helpful for someone – whether the courts (for example, through a test case[258]) or perhaps a body such as the UKJT – to set out the existing law of fiduciary duties and consider – in general terms – whether and when developers might be acting in a position of power that could equate them to, for example, directors of a company or trustees of a trust such that the imposition of fiduciary duties might be appropriate and legally sound. This question is perhaps particularly relevant to developers in DAOs who may be in a position to encode and change the rules for an organisation. Even with such guidance, how the law applied in any particular case would have to be a fact-specific decision.

Next steps

3.144 Consideration should be given as to whether a fuller analysis on the applicability of the law of fiduciary duties to software developers could be conducted to temper the possible chilling effect of *Tulip Trading*.

[258] A financial markets test case scheme is provided for in Practice Direction 63AA of the Civil Procedure Rules 1998, SI 1998 No 3132. It may be difficult, however, to locate a fiduciary duty/software developer scenario within the context of a financial list claim which "(a) principally relates to loans, project finance, banking transactions, derivatives and complex financial products, financial benchmark, capital or currency controls, bank guarantees, bonds, debt securities, private equity deals, hedge fund disputes, sovereign debt, or clearing and settlement, and is for more than £50 million or equivalent; (b) requires particular expertise in the financial markets; or (c) raises issues of general importance to the financial markets" and in relation to which "immediately relevant authoritative English law guidance is needed", as the scheme requires. If it could be so located, a test case would almost certainly have to be brought by private parties rather than Government.

Chapter 4: Hybrid arrangements

4.1 The “pure DAOs” we have discussed in Chapter 3 represent the origin and the core of the ideological concept of a DAO. Indeed, some industry commentators maintain that only exclusively on-chain, smart-contract governed, decentralised and “trustless” organisations are worthy of the name. However, some DAOs have nevertheless chosen to use legal entities in their structures. In this paper we refer to these as “hybrid arrangements”.

WHY DO DAOS USE LEGAL ENTITIES?

4.2 The objectives of many DAOs (in the broader sense), be they financial, cultural, charitable, or technical, still require engagement with existing legal and social structures for regulating economic activity. As explored in the previous chapter, choosing not to adopt an organisational form designed for participation in these structures can leave participants in pure DAOs exposed to uncertain or unexpected liabilities. Choosing not to choose does not necessarily render a DAO alegal, but rather exposes it to an uncertain characterisation as, potentially, a purely contractual arrangement, a general partnership, or an unincorporated association.[259] This characterisation can then result in a greater imposition of the legal system, in terms of potential liability of participants, than if the DAO voluntarily adopted a more considered legal structure. In some circumstances, this may include DAO participants intentionally structuring their relationship through a partnership agreement or an association agreement. However, to avoid the liability risks and mutual duties which involvement in such entities - particularly general partnerships - entails, many turn instead to incorporated legal entities.

4.3 Stakeholders, particularly law firms advising DAOs, have told us that many in the industry are moving towards using incorporated entities to perform certain activities and functions within a DAO. This is known as “wrapping”. Adoption of a “legal “wrapper” can facilitate a DAO’s ability to protect its members from liability and interact with the off-chain world.[260] As well as advantages, there are trade-offs resulting from the use of distinct legal entities. The most significant advantages are the limited liability of members and a separate legal personality for the “DAO”. These can not only limit the liability of members to their contribution, but also facilitate off-chain transactions (from holding property and entering contracts to simply opening a bank account), promote counterparty confidence, improve legal predictability and,

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259 Industry commentators usually consider a general partnership characterisation to have severe implications for most DAOs, and especially those involved in encouraging growth in the decentralised internet and “web3”. See, for example, M Jennings and D Kerr, “The DUNA: An Oasis for DAOs” (Webpage, 08/03/2024), accessible at: https://a16zcrypto.com/posts/article/duna-for-daos/. The authors claim that “The Ooki DAO court already determined that the Ooki DAO was a general partnership, and if that decision is broadly replicated, it will be a death knell for decentralized governance in web3. DAOs ignore this risk at their own peril.”

260 See C Brummer and R Seira, “Legal Wrappers and DAOs” (2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4123737.

depending on the form chosen, achieve tax advantages (including increased certainty about applying tax rules).

4.4 The costs of adopting a distinct legal form are that most of them were not designed with DAOs in mind, and at first glance require a degree of centralisation, identifiability and accountability that are inconsistent with a DAO's core operating model and ideology. This challenge of "DAO-entity fit" means that even legislative attempts to introduce DAO-specific entities have been forced to make trade-offs. Even so, the popularity of a variety of legal entities on offer internationally for use in DAOs suggests that these trade-offs are not a deal-breaker for all DAOs.

4.5 This chapter considers in more detail why DAOs would make use of distinct legal entities in their structure, what obstacles arise from the problem of DAO-entity fit, and what structuring varieties are common, depending on the DAO's purpose. We then consider what legal entities in England and Wales could best meet a DAO's objectives, before considering options internationally. In the following chapter, we consider whether any changes or additions to the available options could make this jurisdiction more attractive to DAOs and digital legal entities, while maintaining the integrity of the business organisation landscape.

Separate legal personality and limited liability

4.6 As "DAOs" have developed as an omnibus concept, growing in size and sophistication and increasingly interacting with the off-chain world, their activities and legal implications have begun to look a lot more like those of traditional organisations. Many of the challenges faced by DAOs are therefore not unique.

4.7 As we have explained in Chapter 3, a partner in a general partnership is part of an association of individuals, each presumptively exposed to personal liability for the losses of the partnership. The same can be true of individuals in an unincorporated association or those bound by contract, depending on the terms of their agreement. Even where no contractual relationship exists, individuals acting together could still be exposed to liability; for example, in torts such as negligence, or by way of fiduciary duties, unjust enrichment or under a trust. This makes such ventures risky for the individual, who potentially risks losing far more than the amount they have invested in the endeavour: all their personal assets could be exposed. Additionally, without a discrete recognised legal identity, many common operational activities – hiring employees, contracting with services providers, compliance, and payment of tax – can become practically challenging.[261]

4.8 Solutions to many of these challenges have been developed in this jurisdiction over the past 200 years, and in many others. To mitigate the risk of unlimited personal liability,[262] most business enterprises seek some form of limited liability, usually by

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261 These activities are still possible, including through trust and agency relationships.

262 The distinction between the artificial personality of the entity created as a matter of law may, in limited circumstances, be disregarded (known as "lifting" or "piercing" the veil of incorporation: see the discussion in *Prest v Petrodel Resources Limited and others* [2013] UKSC 34).

operating through an entity with separate legal personality.[263] Certain entities created and recognised by law – again most notably companies[264] – are given separate legal personality through incorporation. The act of incorporation creates a legal "person" having a discrete legal identity subject to its own rights and duties separate from the individuals who set it up and participate in it: its owners, managers, and employees.[265] Each is regarded as a distinct person in law.[266] Separate legal personality provides an entity with capacity to own property,[267] conduct business,[268] enter into contracts,[269] be regulated, pay tax, commit torts,[270] incur liabilities and be a claimant or defendant in legal proceedings – that is, to sue or be sued.[271]

4.9 The legal recognition of an entity as having its own personality also allows those involved to limit their liability. The limited company rose to prominence more than a century ago.[272] Liability could be limited in two ways:[273] either by reference to a member's shareholding (in the case of companies limited by shares)[274] or by a statutory undertaking by a member to contribute to the assets of the company (in the case of companies limited by guarantee).[275]

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263 The two are often tightly coupled. In England and Wales, Private Fund Limited Partnerships have limited liability but are not incorporated, so lack separate legal personality. Conversely, unlimited liability companies are incorporated but lack limited liability: Companies Act 2006, s 3(4). See R Harris, "A New Understanding of the History of Limited Liability: An Invitation for Theoretical Reframing" (2020) 16(5) *Journal of Institutional Economics* 643, 650 (legal personality created 'asset partitioning'–corporations owning and managing assets–but pre-dated 'asset shielding' (or limited liability) in insolvency). Entities in other jurisdictions are discussed below.

264 An exception, albeit comparatively uncommon, is the "unlimited liability company" that is incorporated with separate legal personality but without limited liability: Companies Act 2006, s 3(4). The Limited Liability Partnership is an incorporated entity with separate legal personality: Limited Liability Partnerships Act 2000, s 1.

265 *Salomon v Salomon & Co Ltd* [1897] AC 22 (HL) at 51.

266 *In re the* Sheffield and South Yorkshire Permanent Building Society (In Liquidation) (1889) 22 QBD 470 at 476 (Cave J): an incorporated entity, such as a company, has "a legal persona just as much as an individual".

267 *Macaura v Northern Assurance Co Ltd* [1925] AC 619 (HL) at 630, Lord Sumner; *Lonrho v Shell Petroleum Co Ltd* [1980] QB 358 (CA) at 362, 365-366 per Shaw LJ aff'd *Lonrho v Shell Petroleum Co Ltd (No 2)* [1982] A.C. 173 (HL).

268 *Gramophone and Typewriter Limited v Stanley* [1908] 2 KB 89 at 105-106.

269 *Hazell v Hammersmith and Fulham LBC* [1992] 2 AC 1, at 39F; *Lee v Lee's Air Farming Ltd* [1961] AC 12 at 25.

270 By being vicariously liable for the acts of its agents/employees: *Lister v Hesley Hall Ltd [2001] UKHL 22.*

271 *Adams v Cape Industries plc* [1990] Ch 433 at 536; *The Albazero* [1977] AC 744 at 807.

272 Following the introduction of the Limited Liability Act 1855 (later replaced by the Companies Act 1862 that laid the foundations for the Companies Act 2006). For a detailed history, see J D Turner, "The Development of English Company Law Before 1900" (2017) *Queen's University Centre for Economic History Working Paper Series*, No. 2017-01 cf R Harris, "A New Understanding of the History of Limited Liability: An Invitation for Theoretical Reframing" (2020) 16(5) *Journal of Institutional Economics* 643 (arguing full limitation of shareholder liability is of more recent origin).

273 Companies Act 2006, s 9(2)(c).

274 Companies Act 2006, ss 9(4)(a) and 10.

275 Companies Act 2006, ss 9(4)(b) and 11.

4.10 A member of a general partnership incurs liability for all debts and obligations of the partnership during the term of membership, regardless of any agreement to the contrary between the partners. In contrast, a member of a company is generally not liable for the company's debts or anything beyond the amount that they have invested in the company.[276]

4.11 Limited liability is often viewed as the defining attribute of the corporation and fundamental to a capitalist economy.[277] Although now ubiquitous, this was once a radical departure from the traditional view that the owner of a business must take responsibility for its debts.[278] The risk of moral hazard is clear: an entrepreneur who is not liable for the full consequences of their actions may be incentivised to take undue risk; risk that may be shifted from owner to creditor.[279] Various explanations have been advanced for the vital role of limited liability in economic growth, including encouraging capital formation,[280] improving commercial efficiency,[281] and facilitating market liquidity.[282] Notably, limited liability may, theoretically, reduce agency costs[283] by decreasing the need to monitor agents and other shareholders as well as providing a means for members/principals to divest their interests to others.

4.12 Limited liability has been described as a "privilege",[284] to be exercised subject to creditor safeguards. For members, the privilege is that any loss is limited to the amount of capital they have invested in the company (that is, the amount they have

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276 Although liability can be imposed on its members by the company's constitutional documents and is imposed by common law and statute in some circumstances. Director duties may impose personal liability when a member is also a director: Companies Act 2006, ss 171 – 177 (general duties) and Insolvency Act 1986, s 212 (misfeasance), s 213 (fraudulent trading), s 214 (wrongful trading), s 238 (transactions at an undervalue).

277 J Armour et al, "What is Corporate Law?" in J Armour et al. (eds), *The Anatomy of Corporate Law: A Comparative and Functional Approach*, (3rd ed, 2017), pp 1 – 28.

278 See H A Shannon, "The Coming of General Limited Liability" (1931) 2 *Economic History* 267.

279 P Ireland, "Limited Liability, Shareholder Rights and the Problem of Corporate Irresponsibility" (2010) 35(5) *Cambridge Journal of Economics* 837; R Posner, *Economic Analysis of Law* (Aspen Law and Business, 5th ed, 1998), 432, cf F H Easterbrook and D R Fischel, *The Economic Structure of Corporate Law* (1st ed 1991), 44, 56 (arguing the standard agency-based analysis does not apply to closely-held corporations).

280 See M C Jensen and W Meckling, 'Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure' (1976) 3(4) Journal of Financial Economics 305; S Wheeler, "The Business Enterprise: A Socio-Legal Introduction" in *A Reader on the Law of the Business Enterprise* (1st ed, 1994), p 7.

281 If not provided, corporations would seek to contract for limited liability with counterparties and/or through insurance: P Halpern et al, "An Economic Analysis of Limited Liability in Corporation Law" (1980) 30 *University of Toronto Law Journal* 117, 138-45 cf J Freeman, "Limited Liability: Large Company Theory and Small Firms" (2000) 63(3) *Modern Law Review* 317, 338 – 340 and R Posner, *Economic Analysis of Law* (Aspen Law and Business, 5th ed, 1998), 448 (regarding the practicalities of creating and maintaining a viable market for insurance).

282 Limited liability creates value consistency between shares. Equity holders would contribute inconsistently (based on their personal wealth) in the event of corporate default, resulting in different valuations: P Halpern et al, "An Economic Analysis of Limited Liability in Corporation Law" (1980) 30 *University of Toronto Law Journal* 117.

283 F H Easterbrook and D R Fischel, "Limited Liability and The Corporation" (1985) 52(1) *University of Chicago Law Review* 89, 93 – 97 cf F H Easterbrook and D R Fischel, *The Economic Structure of Corporate* re moral hazard; J Freeman, "Limited Liability: Large Company Theory and Small Firms" (2000) 63(3) *Modern Law Review* 317, 328.

284 *Re Crestjoy Products Ltd* [1990] BCLC 677, 681, by Harman J.

paid, or have agreed to pay, for their shares). If the company goes into liquidation, the members are only liable up to this amount. They are not liable for anything more, such as the debts of the company or the costs of the liquidation.[285] Creditors cannot pursue them individually.

4.13 In return, creditors are provided with transparency. Therefore, under the law of England and Wales, to obtain limited liability status, a company must be registered with the state.[286] It must file annual accounts and disclose the names of its directors as well as, more recently, "people with significant control" (or "beneficial owners").[287] The documents that provide the membership[288] and constitution[289] of the company are also publicly available.[290] The details of how these disclosures are made have changed over the years and differ between the many available types of legal entity. As well as different structures for business ventures, there is also a range of legal entities available for non-profit or member-based endeavours.[291]

4.14 However, despite the many variations, the basic principle remains: limited liability is provided in return for obligations of disclosure,[292] primarily for the protection of third parties, including tax authorities, as well as other reasons of public policy. This contrasts with, for example, foundations in the Cayman Islands and Panama, which provide greater levels of anonymity for participants.[293]

4.15 Limited liability can play a role in a business' competitiveness and functionality in the broader economy, but, as demonstrated in recent litigation in the US, cannot be simply assumed to exist in relation to DAOs.[294] Below, we consider to what extent the advantages and trade-offs relating to limited liability status can be reconciled with other features of DAOs, at least as originally conceived.

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285 Insolvency Act 1986, s 74(2)(d) and Companies Act 2006, s 3(3).

286 Companies Act 2006, s 7 (stipulating the formation requirements under ss 8–13).

287 Companies Act 2006, part 21A and schs 1A and 1B. People with significant control are generally those who control more than 25% of the shares, more than 25% of the voting rights in the company, and/or the right to appoint or remove the majority of the board: see https://www.gov.uk/guidance/people-with-significant-control-pscs (these figures are subject to amendment by the Secretary of State: Companies Act 2006 sch 1A para 26).

288 Companies Act 2006, s 8 (the memorandum of association detailing members of the company at formation) and Companies Act 2006, ss 113 and 116 (the current register of shareholders).

289 The constitution includes the company's articles of association that prescribe regulations for the management of the affairs of the company and the conduct of its business: Companies Act ss 17 and 18(1).

290 Companies Act 2006, s 1085. The same applies, with certain modifications, to unregistered companies (a rare form of company formed otherwise than under the Companies Act 2006, predominantly limited to statutory companies): Unregistered Companies Regulations 2009, SI 2009 No 2436, sch 1 para 20.

291 For example, co-operative and community benefit societies and community interest companies. We consider some of these models in our Background paper: legal forms for social enterprises (2017) available at https://lawcom.gov.uk/project/pension-funds-and-social-investment/.

292 I Ayres and R Gertner, "Filling Gaps in Incomplete Contracts: An Economic Theory of Default Rules" (1989) 99 *Yale Law Journal* 87, 97 – 98.

293 See further discussion from para 4.136.

294 See eg *Sarcuni v bZx DAO*, No. 22-618 (SD Cal Mar 27, 2023); *Loon v Department of Treasury*, 1:23-CV-312-RP (17/08/2023).

A simple example

4.16 Let us return to the example of Alinie, Bartek and Clara, the software developers launching a DAO who we met in Chapter 3. They decide that they want to explore the possibility of a hybrid arrangement for their DAO because they are concerned about potential liabilities and also want to protect some intellectual property.

4.17 They know that using legal entities can help them but they are mindful that a hybrid arrangement may require some centralisation and loss of autonomy. They identify what is important to them and what aspects of the ideology underlying DAOs they are willing to depart from (the trade-offs they are willing to make). They then talk to some advisors who suggest an out of the box solution of legal entities which has proved popular with some of their other clients. They consider the suggestion but decide instead to work with their advisors (lawyers and tax advisors) to develop a bespoke structure.

4.18 Their chosen structure uses legal entities strategically, taking into account their personal take on the DAO philosophy, their desire to protect themselves from personal liability and protect their intellectual property, and the business needs of the DAO.

THE ISSUE OF DAO-ENTITY FIT

4.19 How can a DAO secure the legal and commercial advantages of limited liability and separate legal personality while staying true to its novel operating model? This is the central question underpinning DAOs' use of distinct legal entities, and the answer will vary depending on a DAO's industry, whether it is a business or non-profit, its priorities and the extent of its commitment to decentralisation and a "trustless" system. One market participant has suggested that: [295]

> [i]n evaluating a desirable jurisdiction and entity type […] maintaining the benefits of a DAO and limiting trust in anything other than code should be primary considerations.

4.20 This quotation emphasises the priorities of DAOs as initially conceived, but the reality is much more variable and these goals may ultimately be compromised to accommodate other practical considerations. While different DAOs will place different weights on different concerns, generally, a DAO is likely to seek many of the following objectives when considering how it will structure itself:

(1) limiting the liability of participants: principally developers, users, and token holders;

(2) enabling off-chain activity such as the employment of developers and the ownership of off-chain property;

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[295] dYdX Foundation, "Legal Framework for Non-U.S. Trusts in DAOs" (15 March 2022), https://www.dydx.foundation/blog/legal-framework-non-us-trusts-in-daos.

(3) maximising the degree of decentralisation and autonomy by limiting the control of: (i) managers; (ii) any individual entity and (iii) state involvement in formation and ongoing operations (such as reporting obligations);

(4) facilitating, or at least not unduly inhibiting, the transfer of governance interests of token holders;[296]

(5) facilitating pseudonymity of participants;

(6) accommodating the DAOs' preferred governance mechanics, whether these involve on-chain voting by token holders or some kind of off-chain decision making forum;

(7) providing a suitable basis for complying with any regulatory compliance requirements;[297]

(8) enabling distributions to members where relevant to the purpose of the arrangement; and

(9) minimising tax risks for participants so that they can understand their tax liabilities and, where applicable, identifying an entity that is liable for, and capable of, paying tax.

4.21 It is not clear that any one legal structure can achieve all of these objectives in equal measure. In response to our call for evidence, Coalition of Automated Legal Applications (COALA) and BlockchainGov (in a joint submission) told us:

> Attempts by DAOs to use legal wrappers are often ineffective and generally fit poorly so a sense of legal certainty is not necessarily achieved from their use […] The requirements and duties imposed by the legal wrapper do not necessarily match the DAO's behaviours and operations, or the legal wrapper applies to some things but not all aspects of a DAO and thus does not offer the comprehensive container to understand a DAO's activities as it does for a traditional organisation.

4.22 Most legal entities are designed for centralised operations. Taking advantage of their benefits – most notably separate legal personality and limited liability – requires acceptance of what might be considered by some to be trade-offs that are at odds with the core tenets of DAOs discussed in Chapter 2. Examples include:

(1) Many legal entities require specific authority to be placed with particular individuals, such as directors or designated members. This limits the extent to which the DAO can remain wholly decentralised.

(2) Registration with the state in exchange for the benefits of legal personality generates disclosure obligations in respect of membership, persons of significant control, and officer identities. This militates against the usual

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296 The transferability of governance tokens is generally an inherent result of DLT-based systems and may buttress decentralisation.

297 We discuss some regulatory requirements in Chapter 6.

pseudonymity and often transient nature of DAO participants, particularly token holders.

(3) In creating jurisdictional ties, registration could also have implications for the extraterritorial and borderless nature of DAOs, potentially centralising decision making in specific jurisdictions.

4.23 However, as noted above, there are a variety of legal forms available internationally which have been adopted by DAOs as part of their structure. This suggests that the preservation of some key novel features of DAOs combined with acquisition of useful legal attributes is an achievable middle ground for some DAOs.

Structuring varieties

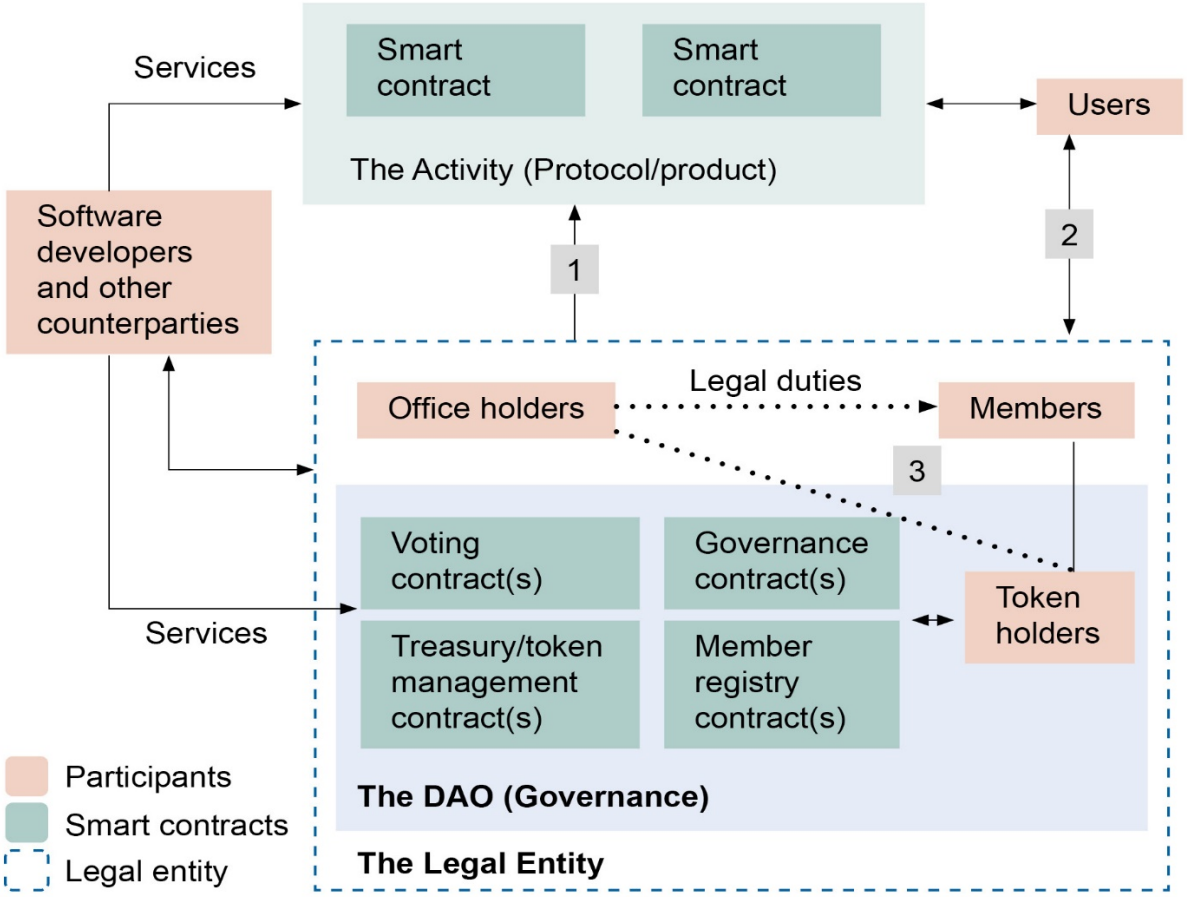
4.24 What are the different ways in which a DAO can integrate distinct legal entities into its structure? Just as with the degree of decentralisation of DAOs generally, use of a distinct legal entity is not "all or nothing". A distinct legal entity may be used strategically to carry on a particular project or carry out a particular function, like governing the DAO treasury to facilitate the DAO's interaction with off-chain counterparties. Alternatively, an entity could operate as a "full wrapper", encompassing the entire DAO and defining the token holders' interests in the legal entity by reference to their interests in the DAO.

4.25 Some arrangements might use a domestic single-company structure; others may be more akin to sophisticated transnational structures using multiple jurisdictions and entity types: fundraising entities may take one wrapper, while token issuers, or member collectives, another.

4.26 As we discussed in Chapter 2, hybrid arrangements can fall over a wide spectrum in terms of their level of decentralisation and autonomy. As the discussion below seeks to demonstrate, the level of decentralisation and autonomy can vary within and between full wrappers, partial wrappers and DAO-adjacent entities depending on which distinct legal entities are used and the rules with which they are implemented.

Full wrapping

Diagram 2: A fully-wrapped DAO



1	Alterations to the protocol smart contracts or product offering are determined in accordance with the rules of the legal entity, even if the rules of the legal entity require decisions to be made according to on-chain votes by token holders.
2	Users of the DAO's protocol or product have a direct legal relationship with the legal entity. Members of the DAO have limited liability.
3	In a fully-wrapped DAO, token holders are also members of the legal entity. The legal entity may also require certain office holders, such as directors in a company. Office holders may or may not also be members. In the company context, directors will owe duties to members of the company. The content of legal duties owed will depend on the legal entity used and on the terms of the incorporating document. We again use an example of a DAO in which all smart contracts can be varied by all token holders for simplicity.

The components used above are indicative and non-exhaustive examples that may be used.

The actual composition and functionality of the smart contracts will be fact specific.

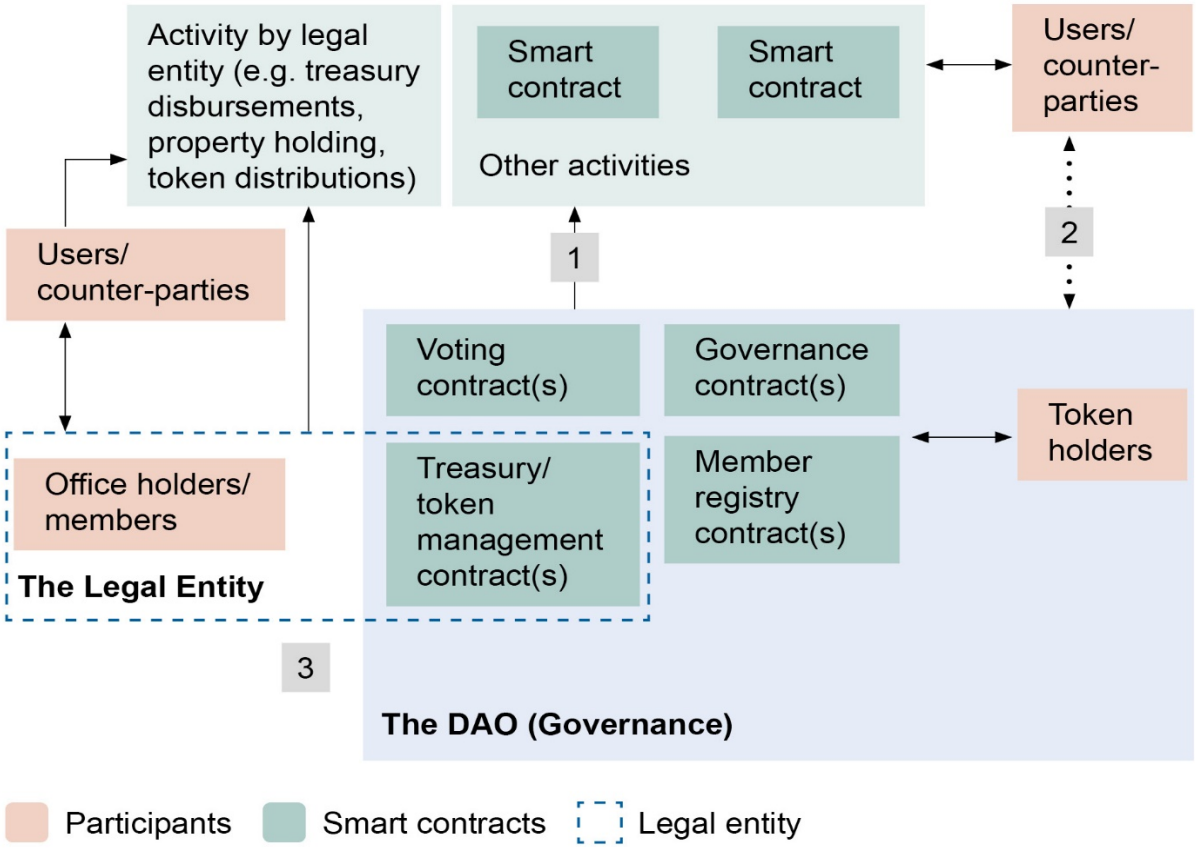
4.27 A DAO may use a legal form or legal entity to wrap itself fully. Typically, a legal entity will be chosen which has separate legal personality from its members and affords limited liability to its members. By being entirely wrapped, the legal entity effectively *is* the DAO for the purposes of its activities: the latter is encompassed within the former. Typically, this means that all members of the DAO (principally the token holders) will also be members (for example, shareholders) of the entity and will therefore have the usual limited liability protections of members of incorporated entities.

4.28 Limited liability will be afforded to token holders acting in their capacity as members of the legal entity, rather than because they hold tokens in the DAO in and of itself. For the purposes of the activities carried on by the legal entity, participants in the legal entity will only have the decision-making power that entity grants them under law. Voting on-chain by token holders can be influential but it will not be the formal decision-making process unless that is authorised by the governing documents of the legal entity, which in the case of, for example, a company limited by shares in this jurisdiction, is unlikely to be possible. Tokens are not shares or tokenised securities. Token holders will still need to be shareholders or otherwise appointed to a decision-making role within the entity to be directly involved in governance and directly exercise decision-making powers.

4.29 As identified above, some factors associated with the use of legal entities are fundamentally at odds with the DAO concept. Where the entity and the DAO are, effectively, the same thing, this is particularly acute. The act of fully wrapping the DAO is effectively an explicit recognition and acceptance of these consequences.

Partial wrapping and DAO-adjacent entities

Diagram 3: A partially-wrapped DAO



1	Alterations to the smart contracts or product offering not controlled by the legal entity are determined by the outcome of governance votes.
2	The relationship between token holders in the DAO and those engaged with the activity deployed independently of the DAO's wrapped component will depend on the factors discussed in Chapter 3 of the scoping paper.
3	In a partially-wrapped DAO, token holders are not necessarily members of the legal entity, although some might be. The legal entity can be used to silo activities of the DAO which generate particular liability risk or for which separate legal personality is particularly useful. The accountability of members of the legal entity to DAO token holders will depend on the terms of the incorporating document of the legal entity. The authority of the entity over DAO smart contracts relevant to the activity they control could be determined by the DAO governance contract, voted on by the token holders. Again, this diagram provides merely a simple example of many potential structures.

The components used above are indicative and non-exhaustive examples that may be used.

The actual composition and functionality of the smart contracts will be fact specific.

4.30 A “partial wrapper”, as the term suggests, does not encompass the entire DAO. This structure allows for a legal entity to wrap a part of the DAO that undertakes certain activities, such as acting as token issuer/seller or conducting off-chain activities such as holding certain assets.[298] For example, a component managing the treasury may be wrapped while allowing other parts of the DAO to be wrapped in a separate entity or remain unwrapped.[299]

4.31 By contrast with a full wrapper, some or all of the activities in a partially wrapped DAO are undertaken by the legal entity, but the DAO’s token holders are not necessarily members of the entity. Consequently, acts of the entity and those of each of the DAO token holders are acts of separate legal persons. DAO participants therefore cannot *directly* benefit from the limited liability afforded to the entity. The partial wrapper may provide a means of indirect protection from liability by performing certain operations of the DAO, as opposed to these actions being carried out by the DAO through the votes of its token holders. In this sense it acts as a way of siloing or isolating parts of the DAO that present particular risks or which can use structures to optimise operations; for example, a purpose trust holding intellectual property or issuing tokens for grants. This use of an entity can also push taxable activities into favourable jurisdictions in a manner similar to traditional organisations. However, there may be questions about the nature of the relationship between the entity and the software/participants that make up the “residual” part of the DAO. It will also be important to consider what, if any, control the members of the DAO can have in respect of the legal entity, and the liability consequences that could result. The use of partial wrappers therefore involves distinct but often as severe trade-offs as those faced when using a full wrapper. Since not all DAO participants will govern all activities, decentralisation is far from assured.

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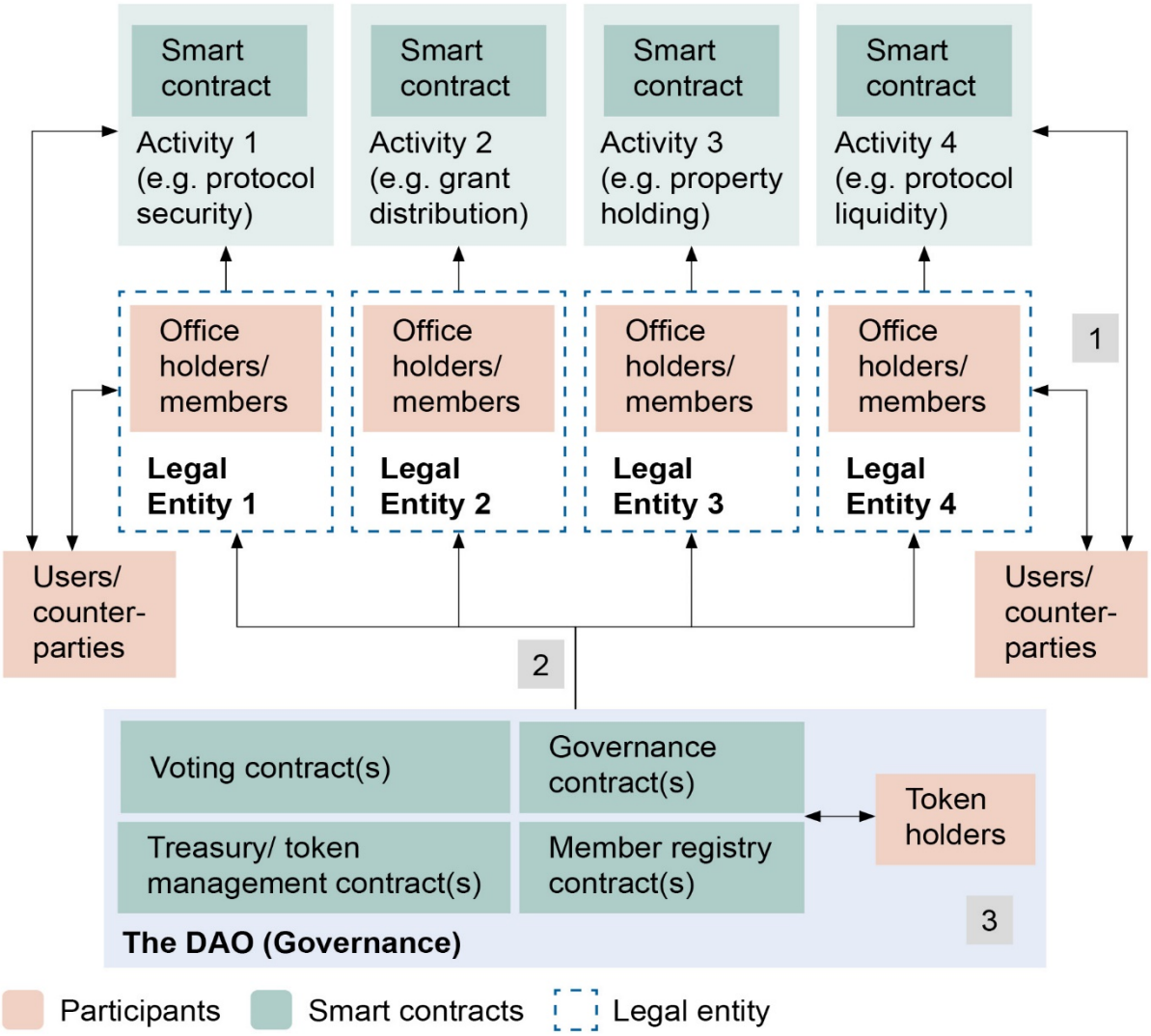
298 Individual token holders may also operate through an entity that acts as a member contributing to the arrangement’s governance activities.

299 See examples in M Jennings and D Kerr, “A Legal Framework for Decentralized Autonomous Organizations, Part I” (June 2022) pp 27 – 28: https://api.a16zcrypto.com/wp-content/uploads/2022/06/dao-legal-framework-part-1.pdf.

Diagram 4: A DAO using DAO-adjacent entities



1	Users or counterparties engaged with the activity will have a direct legal relationship with the legal entity. Members of the entity will have limited liability and non-member token holders will not be (directly) involved.
2	The adjacent legal entities hold property and conduct specific activities on behalf of the DAO. Through "code deference" enshrined in the legal entity's incorporating document, its agents can be obliged to follow the votes of the DAO, subject to the mandatory rules of the entity form employed.
3	Non-member token holders are not directly responsible for the DAO's activities (at least not all of them, and not those conducted off-chain). However, they retain ultimate control through the code deference of the legal entities used to perform activities. Variation of the code remains subject to the rules of DAO governance. Again, this diagram provides merely a simple example of many potential structures.

The components used above are indicative and non-exhaustive examples that may be used.

The actual composition and functionality of the smart contracts will be fact specific.

4.32 DAO-adjacent entities achieve a similar functional result to partial wrappers but have a more specific justification, namely, the preservation of DAO governance where possible. DAOs taking this approach are similar to partially wrapped ones in their use of distinct legal entities as special purpose vehicles in which the DAO participants may not have a direct interest. But the purpose of a DAO-adjacent entity is to be an intermediary, a distinct legal unit designed for carrying on specific activities but ultimately subject to the governance of the whole DAO.[300]

4.33 Delphi Labs refers to these entities as "BORGs": a form of entity that is enhanced by utilising DAO-connected smart contracts so that it is "*legally governed* by autonomous technologies through tech-specific rules implanted in their charter documents".[301] These forms of arrangement use the concept of "code deference" to link the DAO as a governance mechanism with the governing documents of the entities in question.[302] An illustrative example of the objective is that provided by Brummer and Seira:[303]

> [A] corporation could revise its charter and bylaws to provide that, to the extent possible under law, the results of the DAO's smart contract protocol are determinative of the rights and obligations of the shareholders.

4.34 A DAO-adjacent entity, then, can be viewed as a specific type of partial wrapper designed to separate the organisation that interacts with third parties off-chain (and its assets) from the DAO, which operates exclusively on-chain. Accountability to the DAO is maintained through code deference enshrined in the governing documents of the entity, although the extent of this may be necessarily limited by any mandatory rules of the entity form used.

4.35 For some commentators, this is an appealing way to achieve some of the benefits of wrappers while preserving the conceptual integrity of the DAO.[304] Nevertheless, all structures come with trade-offs: formal code deference may increase the risk that DAO participants intended to be shielded from liability, not being members of the distinct legal entity, are nonetheless deemed to control it and be exposed as a result.[305]

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300 See Delphi Labs, "Assimilating the BORG: A New Framework for Cryptolaw Entities" (20 April 2023).

301 See Delphi Labs, "Assimilating the BORG: A New Framework for Cryptolaw Entities" (20 April 2023).

302 See A Hinkes, "The Limits of Code Deference" (2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3889630.

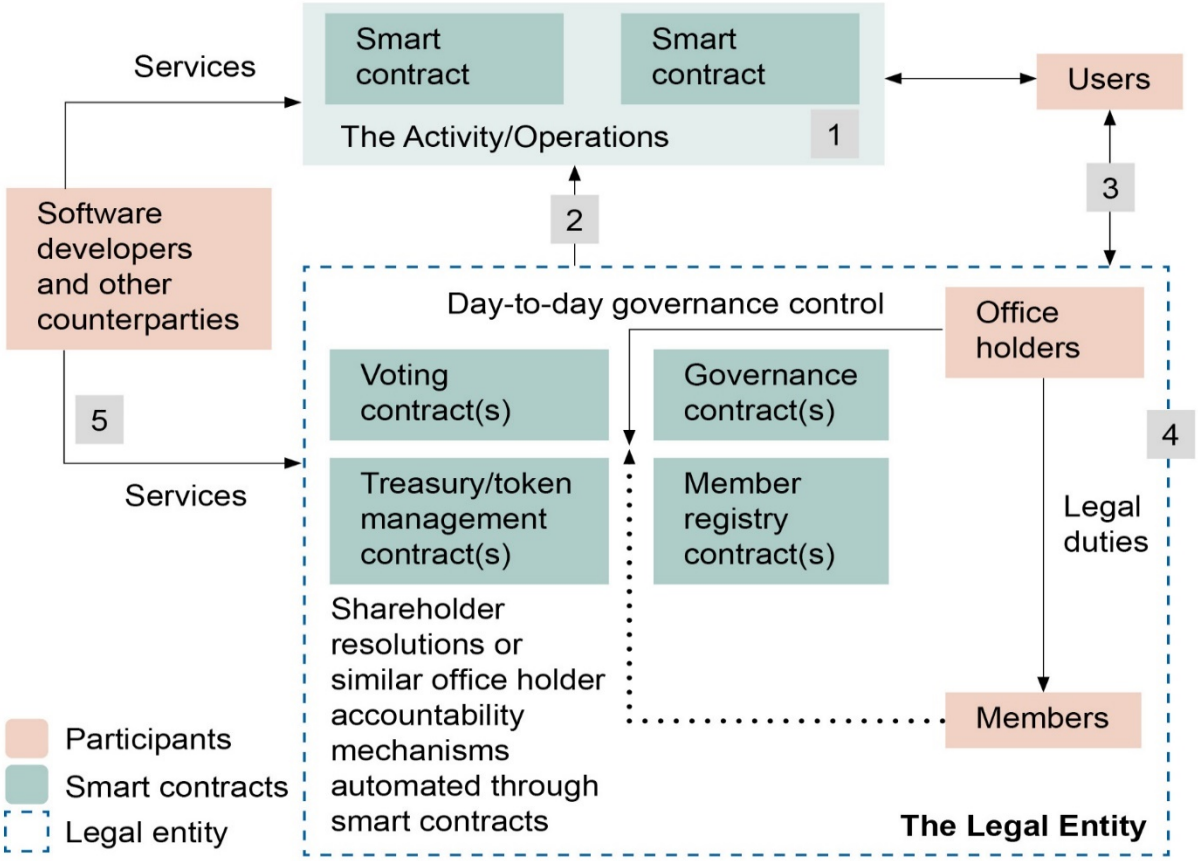
303 C Brummer and R Seira, "Legal Wrappers and DAOs" (2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4123737, p 9. Note that other structures with less mandatory rules, such as ownerless foundations, might be more appealing for this approach than corporations.

304 See Delphi Labs, "Assimilating the BORG: A New Framework for Cryptolaw Entities" (20 April 2023).

305 This risk would depend on the law applicable to the legal entity used and the law of the relevant jurisdiction.

DISTINGUISHING DIGITAL LEGAL ENTITIES

Diagram 5: A digital legal entity



1	Digital legal entities may use smart contracts in their operations as well as governance.
2	Alterations to the product offering are determined in accordance with the rules of the legal entity, even if the rules of the legal entity allow alterations to be automated by smart contract.
3	Users of the organisation's product have a direct legal relationship with the legal entity that provides it. Members and office holders maintain limited liability.
4	In a digital legal entity, there is no distinction between on-chain governance tokens and membership interests in the legal entity. Equity interests could themselves be crypto-tokens. Additionally, there is no necessary decentralisation of management authority. Smart contracts can simply be employed to automate other corporate governance arrangements. Again, this is only one simple example of the ways in which DLT could be incorporated into an organisation's governance.
5	When the legal entity engages a counterparty to perform work on its behalf (in employment or otherwise), the counterparty's legal relationship will be with the legal entity not individual members or directors.

The components used above are indicative and non-exhaustive examples that may be used.

The actual composition and functionality of the smart contracts will be fact specific.

4.36 A "digital legal entity" in our terminology refers to an incorporated legal entity which has been digitised such that certain governance or operations of the entity which may otherwise have been performed by humans are replaced or augmented using distributed ledger technologies and smart contracts. It is not driven by the DAO ideology of decentralisation and autonomy and, unlike a hybrid arrangement, there is no residual token-based decision making outside the legal entity.

4.37 For example, if companies are authorised to issue shares as tokens recorded on a blockchain, that would suggest the company is moving towards being, or being operated as, a digital legal entity.[306] A digital legal entity can be distinguished from a DAO fully-wrapped as a company, which would issue shares alongside DAO governance-tokens that exist exclusively on-chain. In a sense, the concepts are the inverse of one another: a fully-wrapped DAO uses a company to facilitate its off-chain interactions and limit the liability of its members; a digital legal entity (in this example a company) tokenises its shares and share register to benefit from the efficiency advantages of decentralised technology. All the while, however, the organisations operate very differently: the company (at this stage) is still centralised with a board of directors, and the DAO's conduct is still driven by its smart contracts as varied by governance token holders who likely exercise similar control over the entity. We briefly discuss options for reform that could facilitate the digitalisation of existing legal entities in Chapter 5.

DOMESTIC OPTIONS

4.38 In this section we discuss the legal forms and legal entities available in England and Wales that could be used by DAOs as part of a hybrid arrangement. We do not consider every available legal form and legal entity, only those that are commonly used in this jurisdiction or that may be attractive for DAOs. We discuss the attributes of each and any challenges that can arise relating to DAO-entity fit.

Companies

4.39 The framework for company law in England and Wales is set out in the Companies Act 2006. The Act provides for limited companies (which we discuss below), community interest companies (which we discuss from paragraph 4.54 and overseas companies[307] (which we do not discuss further in this paper). Companies established under the Act must be incorporated, that is, they must comply with certain registration requirements and become registered with Companies House.

4.40 Limited liability companies under the law of England and Wales are either limited by shares or by guarantee.[308] A company is limited by shares if its members' liability is limited to the amount, if any, unpaid on the shares held by them. A company limited by

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306 Under the current law at least in the UK, a token can only be evidence that one owns the share; share ownership is determined by the register of members and not holding a token. The token in this context cannot be the share itself or function like a bearer instrument. See H Liu, "Digital assets: the mystery of the 'link'" (2022) 3 *Journal of International Banking and Financial Law* 161.

307 Companies Act 2006, Pt 34. Overseas companies are companies incorporated overseas which must register if they operate an establishment in the UK.

308 Companies Act 2006, s 3(2). Previously it was possible to form a company limited by guarantee having a share capital but formation of these companies is no longer possible: Companies Act 2006, s 5.

guarantee limits the liability of its members by way of an undertaking to contribute to the assets of the company in the event of it being wound up.[309] A company limited by guarantee, unlike that limited by shares, will not obtain its working capital from its members. It also cannot, because of the absence of share capital, distribute dividends. As such it is generally seen as more suited to non-profit purposes.

4.41 In this chapter we are primarily concerned with how legal forms and legal entities are used by DAOs with hybrid arrangements. However, we note here that companies are often used in the early stages of developing smart contracts for DAOs which may go on to be pure DAOs rather than hybrid arrangements. These developer corporations ("DevCos") are used to hire software developers to develop the initial DAO software, and typically retain control over certain aspects of the smart contracts themselves. In a pure DAO, when the governance smart contracts are activated, control of the smart contracts is typically passed from the DevCo to the DAO token holders.[310] The DevCo may continue to exist once the pure DAO is in operation, but outside the pure DAO as a service provider which can be instructed by the pure DAO if necessary to update to the code of the smart contracts. In a hybrid arrangement, a DevCo could sit within the DAO's structure and retain decision making powers in relation to the code. While many DevCos are established as Delaware C-Corps (which is a standard practice for US venture capital funded enterprises), there is no reason why a company incorporated in England and Wales could not be used instead.

4.42 Below we consider, independently of DevCos, how companies incorporated under the law of England and Wales are one potential candidate for fully wrapping a DAO.[311] The governance process of a company is governed by its articles and statute. While the articles and resolution procedures provide an opportunity for members to establish and operate governance practices that reflect a degree of fit with the objectives of the DAO, companies present the paradigm example of the entity-fit challenges introduced above. The scope of mandatory rules, the default position in the articles, the activities requiring special resolutions, and the engagement of DAO members are all constraints on their suitability for DAOs. The ability for members to compel directors to take or refrain from taking certain actions against the exercise of their general power to operate the company may therefore be significantly curtailed.

4.43 Starting with the most obvious problem, companies are required to have at least one director (whose personal details such as name and address must be declared).[312] This requirement for directors requires a degree of centralisation that is a poor conceptual fit for DAOs. Companies must also keep a register of members,[313] and declare information about any person or entity with significant control over the

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309 Companies Act 2006, s 3(3).

310 This is a common step in a strategy of "progressive decentralisation" see: para 2.67. The "DevCo" often retains DAO governance tokens (outside of any held in the DAO treasury) for the benefit of the developers, often as a means of remuneration or incentivisation for contributing to the software development.

311 However, there is no impediment to companies also being used as a "siloed entity" that acts as a partial wrapper.

312 Companies Act 2006, ss 9 to 12A (personal details), s 154 (requirement) and s 162 (registration).

313 Companies Act 2006, s 113. The register must include, for example, their name and address, date of becoming a member, and details of any shareholding.

company.[314] As touched on above, this is at odds with the pseudonymous nature of DAO membership. Certain acts – statutory disclosures, for example – can only be made by the company through its directors, not by its members. Companies are also required to make a number of returns to Companies House, including annual accounts (unless exempt) and notification of the creation of a charge or mortgage, and notification of certain changes including of registered office, company name, director or a director's personal details. Again, this may challenge the DAO ethos.

4.44 The introduction of the company as a wrapper prescribes a legal change to the governance dynamics that would otherwise exist in a DAO.[315] In particular, it gives rise to issues concerning the involvement of members in decision-making. A company's articles determine the division of powers between the members and directors in the operational governance of the company except where mandatory rules apply.[316] In the default model articles, directors typically have discretion to operate the company in accordance with their duties which includes "exercis[ing] all the powers of the company".[317]

4.45 Directors owe fiduciary duties to the company that cannot be waived by contract.[318] These duties are owed to the company, rather than the members.[319] While the directors have a duty to promote the success of the company for the benefit of its members as a whole,[320] this does not equate to carrying out the actual wishes of the members.[321] Even where shareholders can vote on a particular matter, ultimately, the directors cannot legally prioritise the will of members over their directors' duties (or other legal and regulatory requirements).

4.46 Voting on governance proposals is key to the operation of DAOs as originally conceived. DAO votes may be performed off-chain or on-chain and are formulated and enacted based upon rules adopted by the DAO. In companies, resolutions are the statutorily prescribed equivalent.[322] Written resolutions are the normal mechanism for

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314 See "Policy paper Factsheet: beneficial ownership" (updated 26 October 2023) https://www.gov.uk/government/publications/economic-crime-and-corporate-transparency-bill-2022-factsheets/factsheet-beneficial-ownership.

315 Of course, the result of governance operations may be the same, but the imposition of mandatory requirements will have some impact on the implementation of the governance mechanism.

316 For example, directors' duties under s 172 of the Companies Act 2006.

317 Companies Act 2006, s 20.

318 Companies Act 2006, ss 232(1) and 232(3) (subject to very limited exceptions: ss 232(2) and 232(4)). This applies regardless of whether any provision that purports to do so is contained in the articles or a separate contract.

319 *Percival v Wright* [1902] 2 Ch 421; *Perkins v Anderson* [2001] BCLC 372 at [27] – [37].

320 Companies Act 2006, s 172(1).

321 The relevant interests are those of hypothetical members (*Greenhalgh v Ardene Cinemas* [1951] Ch 286 at 291 by Evershed MR based on the subjective views of the directors (*Re Smith and Fawcett Ltd* [1942] Ch 304).

322 Companies Act 2006, Part 13.

engaging members in decision-making in private companies[323] and may be proposed either by a member or a director through statutorily mandated processes.[324] The process varies according to the nature of the resolution.[325]

4.47 Minimum voting majorities for a resolution to be adopted are set by the Companies Act 2006, not the individual company.[326] Modern practice is to require a special resolution (requiring a 75% majority) to compel or prohibit specific action taken by directors.[327] Our research suggests that a significant proportion of DAOs suffer from lack of token holder engagement and use the views of the *voting* members to determine the adoption or rejection of a governance proposal. By contrast, written resolution majorities are based upon *all* members with voting rights.[328]

4.48 The actual process of voting, however, appears to present far fewer problems. A written resolution may arguably be performed in a manner consistent with most off-chain and on-chain governance proposals.[329] Token holding may be used to determine the weight or quantum of a member's vote by providing for this in the articles.[330]

4.49 In a fully-wrapped DAO, membership of the DAO (by virtue of a token holding) and the legal entity (by virtue of a shareholding or guarantee) are congruous. This means the

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323 Companies Act 2006, ss 281, 288 – 300. Unanimous decisions reached by all members entitled to vote are effective regardless of whether a written resolution is implemented: Companies Act 2006, s 281(4)(a) preserving the rule in *re Duomatic Ltd* [1969] 2 Ch. 365 (general principle) and *Cane v Jones* [1980] 1 WLR 1451 (application to special resolutions).

324 Companies Act 2006, s 291 (directors); Companies Act 2006, ss 292 - 295 (members).

325 Companies Act 2006, Pt 13.

326 The threshold depends upon the nature of the resolution. A minimum simple majority (that is, not less than 50%) is required for "ordinary resolutions" Companies Act 2006, ss 281(3) and 282(1). A special majority of not less than 75% is required for "special resolutions": s 283(1).

327 See, for example, Model Articles – guarantee, s4(1).

328 Companies Act 2006, ss 282 and 283 (unless passed on a show of hands or poll at a meeting which is unlikely to be practicable in the case of DAOs).

329 The resolution itself may be in "electronic form": Companies Act 2006, sch 4, para 5. For off-chain processes, publication is permitted through use of a website: Companies Act 2006, s 299. "Electronic form" (as defined in Companies Act 2006, s 1168) is expansive and would not appear to pose any limitations on the use of existing governance proposal processes, including those stored on-chain or mediated by smart contract. Furthermore, Companies Act 2006, s298 enables members to communicate with a company electronically in respect of a written resolution where an "electronic address is supplied", which "means any address or number used for the purposes of sending or receiving documents or information by electronic means." This includes for the purposes of signifying agreement (Companies Act 2006, s 296(1)-(3)) and would therefore seem to permit the use of on-chain decision-making including through the use of tokens where validly issued and held. Off-chain and on-chain records would seemingly also satisfy the record keeping requirements for resolutions in Companies Act 2006, s 355.

330 Companies Act 2006, s 284(4) (the default position is subject to any provision in the articles). The default position is that votes on written resolutions provide one vote per share for each member of a company limited by shares with (Companies Act 2006, s 284(1)(a)) and one vote in a company limited by guarantee (Companies Act 2006, s 284(1)(b)).

company structure will be a better fit for relatively stable, rather than transient, memberships.[331] DAO governance tokens can be, and are, frequently transferred.

4.50 Shares in a company limited by shares are, in principle, freely transferable subject to the company's articles.[332] However, most (if not all) private companies restrict transfer[333] and registration[334] to ensure control and management of the company. Whether restricted or not, the logistics of transfer, although not insurmountable, are an administrative burden.[335] This may be mitigated if the articles eliminate the need for certificates[336] or shares in the company are themselves tokenised, however this kind of tokenisation is not currently permissible for UK companies.[337]

4.51 Interests in companies limited by guarantee are non-transferable.[338] Effecting a membership change requires an existing interest be terminated and a new interest created by application and approval by the directors.[339] The absence of a transfer process may mitigate any real or perceived complexity but is inconsistent with the free transfer of tokens without director involvement.

4.52 The distribution of profits also differs between companies limited by guarantee and by shares. A company limited by shares has an implied power to make distributions to members by way of dividend unless its articles of association provide otherwise.[340] The power to do so flows from the conception of the company limited by shares as a vehicle for private enterprise motivated by profit. As a company limited by guarantee has no share capital, companies limited by guarantee cannot distribute profits to members by way of dividends. Any provision in the company's articles of association or any resolution of the company purporting to give any person a right to participate in the profits of a company, otherwise than as a member, is void.[341] The effect of such a

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331 The same principles apply by extension to the wrapping of a particular subgroup (including a sub-DAO) as opposed to the entire membership.

332 Companies Act 2006, s 544(1); *Greenhalgh v Mallard* [1943] 2 All E.R. 234; *re National Provincial Marine Insurance Co* (1869–70) L.R. 5 Ch. App. 559, 565 (the right to transfer only need be restricted and need not be granted by the articles).

333 There is no limit to the restrictions that may be imposed in the company's articles: *Palmer's Company Law* (Release 182, April 2024), para 6.444.

334 The modern practice is to provide directors with a general power of refusal to register a transfer: Companies (Model Articles) Regulations 2008, SI 2008 No 3229, sch 1, art 26(5). This is subject to proper administration of the power under Companies Act 2006, s 771.

335 The procedure will depend on whether the shares are certificated (that is, the company has issued a certificate, usually in paper form, for the shares) or uncertificated (held in electronic form through a central securities depository (a "CSD") – the only CSD in the UK is CREST, which we discuss at para 5.118 of Appendix 5).

336 Companies Act 2006, ss 769 and 776 (there is no requirement for share certificates "if the conditions of issue of the shares, debentures or debenture stock provide otherwise").

337 UKJT, "Legal statement on the issuance and transfer of digital securities under English private law" (2023), https://ukjt.lawtechuk.io/. We consider the possibility of digital bearer securities from para 5.110.

338 As reflected in Companies (Model Articles) Regulations 2008, SI 2008 No 3229, sch 2, art 22(2).

339 As reflected in Companies (Model Articles) Regulations 2008, SI 2008 No 3229, sch 2, art 21.

340 *Palmers Company Law* (Release 182, April 2024), para 9.705.

341 Companies Act 2006, s 37.

restriction may be viewed as either a benefit or an impediment, depending on the purpose of the DAO. A company limited by guarantee lacks the ability to distribute profits but may still be profit generating. This may be a good fit for some non-profit DAOs.

4.53 The challenges of DAO-entity fit for companies are not unique to UK company law. The corporation in the United States is similar to the UK company. Brummer and Seira note that "few DAOs organize themselves as corporations" for this reason,[342] instead opting to use one of the more flexible limited liability company models discussed below.

Community interest companies

4.54 Limited companies are generally used for commercial businesses set up principally to make a profit and provide returns to shareholders. The Community Interest Company (CIC)[343] was established to provide a form for businesses with a primary purpose of community benefit rather than private profit.[344] The rationale is to leverage the limited company framework[345] for non-charitable organisations which aim to benefit the community or which have a social purpose.[346] CICs can be set up as companies limited either by shares or guarantee. CICs limited by shares are permitted to pay dividends but these are subject to restrictions. Distributions are either subject to a 35% dividend cap[347] to shareholders as non "asset locked bodies"[348] or subject to constraints that further the purpose of the CIC, are only to "asset locked bodies", and are subject to the consent of the Regulator.[349]

4.55 Community interest companies must incorporate in the same way as other companies and, in addition, register with the Office of the Regulator of Community Interest

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342 C Brummer and R Seira, "Legal Wrappers and DAOs" (2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4123737, p 8.

343 CICs were originally established under the Companies (Audit, Investigations and Community Enterprise) Act 2004 and the Community Interest Company Regulations 2005, SI 2005 No 1788.

344 Community Interest Companies Guidance (updated, 9 February 2024), https://www.gov.uk/government/publications/community-interest-companies-how-to-form-a-cic/community-interest-companies-guidance-chapters.

345 Companies (Audit, Investigations and Community Enterprise) Act 2004, s 26(2).

346 If a DAO exists for charitable purposes, it could also register as a Charitable Incorporated Organisation (CIO) with the Charity Commission. The charitable DAO would not be subject to company law, but would have to comply with certain requirements set out in Part 11 of the Charities Act 2011, including: a physical office in England or Wales, duties on registered members to exercise their powers in the way they decide is most likely to further the CIO's charitable purposes, and Charity Commission consent for various changes to the constitution of the CIO. We do not discuss this option in more depth because it applies only to DAOs with a charitable purpose as defined under s 2 of the Charities Act 2011, rather than non-profits considered more broadly.

347 Dividends may only be paid to CICs that operate as companies limited by shares, see Community Interest Company Regulations 2005, SI 2005 No 1788, reg 7 and sch 1.

348 "Asset-locked body" is defined in Community Interest Company Regulations 2005, SI 2005 No 1788, reg 2. The caveat being where a member is itself an "asset locked body".

349 The "asset lock" requires adoption of the articles of Community Interest Company Regulations 2005, SI 2005 No 1788, sch 2. The CIC, as a limited company, remains subject to the rules on distributable profits that apply to a limited company.

Companies ("CIC Regulator"). To have registration approved by the CIC Regulator, organisations must provide the CIC Regulator with evidence that they will satisfy the community interest test. This is a requirement to carry on activities that "a reasonable person might consider [are] for the benefit of the community".[350] The "community" includes a "section of the community (whether in the United Kingdom or anywhere else)"[351] that "share a common characteristic which distinguishes them from other members of the community".[352] Activities for political purposes and those benefitting "only the members of a particular body or the employees of a particular employer" do not meet this characterisation.[353]

4.56 The CIC Guidance states that "it is expected that the community will usually be wider than just the members of the CIC."[354] It may be possible to argue that a "community" is constituted by the wider participants in a DAO ecosystem including users, node operators, developers and other contributors who receive DAO tokens or other remuneration, as well as exchanges and their users where tokens are locked or staked to generate liquidity. The activities of the CIC could be a benefit to that community as a whole or potentially just to token holders (as a section of that community).

4.57 However, the CIC Guidance states that "it is expected that the community will usually be wider than just the members of the CIC" and regard would have to be had to the prohibition against benefiting "only the members of a particular body".[355] Developing software and providing governance services for the benefit of other participants may be examples of activities that serve a community broader than the DAO itself.

4.58 Many of the same issues that arise for DAOs in relation to limited companies (for example, the requirement for nominated officers and various returns) apply also to CICs and may in some cases be exacerbated. For example:

(1) In addition to Companies House, there is an additional regulator for CICs – the Regulator of Community Interest Companies[356] – and therefore another level of state involvement. The CIC Regulator has wide-ranging enforcement powers that directly address governance autonomy: the power to appoint or remove directors, appoint a manager, order the transfer of shares or extinguishment of member interests, and to present petitions for winding up.[357] However, these

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350 Companies (Audit, Investigations and Community Enterprise) Act 2004, ss 35(2) and 35(3).

351 Companies (Audit, Investigations and Community Enterprise) Act 2004, s 35(5).

352 Community Interest Company Regulations 2005, SI 2005 No 1788, reg 5.

353 Community Interest Company Regulations 2005, SI 2005 No 1788, regs 3 – 4.

354 Office of the Regulator of Community Interest Companies, *Community Interest Companies Guidance* (Feb 2024): https://www.gov.uk/government/publications/community-interest-companies-how-to-form-a-cic/community-interest-companies-guidance-chapters.

355 Community Interest Companies Guidance (updated, 9 February 2024), https://www.gov.uk/government/publications/community-interest-companies-how-to-form-a-cic/community-interest-companies-guidance-chapters.

356 Companies (Audit, Investigations and Community Enterprise) Act 2004, ss 27 and 61.

357 Companies (Audit, Investigations and Community Enterprise) Act 2004, ss 42-52 and sch 7.

enforcement powers are to be used only to the extent necessary to maintain confidence in CICs and the regulator is described as "light touch".[358]

(2) The CIC regime places "asset lock" restrictions on the distribution of profits. Distributions are either subject to a 35% dividend cap to shareholders as non "asset locked bodies" or subject to constraints that further the purpose of the CIC, are only to "asset locked bodies", and are subject to the consent of the Regulator.[359] The asset lock is designed to ensure that assets and their proceeds are retained and applied exclusively for the designated purpose of the CIC. It may, depending on the facts, create a greater degree of entity fit for non-profit DAOs. For example, it may mitigate agency issues by reducing directors' discretion to make distributions (e.g. out of treasury). Even so, it may be seen as causing unwarranted centralisation and a requirement of state approval that further undermines decentralisation and autonomy.[360]

Trusts

4.59 As we have noted earlier,[361] a trust arises when one person (the "settlor") transfers property to another (the "trustee") to hold for some other person (the "beneficiary") or for some legally enforceable purpose,[362] with the intention of creating a trust.[363] Trusts are effectively asset management structures:[364] a way of holding property that separates management of the property (carried out by the trustees) from the benefits.[365] Trusts are relationships between beneficiaries and trustees. A trust is not a legal person in itself.[366]

4.60 In Chapter 3, we raised the possibility of trusts arising by matter of fact in circumstances in which DAO members pass control of crypto-assets to an individual or subset of members to hold or manage on their behalf (even if, generally, DAOs

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358 Companies (Audit, Investigations and Community Enterprise) Act 2004, s 41(1); Community Interest Companies Guidance (updated, 9 February 2024), https://www.gov.uk/government/publications/community-interest-companies-how-to-form-a-cic/community-interest-companies-guidance-chapters.

359 Community Interest Company Regulations 2005, SI 2005 No 1788, sch 1(1), sch 2(1), sch 3(1). See also Office of the Regulator of Community Interest Companies, *Community Interest Companies Guidance* (Feb 2024): https://www.gov.uk/government/publications/community-interest-companies-how-to-form-a-cic/community-interest-companies-guidance-chapters.

360 To the extent that one considers this relevant with the existence of an entity wrapper.

361 At para 3.107.

362 *Re Astor's Settlement Trusts [1952] Ch 534* at 541; McGhee et al, *Snell's Equity* (34th ed 2019), para 21-001.

363 Trusts may also arise by operation of the law (referred to as "constructive" and "resulting" trusts): J McGhee et al, *Snell's Equity* (34th ed 2019), paras 21-013. See also discussion from para 3.107.

364 For the view that express trusts are a species of obligation as opposed to a means of property management see P Parkinson, "Reconceptualising the Express Trust" (2002) 61(3) *Cambridge Law Journal* 657.

365 J McGhee et al, *Snell's Equity* (34th ed 2019), paras 21-002, 21-018 - 21-021, 22-035, 24-001.The defining feature of the trust is that the trustee (typically) holds legal title to the property subject to the beneficiary's equitable rights, as defined in the trust instrument and the applicable law: *Westdeutsche v Islington LBC [1996] A.C. 669* at 707.

366 See *Lewin on Trusts* (20th ed, 2023), paras [1-003] – [1-0004], [1-006].

seek to avoid this centralisation of authority and discretion).[367] While the application of the law is the same, here we focus on the intentional use of a trustee, which may be an incorporated legal entity such as a company, to achieve a measure of asset partitioning and liability protection for DAO token holders, as beneficiaries.

4.61 An express trust may be created informally in cases where the property is other than land.[368] Under the law of England and Wales, in order effectively to settle a trust it needs to satisfy the "three certainties": certainty of intention (to create a trust relationship), subject matter (the trust property), and objects (those entitled to the benefit of the property, the beneficiaries).[369] Trusts are usually established using a trust instrument which identifies the trustees and the intended beneficiaries of the trust. The trust instrument generally provides that assets cannot be used or sold to benefit anyone other than the beneficiaries identified.

4.62 The trust instrument provides the main source of the trustee's powers. The general law[370] applies where it provides mandatory rules, most importantly that the trustees act in good faith in the interests of the beneficiaries, or the trust instrument does not deal with a relevant matter.[371]

4.63 Trusts, though mainly offshore purpose trusts,[372] have been used in DAOs as part of a structure where certain assets (such as intellectual property rights[373] or tokens[374]) are transferred to the trustee by the DAO (its founders or token holders). They have also been used to allow DAO token holders, listed as beneficiaries of the trust, to profit from a DAO's investment in off-chain assets, such as bonds.[375] While in each of these cases a trust under the law of England and Wales was not used, there is no reason why equivalent assets could not constitute trust property in this jurisdiction.

4.64 As the trustees carry out the managerial function that may otherwise be performed by the token holders, using a trust structure reduces the potential that token holders and other participants will be held liable for the actions of the DAO. Actions are taken by trustees, who are not part of the DAO and are, in the first instance, personally liable on contracts they sign or tortious activity that they incur.[376] If they incur a liability in due administration of the trust, they are entitled to indemnity from the trust assets, and indemnity to which counterparties may be subrogated,[377] but, unless the trust

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367 We discuss this from para 3.107.

368 Law of Property Act 1925, s 53(1)(b).

369 *Knight v Knight* (1840) 49 ER 58.

370 Principally the Trustee Act 1925 and Trustee Act 2000.

371 J McGhee et al, *Snell's Equity* (34th ed 2019), para 21-004.

372 See discussion from para 4.128.

373 For example, NounsDAO.

374 For example, dYdX.

375 For example, the MakerDAO RWA Trust. For a discussion of this arrangement, see: https://medium.com/chainargos/makerdao-rwa-structure-issues-204553b03955.

376 For this reason, many trustees are incorporated legal entities, either domestic or foreign.

377 Trustee Act 2000 s 31; *Vacuum Oil Co. Pty Ltd v Wiltshire* (1945) 72 Commonwealth Law Reports 319 at p 328.

instrument provides otherwise, are not entitled to be indemnified for negligently incurred liabilities. There is an old rule, subject to criticism and abolished in New South Wales,[378] that a trustee may be entitled to recoup from the beneficiaries' personal assets if the value of the trust assets is insufficient to cover a liability properly incurred.[379] Therefore, in England and Wales, a trust structure does not guarantee beneficiaries complete limitation of their liability to the assets held on trust. Even so, trusts remain popular and usually effective asset partitioning devices for a range of purposes.

4.65 A trust enables trustee engagement in off-chain activities, subject to the obligations under the trust instrument and the general law. While not legal persons, trusts may effectively replicate many of the incidents of separate legal personality: legal title to assets is held by the trustees; commercial acts (such as entering into contracts, operating bank accounts) are done in the name of the trustees. Similarly, tax obligations are often borne by the trust, subject to rules concerning settlor-interested and bare trusts.[380]

4.66 The main source of governance – the trust instrument – is broadly flexible, providing a high degree of potential fit with the DAO (or the wrapped component).[381] Trust instruments have limited prescribed formalities, are not a matter of public record, and do not require registration or have ongoing reporting obligations per se.

4.67 A key challenge for the use of trusts by DAOs is identifying the beneficiaries: only legal persons (and therefore not unincorporated associations or general partnerships) may be beneficiaries under a trust. This generates identification issues if DAO members wish to retain pseudonymity. However, there is a plausible argument that certainty of objects is achieved even if the beneficiaries are listed as the class of legal persons with control over the DAO's governance tokens at any given point, as was attempted by MakerDAO in its RWA Trust.[382]

4.68 If a DAO meets the criteria of an unincorporated association, and the trust is used as part of the DAO's structure to hold assets on behalf of all members of the DAO, pseudonymity of members is likely to be the main obstacle, rather than definition of the class. In *re Denley's Trust Deed*, the scope of the beneficiary principle was

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378 Trustee Act 1925 (NSW) s 100A.

379 See *Hardoon v Belilios* [1901] AC 118. See also Joseph Campbell, 'The Undesirability of the Rule in "Hardoon v Belilios" (2020) *Trust Law International* 34(3) 131. The principle is unlikely to apply where the DAO operates as an unincorporated association. Wise v Perpetual Trustee Co [1903] AC 139 at p 149 that suggests a more limited application of *Hardoon*: "As was then pointed out, this principle by no means applies to all trusts and it cannot be applied to cases in which the nature of the transaction excludes it… Clubs are associations of a peculiar nature… They are not partnerships; they are not associations for gain; and the feature which distinguishes them is that no member as such becomes liable to pay any money beyond the subscriptions required by the rules of the club… It is upon this fundamental condition, not usually expressed but understood by everyone, that clubs are formed. "

380 See discussion at *Lewin on Trusts* (20th ed) 5-032.

381 There are examples of trust governance using native distributed ledger concepts (such as use on-chain addresses as opposed to physical mail) and digital methods for communication and voting methods that are conventional to the operation of most DAOs. See dYdX Foundation, "Legal Framework for Non-U.S. Trusts in DAOs" (15 March 2022): https://www.dydx.foundation/blog/legal-framework-non-us-trusts-in-daos.

382 See discussion in https://medium.com/chainargos/makerdao-rwa-structure-issues-204553b03955.

considered and Goff J (as he then was) held that if the purpose of a trust is for the benefit of ascertainable beneficiaries and affords them standing to apply to the court to enforce the trustee's duties, the beneficiary principle is fulfilled and the trust is permissible.[383] While membership of the DAO may fluctuate as governance tokens are exchanged, it is clearly possible to ascertain at least which public addresses hold them at any given time.

4.69 Where a trust is intended for the benefit of particular persons (as opposed to a discretionary trust in which trustees are given discretion over to whom to distribute capital and income), the trust will fail if the words used do not enable the trustees to draw up a complete list of all those intended to take an interest under the trust.[384] A trustee in a DAO in which members are pseudonymous may well be able to draw up a complete list of entitled public addresses, but could this count as "those intended to take an interest" where the trustee does not know the real person controlling those addresses? This is not a settled question. It may be of assistance that only conceptual uncertainty as to the intended list will invalidate the trust: mere practical difficulty, for example in tracing absent beneficiaries, will not do so.[385] However, it is clearly arguable that the inability to tie ownership of a governance-token to real world identity, because of intentional pseudonymity, is just such a conceptual uncertainty. This is likely among the reasons why DAOs intentionally employing trusts as part of their structure have primarily employed offshore purpose trusts.

4.70 The test for a valid discretionary trust is more permissive. Where there is a trust to distribute among members of a class of beneficiaries to be selected, it is enough that it can be said with certainty whether any particular person is a member of that class.[386] The test is satisfied if some persons are able to prove that they are members of the class – the selectors do need not be able to enumerate the whole class. On this test, we consider it less likely that pseudonymity would invalidate the trust: a real person could demonstrate an entitlement to be considered for distribution by proving ownership of a governance token. However, the use case for discretionary trusts in DAOs may be less clear: it provides just the centralisation of authority, and indeed discretion, that DAOs seek to avoid. With that said, we recognise it may not be impossible to design a discretionary trust for use in a DAO that is functionally deployed in a way to benefit all token holders.

4.71 The greater obstacle to pseudonymity may be tax registration obligations, rather than trust doctrine itself.[387] Additionally, in the case of a fixed trust, the trust instrument would need to specify that the assets are held on trust for members in accordance

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383 *re Denley's Trust Deed* [1969] 1 Ch 373 per Goff J (as he then was) at 383 (purpose must be sufficiently direct or indirect benefit to provide standing) and 386 (beneficiaries must be "ascertained or capable of ascertainment at any given time").

384 *Lewin on Trusts* (20th ed) 235.

385 *Lewin on Trusts* (20th ed) 236.

386 *Lewin on Trusts* (20th ed) 238.

387 See generally HM Revenue & Customs, "Guidance Register a trust as a trustee" (18 December 2023): https://www.gov.uk/guidance/register-a-trust-as-a-trustee.

with the rules of the DAO, to avoid granting token holders a right to sever their proprietary interest and leave with DAO assets in tow.[388]

4.72 Another key challenge is that trusts are, by their very purpose of separating management and ownership, antithetical to the traditional governance vision of DAOs. Neither beneficiaries nor settlors are able to bindingly direct trustees to take certain actions,[389] and if the settlors (as members of the DAO) put all practical control in their own hands in the trust instrument, the court may find no real intention to put the assets on trust.[390] Even if trusts are merely used to hold particular property, how that property is managed cannot be directed by the DAO participants directly. With that said, the use of trusts which maintain soft settlor influence, through letters of wishes to the trustees, and which reserve limited powers to the settlor in the trust instrument, not to mention the obvious incentive of trust company providers to comply with settlor interests, are all well established, even under the law of England and Wales.

Co-operatives

4.73 Co-operative societies (or "co-operatives") are membership organisations "for carrying on any industry, business or trade".[391] They are required to register with the Financial Conduct Authority ("FCA").[392] They are predominantly governed by the Co-operative and Community Benefit Societies Act 2014 ("CCBSA") and the FCA Guidance.[393]

4.74 The FCA's Guidance defines a bona fide co-operative as "an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly owned and democratically controlled enterprise". Depending on the DAO's purpose, the co-operative model may be

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388 See N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2001), paras 3.01-3.07; Re Buckinghamshire Constabulary Widows' and Orphans' Fund Friendly Society (No 2) [1979] 1 WLR 936 (Ch) 939-40.

389 See Lewin on Trusts (20th ed) at 53-004. Note, however, that the beneficiaries can have influence, even if they lack direct control: 'If all the beneficiaries are of full age and capacity, and the trustee is uncooperative, there are two options available to the beneficiaries. They can terminate the trust by requiring the trustee to transfer the trust property to themselves or another [Under the rule in Saunders v Vautier (1841) Cr. & Ph. 240. See §§ 22-014 onwards] and in that sense they can both authorise and require a departure from the trusts. Alternatively, they may replace the trustee with one of their own choice, in the expectation that the new trustee will be more amenable than the previous one [Under Trusts of Land and Appointment of Trustees Act 1996, s.19. See §§ 14-032 onwards.]'

390 See Matthew Conaglen, 'Sham Trusts' (2008) 67 Cambridge Law Journal 176 and Simon Douglas and Ben McFarlane 'Sham Trusts' in Heather Conway and Robin Hickey (eds), *Modern Studies in Property Law*, Volume 9 (Hart 2017) 237.

391 Co-operative and Community Benefit Societies Act 2014, s 2(1)(a).

392 Co-operative and Community Benefit Societies Act 2014, s 149. The FCA has a range of investigatory powers that may be exercised to ensure that the co-operative is operating as a bona fide society in compliance with the obligations imposed by the Co-operative and Community Benefit Societies Act 2014, s 5 and ss 105 – 107.

393 Financial Conduct Authority, "Registration Function under the Co-operative and Community Benefit Societies Act 2014 Guide" ("RFCCBS") in the FCA Handbook, https://www.handbook.fca.org.uk/handbook/RFCCBS.

appropriate.[394] The FCA considers a bona fide co-operative to be determined by "the nature of the relationship between members and the society".[395]

4.75 A co-operative, when registered, is an incorporated entity with limited liability.[396] It is governed by the rules of the society. The rules bind the society and its members.[397] The content of the rules is not restricted except to the extent that they are inconsistent with the CCBSA or are otherwise unlawful.[398] The content of the rules under the CCBSA is permissive: stipulating only the issues on which provision must be made, not their actual content.[399] As such, societies have some latitude to determine the terms of admission and removal as a member, the nature of members' voting rights and other governance arrangements (including "the scale and right of voting, and the method of making, altering or rescinding rules"),[400] election of officers,[401] the power to invest,[402] and more.[403] The FCA must approve the rules and, if the rules depart from the model rules, they will be scrutinised. If they depart from co-operative principles, they will be rejected.

4.76 The most important principle for primary co-operatives is that they must be one member, one vote.[404] This could be desirable for DAOs that genuinely wish control to

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394 RFCCBS 4.3.1G (updated 24 February 2023). The International Cooperative Alliance (ICA), Guidance Notes to the Co-operative Principles (2015), p 8 similarly states that members "are users of a co-operative's services or participate in its business enterprise as consumers, workers, producers or independent business owners. The type of members will depend on the nature of each co-operative. Members are also the co-operative's stakeholders, co-owners and co-decision makers with authority over major business decisions."

395 RFCCBS 4.2.4(3)G (updated 24 February 2023). Unlike a community benefit society (and CICs), a co-operative does not seek to benefit the "community". Community benefit societies are not considered because the joint requirements that a community benefit society "should not exist to provide benefits contingent upon membership", and a strict community purpose (RFCCBS 5.1.3G (updated 24 February 2023)), present strong impediments to their meaningful use in DAO structuring.

396 Co-operative and Community Benefit Societies Act 2014, s 3(3).

397 Co-operative and Community Benefit Societies Act 2014, s 15(1) (with the exception that written consent is required before a member is bound by a rule amendment increasing her liability to contribute to the society's share or loan capital under s 15(3)). Various forms of model rules for co-operatives with particular purposes/functions are available, see Financial Conduct Authority, "Model Rules Sponsors List": https://www.fca.org.uk/publication/forms/mutuals-model-rules-sponsors-list.pdf.

398 Co-operative and Community Benefit Societies Act 2014, s 23(3).

399 Co-operative and Community Benefit Societies Act 2014, s 14. The rules cannot address those things in the negative or in a way that conflicts with the rules for co-operatives generally. For example, s 14 says that rules must address membership. But rules cannot address membership by precluding membership. Nor could they close membership to newcomers.

400 Co-operative and Community Benefit Societies Act 2014, s 14(5).

401 Co-operative and Community Benefit Societies Act 2014, s 14(6). RFCCBS 8.1.5 confirms the duties of officers are those applicable to directors under the common law, such as fiduciary duties.

402 Co-operative and Community Benefit Societies Act 2014, s 27(1).

403 The CBCBSA applies an asset lock to community benefit societies but not to co-ops. The Co-operatives, Mutuals and Friendly Societies Act 2023 contains a power o introduce assets locks for co-ops, but this is dependent on further secondary legislation being made which has not occurred at the time of writing.

404 RFCCBS 4.12.2 ("Democratic member control"). The primary co-op is the consumer / worker / producer etc co-op, where members are people. Primary co-ops federate into secondary co-ops, which are like unions or trade bodies, and whose members are the primary co-ops. Secondary co-ops might have federal voting systems (for example, x number of votes per region, rather than one member one vote).

be distributed, as it prevents the situation in which a small number of people hold a majority of the tokens and therefore of the voting rights. The Act also prescribes voting methods on certain topics such as dissolution or conversion to a company.[405]

4.77 Co-operatives offer potential for use both in hybrid arrangements and are well positioned to operate as digital legal entities in certain circumstances. As the World Cooperative Monitor Report 2022 noted:[406]

> [T]here is ample room for improvement in the level of digitalization […] both in terms of the day-to-day management of activities and the online sale of goods and services, but more especially in terms of member participation and communication with stakeholders.

4.78 In terms of their use for DAOs in hybrid arrangements, aside from the obvious benefits of separate legal personality and limited liability, members may also benefit from their position as token holders. Co-operative membership may potentially be conditional on holding a particular token;[407] the "open membership" principle (requiring co-operatives to be "voluntary" and "open to all persons") would mean that all such token holders would be permitted to be members. This is supported by the International Cooperative Alliance Guidance Notes:[408]

> The only limit on membership being the limit imposed *by the purpose of the co-operative*…co-operatives are organised for specific purposes [that] can only effectively serve a certain kind of member or a limited number of members.

4.79 Permissiveness in the governance rules (including the ability to set high thresholds for change[409]) allows for the possibility of tailoring governance mechanisms to achieve an appreciable degree of fit with the characteristics of DAOs generally, and those of particular types or with certain purposes. Indeed, developing model co-operative rules for particular types of DAOs may be a low cost and high value way of providing a more bespoke entity structure for certain applications.[410]

4.80 While the existence of fiduciary obligations on company directors can often be seen as a factor militating against entity fit,[411] the member-centricity and flexibility in

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405 Co-operative and Community Benefit Societies Act 2014, Pt 9.

406 Digitalization and Large Coops - World Cooperative Monitor Report 2022 Extract, p 4: https://monitor.coop/en/media/library/research-and-reviews-world-cooperative-monitor/large-cooperatives-digitalization. This report considered digitalisation of co-operatives generally, rather than DAOs using co-operatives as part of a hybrid arrangement.

407 Co-operative and Community Benefit Societies Act 2014, ss 14(4) and 14(11) provide that the society rules make provision for the admission and withdrawal of members.

408 International Cooperative Alliance (ICA), Guidance Notes to the Co-operative Principles (2015), p 6 (emphasis added).

409 RFCCBS 3.4.4 - 3.4.7. "Entrenchment" seeks to implement a rule that cannot be subsequently changed.

410 See, for example, the range of model rules published by the FCA: see Financial Conduct Authority, "Model Rules Sponsors List": https://www.fca.org.uk/publication/forms/mutuals-model-rules-sponsors-list.pdf.

411 Discussed from para 4.45.

governance rules for co-operatives do not present the same concerns in their application. Indeed, their existence buttresses the enforcement of the rules.

4.81 A co-operative's ability to provide returns is restricted. The society must not exist "mainly for the payment of interest, dividends or bonuses on money invested or deposited with, or lent to the society".[412] Co-operatives can pay interest or dividends on money invested, deposited with, or lent to the society or any other person. However, if these activities are the main purpose or 'object' of the society's actual or intended business, then it does not meet the definition of a co-operative society and the FCA will not register it.[413] This could make co-operatives unattractive for DAOs who wish to have a profit sharing mechanism for token holders who have invested.

4.82 The Law Commission is currently undertaking a project to consider modernisation of the CCBS Act 2014, although this is not likely to consider DAOs specifically.

Limited Liability Partnerships (LLPs)

4.83 LLPs emerged as a concept in response to the savings and loan (S&L) crisis in the United States during the 1980s. Many S&L organisations, structured as general partnerships, collapsed and became subject to legal claims that, when successful, could result in all partners, including those who were not responsible for the loss, being liable for millions in compensation. In 1991 Texas was the first state to introduce a limited liability partnership structure, and many other American states and Jersey soon followed. LLPs were introduced in the United Kingdom in the Limited Liability Partnerships Act 2000.

4.84 LLPs are completely different from general partnerships, Limited Partnerships (LPs), and their modern variation, Private Fund Limited Partnerships (PFLPs). LPs and PFLPs allow people to contribute capital to an investment business and become protected by limited liability (become a "limited partner"), provided they do not engage in the management of the business, which is solely conducted by the "general partner".[414] We do not analyse those entities here because they require a centralisation of management authority antithetical to the core DAO concept.

4.85 LLPs, in contrast, have similarities with companies but with greater flexibility over governance. An LLP is an incorporated body, meaning it has a separate legal personality,[415] with unlimited capacity as a legal person.[416] An LLP is incorporated by registration at Companies House. Given the separate legal personality of the LLP, members act as the LLP's agents and are only liable up to the amount they have

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412 Co-operative and Community Benefit Societies Act 2014, s 24(3). See the guide to analysis of this criterion: RFCCBS 4.2.1.

413 A society will not be eligible for registration base upon RFCCBS 4.2.4(3) where it is "actually an association of capital with the main purpose of generating financial returns."

414 For further detail, see the Limited Partnerships Act 1907 and the Legislative Reform (Private Fund Limited Partnerships) Order 2017, SI 2017 No 514.

415 Limited Liability Partnerships Act 2000, s 2.

416 Limited Liability Partnerships Act 2000, s 1(3).

contributed. This is an important contrast with general partnerships. An LLP can only be incorporated by persons carrying on a lawful business "with a view to profit".[417]

4.86 An LLP has the organisational flexibility of a general partnership (and does not suffer from the organisational restraints of the limited partnership). The members are, for example, free to agree:[418]

(1) how to share profits;

(2) who is responsible for management and how decisions are made;

(3) when and how new members are appointed; and

(4) the circumstances in which members retire.

4.87 The accounting and filing requirements are similar to that of a company. However, LLPs have no share capital, there is no obligation for members to contribute capital to the LLP, and any members' agreement is a private document that does not need to be publicly filed.

4.88 The Limited Liability Partnerships Act 2000 does not dictate whether the members' relationships with each other are fiduciary in nature – the members may decide to provide for this in the LLP agreement.[419] The High Court has therefore held that members may only owe each other a duty of good faith as expressly provided for in the LLP agreement.[420]

4.89 LLPs, then, appear to offer many of the benefits of companies but with additional, and crucial, flexibility in governance. There does not appear to be any obstacle to a DAO, in the LLP agreement, providing that decisions are made according to on-chain voting by DAO governance token holders. Nor does there appear to be any obstacle to a DAO, in the LLP agreement, providing that new members are appointed automatically on use of a governance token, and "retire" on its sale.

4.90 Even so, LLPs present significant administrative compliance challenges and are incompatible with complete pseudonymity. Whenever details of the membership of an LLP change, those details must be reported to Companies House within 14 days.[421] An LLP must also identify at least two "designated members" on registration, who are responsible for maintaining accounting records, statutory registers, and registering with HMRC.[422] This requires some degree of administrative centralisation off-chain, but is still compatible with decentralised management more broadly.

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417 Limited Liability Partnerships Act 2000, s 1(a).

418 See generally Limited Liability Partnerships Act 2000.

419 Limited Liability Partnerships Act 2000, s 5.

420 *F&C Alternative Investments (Holdings) Ltd v Barthelemy* [2011] EWHC 1731 (Ch).

421 Limited Liability Partnerships Act 2000, s 9(1).

422 Limited Liability Partnerships Act 2000, s 8.

4.91 LLPs exist in similar format in many American states, and have been expressly recommended as a structure for DAOs by academic commentators.[423]

4.92 LLPs are, like general partnerships, treated as pass-through entities for tax purposes. Members will be taxed individually on their share of the profits.[424]

[423] See Carla Reyes and Christine Hurt, "The Contractarian Joint Venture" (26/02/2024) pp 22-23 and p 34: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4739274.

[424] Limited Liability Partnerships Act s 10(3).

Table 1: Comparison of England and Wales legal structuring options

	Company limited by shares	Company limited by guarantee	Community interest company (CIC)	Trust	Co-operative	Limited Liability Partnership (LLP)	General partnership	Unincorporated association
Limited liability?	Yes	Yes	Yes	Yes, the personal assets of beneficiaries are not available to trust creditors, subject to the potential liability of beneficiaries to the trustee company under the rule in *Hardoon v Belilios*.[1] The use of a trust company limits the liability of the company's members. If the trustee is a natural person they will be personally liable on debts unless they contract otherwise.	Yes	Yes	No	Not expressly, but ordinary rules of agency apply and personal liability on contracts excludable by rules of the association.
Separate legal personality?	Yes	Yes	Yes	The trust itself does not have separate legal personality. The assets are legally held and contracts entered into by the trustee, which can be a legal entity with separate legal	Yes	Yes	No	No

[1] [1901] AC 118.

	Company limited by shares	Company limited by guarantee	Community interest company (CIC)	Trust	Co-operative	Limited Liability Partnership (LLP)	General partnership	Unincorporated association
				personality or a natural person, rather than the beneficiaries.				
Transferability of interests?	Yes, shares in the company can be transferred subject to numerous administrative requirements under the Companies Act 2006.	Membership in a company limited by guarantee cannot be transferred. However, memberships can be extinguished and created easily.	As for companies limited by shares or guarantee depending on the structure chosen.	Yes, beneficial interests can be transferred, but only by writing and the signature and the transferor.	The governing documents of the co-operative can specify the rules for admission and removal of members and transferability of shares, however these must be approved by the Financial Conduct Authority as consistent with co-operative principles.	Yes, but register of members must be maintained.	Yes, subject to the partnership agreement.	Yes, subject to the rules of the association.
Mandatory duties?	Yes, directors owe duties to the company under the Companies Act 2006.	Yes, directors owe duties to the company under the Companies Act 2006.	Yes, directors owe duties to the company under the Companies Act 2006.	Yes. Under general trust law the trustee must manage the trust property in good faith in the interests of the beneficiaries. General trust law provides further default duties which can be excluded by the trust instrument.	Common law duties of those with control to act in the best interests of the society.	No, but there are default duties in legislation that can be excluded by the governing documents of the LLP.	No, but there are default fiduciary duties between partners under the Partnership Act 1890.	No, but those holding property on behalf of the members may be trustees and therefore owe duties under general trust law.

	Company limited by shares	Company limited by guarantee	Community interest company (CIC)	Trust	Co-operative	Limited Liability Partnership (LLP)	General partnership	Unincorporated association
Decentralised governance?	No	No	No	Not formally. Although, the trust instrument may include powers for other people, such as settlors or protectors, and limit the discretion of the trustee.	Yes	Yes	Yes	Yes
Flexible governance?	No	No	No	Some. Under general trust law, the trust instrument may include powers for other people, such as settlors or protectors, and limit the discretion of the trustee. The trustee must manage the trust property in good faith in the interests of the beneficiaries.	One-member one-vote principle, and Financial Conduct Authority approval of adherence to co-op principles, required.	Yes	Yes	Yes
Financial distributions to members?	Yes	No	Yes if a company limited by shares, but subject to the "asset lock".	Financial distributions can be made to beneficiaries.	Only if this is not the main purpose of the co-operative's activities.	Yes	Yes	No
Pseudonymity?	No	No	No	Uncertain, but likely to be possible,	No	No	Possibly, but partners have individual tax	Yes

	Company limited by shares	Company limited by guarantee	Community interest company (CIC)	Trust	Co-operative	Limited Liability Partnership (LLP)	General partnership	Unincorporated association
				particularly for a discretionary trust.			reporting obligations.	
Entity-level taxation?	Yes	Yes	Yes	Yes, although note that the law varies for bare trusts and settlor-interested trusts.	Yes	No	No	Yes

OPTIONS IN OTHER JURISDICTIONS

4.93 Companies (corporations) and LLPs are available in other jurisdictions, most notably the United States, and offer similar advantages and obstacles for DAO-entity fit as their equivalents in England and Wales. But many overseas jurisdictions also offer entities with no exact equivalent in England and Wales, which appear to offer potential advantages for DAOs seeking a favourable legal structure. This section introduces the entities that we understand are used by DAOs, including those designed with DAOs in mind, and our understanding as to their advantages and disadvantages. The material here is based on publicly available information and views expressed by stakeholders, rather than in-depth comparative research. Stakeholders with more than a general interest in these foreign entities should seek advice from appropriately qualified advisors.

Limited Liability Companies (LLC)

4.94 An LLC is an entity available in many US states. It shares some but not all the characteristics of a corporation and has several functional similarities to LLPs.

4.95 An LLC comes into existence following registration with the relevant state. Many of its features are equivalent to those of an LLP. These include:[427]

(1) The possibility of member management, rather than a requirement for a board of directors.

(2) Limited liability and separate legal personality.

(3) Mostly used by for-profit entities (although it is possible to form a non-profit LLC subject to Internal Revenue Service (IRS) rules).

(4) Allocation of profit, losses and other distributions according to the LLC operating agreement, with default rules in the governing legislation.

(5) Transferability of interests according to the LLC operating agreement.

(6) Fiduciary duties owed by managers and controlling members can be excluded by operating agreement.

4.96 Some of the main perceived disadvantages of LLPs for DAOs are shared by LLCs. In particular, LLCs are subject to the federal Corporate Transparency Act 2024, which would require a DAO using an LLC as a full wrapper to be able to identify its members and thus whether any member controls 25% of the LLC's ownership interests.[428] This may be inconsistent with complete pseudonymity even though many LLCs, such as the Delaware LLC, do not otherwise require the disclosure of a register of all members. Even so, the degree of pseudonymity achievable through such a regime is greater than that available to a company or LLP in England and Wales: it is one thing for the DAO to know the real identity of members and be compelled to disclose any

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427 See Delaware Code, Title 6, Chapter 18 – Limited Liability Company Act.

428 B Strack, "California DAO Bill Would Fix Existing Laws' 'Fatal Flaws,' a16z Exec Says" (25 April 2023): https://blockworks.co/news/california-dao-bill-fixes-existing-laws.

who control over 25%; it is another for the regulator to be informed of any change in membership interests within 14 days.

4.97 Additionally, membership interests in LLCs have often been regulated as securities under US securities law. Industry commentators suggest that this creates apprehension that DAOs will subject themselves to onerous and unwarranted financial regulatory requirements by adopting such a form.[429] But this risk may be overstated: if the LLC is truly member managed it will not meet the "Howey" criteria to classify its membership interests as securities.[430] The Howey test is functional rather than formal: it does not seem likely that a DAO can avoid or wrongly find itself embroiled in its requirements by selecting the wrong entity structure.

4.98 The main functional distinction between LLCs and LLPs, beyond their possible use by non-profit entities and member disclosure requirements, arises in the tax context: while LLPs are mandatorily a pass-through entity, LLCs can elect to "check the box" to be taxed as corporations. This offers potential advantages for simplifying tax administration for some DAOs, minimising the reporting and tax calculation requirements of token holders for assets not yet distributed, even if it does imply a greater degree of centralisation.[431]

Unincorporated Non-profit Associations (UNA)

4.99 Most American states take a similar approach to unincorporated associations as England and Wales. However, in thirteen states, including California, Delaware and Texas, an "Unincorporated Non-profit Association" is treated as a legal entity apart from its members. It may be taxed (or deemed tax-exempt) on an entity-level like a company or an LLC that "checks the box". And like an unincorporated association under the law of England and Wales, it retains significant flexibility for governance without any particular form of agency-based management.[432]

4.100 Distributions to token holders for their own use would generally not be "made in furtherance of the non-profit association's non-profit purposes".[433] A DAO making distributions would therefore be more likely to be classified as a default 'for-profit' general partnership.[434] However, some in the industry have argued that distributions

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429 B Strack, "California DAO Bill Would Fix Existing Laws' 'Fatal Flaws,' a16z Exec Says" (25 April 2023): https://blockworks.co/news/california-dao-bill-fixes-existing-laws.

430 C Reyes and C Hurt, "The Contractarian Joint Venture" (26/02/2024) pp 22-23: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4739274.

431 See M Jennings and D Kerr, 'A Legal Framework for Decentralized Autonomous Organizations' (2022): https://api.a16zcrypto.com/wp-content/uploads/2022/06/dao-legal-framework-part-1.pdf.

432 National Conference of Commissioners on Uniform State Laws, Uniform Unincorporated Nonprofit Association Act (2008) (last amended 2011), ss 2(3) and 21; p 28 ("The intent is to allow maximum flexibility. The nonprofit association's governing principles can provide for any type of managerial structure the nonprofit association wants to have. Choices range from a traditional board of directors or trustees to third parties who manage the nonprofit association under a contract.")

433 National Conference of Commissioners on Uniform State Laws, Uniform Unincorporated Nonprofit Association Act (2008) (last amended 2011), p 13 (reflected in s 25(a); See M Jennings and D Kerr, 'A Legal Framework for Decentralized Autonomous Organisations' (2022), p 12 – 13.

434 National Conference of Commissioners on Uniform State Laws, Uniform Unincorporated Nonprofit Association Act (2008) (last amended 2011), p 13.

to members are not necessarily inconsistent with a DAO's non-profit purpose under state legislation.[435]

4.101 An alleged advantage of a UNA is that the "agreement" to form one could be implemented simply by a majority approved governance proposal, meaning one could be adopted by a DAO already in existence.[436]

4.102 A UNA must still be registered with the IRS if it receives revenue over $5000. This does not, however necessarily require disclosure of the names of the members, beyond at least two in the originating document.[437] Additionally, because it does not come into existence by incorporation, it seems to be outside the scope of the federal Corporate Transparency Act.[438]

4.103 Transfers of membership are feasible, and without the limitations of the process applicable to equity interests.[439] Transfer of DAO governance tokens may therefore be sufficient for such transfers to be effective, given the permissive process for establishing membership.

4.104 The application of UNA principles to DAOs has not received significant judicial consideration. Issues such as the scope of permissible profit distribution are unsettled. However, the attributes of the UNA may correlate with those of DAOs where qualifying non-profit activities can be identified, which may, in some circumstances, include operating a protocol. As Miles Jennings and David Kerr summarise:[440]

> The UNA is a compelling alternative [to foundation-based structures] that provides legal existence to unincorporated organizational forms, which is analogous to what most DAOs represent.

DAO-specific statutory entities and the COALA Model Law

DAO LLCs, BBLLCs, LLDs

4.105 A few American states have enacted legislation providing for amendments to their general forms of LLC in order to accommodate DAOs, in particular, explicitly providing for the permissibility of decentralised, blockchain-based governance.

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435 See M Jennings and D Kerr, 'A Legal Framework for Decentralized Autonomous Organizations' (2022), citing *MT Falkin Invs., LLC v. Chisholm Trail Elks Lodge No. 2659*, 400 S.W.3d 658 (Tex. App.- Austin 2013).

436 See M Jennings and D Kerr, 'A Legal Framework for Decentralized Autonomous Organisations' (2022).

437 Department of the Treasury Internal Revenue Service, "Instructions for Form 1023-EZ" (January 2023): https://www.irs.gov/pub/irs-pdf/i1023ez.pdf.

438 B Strack, "California DAO Bill Would Fix Existing Laws' 'Fatal Flaws,' a16z Exec Says" (25 April 2023): https://blockworks.co/news/california-dao-bill-fixes-existing-laws.

439 Although a positive provision to this effect must be provided in the governing principles of the UNA: National Conference of Commissioners on Uniform State Laws, Uniform Unincorporated Nonprofit Association Act (2008) (last amended 2011), s 20.

440 M Jennings and D Kerr, "How to pick a DAO legal entity", (6 August 2022): https://a16zcrypto.com/posts/article/dao-legal-entity-how-to-pick/.

4.106 Statutes in Wyoming[441] and Tennessee[442] provide for a separate "DAO LLC": an LLC that can be "algorithmically" or "smart contract-managed" instead of being "manager managed".[443] The Vermont "blockchain-based limited liability company"[444] is similar but less prescriptive in operational and technical implementation.[445] The general intention is to enable DAOs to be wrapped in, and identifiable as, LLCs.

4.107 The Utah limited liability decentralized autonomous organization ("LLD")[446] effectively operates like an LLC but does not explicitly "wrap" the DAO. Instead, it imbues it directly with separate legal personality.[447]

4.108 The general rationale for technology-specific or DAO-specific legislation is to facilitate entity fit and to improve market certainty as to the consequences of using a particular legal form as part of a structure (thereby improving the attractiveness of the jurisdiction).[448] While this legislation may be seen to create a degree of certainty (in the sense of providing a specific entity form), DAO-entity fit remains imperfect. For example, the Wyoming DAO legislation has been criticised for a simultaneous failure to address the issues faced by DAOs using LLCs and the introduction of new restrictions and requirements that do not apply to general LLCs.[449] Some of these issues stem from being overly prescriptive with technology-specific concepts.[450]

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441 Wyoming Decentralized Autonomous Organization Supplement (Wy. Stat. §17-31-101-§17-31-116, as originally enacted): https://wyoleg.gov/2021/Enroll/SF0038.pdf/.

442 Tenn. Code Ann. §48-250-101-48-250-115.

443 The Wyoming Supplement originally used the term "algorithmically managed": §17-31-104(e) which, although not defined, may be implied as a reference to management through smart contracts (see §17-31-106(c)). Amendments introduced on 9 March 2022 modified this to refer to the "organization being managed by the members and any applicable smart contracts" (Wy. Stat. § 17-31-109): https://www.wyoleg.gov/Legislation/2022/SF0068. The Tennessee legislation defines a DAO as being "smart contract-managed": §48-250-103(2).

444 An Act Related to Blockchain Business Development (Sec. 7. 11 V.S.A. chapter 25, subchapter 12).

445 This may be attributable to the more genera purpose of the Act, which makes no mention of DAOs. §4173(1) states that "[a] BBLLC may provide for its governance, in whole or in part, through blockchain technology." The BBLLC retains the general LLC "member managed" and "manager managed" dichotomy: §4174.

446 Decentralized Autonomous Organizations Act (Utah Code Ann. §48-5-101–406).

447 §48-5-102 provides that the DAO will be governed in accordance with the DAO by-laws (as is typical of LLCs) and in the event both the Act and the by-laws are silent by the relevant provisions of the Utah Revised Uniform Limited Liability Company Act.

448 See S Boss, "DAOs: Legal and Empirical Review" (2023) Amsterdam Law School Legal Studies Research Paper No. 2023-27, Institute for Information Law Research Paper No. 2023-06, https://ssrn.com/abstract=4503234.

449 See, for example, Matt Blaszczyk, 'Decentralized Autonomous Organizations and Regulatory Competition: A Race Without a Cause' (2024) 99 North Dakota Law Review 107. See also J Teague, "Starting a DAO in the USA? Steer Clear of DAO Legislation" (7 June 2022): https://thedefiant.io/starting-a-dao-in-the-usa-steer-clear-of-dao-legislation; S Abualy and G Shapiro, "Wyoming's Legal Dao-saster" (10 April 2021): https://lexnode.substack.com/p/wyomings-legal-dao-saster.

450 These include: (a) expanded disclosure requirements relating to the details of smart contracts; (b) a requirement that DAO smart contracts are amendable: (c) dissolution after a year of no activity; (d) uncertainty around the meaning or necessity of the concept of "algorithmic-management"; and (e) the prohibition on "manager-management".

4.109 Consultees gave mixed responses to these statutory developments, noting the importance and shortcomings of these efforts.[451] COALA and BlockchainGov (in a joint response) stated that the regimes did not work for DAOs so that "to date, no large DAOs and no significant number of DAOs have interacted with these regimes". They noted the issue of 'fit' and seemed to criticise the attempt to fit the DAO philosophy into any existing corporate wrapper.

4.110 Delphi Labs has also considered the legislation to be overly prescriptive as to how DAOs should work, often undermining autonomy, causing unpredictable incentive side effects, and adverse regulatory implications.[452]

4.111 In their response to our call for evidence, Simmons & Simmons LLP similarly emphasised the failure to address the practical issues of entity fit arising from extension of the LLC to DAOs:

> Wyoming has recently become a popular jurisdiction where DAOs get registered […] However, the industry's view is that the Bill makes the entire process of running and being a member of a DAO unnecessarily cumbersome and restrictive. The reason is that 1) the number of the DAO's members is limited to 99, and 2) they are all required to be registered as shareholders, which means that they need to be issued a shareholder's certificate upon becoming a member of the DAO (i.e., purchasing the token associated with the project). If the token is subsequently resold, the change of shareholders needs to be registered with the regulator. In the decentralised community this practically strips the DAO of its fundamental purpose – to make entry into/exit from the organisation easy, to be flexible and to grow the number of its members.

4.112 The law firm gunnercooke llp observed that the slow adoption of some DAO-specific entities may not be due to their characteristics, but rather as a result of concerns about regulatory rules to which they are subject:

> We have generally steered clients away from using the US DAO frameworks because of concerns around US securities laws rather than specific consideration of the nature of the DAO corporate vehicles on offer.

4.113 Aaron Payas of Hassans International Law Firm Limited (in a personal response) had a more fundamental objection, and considered that "the concept of a legal form contradicts the nature of a DAO":

> As soon as you have a legal entity, the DAO is no longer decentralised and loses its main benefits and, generally, the reason why they are created in the first place.

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451 Cambridge Blockchain Society, Holland & Knight LLP, and Simmons & Simmons LLP; Shawn Jhanji (co-founder of Zbra DAO (in a submission on behalf of Zbra DAO and himself)), and XDAO.

452 Delphi Labs, "Assimilating the BORG: A New Framework for CryptoLaw Entities" (April 2020): https://delphilabs.medium.com/assimilating-the-borg-a-new-cryptolegal-framework-for-dao-adjacent-entities-569e54a43f83.

4.114 In the table that follows, we make a comparison of example legal entities, the Delaware LLC and England and Wales LLP, that may be appropriate as a full-wrapper for for-profit DAOs, noting the key features relevant to DAO-entity fit.

Table 2: For-profit full wrapper example comparison[453]

	Delaware LLC	England and Wales LLP
Limited liability?	Yes	Yes
Separate legal personality?	Yes	Yes
Transferability of interests?	Yes	Yes
Mandatory duties?	There are default duties in legislation that can be excluded by the governing documents of the LLC.	No, but there are default duties in legislation that can be excluded by the governing documents of the LLP.
Decentralised governance?	Yes	Yes
Flexible governance?	Yes	Yes
Financial distributions to members?	Yes	Yes
Pseudonymity?	The Corporate Transparency Act 2024 requires disclosure of individuals who exercise substantial control over the LLC or control at least 25% of its ownership interests. Otherwise, member names and addresses are not required to be listed on the Certificate of Formation.	No. An LLP must maintain a register of members' names and addresses.
Entity-level taxation?	Yes, if chosen.	No

Decentralized unincorporated non-profit association (DUNA)

4.115 Wyoming's Decentralized Unincorporated Non-Profit Associations Act, passed on 7 March 2024, was expressly designed with blockchain networks in mind.[454]

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453 We have chosen an LLP as the comparator because of its unique capacity for decentralised governance among incorporated for-profit entities in England and Wales.

454 M Jennings and D Kerr, 'The DUNA: An Oasis for DAOs' (3 August 2024): https://a16zcrypto.com/posts/article/duna-for-daos/. The authors claim that "this new entity structure is likely to become the industry standard for blockchain networks created in the United States". For a more sceptical view, see Jack du Rose, 'Wyoming's DUNA: What does it mean for DAOs' (21 March 2024): https://blog.colony.io/wyomings-duna-what-does-it-mean-for-daos/.

4.116 A decentralized unincorporated non-profit association (DUNA) must elect to be formed under the relevant chapter of Wyoming law, and must consist of at least 100 members joined by mutual consent under an agreement that may be in writing or inferred from conduct for a common non-profit purpose.[455]

4.117 The DUNA has separate legal personality,[456] can hold property in its own name,[457] can have perpetual duration,[458] transfer membership interests "in accordance with [the DUNA's] governing principles",[459] and can be treated as an entity for tax purposes.[460]

4.118 It may engage in profit-making activities, but profits from any activities must be used in furtherance of, or set aside for, the association's common non-profit purpose. The legislation also includes a carve-out for "reasonable compensation". A DUNA may:[461]

> Pay reasonable compensation or reimburse reasonable expenses to its members, administrators, and persons outside the organization for services rendered, including with respect to the administration and operation of the decentralized unincorporated nonprofit association (which may include, the provisions of collateral for the self-insurance of the decentralized unincorporated nonprofit association, voting, and participation in the association's operations and activities).

4.119 While some commentators have interpreted this provision generously, it is for Wyoming courts to determine the ceiling of "reasonable compensation". This will likely mean reasonable in furtherance of the DUNA's non-profit purpose.

4.120 The DUNA seems to clarify what already seemed possible in many states' UNA regimes. It expressly permits conferral of membership automatically if someone becomes a member in accordance with the governing principles of the organisation, facilitating the transferability of DAO tokens. It does not include a requirement to disclose a register of members. Additionally, the DUNA expressly provides that the smart contract is the legal contract for DUNA members: there is no requirement for a separate natural language document.[462]

4.121 Another important distinction from unincorporated associations in England and Wales is that, as with certain other American state UNAs, a DUNA can choose whether or not to be taxed as a company. Further, its limited liability and separate legal

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455 Decentralized Unincorporated Non-Profit Associations Act 17-32-102 (iii)(a)-(b).

456 Decentralized Unincorporated Non-Profit Associations Act 17-32-107(a).

457 Decentralized Unincorporated Non-Profit Associations Act 17-32-105.

458 Decentralized Unincorporated Non-Profit Associations Act 17-32-114(a).

459 Decentralized Unincorporated Non-Profit Associations Act 17-32-115(a), 17-32-119.

460 M Jennings and D Kerr, 'The DUNA: An Oasis for DAOs' (3 August 2024): https://a16zcrypto.com/posts/article/duna-for-daos/.

461 Decentralized Unincorporated Non-Profit Associations Act 17-32-104(c)(1).

462 Decentralized Unincorporated Non-Profit Associations Act 17-32-102(vii) (all agreements and any amendment or restatement of those agreements, including any decentralized unincorporated nonprofit association agreements, *consensus formation algorithms, smart contracts or enacted governance proposals*, that govern the purpose or operation of a decentralized unincorporated nonprofit association and the rights and obligations of the nonprofit association's members and administrators…) (emphasis added).

personality is achieved without incorporation (though members must elect to form under the DUNA Chapter of Wyoming legislation).

4.122 While the DUNA is the first in force legislation of its kind, a very similar bill passed the Texas House of Representatives in May 2023. It remains before the Business & Commerce Committee of the Texas Senate.[463]

Table 3: Non-profit full wrapper example comparison[464]

	Wyoming decentralized unincorporated non-profit association (DUNA)	England and Wales co-operative
Limited liability?	Yes	Yes
Separate legal personality?	Yes	Yes
Transferability of interests?	Yes	Yes
Mandatory duties?	No	Common law duties of those with control to act in the best interests of the society.
Decentralised governance?	Yes	Yes
Flexible governance?	Yes	One-member one-vote principle, and Financial Conduct Authority approval of adherence to co-operative principles, required.
Financial distributions to members?	"Reasonable compensation" for services provided in pursuit of the non-profit purpose.	Yes, but only if these activities are not the main purpose or object of the co-operative's actual or intended business.
Pseudonymity?	Yes. The Economic Transparency Act does not apply to organisations which did not come about by incorporation.	No. A register of members is required.
Entity-level taxation?	Yes, if chosen.	Yes

463 LegiScan, Texas House Bill 3768, https://legiscan.com/TX/bill/HB3768/2023#:~:text=Texas%20House%20Bill%203768&text=Relating%20to%20the%20formation%20of,business%20purposes%3B%20authorizing%20a%20fee.

464 We have chosen to use the co-operative as a comparator because, like the DUNA, it has separate legal personality and limited liability. It also has some capacity for decentralised governance as a result of its capacity for a one-member one-vote structure and the lack of a need for directors with statutory directors' duties.

COALA Model Law

4.123 Four consultees referred to the Model Law for Decentralized Organizations prepared by COALA (the "Coalition of Automated Legal Applications"), a blockchain research and development initiative. The model law, unlike the US statutes, is not an attempt to modify an existing statutory approach. It seeks to provide a set of rules for national legislatures to adopt legislation for DAOs on matters of agency, legal personality, limited liability, governance processes, and off-chain activity.[465]

4.124 According to COALA,[466] the model is designed to:

> assist governments in crafting their own DAO laws, so as to recognize full or partial legal personality to DAOs...to endow them with specific legal rights — and obligations — without requiring them to register or conform to traditional corporate law rules, so long as they satisfy the relevant legal provisions through technological means (such as "technological guarantees" afforded by blockchain infrastructure).

4.125 They go on to suggest that:

> Those technological means should provide legal protections equivalent to those underpinning traditional corporate legal forms, while taking account of the new opportunities of blockchain technology. At its core, this model law maps the various policy goals underpinning traditional corporate law rules, with a series of technological guarantees that can be regarded as "functional equivalents" to those rules.

4.126 The effort captures many of the themes addressed in this paper. It seeks to address the core issues of DAO-entity fit through the principle of functional equivalence: effectively 'mapping' the purpose/objective of a legal rule (such as a requirement to register) and the function of the technology.[467] Whilst undoubtedly a worthwhile and well-executed endeavour, questions remain as to how this can be achieved: some regulatory measures, such as KYC/AML requirements or a single point of reference for tax administration, are unlikely to be adaptable to DAO objectives and operations.

4.127 The model law has not yet been directly adopted but has served as an inspiration for the legislation in Utah as well as New Hampshire.[468]

Purpose trusts and foundations

Purpose trusts

4.128 Where existing DAOs have used trusts, these are generally formed for a particular purpose, such as the management of a DAO treasury, rather than for the benefit of a

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465 Coalition of Automated Legal Applications (COALA), "Model Law for Decentralized Organizations (DAOs)", pp 3 – 4: https://coala.global/wp-content/uploads/2022/03/DAO-Model-Law.pdf.

466 COALA, "The DAO Model Law" (19 December 2019): https://medium.com/coala/the-dao-model-law-68e5360971ea.

467 COALA, "The DAO Model Law" (19 December 2019): https://medium.com/coala/the-dao-model-law-68e5360971ea.

468 New Hampshire's proposed DAO bill is similar to Utah's Act, but has not yet passed the House.

person or persons.[469] Such trusts are "purpose trusts". For example, dYdX – a prominent decentralised crypto-token exchange – uses a trust for the purpose of wrapping a grants program that applies funds transferred from the DAO treasury to "make distributions to such persons identified by the Trustees in furtherance of the dYdX protocol and ecosystem".[470]

4.129 Purpose trusts are, however, generally void under the law of England and Wales (except for those settled for valid charitable purposes, enforceable by the Attorney General) because there are no beneficiaries to enforce the trust.[471]

4.130 Many offshore trust jurisdictions have introduced legislative provisions validating otherwise void non-charitable purpose trusts, thereby enabling private purpose trusts.[472] In theory, the trustee may be held to account through an enforcement mechanism even if this is not performed by a beneficiary with a direct interest in the trust.

4.131 For example, Jersey and Guernsey provide for "enforcement"-based models in which an "enforcer" is appointed to oversee administration by the trustees.[473] Most recently, Scotland has also introduced a purpose trust regime.[474] Taking inspiration from enforcement-based models, the new regime provides for the appointment of a "supervisor" who is granted powers to enforce the trust.[475]

4.132 The enforcer is always subject to removal by the trustees, who must (and can only) do so at the request of the settlor.

4.133 The Guernsey special purpose trust is a particularly oft-cited example of a viable wrapper for DAOs. For example, in the dYdX trust, assets were transferred from a smart contract controlled by the DAO to a purpose trust for issuing token-based grants to third parties.[476] The rationale for its selection correlates to the notion of "entity fit":

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469 See dYdX Foundation, "Legal Framework for Non-U.S. Trusts in DAOs" (15 March 2022): https://www.dydx.foundation/blog/legal-framework-non-us-trusts-in-daos.

470 See "Purpose Trust Instrument of dYdX Grants Trust": https://drive.google.com/file/d/1HV97VtmeHSt2Fof920TzR7utuSStBFhZ/view; dYdX Foundation, "Legal Framework for Non-U.S. Trusts in DAOs" (15 March 2022): https://www.dydx.foundation/blog/legal-framework-non-us-trusts-in-daos.

471 See *re Astor's Settlement Trusts* [1952] Ch 534; *re Endacott* [1960] Ch 232. A settlor may simply direct the property to be applied for charitable purposes: *Re Willis, Shaw v Willis* [1921] 1 Ch. For further differences see *Snell's Equity* (34th ed 2019), paras 23-040, 23-060, 20-040.

472 These include Jersey, Guernsey, Cayman Islands, British Virgin Islands, Bermuda, Isle of Man, and Belize.

473 Trusts (Jersey) Law 1984, art 15; Trusts (Guernsey) Law, 2007, art 12. A similar principle has been extended to private offshore foundations: P Panico, "Private Purpose Foundations: From Classic 'Beneficiary Principle' to Modern Legislative Creativity?" (2013) 19(6) *Trusts & Trustees* 542.

474 Trusts and Succession (Scotland) Act 2024, ch 6.

475 Report on Trust Law (2014) Scot Law Com No 239, Trusts and Succession (Scotland) Act 2024, ch 6 ss 49 and 50 (1). S 47 also provides that any person with an interest in the purpose of a private purpose trust can also apply to the court to enforce the trust purpose.

476 See fn 470.

> [t]he Purpose Trust under Guernsey law allows a DAO to retain all the characteristics of a DAO and continue to minimize trust in any group or person.[477]

4.134 The Guernsey trust provides flexibility in terms of governance structure and on the issue of who can serve as trustees and enforcers. DAO token holders retain the legal right to direct, add/remove trustees (and the enforcer) or to terminate the trust and transfer funds. Under the Guernsey trust, the settlor – whichever legal person it is that represents the DAO – can be appointed as the "enforcer".[478] Other off-shore trusts such as the Cayman Islands and the British Virgin Islands prescribe restrictions: trustees must include a licensed local trust company,[479] which inhibits typical DAO committee members from serving as the only trustees.

4.135 A purpose trust in which the trustees can be "directed" by a DAO vote to act in a particular way seems to be a roundabout way of preserving a DAO's decentralisation and quite inconsistent with its autonomy. It is also inconsistent with the traditional concept of the role of the trustee, even if now statutorily authorised offshore to recognise the common reality of settlor influence. These points of principle do not, however, reduce the potential usefulness of these entities for DAOs wanting to engage off-chain, particularly in a partial wrapper or DAO-adjacent entity structure.

Offshore foundations

4.136 Another popular offshore alternative, largely because of their flexibility of rules, are offshore foundations. Capable of being fully directed by DAO votes, foundations offer perhaps the best example of the DAO-adjacent entity concept as currently employed in the market.

4.137 The foundation is a traditionally civil law concept[480] originally used for the furtherance of charitable purposes with defined objectives. It is a relatively new addition to the common law in jurisdictions such as the Cayman Islands.[481] They are not available under the law of England and Wales. Whereas an LLC may be seen as a hybrid between a company and a partnership, Brummer and Seira note the foundation "functions similar[ly] to a mix of a corporation and a trust".[482] Private foundations have now emerged for the purpose of holding and administering certain assets, with no direct or implied reference to any beneficiaries. They are often used in investment funds, as holding vehicles and special purpose vehicles for commercial transactions (particularly securitisations), and as private trust companies as an alternative to

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477 dYdX Foundation, "Legal Framework for Non-U.S. Trusts in DAOs" (15 March 2022): https://www.dydx.foundation/blog/legal-framework-non-us-trusts-in-daos.

478 Trusts (Guernsey) Law, 2007, art 12(10).

479 Cayman Islands Trusts Act 2021 (Supplement No. 3 published with Legislation Gazette No. 19 of 26 February, 2021), s 105(1); Virgin Islands Trustee Act (Revised Edition showing the law as at 1 January 2020) ss 84A(1) and 84A(3)(c).

480 See R Feenstra "Foundations in Continental Law since the 12th Century: The Legal Person Concept and Trust-like Devices" in R Helmholz and R Zimmermann (eds), *Itinera Fiduciae: Trust and Treuhand in Historical Perspectiv*e (1st ed, 1998).

481 See P Panico, "Private Purpose Foundations: From Classic 'Beneficiary Principle' to Modern Legislative Creativity?" (2013) 19(6) *Trusts & Trustees* 542.

482 C Brummer and R Seira, "Legal Wrappers and DAOs" (2022), p 18: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4123737.

trusts. In recent years they have been used by DAOs. Consultees mentioned Cayman foundation companies and Panama private interest foundations in particular. We discuss these briefly below.

4.138 Simmons & Simmons LLP noted the attractiveness of the inherent flexibility possible with offshore foundations – particularly the absence of "restrictions" imposed in DAO-specific legislation (and, presumably, in the structures available in England and Wales):

> Jurisdictions such as the Cayman Islands, Panama and Switzerland are among the most popular choices for DAOs to incorporate foundations, because in contrast to [DAO-specific entities such as] Wyoming, they do not have onerous legal and fiscal restrictions to slow down the work of the DAO and defy its main objectives of being decentralised and flexible.

4.139 Of course, it is not only DAOs that are attracted to offshore jurisdictions and tax havens. Offshore jurisdictions have established competitive regimes for entity formation generally, with many being highly permissive in the choices that can be made regarding governance and operational attributes. There are notable examples of requirements or restrictions under the law of England and Wales being absent in other jurisdictions to make them more attractive (such as the rules on purpose trusts). When coupled with tax regimes that are often disengaged from international coordination efforts, they may be very attractive for structuring activities. This is especially true when a particular arrangement has no predefined or required ties to a particular jurisdiction, and when the jurisdictional policy is to actively permit loose ties. For DAOs, the general permissiveness of such jurisdictions is attractive given the legal or regulatory requirements in other, more proscriptive, jurisdictions.

Cayman foundation company

4.140 The Cayman foundation company (often referred to as a "Cayman foundation") is now one of the most used structures for DAO projects.[483] Cayman foundations are familiar to many industry participants and in particular venture capital investors.[484] Five consultees mentioned Cayman foundations as providing benefits for DAOs over other forms of entity.[485]

4.141 The Cayman foundation is built on a company model: it is limited by shares or by guarantee with articles, similar to limited companies under the law of England and

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483 C Brummer and R Seira, "Legal Wrappers and DAOs" (2022), pp 17–18: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4123737.

484 See Carey Olsen, 'An overview of Cayman Islands foundation companies' (6 April 2022): https://www.careyolsen.com/briefings/cayman-islands-foundation-companies-daos-defi-and-nfts.

485 Andersen LLP, Cambridge Blockchain Society, Dhivyan Kandiah (co-founder and COO of HocDAO (in a personal response)), EUCI, and Shawn Jhanji (co-founder of Zbra DAO (in a submission on behalf of Zbra DAO and himself)).

Wales[486] (particularly to companies limited by guarantee).[487] While the underlying form may be similar, the substance is far less prescriptive, allowing substantial structural, governance, and operational flexibility that provides the opportunity for a greater degree of entity fit.

4.142 Like companies, Cayman foundations can be formed for any lawful purpose, have separate legal personality, and provide limited liability to members.[488] They are flexible enough to provide a governance structure that allows for persons other than directors to exercise control,[489] though must have a secretary registered in the Cayman Islands.[490] The company must prescribe objects,[491] which may appear similar to those in purpose trusts. However, these are only required to be performed under two circumstances. The first is if the foundation company memorandum expressly declares so. The second is if the memorandum designates persons with standing to enforce the foundation company's obligation to carry out its objects, by way of action against the foundation company itself. Except as otherwise expressly provided by the constitution, rights under it are enforceable against the foundation company itself, not the directors. [492] "Supervisors",[493] similarly to offshore trust enforcers, can provide oversight of the directors to ensure alignment between the operations of the foundation company and its obligations to the DAO under the governing documents. "Interested Persons", which may include DAO members under the governing documents, can also sue directors on the company's behalf without being members.[494]

4.143 Foundations do not typically "wrap" the DAO, but instead "act as an affiliate of the DAO, or even an independent entity, that is directed by the DAO's token holders for a specific purpose".[495] While the foundation company will have limited liability, DAO

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486 Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April, 2017), ss 4(1)(a)-(c). The law of the Cayman Islands is based on the common law of England and Wales.

487 Distributions to members are prohibited: Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April, 2017), s 4(b)(iv).

488 Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April, 2017), s 3(2).

489 Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April, 2017), s 7(1). This duties and powers may be "subject to any condition".

490 Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April, 2017), s 16(1).

491 Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April, 2017), s 4(b)(ii).

492 Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April, 2017), s 7(4)(b), (5).

493 Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April 2017), s 8.

494 Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April 2017), s 7(d). See also Carey Olsen, 'An overview of Cayman Islands foundation companies' (6 April 2022), https://www.careyolsen.com/briefings/cayman-islands-foundation-companies-daos-defi-and-nfts.

495 C Brummer and R Seira, "Legal Wrappers and DAOs" (2022), p 18: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4123737.

token holders are often not members of the foundation as in the case of "full wrappers": indeed, the foundation can be completely memberless if the originating member resigns. DAO members may merely stand to benefit from the objectives pursued by the foundation.[496] A memberless arrangement is the preferable set-up for any for-profit DAOs, since profits cannot be distributed to members by the foundation.[497] It is also the preferable set-up to retain anonymity: Foundations are still required to keep a register of members, directors and supervisors in the Cayman Islands. Foundations can sue and be sued in their own names in respect of assets they hold, avoiding the risk of trustee liability to counterparties that remain in trust structures.[498]

4.144 An important feature for DAOs is that while they remain managed by a board of directors, the Foundation company can be "ownerless":[499]

> [T]he Cayman foundation company, which is in substance a company limited by guarantee, requires an initial guarantee member to be created, but that guarantee member can subsequently resign such that is memberless. A Cayman Foundation provides much greater anonymity than an English company. It does not need to disclose its beneficiaries and can be registered with the name of one supervisor and one director. These can be the same person and can be corporate rather than natural persons.

4.145 DAOs using a foundation typically delegate to the foundation limited authority over assets transferred from the DAO (in much the same way as a trust). The foundation board/council is subject to fiduciary obligations owed to the company. But instead of owing fiduciary duties to the company for the benefit of shareholders, directors and managers have a more direct duty to act pursuant to the foundation company's governing documents and, where applicable, in pursuance of the foundation company's objects.[500]

4.146 Perhaps the most appealing element of the Cayman foundation is the capacity for its constitution to distribute governance powers to almost any person for any purpose. This includes the possibility of most major decisions being subject to a vote of DAO

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496 Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April 2017), s 2(1): a "beneficiary" means a person who will or may benefit from the foundation company carrying out its objects. A "beneficiary", by default, has not powers or rights relating to the foundation company: s 7(4)(e). This is obviously distinct form a beneficiary with a proprietary interest in a trust.

497 This would be the case as the DAO members would typically not be members of the foundation company. Nonetheless, Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April 2017), s 4(2)(a) makes this clear: "a member is not regarded as receiving a dividend or distribution as a member merely because the member […] is a beneficiary of the foundation company and receives benefits as such".

498 Anthony Partridge, 'A Guide to Foundation Companies in the Cayman Islands' (9 February 2023): https://www.ogier.com/news-and-insights/insights/a-guide-to-foundation-companies-in-the-cayman-islands/.

499 Andersen LLP referring to Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April 2017), s 8(2).

500 Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April 2017), ss 7(3) and 7(5).

token holders. The rights, powers or duties which can be specified in the constitution can relate to:[501]

(1) admitting, appointing or removing members, supervisors and directors;

(2) making and amending any bylaws;[502]

(3) the supervision of the foundation company's management and operations;

(4) enforcing duties;

(5) calling and attending at general meetings;

(6) voting on resolutions;

(7) altering the constitution; and

(8) winding up and disposing of surplus assets.

4.147 In short, the DAO can retain almost complete control over how the foundation's assets are used, without being members or directors of the foundation company, so long as these rights are specified in the constitution of the foundation company.[503]

4.148 Another significant factor is tax advantages. A Cayman foundation company whose objects are to be carried out mainly outside the Cayman Islands is not subject to any corporation, income, withholding, or capital gains taxes.[504] What's more, an exempted company is further entitled to apply for an undertaking that no Cayman Islands law enacted after the date of the undertaking imposing new tax obligations apply to the company or its operations.[505] Members or beneficiaries are also not subject to any income, withholding, or capital gains taxes in the Cayman Islands with respect to their interests. Both may, of course be subject to tax liabilities in other jurisdictions based upon their residence and/or activities, particularly in the issuance of tokens and off-chain operations.

4.149 Assuming it is a single entity performing typical DAO governance activities, it is likely that a Cayman Foundation will be designated a Virtual Asset Service Provider

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501 Anthony Partridge, 'A Guide to Foundation Companies in the Cayman Islands' (9 February 2023): https://www.ogier.com/news-and-insights/insights/a-guide-to-foundation-companies-in-the-cayman-islands/.

502 These bylaws can be private, they do not need to be publicly filed. See Carey Olsen, 'An overview of Cayman Islands foundation companies' (6 April 2022): https://www.careyolsen.com/briefings/cayman-islands-foundation-companies-daos-defi-and-nfts.

503 See, for example, Ethereum Name Service (ENS) which provides an example of a protocol – a form of domain name service for the Ethereum network – governed using a Cayman Foundation. The ENS Foundation has no shareholders and cannot pay out dividends to its directors or members. Other similar examples include the Developer DAO and Nouns DAO.

504 Carey Olsen, 'An overview of Cayman Islands foundation companies' (6 April 2022): https://www.careyolsen.com/briefings/cayman-islands-foundation-companies-daos-defi-and-nfts.

505 Anthony Partridge, 'A Guide to Foundation Companies in the Cayman Islands' (9 February 2023): https://www.ogier.com/news-and-insights/insights/a-guide-to-foundation-companies-in-the-cayman-islands/.

("VASP") for regulatory purposes in the Cayman Islands.[506] The VASP requirements extend to licensing, registration, notification and reporting obligations, including relating to anti-money laundering. The VASP legislation would clearly impact legal decentralisation that may have been reduced (although not eliminated) to a notable degree using the foundation company. On the other hand, the legislation – given its application to foundation companies – may be attractive to DAOs that have suggested an absence of regulatory certainty in England and Wales as being prohibitive to their use of entities provided in the jurisdiction.[507] As Andersen LLP noted:

> It is highly unusual to use such an entity incorporated in England & Wales due to the difficulty in registering it for AML purposes with the FCA in order to issue a token to fund the project.

Panama private interest foundations

4.150 Two consultees also mentioned the use of Panama private interest foundations ("PPIF").[508] These have been described as "a type of offshore private foundation, carefully designed by the Panamanian Government as an offshore asset protection solution".[509]

4.151 A PPIF cannot engage directly in any business activity that is commercial in nature. Its main use is to hold and protect assets from creditors or regulators. As one adviser explains, "because the PPIF has no owners, the assets of the PPIF cannot be claimed if the founder, council members, protector or beneficiaries have unpaid debt".[510] Typically, PPIFs are used to hold investments and to collect royalties, manage trademarks and other passive activities.[511]

4.152 PPIFs may be used as part of more complex corporate structures. One adviser explains that the Cayman Islands have "approved the Panama Foundation to open accounts in its banks without any extra due diligence required".[512] This can make it attractive to structure a DAO using both Cayman Islands and Panama incorporated entities.[513] While we have been told that tax is usually not the primary driver, the tax efficiencies offered by the Cayman Islands as a jurisdiction, such as an absence of corporation, capital gains and income taxes, are obviously relevant.

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506 Cayman Islands: Virtual Asset (Service Providers) Law, 2020; Virtual Asset (Service Providers) Regulations, 2020.

507 We discuss money laundering regulations in Chapter 6.

508 Panama Law No. 25, Panama Private Foundation Part 11 – Panama Private Interest Foundation Law.

509 Offshore Protection, "Panama Foundation – Private Interest Foundation (PPIF) (30 July 2023): https://www.offshore-protection.com/panama-private-interest-foundations-formation#H2-1.

510 Offshore Protection, "Panama Foundation – Private Interest Foundation (PPIF) (30 July 2023): https://www.offshore-protection.com/panama-private-interest-foundations-formation#H2-1.

511 Offshore Protection, "Panama Foundation – Private Interest Foundation (PPIF) (30 July 2023): https://www.offshore-protection.com/panama-private-interest-foundations-formation#H2-1.

512 Offshore Protection, "Panama Foundation – Private Interest Foundation (PPIF) (30 July 2023): https://www.offshore-protection.com/panama-private-interest-foundations-formation#H2-1.

513 For example, MakerDAO.

Table 4: Partial wrapper or DAO-adjacent entity example comparison[514]

	Cayman Islands Foundation	England and Wales trust using a company limited by guarantee as trustee
Limited liability?	Yes. Indeed, those who benefit from the foundation may not even be members.	Yes, the personal assets of beneficiaries are not available to trust creditors, subject to the potential liability of beneficiaries to the trustee company under the rule in *Hardoon v Belilios*.[515] Similarly, the use of a trust company limits the liability of the company's members to the amount of the guarantee.
Separate legal personality?	Yes	The company acting as trustee has legal personality separate from the individuals managing the trust and beneficiaries.
Transferability of interests?	Yes. Since those who benefit from the foundation need not be members, this is not a great concern.	Yes, beneficial interests can be transferred, but only by writing and the signature and the transferor.
Mandatory duties?	Statutory duty for directors to act in accordance with the foundation's governing documents, which can be structured very flexibly. The legislation also provides for default duties which can be excluded by the governing documents.	Yes. Under general trust law the trustee company must manage the trust property in good faith in the interests of the beneficiaries (who must be legal persons). General trust law provides further default duties which can be excluded by the trust instrument. Additionally, the directors of the company will be subject to directors' duties under company law.
Decentralised governance?	Yes. The foundation allows for persons specified in its governing documents to make decisions, even without those persons having a title or duties as a director or member of the foundation.	Not formally. Although, the trust instrument may include powers for other people, such as settlors or protectors, and limit the discretion of the trustee company.

514 We have chosen a trust using a company limited by guarantee as a comparator because its degree of fit with the attributes listed demonstrates more suitability for use as a partial wrapper or adjacent entity than other structures available in England and Wales that we considered.

515 [1901] AC 118.

	Cayman Islands Foundation	England and Wales trust using a company limited by guarantee as trustee
Flexible governance?	Yes, they are flexible enough to provide a governance structure that allows for persons other than directors to exercise control.	Some. Under general trust law, the trust instrument may include powers for other people, such as settlors or protectors, and limit the discretion of the trustee company. The trustee company must manage the trust property in good faith in the interests of the beneficiaries (who must be legal persons). Additionally, the directors of the company will be subject to directors' duties under company law.
Financial distributions to members?	No. However, the fact of being a member of the foundation company does not preclude a person from otherwise benefitting financially from the foundation's activities.	Financial distributions can be made to beneficiaries under the trust. They cannot be made to members of the trustee company limited by guarantee.
Pseudonymity?	Yes. While members of the foundation must register with the Cayman Islands Registrar of Companies, those who benefit from the foundation's activities need not be members.	Uncertain, but likely to be possible, particularly for a discretionary trust.
Entity-level taxation?	No taxation of the foundation in the Cayman Islands.	Yes, although note that the law varies for bare trusts and settlor-interested trusts.

Other jurisdictions

4.153 Consultees made references to other jurisdictions which might be attractive for DAOs. We look briefly at some of these below.

Singapore

4.154 Two consultees mentioned Singapore.[516] Options in Singapore are broadly equivalent to limited companies and trusts in England and Wales. There is no specific legislation to characterise DAOs as a specific form of legal entity or to otherwise grant legal status to DAOs.However, European Crypto Initiative (EUCI) noted that:

> In Singapore, the Monetary Authority of Singapore (MAS) has issued guidance on distributed ledger technology and virtual currencies, which provides greater clarity

[516] European Crypto Initiative (EUCI) and Shawn Jhanji (co-founder of Zbra DAO (in a submission on behalf of Zbra DAO and himself)).

on the legal status of DAOs and the activities of DAOs in Singapore. Their regulator is known for providing swift and clear responses which help build certainty within the ecosystem

4.155 Similarly, Shawn Jhanji (co-founder of Zbra DAO (in a response on behalf of Zbra DAO and himself)) observed that Singapore is "more visible and pro-active" than England and Wales, although he noted that he was not able to comment on whether its approach is more effective than in this jurisdiction.

Malta

4.156 The Maltese Innovative Technology Arrangements and Services Act 2018 provides for certification of innovative technology services (ITAs). An ITA is defined as including "smart contracts"[517] and "related applications, including decentralised autonomous organisations, as well as other similar arrangements."[518] Applications to the Malta Digital Innovation Authority for certification are voluntary and ITAs must comply with various requirements to be successful. These include:

(1) appointing an administrator who is able to vary the ITA's parameters and functions and intervene in the event of loss;[519]

(2) subjecting itself to a rigorous audit;[520] and

(3) adequately disclosing information to users about, amongst other things, the purpose, limitations and terms of service of the ITA in an easily accessible and intelligible format.[521]

4.157 Certification will consequently serve as a mark of legitimacy for ITAs and show compliance with requirements which prospective token holders and investors may value.

4.158 Only one consultee mentioned Malta as a potential jurisdiction for DAOs. EUCI commented that: "Malta's legal framework for distributed ledger technology provides for the recognition of the legal validity of DLT transactions, which in turn provides increased legal certainty for DAOs that choose to use DLT".

4.159 At the time of finalising this scoping paper, only one ITA has so far been certified by the authority.[522] It is not clear if this is because of a lack of interest in seeking certification, because the requirements are challenging for ITAs to comply with, or for some other reason.

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517 Malta: A Leader in DLT Regulation Consultation Document page 17 states that "the current legislative framework does not contemplate having contracts in 'smart' format and therefore the intention is to provide a degree of legal certainty to smart contracts".

518 Innovative Technology Arrangements and Services Act 2018, First Schedule para 3.

519 Innovative Technology Arrangements and Services Act 2018, Article 8(4)(c) and Article 8(4)(d)(iii).

520 Innovative Technology Arrangements and Services Act 2018, Article 8(4)(b).

521 Innovative Technology Arrangements and Services Act 2018, art Article 8(4)(e).

522 See https://www.mdia.gov.mt/certification/innovative-technology-arrangement-certificate/.

Switzerland

4.160 Four consultees mentioned Swiss foundations or associations.[523] EUCI commented:

> Besides providing a list of various different corporate forms (e.g. GmbH, AG, OG, KG, Cooperative, Foundation, Association, Branch Office, Holding Company, GesbR, Trust, and Kommanditgescellschaft) it also offers a favourable and clear tax regime.

4.161 Simmons & Simmons LLP also noted that Switzerland is a popular choice of jurisdiction for DAOs to incorporate foundations because of favourable regulation.[524]

4.162 Shawn Jhanji (co-founder of Zbra DAO (in a response on behalf of Zbra DAO and himself)) also mentioned the Swiss approach to tokenisation, relevant for digital legal entities:

> Switzerland allows tokenization of any asset. Real estate and company shares blockchain turnover is a thing that is already asked for by many.

Liechtenstein

4.163 Two consultees mentioned Liechtenstein.[525] Shawn Jhanji (co-founder of Zbra DAO (in a response on behalf of Zbra DAO and himself)) included Liechtenstein in a list of jurisdictions that he suggested were "more visible and pro-active" than England and Wales, although he noted that he was not able to comment on whether they were more effective than this jurisdiction.

4.164 EUCI commented on Liechtenstein's favourable financial regulation, combined with its approach to tokens and company structures:

> In Liechtenstein, the Financial Market Authority (FMA) has issued guidance on distributed ledger technology and virtual currencies, which provides greater clarity on the legal status of DAOs and the activities of DAOs in Liechtenstein. Liechtenstein is also known for a specific categorisation of tokens and provides a special legal framework for companies which incorporate there and don't surpass a specific capital threshold.

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523 Cambridge Blockchain Society, European Crypto Initiative (EUCI), Simmons & Simmons LLP and Shawn Jhanji (co-founder of Zbra DAO (in a response on behalf of Zbra DAO and himself).

524 See para 4.138.

525 European Crypto Initiative (EUCI) and Shawn Jhanji (co-founder of Zbra DAO (in a response on behalf of Zbra DAO and himself).

Gibraltar

4.165 Two consultees mentioned that Gibraltar was an attractive jurisdiction.[526]

4.166 Aaron Payas of Hassans International Law Firm Limited (in a personal response) told us that Gibraltar Foundations established under the Private Foundations Act 2017 have been used as an off-chain support vehicle for DAOs. He added:

> The arrangement is completely at arms-length and the robustness of the structure is present given the legal requirement for a Foundation to have a regulated professional trustee firm as one of the Council members.

4.167 EUCI commented:

> In Gibraltar, the Gibraltar Financial Services Commission (GFSC) has issued guidance on distributed ledger technology and virtual currencies, which provides greater clarity on the legal status of DAOs and the activities of DAOs in Gibraltar. Additionally, the GFSC has issued a number of rules and regulations which, if adopted, would provide greater legal certainty for DAOs operating in Gibraltar.

[526] Aaron Payas of Hassans International Law Firm Limited (in a personal response) and European Crypto Initiative (EUCI).

Chapter 5: England and Wales as a jurisdiction: potential areas of further work

5.1 As we have seen in the early chapters of this paper, the DAO philosophy at its most extreme is essentially anarchic: the archetypal DAO would have no internal hierarchy and no state/government charter, and there may even be a desire to exist and operate entirely outside of the legal system. But, in the wake of recent US litigation and increased attention from law-makers around the word, most DAO participants must realise that it is not possible to opt out of law, tax or regulation simply by developing a new kind of organisation that is not state-sanctioned. Regardless of the intention behind its formation, a DAO still exists in the real world as a series of elements and relationships. The recent case law in the US has demonstrated that the courts can and will apply established legal principles to these constructs where this is necessary to identify a legal person or persons who can be held responsible for transgressions.

5.2 In any case, there are now arrangements using decentralised technology that look increasingly like traditional organisations, often involving significant amounts of money, on- and off-chain property and activities, and obvious potential liabilities. Arrangements that were originally conceived as DAOs are now looking to formalise their structures so as to benefit from limited liability, legal personhood, and authorisation from regulators to undertake regulated activities.

5.3 As discussed in the previous chapter, there is no “perfect” legal entity or structuring option for DAOs in any jurisdiction. However, some jurisdictions provide more flexible options than others, which are better able to accommodate the novel features of such arrangements. In this chapter, drawing in particular on views expressed by consultees in response to our call for evidence, we consider how the jurisdiction of England and Wales compares to other systems and identify areas where there might be room for development.

5.4 We begin by considering the attractiveness (or otherwise) of England and Wales as a jurisdiction for establishing DAOs in general terms, considering its legal infrastructure and international reputation. We then look at various options for further legal or policy development which might make England and Wales a more viable prospect for DAOs and other entities looking to make use of DLT, smart contracts and tokens in their governance structures. We also note when there are policy considerations which might point away from such developments despite their initial appeal. The options considered include:

(1) the possibility of introducing purpose trusts and ownerless foundations under the law of England and Wales;

(2) the argument for a DAO-specific entity;

(3) the potential case for a limited liability, not-for-profit association in England and Wales;

(4) potential organisational law (primarily company law) reforms that could make it easier for organisations to leverage DLT and other technology at the governance level of a legal structure, whether DAOs or otherwise.

5.5 In Chapter 6, we consider briefly the regulatory landscape as it applies to DAOs and identify further areas for consideration in that context.

ENGLAND AND WALES AS A JURISDICTION

5.6 The law of England and Wales provides a variety of flexible tools and principles that market participants can use when structuring their organisational arrangements. England and Wales is generally a desirable location in which to conduct business and other activities. This does not change simply because an organisational arrangement is loosely described as a DAO or uses particular technology.

5.7 At a general level, businesses of all types choose to establish themselves in this jurisdiction for many reasons, including the following:[527]

(1) Strong legal foundations: the flexibility of common law, supported by statute where required.

(2) Strong financial and other regulation, which can promote the reliability and legitimacy of emerging industries and enhance consumer confidence.

(3) Quality legal and other advisors.

(4) Availability of legitimate sources of finance.

(5) Reputable courts in event of dispute.

5.8 As the Law Society of England and Wales told us:

> The UK has a long history as a jurisdiction that supports global business ventures and makes available a great variety of corporate forms, created within a sophisticated and developed common law tradition. Although blockchain and DLT systems have novel features, there are many familiar aspects of projects involving digital assets which are common to all forms of corporate venture.

5.9 Despite noting some uncertainties in the law, D2 Legal Technology was optimistic about the prospect of attracting projects to the jurisdiction:

> The United Kingdom's depth of expertise in financial regulation, with an expert and independent judicial system, as well as a wealth of corporate structural options, provide a great opportunity for the UK to act as a home jurisdiction for DAO projects.

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527 See, for example, City of London Corporation, *State of the sector: Annual review of UK Financial Services 2023*, https://www.theglobalcity.uk/PositiveWebsite/media/Research-reports/State-of-the-sector_annual-review-of-UK-financial-services-2023.pdf.

5.10 Some consultees suggested that DAOs would benefit from guidance or a statement of the law on some of these issues, including confirmation that DAOs can use existing legal entities to structure themselves.

5.11 While it would not be appropriate for us to give legal advice on the best way to structure DAOs, and any structuring decisions must be made on a case-by-case basis, we hope that the material in our paper will help market participants and potential entrants to the market understand the options in this jurisdiction and their attendant risks.

DAOs do not appear to choose England and Wales for legal structuring

5.12 Despite the breadth of options and the benefits of this jurisdiction, very few DAOs have chosen to set up or base themselves in England and Wales. The decentralised and often unregistered nature of the DAO concept may make it hard to determine whether a DAO is "based" in the UK in a looser sense. However, the significantly higher use of foreign entities in established DAOs nonetheless suggests that England and Wales is not regarded as an attractive jurisdiction for establishing distinct legal entities used in DAOs.

5.13 COALA and BlockchainGov (in a joint response) said:

> To our knowledge, there are very few DAOs 'incorporating' in England and Wales through any legal entity form. Indeed, some DAOs, platforms for building DAOs and blockchain protocol appear to have shifted their domicile after initially being established in England & Wales.

5.14 They gave the example of "Nexus Mutual … a blockchain-based, member-governed discretionary mutual that covers risks arising from e.g., bugs in smart contracts". This DAO incorporated in England and Wales, but later elected to move its main operations offshore, retaining only an administrative company here: a non-profit community interest company registered in England and Wales,[528] limited by guarantee, to employ core staff and manage other costs such as websites. All assets were transferred to a private interest foundation in Panama,[529] with existing and new members becoming members of the foundation and membership agreements governed by the law of the British Virgin Islands.[530] The most significant motivation behind this restructuring was said to be to avoid "the [English] requirement for members to go through KYC/AML to become full members of the mutual", and the most significant risk in restructuring would be the loss of limited liability for members.[531]

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528 Information about this company held at Companies House is available here: https://find-and-update.company-information.service.gov.uk/company/11353187/filing-history.

529 The regulations of the foundation are available here: https://drive.google.com/file/d/1FShl321zQjiMot5bw9cSZw8Qy1f_6gBd/view.

530 The membership agreement is available here: https://uploads-ssl.webflow.com/62d8193ce9880895261daf4a/63d0f45aacb2752b543ddcaf_Nexus-Mutual-DAO-Member-Agreement-FIN.pdf.

531 See forum governance discussion: "Operation Wartortle Next Steps: Draft Execution Proposal" (December 2021): https://forum.nexusmutual.io/t/operation-wartortle-next-steps-draft-execution-proposal/746.

5.15 Other consultees identified reasons why they believe incorporated legal forms in this jurisdiction may not be suitable for DAOs. Several said that existing legal structures could not recognise the unique qualities of a DAO; some related this to legal forms available in England and Wales.

5.16 gunnercooke llp told us:

> We are not aware of any entities using England and Wales as their place of incorporation, and in our view, this is for the reasons already provided in relation to corporate issues, and even more fundamentally because of the difficulty DAOs would have in fitting with the requirements of the Money Laundering Regulations.

5.17 Ashurst LLP noted that "current legal entity forms under English law may be inconsistent with or unsuited to the operations and objectives of DAOs", giving three reasons:

(1) the centralised structures of existing legal entity forms are inconsistent with the intent of DAOs to be decentralised.

(2) existing legal entity forms are less flexible than DAOs intend to be; and

(3) company incorporation and record-keeping requirements are inconsistent with the anonymity that some DAO participants seek.

5.18 We have identified this as the issue of "entity fit" in Chapter 4 and recognise it to be a challenge to adoption of distinct legal entities generally, not only under the law of England and Wales.

5.19 Dhivyan Kandiah questioned the suitability of existing incorporated legal forms in this jurisdiction "as there is no UK company structure similar to the Cayman Foundation".

5.20 Consultees identified the following further challenges for DAOs:

(1) Filing and transparency requirements, which as we have seen are trade-offs for limited liability and separate legal personality under UK law (whereas, for example, Cayman foundation companies have limited liability and separate legal personality but they do not have to have shareholders).

(2) Ongoing costs of complying with regulations, in particular money laundering regulations and the risk of being caught by the regulated activities scheme (regarding DeFi activities).

(3) Complying with company law requirements, in particular the requirement to have a physical address, the requirement that all directors must be registered at Companies House, and the requirements for publicly available annual statutory accounts and registers.

(4) Taxation, either uncertainty about how to assess a DAO for tax or because there are other jurisdictions with more favourable taxation regimes.

(5) Compliance with anti-money laundering and KYC requirements where it is a challenge to preserve members' privacy as well as the fluidity of membership.

(6) The limitations of attachment to a specific jurisdiction, which is at odds with the decentralised and globalised nature of DAO participation.

5.21 These challenges for DAOs are not unique to England and Wales. As we discuss below in relation to DAO-specific entities, many industry participants are concerned with economic transparency requirements in the United States, as well as exposure to US securities law. Such concerns are likely to extend to most "onshore" jurisdictions with large consumer markets, developed financial regulation and an active tax authority supported by an economic transparency regime. As we have seen, transparency is often the trade-off for separate legal personality. Regulation, too, is vital to improving and maintaining confidence in financial services. While the well-developed legal and regulatory regime in this jurisdiction is a good thing for many reasons, the corollary is that it can be burdensome for business and/or require transparency and that for DAOs these disadvantages might be decisive.

5.22 We do not see a case for exempting DAOs from any or all of these requirements and restrictions, given their role in the overall integrity of the system and the need to protect third parties. This has significant implications for the feasibility of an entity like a Guernsey purpose trust or Cayman foundation being introduced into the law of England and Wales, motivated primarily by accommodating DAOs. That said, there is an argument for ensuring that domestic regulation recognises and supports the use of new technologies where compatible with the policy function of the relevant regulation. Both points are discussed further below.

Other jurisdictions are preferred

5.23 Thirteen consultees thought that there are foreign jurisdictions more effective for use by DAOs, or at least more popularly used, because of the legal regime and entities available there.

5.24 Whilst a number of consultees referred to DAO-specific entities (particularly in the US), as we discuss further, these recent legislative attempts have to date met with significant criticism in the market and, reportedly, limited uptake.

5.25 Ownerless foundations (particularly in Cayman, Panama, and Switzerland) appear popular with DAOs, some large and sophisticated. As discussed in Chapter 4, these allow for more flexibility, less transparency and less regulation than is likely to be acceptable in this jurisdiction, frequently coupled with tax benefits.

5.26 Andersen LLP noted that while the company limited by guarantee provided an attractive option, "consideration should be given to replicating the Cayman foundation company model" noting that it is "the most deployed legal wrapper on a global basis". It was clear from consultee responses that the most attractive jurisdictions for DAOs were those that provide for "ownerless" foundations.

5.27 Shawn Jhanji (co-founder of Zbra DAO (in a response on behalf of Zbra DAO and himself)) said that the advantage of some of the other jurisdictions mentioned:

> appears to be that there is a group of people confidently able to advise how to set up a DAO in those territories and the processes exist to be able to do that efficiently. The costs vary considerably, but it can be done. There is a reality that many of the

options do also involve the creation of two or more entities to provide a liability or visibility shield, whilst also addressing shareholding requirements, the holding of the ManCo/operation and functional levels. Ultimately still complex but a manageable and known complexity.

… the disadvantages [of these other jurisdictions] are that these are not necessarily the most transparent models for setting up DAOs, and by registering 'offshore' in several of these regions … would most likely create more uncertainty and fear about the integrity of a DAO for many potential stakeholders, than if it were registered 'onshore' in the UK. Certainly not many provide stability, confidence and peace of mind legally, which the umbrella of UK law would provide.

Some DAOs use the law of England and Wales as a governing law

5.28 Whilst DAOs have predominately avoided establishment in this jurisdiction, English contract law appears popular for DAOs in terms of choice of law.

5.29 COALA and BlockchainGov (in a joint response) noted that:

> Although England and Wales is not yet seen as a viable alternative for DAOs to incorporate an entity in, the private ordering agreements, participation agreements and 'constitutions' of DAOs regularly refer to England and Wales as the governing law of these agreements. See for example the adopted participation agreements of DXDAO, GnosisDAO, NecDAO, TracerDAO, CowDAO, and SafeDAO. England and Wales is an attractive governing law choice because of the flexible signatory requirements under common law.

5.30 The law of England and Wales – and particularly contract and commercial law – has long been a valuable export for this jurisdiction. Its common law basis has provided significant flexibility and ensured the ability of the legal system to accommodate new technologies with little or no statutory intervention. We have seen this recently on other projects we have conducted on matters that will be relevant to DAOs. For example, we have concluded that:

(1) smart contracts are capable of constituting legally enforceable contracts ("smart legal contracts") if this is as the parties intend, and that existing contract law can accommodate smart legal contracts;[532]

(2) code could constitute "writing" for the purposes of formality requirements;[533]

(3) a wide range of electronic signatures can be used to execute documents provided that the person signing the document intends to authenticate the documents and that any formalities relating to the execution of the particular document are satisfied;[534] and

(4) the common law recognises digital assets such as crypto-tokens as objects that can attract property rights, and that this jurisdiction is well placed to provide,

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532 Smart legal contracts: Advice to Government (2021) Law Com No 401.

533 Smart legal contracts: Advice to Government (2021) Law Com No 401, from para 3.79.

534 Electronic execution of documents (2019) Law Com No 386.

through development of the common law, a coherent and globally relevant regime for existing and new types of digital asset.[535]

5.31 Furthermore, DAOs might also use the law of England and Wales indirectly by incorporating in a British Overseas Territory with a common law background. European Crypto Initiative (EUCI) said that the Cayman Islands' use of common law makes it a particularly attractive choice:

> While there are not many DAOs incorporated in the UK, the law of England and Wales is being used by DAOs that choose to incorporate in the Cayman Islands since the Cayman Islands has adopted a number of English statutes which provide a legal framework for DAOs to operate under. Additionally, many DAOs will also look to English courts to resolve disputes, as the Cayman Islands is a British Overseas Territory and is subject to the jurisdiction of the [Privy Council].

DAO-SPECIFIC ENTITIES

5.32 In their responses to our call for evidence, a number of consultees were in favour of the introduction, in England and Wales, of a new entity specifically tailored to DAOs. However, despite broad support for the principle at a high level, there was no consensus view on the form that any such "DAO" entity should take.

5.33 Simmons & Simmons LLP gave general support to a new form of legal entity:

> Having a DAO incorporated as a completely new form of entity would have the benefit of tailoring the law to the exact needs of this type of business, allowing the UK to listen to the business' needs and avoid the mistakes which Wyoming have apparently made, thus attracting more DAOs into the country. Alternatively, using already existing forms of incorporation might lead to discrepancies as a result of the novel nature of the way a DAO is operating.

5.34 Consultees suggested new rules should:

(1) relate to incorporation of DAOs and give DAOs a separate legal personality;

(2) create a framework for DAOs which accommodates widely distributed networks of participants and allows for the issuing of tokens rather than shares;

(3) provide for liability limitation for DAO members, including defining situations in which the "corporate veil" could be pierced;

(4) include options for different classes of DAOs, for example, commercial DAOs and more charitable DAOs; and

(5) include a competitive taxation mechanism for DAOs.

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[535] Digital assets: Final report (2023) Law Com No 412.

5.35 Cambridge Blockchain Society set out the "most crucial features" in their eyes:

> DAOs should be entitled to a legal personality and limited liability. Registration requirements should consider the digital nature of DAOs. Reporting obligations should consider a data-resilient and fully-traceable distributed ledger technology. Accountability rules should consider DAO-specific protocols.[536]

5.36 Two consultees supported the introduction of an ownerless legal foundation, and two expressed interest in a DAO LLC. XDAO added:

> The most demand would be found in introducing an LLC that operates as a blockchain entity when the decision making and the contract formation can be carried out as a blockchain vote. … The process of joining such a DAO-LLC shall be streamlined and be available remotely or via initial mails exchange. All subsequent communications shall be available by email or blockchain.

5.37 Four consultees cited the COALA Model Law for Decentralized Organizations. As we have discussed in Chapter 4,[537] the model law, unlike the US statutes, is not an attempt to modify an existing statutory approach. It seeks to provide a set of rules for national legislatures to adopt legislation for DAOs on matters of agency, legal personality, limited liability, governance processes, and off-chain activity.[538] In a joint response, COALA and BlockchainGov criticised attempts to provide a DAO entity that simply mimics existing entities:

> … some jurisdictions have opted to introduce DAO legislation as if DAOs are just another corporate entity that should be subject to the same or effectively the same legislation and fiduciary duties that have evolved through case law in non-technology native organisations. To date, no large DAOs and no significant number of DAOs have interacted with these regimes.
>
> We are of the view that [the COALA model law] is preferable to 'wrapped models' like in Wyoming, Vermont, and the Marshall Islands. These are largely attempts at making an existing legal form fit a novel technology. The result is a lack of congruency between: (a) the attributes of the organisation and the technology and (b) the attributes of the entity. As we have seen, this can lead to somewhat perverse or unnecessary results, administrative overheads, and bureaucratic unfamiliarity.

5.38 Much of the discussion about what makes a jurisdiction attractive for DAOs emphasised privacy and "censorship resistance". However, several consultees emphasised that any new regime should protect creditors and ensure regulation

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536 Whilst Cambridge Blockchain Society said that "if DAO is understood primarily as decentralised governance (which can be combined with the above understanding), current organisational structures are not entirely appropriate … [and] a new legal form could be considered", they also suggested that "if DAO is understood primarily as self-executing decision-making process with a key feature of encoding a protocol for governance (which is then executed automatically), the existing organisational structures may be suitable" and "if DAO is understood primarily as a platform in a sharing economy context, matching dispersed stakeholders in an integrated way, the existing organisational structures may be suitable."

537 See from para 4.123.

538 Coalition of Automated Legal Applications (COALA), "Model Law for Decentralized Organizations (DAOs)", pp 3 to 4: https://coala.global/wp-content/uploads/2022/03/DAO-Model-Law.pdf.

which, as we have discussed, is likely to conflict with a desire for privacy and censorship resistance.

5.39 For example, gunnercooke llp said:

> The position of those contracting with DAOs needs to be protected. At a minimum, there should be a requirement for DAOs to make clear what they are (for example by having "DAO" after the name of the entity, similarly to "Ltd" after a private company). DAOs should also be clear as to the amount held in treasury, which the DAO could be successfully sued for.

5.40 RISE-CVF Ltd (The Charity For Victims of Fraud) and Hatton-Li-Traders Ltd (in a joint response) told us that limited companies could be being used to lend legitimacy to fraudulent platforms:

> Legal forms are targeted by fraudulent platforms because they provide a bottom tier of legitimacy to fool investors to part with their money. In this instance the misuse of legal form is leading to exploitation of the system and DAOs.

5.41 They suggested that any crypto-related company should be referred to and registered with the Financial Conduct Authority so that consumers could check a DAO's legal structure and formation purpose.

5.42 D2 Legal Technology thought that the sector should be subject to "a system of oversight administered by a sector regulator" comparable to "the system applicable to charities in England and Wales".

5.43 Associate Professor Elspeth Berry argued against any amendment to the law regarding formation of general partnerships specifically for DAOs:

> Section 1 of the Partnership Act 1890 and associated caselaw on how and when a partnership is formed is settled law. It is, however, inevitable that a degree of uncertainty may exist as to whether a particular business (whether a DAO or not) is a partnership, given that this is a business vehicle which does not have to comply with strict criteria and/or procedures in order to come into existence. It would be extremely unfortunate if the desire to provide law supporting and/or regulating DAOs were to lead to any interference with this settled law or with the flexibility of partnership law in this respect.

5.44 ADAM and ADMA's members were divided in opinion.[539] Whilst some members "believe that it is a must that a new set of entities be set up for DAOs", others did not "think a new legal form should be created":

> After all, given DAO is an ambiguously defined term, it would be very challenging to form a new legal entity about DAO. Instead, we should have clear guidelines on the actual legal form of different types of "DAO" – from nothing to unincorporated

[539] Association of Decentralized Asset Management (ADAM) and AllStars DAO Management Authority (ADMA) (provided a joint response).

association to partnership to limited company, thus we could use our existing legal infrastructure to define the rights and responsibilities.

No current case for a DAO-specific entity

5.45 We have formed the view that there is no current need for further work to develop a DAO-specific entity in England and Wales.

5.46 As is clear from the discussion in the rest of this paper, the term "DAO" is currently used to refer to a wide spectrum of arrangements. There is little consensus on what a DAO is and what it is not. Not all DAOs operate in the same way. There is no silver bullet solution: trade-offs between broader policy objectives and ease of use by DAOs are inevitable. Devising an entity form with the appropriate degree of fit, as discussed in Chapter 4,[540] has proved difficult for many jurisdictions. The answers to these challenges are not straightforward and are likely to be different for different DAOs.

5.47 Although several other jurisdictions have introduced DAO-specific legislation, these new legal forms have mostly proven controversial[541] and have not been extensively used. This is perhaps the best evidence of the challenge inherent in effecting the balance for a nascent concept with boundaries that are as yet difficult to define. Developing a new legal entity and ensuring it appropriately fits in with the existing legal and regulatory landscape including insolvency, tax, and fiduciary law, is potentially complex.

5.48 Designing an entity that is technology prescriptive, rather than technology agnostic, is likely to generate further complexity. Indeed, one of the main complaints about the "DAO LLCs" being developed in many American states is that they impose technological prescriptions on DAOs in addition to those faced by ordinary LLCs. As a consequence, some commentators have suggested it is better for DAOs simply to become ordinary LLCs.[542] There is a risk that in attempting to accommodate a particular technological development, ad hoc and technology-specific legislation will obstruct the very dynamism it is trying to facilitate.

5.49 As of yet, we do not see clear evidence that a bespoke legal entity for DAOs is either required or justified. From a practical perspective, there is no agreement as to what such an entity would look like. From a broader policy perspective, the case for offering DAOs different, and potentially less burdensome, legal, regulatory or tax treatment (such as reduced disclosures or greater flexibility in managerial control) compared with traditional organisations has not (yet) been made out. Any policy arguments in favour would need to be strong and unambiguous.

5.50 Our view is that there is no current need to develop a DAO-specific legal entity for England and Wales. This is in part because there is no consensus around what such an entity could look like and where its parameters would lie, and in part because of the

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540 See discussion from para 4.105.

541 See, for example, J Teague, "Starting a DAO in the USA? Steer Clear of DAO Legislation" (7 June 2022): https://thedefiant.io/starting-a-dao-in-the-usa-steer-clear-of-dao-legislation; S Abualy and G Shapiro, "Wyoming's Legal Dao-saster" (10 April 2021): https://lexnode.substack.com/p/wyomings-legal-dao-saster.

542 See, for example, Matt Blaszczyk, "Decentralized Autonomous Organizations and Regulatory Competition: A Race Without a Cause" (2024) 99 North Dakota Law Review 107.

general desirability of organisational law remaining technology-neutral. However, we advise that Government should keep this matter under review as the case for a new entity may emerge as market practice matures.

Next steps

5.51 Our view is that there is no current need to develop a DAO-specific legal entity for England and Wales. However, the Government should keep this matter under review.

5.52 That said, ensuring that existing legal forms do not exclude the take-up of new technologies that achieve the same functional objectives as existing formal requirements would be a worthwhile future project. This would be useful not only to increase the feasibility of distinct legal entities such as DAO wrappers and adjacent-entities, but perhaps even more so to support the growth of digital legal entities, without proclaimed DAO objectives. There is a clear case for ensuring that the existing law, particularly in relation to business frameworks such as companies, is kept up to date in order to ensure that there is a sufficient range of appropriate legal vehicles available and so that the benefits of new technologies and ways of operating can be exploited by businesses and other organisations operating in England and Wales. We discuss different options below.

PURPOSE TRUSTS AND FOUNDATIONS

5.53 As both our consultation responses and industry commentary demonstrate, offshore purpose trusts and foundation structures are among the most popular distinct legal entities used by DAOs as part of their structure. The advantages for DAOs of each are quite similar, as discussed in Chapter 4.[543] They can be used as DAO-adjacent entities or partial wrappers, ultimately accountable to DAO voting, without DAO token holders having to be registered and recognised members of the legal entity. By conducting activities and holding assets in the trust, foundation, or some combination thereof, DAOs can preserve flexibility of governance while still largely achieving limited liability, separate legal personality and, often, a lack of economic transparency of the DAO members who ultimately control where the assets are directed.

5.54 It is in part because of these features that neither option is available under the law of England and Wales. Recognising that there are difficult trade-offs involved between achieving a competitive organisational law regime and protecting consumers, contracting parties, and broad-based trust in the jurisdiction, we do not believe these trade-offs should be settled primarily by reference to DAOs. Rather, the appeal of these entities for DAOs should be just one factor considered in a more holistic assessment of the desirability of reform. We therefore outline some of the key concerns in the debate below.

[543] See from para 4.128.

Purpose trusts

5.55 In England and Wales, beneficiaries have standing to enforce a trust and, in some cases, to terminate the trust.[544] Purpose trusts (except for those settled for valid charitable purposes, enforceable by the Attorney General on behalf of the public[545]) are therefore typically considered void under the beneficiary principle: in the absence of beneficiaries, the trustees cannot be held accountable for their management of the trust.[546]

5.56 The tension between the beneficiary principle and purpose trusts has generated considerable academic debate. Some have argued that restricting enforceability rights to beneficiaries is too "inflexible".[547] Rather, alternative "enforcement machinery" – such as the appointment of an enforcer – can meet the requirements of the beneficiary principle.[548]

5.57 Others have argued that the principle ensures the existence of a "right/duty relationship": the duties of a trustee are dependent on the beneficiary's right to trust property.[549] The ability for mechanisms – such as the enforcer[550] – to sufficiently replicate this relationship has been criticised. In the absence of beneficiaries, it is unclear to whom the enforcer owes their duty to enforce the trust, and therefore, who enforces the enforcer.[551] Instead, these mechanisms may shift the enforcement issue of a purpose trust onto another party, creating a "beneficial vacuum".[552]

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544 When the beneficiary (or beneficiaries) represents the entire beneficial interest even where the trust instrument provides otherwise: *Saunders v Vautier (1841) 4 Beav 115*.

545 Unlike private purpose trusts, trusts with a charitable purpose do not fail for uncertainty of object and may be enforced/regulated by public authorities: *Re Astor's Settlement Trusts [1952] Ch 534* at 541.

546 *Morice v Bishop of Durham* (1804) 9 Vest 399.

547 S Chandler, "The Beneficiary Principle in the 21st Century" (2023) 29(1) *Trusts & Trustees* 38, 39.

548 D Waters, "Reaching for the Sky: Taking Trust Law to the Limit" in D J Hayton (ed)*, Extending the Boundaries of Trusts and Similar Ring-Fenced Funds* (2002) 272. See also *D J Hayton, "Developing the Obligation Characteristic of a Trust" (2001) 117 Law Quarterly Review 96, 100 to 101.*

549 P Matthews, "From Obligation to Property, and Back Again" in D J Hayton (ed), *Extending the Boundaries of Trusts and Similar Ring-fenced Funds* (2002) 203; J Webb, "An ever-reducing core? Challenging the Legal Validity of Offshore Trusts" (2015) 21(5) *Trusts & Trustees* 476, 485.

550 See discussion at 4.142.

551 K F Low, "Non-Charitable Purpose Trusts: The Missing Right to Forego Enforcement" (2018) *Social Science Research Network*: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3502628; L Smith, "Give the People What they Want? The Onshoring of the Offshore" (2018) 103 *Iowa Law Review* 2155, 2169 to 2170; S Pryke, "Of Protectors and Enforcers" (2010) 16 *Trusts & Trustees* 64. See also A Braun, "Private Purpose Trusts: Good for Scotland?" (2023) *Edinburgh School of Law Research Paper Series No* 2023/05, 18 to 19 for a recent discussion of this argument in relation to the "supervisor" role as introduced under the Trusts and Succession Scotland Act 2024.

552 P Matthews, "From Obligation to Property, and Back Again" in D J Hayton (ed), *Extending the Boundaries of Trusts and Similar Ring-fenced Funds* (2002) 203, 230; L Smith, "Give the People What they Want? The Onshoring of the Offshore" (2018) 103 *Iowa Law Review* 2155, 2169 to 2170; K F Low, "Non-Charitable Purpose Trusts: The Missing Right to Forego Enforcement" (2018) *Social Science Research Network*, 2 to 5: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3502628.

5.58 Offshore, the appointment of an enforcer can enable settlors to reserve extensive powers over the trust property.[553] A settlor may also reserve powers directly, or through the appointment of a "protector".[554] Retaining settlor control may be useful where the purpose trust is used for commercial asset-management, whether the settlor represents a DAO or any other economic actor. Settlors can also retain some control over trusts under the law of England and Wales through the reservation of rights in the trust instrument. However, the retention of settlor control in cases where the reserved powers are tantamount to ownership, may give rise to a challenge that the trust is "illusory" or a "sham".[555] This prospect is more likely to be avoided in jurisdictions which provide statutorily for the reservation of powers to enforcers or protectors who, in practice, will follow the direction of settlors. Additionally, direct settlor control in an English trust is more likely to generate undesirable tax consequences, in which any income or capital gains on the assets is taxed as if it is a bare trust for the settlor. The "enforcer" and "protector" routes to influence in offshore purpose trusts, combined with the more favourable tax regimes underlying them, reduce this risk.

5.59 A related criticism concerns the use of purpose trusts as asset shielding devices**.** A trust is said to lack "ownership transparency" where the settlor no longer owns trust assets, yet retains a level of control over their administration.[556] Where a purpose trust is used it is often unclear to whom the assets belong: from the perspective of creditors, the effect can be "to create a fund of property that is unowned".[557] As a result, the purpose trust may be used to dispose of property in a way that relieves the settlor or beneficiaries from liabilities that would otherwise arise in relation to property ownership.[558] These liabilities include debt satisfaction and tax liability.[559] It is necessary to consider whether the ability to utilise purpose trusts to obscure

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553 Such as where the settlor appoints themselves as the enforcer: A J Morris, "Private Purpose Trusts and the Re Denley Trust 50 Years on" (2020) 34(3) *Trust Law International* 165, 169.

554 See, for example, The Trusts (Guernsey) Law 2007 s 86; British Virgin Islands Trustee (Amendment) Act 2021 s 86; P Panico, 'Protectors' in *International Trust Laws* (2nd ed 2017); GS Alexander, "Trust Protectors: Who Will Watch the Watchmen" 2005-2006 *Cardozo Law Review* 2807.

555 L Tucker, N L P (KC), M Brightwell, *Lewin on Trusts* (20th ed 2020) 5-020 to 5-035E. For a discussion see M Conaglen, "Sham Trusts" (2008) 67 *Cambridge Law Journal* 176; M Bennett, "Competing Views on Illusory Trusts: the Clayton v Clayton litigation in its wider context" (2017) 11 *Journal of Equity* 48.

556 C Pacini and N Wadlinger, "How Shell Entities and Lack of Ownership Transparency Facilitate Tax Evasion and Modern Policy Responses to These Problems" (2018) 102 *Marquette Law Review* 111, 124 to 125.

557 L Smith, "Give the People What They Want? The Onshoring of the Offshore" (2018) 103 *Iowa Law Review* 2155, 2170.

558 M Bennett and A Hofri-Winogradow, "The Use of Trusts to Subvert the Law: An Analysis and Critique" (2021) 41 *Oxford Journal of Legal Studies* 697; K F Low, "Non-Charitable Purpose Trusts: The Missing Right to Forego Enforcement" (2018) *Social Science Research Network*: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3502628.

559 M Bennett and A Hofri-Winogradow, "The Use of Trusts to Subvert the Law: An Analysis and Critique" (2021) 41 *Oxford Journal of Legal Studies* 697. See also J Webb, "An ever-reducing core? Challenging the Legal Validity of Offshore Trusts" (2015) 21(5) *Trusts & Trustees* 476, 482 to 483.

ownership and avoid creditors, including HM Revenue & Customs, disadvantages the wider public. [560]

5.60 A project on "modernising trust law" was included in the Law Commission's thirteenth programme of law reform. The description of the project noted that, in comments on trust law more generally (that is, not related to DAOs):[561]

> consultees have outlined the development of alternative, flexible trust and trust-like structures in other jurisdictions that are not available in England and Wales, such as Jersey Foundations and Cayman Star Trusts. Not all of these structures may be suitable for this jurisdiction, but there is a strong argument that their advantages and disadvantages should be evaluated.

5.61 Rather than limiting such review of purpose trusts to issues relating to DAOs, we suggest that this could be included within the Commission's general review of trusts. The project will start with an initial scoping study, when resources allow.

Foundations

5.62 The key policy concerns raised above apply equally to foundations in the style of the Cayman foundation, which permit an asset-holding entity to be ownerless.[562] Foundations, being purely a creation of statute, may avoid some of the conceptual concerns commentators have regarding the compatibility of purpose trusts with trust doctrine as developed and understood in the English courts of equity. This does not, however, reduce the applicability of policy-based criticisms.[563]

5.63 If anything, these apply to the features of Cayman foundations with greater force:[564]

(1) The default setting is that the foundation's objects legally need not be performed. Directors of foundations may therefore have even less accountability in their application of assets than trustees of a purpose trust (provided it is broadly in line with the governing documents).

(2) The foundation sues and can be sued in its own name, avoiding the risk of trustee liability to counterparties that remain in trust structures.[565]

(3) Control external to the entity is arguably greater, be it through "supervisors" – the equivalent of offshore trust enforcers – or "interested persons", which can

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560 J Webb, "An ever-reducing core? Challenging the Legal Validity of Offshore Trusts" (2015) 21(5) *Trusts & Trustees* 476, 487. See also L Smith, "Give the People What They Want? The Onshoring of the Offshore" (2018) 103 *Iowa Law Review* 2155, 2170 to 2172.

561 Thirteenth Programme of Law Reform (2017) Law Com No 377, para 2.24.

562 Cayman Islands Foundation Company Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April 2017) s 8(2).

563 See, for example, P Panico, "Private Purpose Foundations: From Classic 'Beneficiary Principle' to Modern Legislative Creativity?" (2013) 19(6) *Trusts & Trustees* 542.

564 We discuss the key features of Caymans foundations from para 4.140.

565 Recognising, of course, that many trustees are companies or foundations themselves to avoid this risk.

include members of the DAO and are able to sue on the company's behalf.[566] Most crucially, purpose trusts offer more flexibility in who can serve as a trustee or enforcer. Foundations, however, go beyond this. The constitution can distribute governance powers to almost any person for any purpose, without those persons becoming trustees or directors.[567]

(4) As with a purpose trust, in which DAO members can derive benefits from the entity's assets without being beneficiaries of the trust, a foundation can benefit DAO members without making them accountable as part of the entity.[568]

(5) Because DAO members can benefit from the foundation without being members of the foundation, they can preserve pseudonymity, just as in the case of purpose trusts.

5.64 Purpose trusts and foundations (as represented in Guernsey and the Cayman Islands respectively), then, offer similar obstacles to economic transparency for counterparties and tax authorities. They are also similarly flexible in the mechanisms they present to ensure those applying assets do so only in accordance with the authority they were granted.

Next steps

5.65 The Law Commission has already agreed with Government to undertake a review of trust law. This will consider – in general terms rather than in the DAO context specifically – the arguments for and against the introduction of more flexible trust and trust-like structures in England and Wales.

LIMITED LIABILITY ASSOCIATIONS

5.66 The Wyoming Decentralised Unincorporated Nonprofit Association ('DUNA'), coming into effect in July 2024 and which we discuss in Chapter 4,[569] has had the most positive industry response of any of the DAO-specific entities we have encountered. Unlike the relationship between the Wyoming DAO LLC and ordinary LLCs, the DUNA does not prescribe many additional requirements to those faced by other UNAs under Wyoming law.[570] By and large, it clarifies the availability of a UNA entity for DAOs by expressly permitting matters such as legal contract through smart contract,

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566 Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April 2017), s 7(5).

567 Cayman Islands Foundation Company Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April 2017) s 7(1)-(2).

568 Cayman Islands Foundation Companies Law, 2017 (Supplement No. 9 published with Extraordinary Gazette No. 35 dated 26 April 2017), s 2(1): a "beneficiary" means a person who will or may benefit from the foundation company carrying out its objects. See also discussion at 4.143.

569 We discuss DUNAs from para 4.115.

570 The DUNA must have at least 100 members, and must elect to form under the relevant chapter of Wyoming legislation.

decentralised governance and the free transfer of membership interests through the transfer of governance tokens.[571]

5.67 We have explained above that some features of entities used by DAOs in other jurisdictions such as the Cayman Islands and Guernsey are often viewed as inconsistent with policy priorities in this jurisdiction that are unlikely to change. We have also explained why we do not believe there is an overwhelming case for developing a DAO-specific entity in England and Wales. However, we do consider that there may be merit in considering a more flexible form of entity that could be attractive to DAOs and, potentially, a range of other organisations. In our view, the most significant "gap" in the legal options available to DAOs in England and Wales concerns not-for-profit organisations, and in particular the unavailability of an unincorporated non-profit association (UNA) with limited liability and separate legal personality.

5.68 As discussed in Chapter 4, England and Wales already offers several incorporated organisational forms for non-profits, specifically companies limited by guarantee, community interest companies, and co-operatives. These all offer non-profit DAOs a potential vehicle for separate legal personality and limited liability.

5.69 However, each of these forms lacks the flexibility of governance that many DAOs seek and that are afforded by UNA forms in some other jurisdictions. To name just a few issues, dealt with further in Chapter 4, companies limited by guarantee require directors, who are subject to mandatory duties, and a register of members. Community interest companies require both of these and are subject to additional regulatory duties. Co-operatives offer several advantages for non-profit organisations directed to advancing the interests of their members, and allow for (indeed, insist on) a decentralisation of decision-making power consistent with many DAOs' objectives. Even so, the FCA (as regulator) must approve their rules, which must accord with model co-operative rules, and in particular must provide for "one-member, one vote". The FCA must also be satisfied that the applicant entity is a "bona fide cooperative". While co-ops offer the potential for decentralised governance and responsibility consistent with DAOs, they do not offer the flexibility of governance or autonomy over DAO governance rules, including the possibility of "one token, one vote" that many DAOs seek.

5.70 Unincorporated associations under the law of England and Wales preserve this flexibility of governance. They allow DAO participants the freedom to determine the rules under which they associate, the amount of capital they will be presumed to have exposed to liability, and the circumstances in which they will be accountable for actions taken on another's behalf. Taking proper advantage, and comprehending the consequences, of these features, however, requires a familiarity with how the laws of contract and agency operate in the context of unincorporated associations. In the absence of any indication to the contrary in the association agreement, the law will make presumptions. This area of law, based in case law,[572] is principled and nuanced

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571 We discuss this from para 4.117.

572 Making it less accessible to non-legal parties.

and, if considered, could allow DAO members to determine their mutual rights and obligations quite flexibly.

5.71 As we discuss in Chapter 3, unincorporated associations provide more flexibility for DAOs, and less personal risk for DAO participants, than general partnerships. So long as a pure DAO is not operating as a business in common with a view to profit for its members, it may avoid characterisation as a general partnership. Where, for example, a pure DAO is providing common infrastructure maintained for use by separate businesses, it may instead be found to be an unincorporated association.[573] Indeed, as we note in Chapter 4, an unincorporated association form may be actively chosen by DAOs for this purpose.[574] DAOs with more standard non-profit objectives can of course also structure themselves as unincorporated associations. In both cases, the rules for the governance of the association can be determined by the DAO participants in any matter they see fit. Governed by contract, there are no mandatory rules for unincorporated associations regarding voting power or centralised duties.

5.72 Unincorporated associations in England and Wales do not, however, have separate legal personality, nor do they offer the automatic limited liability protection achievable through the incorporated forms discussed in Chapter 4. Despite the possibility of carefully structuring rights and liabilities of members in a common law unincorporated association, it appears that the absence of limited liability and separate legal personality is often viewed as posing additional risk and complexity compared with an incorporated form. While incorporation is not a prerequisite to participation of an organisation in economic life, it may assist third party confidence for the reasons discussed in Chapter 4.[575] These include certainty as to the identity of the contracting party and visibility of the assets which would be available to creditors in the event of insolvency.

5.73 General partnerships, which impose more onerous obligations and greater risks on members than unincorporated associations, have been supplemented by a statutory alternative, the limited liability partnership, which offers limited liability and separate legal personality while preserving much of the flexibility of governance achievable in a general partnership. Like the general partnership form, however, the LLP is only available to organisations carrying on a business with a view to profit.[576] We think it is reasonable to ask whether a similar legal entity should be available for non-profit organisations, perhaps a "limited liability association" ("LLA") similar to the "UNAs" adopted by several American states.

5.74 In the states that recognise "UNAs" as separate legal entities, they remain unincorporated. Unlike an LLP or LLC, the entity does not come into existence by incorporation. One example is California. The relevant legislation defines a non-profit association as an unincorporated group of two or more persons joined by mutual

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573 In Chapter 3, we draw an analogy with the stock exchange in the case of *Weinberger v Inglis* [1919] AC 606 (HL) 622; see from para 3.73(1).

574 See para 4.2.

575 We discuss separate legal personality and limited liability from para 4.6.

576 Partnership Act 1890, s 1(2).

consent with a primary common purpose other than to operate a business for profit.[577] Ensuing sections then provide shields for members, directors or agents of the non-profit association from contractual or tortious liability unless certain conditions are met.[578] They also provide that the association can, in its own name, acquire, hold and transfer interests in real or personal property, as property of the association rather than the members individually.[579] Therefore, a significant measure of limited liability and separate legal personality is achieved provided the factual conditions in the statute are met, rather than by a particular incorporating act by the association.

5.75 Under Californian law, an unincorporated non-profit association can be set up without any form of state registration and will be covered automatically by the statutory framework that amounts to separate legal personality and significant limited liability for members. Members need not declare their identities and may remain pseudonymous.[580] This is therefore a departure from the usual principles of transparency coming hand in hand with limited liability.

5.76 Our preliminary view is that a less substantial departure from these principles could still offer desirable flexibility through the introduction in England and Wales of an "incorporated association" or "limited liability association" available to not-for-profit DAOs and other entities.[581] This would not be a DAO-specific entity, but could be of use to DAOs as well as a range of other organisations. Becoming an LLA would require a positive act of incorporation (that is, registration with a registrar) by at least some DAO members to achieve separate legal personality and limited liability for the DAO.

5.77 The key advantage of UNAs is the combination of flexible governance with separate legal personality and limited liability. The creation of a statutory "LLA" with these advantages would not depend on any particular treatment regarding pseudonymity of members. The most suitable policy and legal option would need to be considered as part of any further work on this issue. For example, there could be a requirement similar to that of LLPs, namely that any changes to the membership must be notified to the registrar within 14 days.[582] Alternatively, it might be thought appropriate to allow most members to remain pseudonymous provided that the identity of some members are disclosed, as is the case for LLCs and UNAs in several American states.[583] The advantages of an LLA in terms of flexible governance would remain either way. It is

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577 California Corporate Code Title 3 sections 18020 and 18035.

578 See California Corporate Code Title 3 sections 18605-18620.

579 See California Corporate Code Title 3 sections 18105-18110.

580 See further discussion of UNAs from para 4.99.

581 We note that the Scottish Law Commission has previously considered but ultimately rejected the creation of a new corporate vehicle for not-for-profit organisations in Scotland: Report on Unincorporated Associations (2009) Scot Law Com No 217.

582 Limited Liability Partnerships Act 2000, s 9(1).

583 For LLCs, this is subject to the federal Economic Transparency Act requirements to disclose beneficial ownership information where a person controls at least 25% of ownership interests. The Economic Transparency Act does not apply to UNAs.

necessary to note, however, that an absence of pseudonymity may result in on-chain organisations continuing to choose offshore ownerless entities instead.

5.78 Unlike the legislation introducing the Wyoming DUNA, we do not think that legislation introducing an LLA would need to be technology-specific to be usefully employed by DAOs. Before the DUNA was introduced, a prominent industry commentator, a16z crypto, was advocating the use of ordinary UNAs by DAOs.[584] Those same commentators note that the DUNA makes very clear the compatibility of this form of governance with DAOs, alleviating doubt industry participants may have had as to whether, for example, free transfer of governance tokens would be permitted in a UNA.[585]

5.79 We certainly think it is important that any new incorporated legal entity, in addition to those which exist, should allow for their requirements to be met technologically in as diverse a number of ways as are consistent with the underlying policy objectives. In our view, this is best achieved by legislation which is technology neutral, looking, like the rules on partnerships and associations under the common law, to function over form. Explanatory notes or additional guidance could clarify how DAOs using a UNA/LLA form could make use of technology in a way that would comply with the statutory framework.

5.80 Finally, it is worth reiterating that existing unincorporated associations under the law of England and Wales remain valuable, flexible tools for organisational structuring and we do not think that the existing options are seriously deficient. Our observation is simply that the LLP presents a combination of flexible governance and separate legal personality for which there is no equivalent for non-profit organisations. The popularity among DAO industry commentators of such an equivalent in several American states has led us to identify that there is gap in the business organisations framework in England and Wales which is filled in other jurisdictions. This provides reason to think that this might be a "gap" worth considering, not only for DAOs but for organisations in this jurisdiction more generally.

5.81 Under the law of England and Wales, LLPs are a pass-through entity for tax purposes, while unincorporated associations are generally taxed at entity-level.[586] A further matter for consideration in respect of any new legal entity is what it's tax status should be. Consideration should be given to whether there is a case for "check the box taxation" for any new entity.[587] The availability of "check the box" taxation for LLCs in many American states[588] gives an organisation the ability to elect to be taxed at an entity-level. This may reduce uncertainty and administrative burden for members, particularly in the case of DAOs. With that said, entity level taxation will not necessarily reduce the need for those receiving financial distributions to individually

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584 M Jennings and D Kerr, "A Legal Framework for Decentralized Autonomous Organizations, Part I" (June 2022) pp 27 to 28: https://api.a16zcrypto.com/wp-content/uploads/2022/06/dao-legal-framework-part-1.pdf.

585 M Jennings and D Kerr, "The DUNA: An Oasis for DAOs" (3 August 2024): https://a16zcrypto.com/posts/article/duna-for-daos/.

586 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 11.12.

587 This argument could apply equally to LLPs.

588 Discussed at para 4.98.

evaluate their tax obligations. It may be worth considering whether any potential "LLA" or other suitable entity should have the option to choose to be taxed at entity level.

Next steps

5.82 Further work should be undertaken to determine whether the introduction of a limited liability not-for-profit association with flexible governance options would be a useful and attractive vehicle for non-profit DAOs and potentially a variety of other organisations in England and Wales.

FACILITATING THE GROWTH OF DIGITAL LEGAL ENTITIES

5.83 Commenting on the need for a bespoke legal form, the Law Society of England and Wales did "not consider that there is a need to develop a new form of legal entity specifically for DAOs". They pointed out that the law of England and Wales already provides a wide range of corporate entities, and noted that:

> Legislation to create any new legal form would take some time to craft and bring into effect. In addition, DAO projects can and do take a wide variety of forms and a bespoke legal form may not provide sufficient flexibility.

5.84 Instead, the Law Society said that the priority was to ensure that corporate forms were compatible with digital and blockchain based decision-making:

> Instead, we consider that existing corporate frameworks should be updated to ensure that corporate vehicles are "digital-friendly", which will not only provide greater flexibility for persons wishing to establish a DAO, but also benefit existing corporate structures and the UK legal system as a whole… DAOs will benefit from clarification and clear statements to confirm that DAOs can use the existing legal entity forms, as long as the DAO meets the other requirements set out for such legal entity forms.

5.85 Existing company law in England and Wales already provides a strong potential foundation for organisations looking to use smart contracts and DLT. This is supported by the notable growth in asset tokenisation initiatives, and various government commitments to strategies relating to digitalisation[589] and use of DLT.[590]

5.86 We agree with the Law Society that the law must keep up to date with emerging technologies. As discussed in Chapter 4, the vision of the "digital legal entity" would see technology integrated into the fabric of the entity, with smart contracts and

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589 For example, the reference to digital foundations and commitment to digital growth in the UK Digital Strategy (last updated 4 October 2022) https://www.gov.uk/government/publications/uks-digital-strategy/uk-digital-strategy#financing-digital-growth.

590 For example, HM Treasury, UK regulatory approach to cryptoassets, stable coins and distributed ledger technology in financial markets: Response to the consultation and call for evidence (April 2022): https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1088774/O-S_Stablecoins_consultation_response.pdf. This supports the use of DLT in financial market infrastructure, with appropriate risk management.

distributed ledger technology used to program the rules of the organisation and this being reflected in the entity's governing documents. Some of the ways in which hybrid DAOs and digital legal entities want to use technology are not necessarily permissible under the current company law regime and may require law reform. However, we think that any changes should benefit a wider range of organisations than DAOs.

5.87 There is clear appetite for reform in this area, especially in the financial sector. The City of London Corporation's 2023 report on the UK financial sector consulted extensively with industry participants regarding the UK's global competitiveness and what measures could be taken to improve it.[591] A key opportunity identified by the sector was making the UK a more attractive domicile for investment funds, including by tokenisation and digitalisation of fund operations.[592] Another was progressing the adoption of tokenisation and DLT in capital markets:[593]

> Tokenisation has the potential to give retail investors access to new assets, streamline operational functions and reduce costs, and open access to new markets. Digitising assets could make the UK a more attractive domicile for funds and ETFs, make bonds easier to invest in for retail investors, and appeal to companies seeking an IPO.

5.88 The last targeted review of company law occurred two decades ago with the Company Law Review.[594] We suggest that a review be undertaken, to see whether updates are required to facilitate the increasing digitalisation of companies and other incorporated entities. The potential for useful changes for other forms of business entity, such as LLPs, should also be considered to ensure that all UK-based entities can benefit from new technologies where appropriate.

What could a review consider?

5.89 For some stakeholders, the idealised digital company under the Companies Act 2006 (or LLP under the Limited Liability Partnerships Act 2000) would be an entity that can perform all or many corporate actions – including governance, administration, and compliance – using DLT-based systems, either exclusively or in conjunction with other digital systems.

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591 City of London Corporation, *State of the sector: annual review of UK financial services 2023*: https://www.theglobalcity.uk/PositiveWebsite/media/Research-reports/State-of-the-sector_annual-review-of-UK-financial-services-2023.pdf.

592 City of London Corporation, *State of the sector: annual review of UK financial services 2023*, p 26.

593 City of London Corporation, *State of the sector: annual review of UK financial services 2023*, p 39.

594 Company Law and Investigations Directorate part of Corporate and Consumer Affairs, "Modern Company Law for a Completive Economy" (March 1998); The Company Law Review Steering Group, "Modern Company Law for a Completive Economy: The Strategic Framework" (February 1999); The Company Law Review Steering Group, "Modern Company Law for a Completive Economy: Final Report" (July 2001); Department of Trade and Industry, "Company Law Reform: White Paper" (March 2005).

5.90 This issue was considered as part of the LawtechUK paper on Smarter Contracts, in which it was said:[595]

> The Digital Company is a key step by the UK in its move to develop digital infrastructure by focusing on the digitalisation of corporates and their corporate governance requirements. In doing so, it aims to preserve the benefits of an English private company – particularly the protections it provides to shareholders, creditors, and other stakeholders – while creating a corporate form better suited to our increasingly digital world.

5.91 The Law Society suggested UK corporate forms should be reviewed to identify any procedural and filing-related issues that would cause administrative difficulties for digital asset projects. They gave examples of physical copies or addresses for record-keeping and filing, certificated securities, arrangements for dematerialised securities, in-person meetings, constitutions, and requirements for natural language. They further said:

> We need to ensure corporate legal frameworks permit blockchain-based decision making. It would be helpful for there to be increased legal clarity on the ways in which smart legal contracts can be linked to legal governance processes.

5.92 Similarly, gunnercooke llp said: "Smart contract voting should be recognised as a viable mode for decision making." A review could consider whether any changes would be required to allow for this in appropriate circumstances.

5.93 These concerns apply not just to corporate legal frameworks but across organisational law. For example, consideration could be given to whether the requirement for "signed writing" of the valid transfer of a beneficial interest under a trust can be functionally replicated using DLT.[596]

5.94 Similar issues are being considered in the context of the potential tokenisation of managed investment funds. In 2023, the UK Asset Management Taskforce Technology Working Group wrote a "blueprint" for a staged approach to fund tokenisation.[597] This noted that some integration of technology may be merely administrative and uncontroversial; other aspects could fundamentally change the management of firms. Potential benefits identified included simplification of books and records, through a real-time record keeping system that could be shared across all parties, enhanced data disclosure, and improved processing of corporate actions and distributions through automation.[598] Similar benefits could be felt in digital companies. We identify some particular considerations below.

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595 LawtechUK, "Smarter Contracts Report" (February 2022), p 139: https://lawtechuk.io/our-reports/.

596 Law of Property Act 1925, s 53(1)(c): 'a disposition of an equitable interest or trust subsisting at the time of the disposition, must be in writing signed by the person disposing of the same, or by his agent thereunto lawfully authorised in writing or by will.'

597 UK Asset Management Taskforce Technology Working Group, *UK Fund Tokenisation: A Blueprint for Implementation* (Interim Report, 2023, The Investment Association) 2.

598 UK Asset Management Taskforce Technology Working Group, *UK Fund Tokenisation: A Blueprint for Implementation* (Interim Report, 2023, The Investment Association) 15.

DLT-based registers

5.95 The LawtechUK paper on Smarter Contracts referenced particular developments in relation to a company's share register: [599]

> Digital Asset and Norton Rose Fulbright have since developed a core part of the Digital Company – a digital share register. This mirrors the formation of an English limited company, which requires subscribers combined with the registration of certain documents at the Companies Registry. The register sits at the centre of a company's ecosystem and from it flows many of the fundamental corporate actions – whether establishing legal ownership of shares and enabling transfers to be recorded as well as (in the case of a company limited by shares) encompassing much of the data required for statutory and regulatory filings. In addition, the following digital records have been created using the Legal Schema:
>
> - Register of shareholders;
> - Register of directors; and
> - Register of people with significant control.
>
> These are known as "Smart Registers'. The Smart Registers are implemented as a blockchain-based smart legal contract holding the data of the shareholders (such as names and addresses), their shareholdings, and dates of entry into the company. Each share is represented by a fungible token (a unit of value that is capable of being interchanged) that is recorded on the digital share register.

5.96 More recently, the UK Jurisdiction Taskforce's "Legal Statement on the Issuance and Transfer of Digital Securities under English Private Law"[600] also considered the possible use of DLT-based registers. It noted that the current law requires a UK company to maintain a register of members which must be available for inspection at its registered office.[601] This may be in electronic form as long as it can be reproduced in hard copy form.[602] The UKJT suggested that a DLT-based register could satisfy this provided that it could be printed out in a human readable form, and that a DLT-based register could also be configured so as to record the details required by the Act (whether on- or off-chain). The paper notes that a permissioned rather than permissionless system would be required, as the company must maintain the register rather than just store it, and must therefore have the ability to update and rectify the register.[603] In our report on digital assets, we agreed with the UKJT that structures that

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599 LawtechUK, Smarter Contracts Report (February 2022), p 135: https://lawtechuk.io/our-reports/.

600 UKJT, "Legal statement on the issuance and transfer of digital securities under English private law" (2023), https://ukjt.lawtechuk.io/.

601 Companies Act 2006, s 113.

602 Companies Act 2006, s 1135.

603 UKJT, "Legal statement on the issuance and transfer of digital securities under English private law" (2023) pp 37 to 39.

use DLT and blockchain technologies simply as an alternative form of electronic register might be accommodated within the existing law without difficulty.[604]

5.97 The Economic Crime and Corporate Transparency Act 2023 includes provisions to reform the role of Companies House and improve transparency in respect of UK companies and other legal entities.[605] This includes introducing identity verification for company directors, people with significant control (PSCs) and those delivering documents to the Registrar, and improving the financial information on the register. It is possible that there could be some form of automated transmission of the relevant data from a digital legal entity to Companies House to satisfy the new requirements and remit of the Registrar. This may require some level of interoperability between Companies House and the relevant DLT system.

5.98 A review of company law could consider whether and to what extent the law should be updated to facilitate the use of DLT in company register and record keeping.

Tokenised shares

5.99 The UK Jurisdiction Taskforce paper on Digital Securities[606] also considered whether tokens could function as securities, meaning as a unitised, transferable interest in an issuer, issued and transferred to investors as a means of raising capital. The paper considered debt and equity securities. For our purposes, we are particularly interested in equity securities – that is, shares in a company.

5.100 The paper describes shares as:

> interests in a company's share capital.[607] Shareholders typically have a range of rights, such as the right to vote and the right to participate in dividends and other distributions,[608] and sometimes also obligations, such as an obligation to contribute if the company is wound up. Shares are not creatures of normal contract. The relationship between shareholders and the company is largely governed by the company's articles of association – a 'statutory contract of a special nature with its own distinctive features'[609] – and the shareholders may have additional contractual or equitable obligations amongst themselves.

5.101 As we discuss in the next chapter,[610] governance tokens may at first glance be similar to shares. They give the right to vote, and may confer other rights and obligations including potentially a right to profit distributions (but DAO governance tokens are not, of course, a statutory contract although they may represent a contractual relationship, as discussed in Chapter 3).

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604 Digital assets: Final report (2023) Law Com No 412, para 8.71.

605 Economic Crime and Corporate Transparency Act 2023, part 1.

606 UKJT, "Legal statement on the issuance and transfer of digital securities under English private law" (2023), https://ukjt.lawtechuk.io/.

607 Companies Act 2006, s 540(1).

608 Depending on the nature of the share.

609 *Braton Seymour Service Co Ltd v Oxborough* [1992] BCC 471, 475 by Steyn LJ.

610 See para 6.77.

5.102 Could on-chain governance tokens constitute shares? The UKJT suggested that digital shares in a UK company present challenges because of the nature of the relationship between the company and its shareholders and the need to comply with the requirements of the Companies Act.[611]

5.103 In particular, if a company purported to issue a share in token form, that token would be better characterised as equivalent to a share *certificate*. That is, holding the token could function as evidence that the holder owned the share, but the token could not itself constitute the share, and holding the token would not itself make the holder a shareholder. This is because share ownership is determined by the register of members.[612]

5.104 That is not to say, however, that there is not scope for the use of DLT and tokens under the current law. The UKJT discussed the possible use of DLT in the registration of a transfer of shares. A "proper instrument of transfer" is required,[613] which must be capable of being stamped (electronically) by HMRC for stamp duty purposes (unless exempt).[614] The UKJT noted that while "there is no mandatory template … it would appear sensible … for the blockchain or DLT-based system to be paired with software which produces a document that is as close as possible to a standard stock transfer form".[615]

5.105 We agree with the UKJT's analysis.[616] In our report on digital assets we also proposed another method as an alternative to using a permissioned system. We said that this would involve tokenising equitable entitlements (shares) in the underlying equity securities, and would require the following steps:[617]

(1) The issuing company transfers legal title to the equity securities (issued in a normal way, not in tokenised form) to, and immobilises the securities with, a nominee holding intermediary;

(2) The issuing company mints the crypto-tokens that will represent the equitable entitlements in the underlying equity securities;

(3) The nominee holding intermediary holds the legal title to the equity securities on trust for the benefit of token holders;

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611 UKJT, "Legal statement on the issuance and transfer of digital securities under English private law" (2023), p 22.

612 See eg Companies Act 2006, s 112(2) and discussion in H Liu, "Digital assets: the mystery of the 'link'" (2022) 3 *Journal of International Banking and Financial Law* 161.

613 Companies Act 2006, s 770.

614 See short discussion of authorities in UKJT, "Legal statement on the issuance and transfer of digital securities under English private law" (2023), pp 35 and 36.

615 UKJT, "Legal statement on the issuance and transfer of digital securities under English private law" (2023), p 36.

616 Digital assets: Final report (2023) Law Com No 412, para 8.80. Professor Sarah Green is a member of the UKJT and also the lead Commissioner for this Law Commission project.

617 Digital assets: Final report (2023) Law Com No 412, para 8.81.

(4) The constitutive link between the crypto-tokens and the underlying equitable entitlements in the underlying equity securities is structured and defined by the terms of the declaration of trust.

Although we recognised that there is a potential complexity regarding transfers of these tokens and section 53(1)(c) Law of Property Act 1925, we concluded that this does not present any meaningful practical obstacle.[618] This aligns with the UKJT's view.[619]

5.106 Notwithstanding the practical availability of this intermediated holding structure, we recommended that:[620]

> laws applicable to UK companies should be reviewed to assess the merits of reforms that would confirm the validity of and/or expand the use of crypto-token networks for the issuance and transfer of equity and other registered corporate securities. In particular, we recommend that any such review should consider the extent to which applicable laws could and should support the use of public permissionless ledgers for the issuance and transfer of legal interests in equity and other registered corporate securities.

5.107 We reiterate this previous recommendation.

5.108 Consideration could be given to the feasibility of allowing company shares to be issued in the form of tokens – that is, native issuances – so that the token would represent the share and not just the share certificate. A DLT register could function as the register of members, as discussed above, and a proper instrument of transfer would still be required for transfers effected through a DLT-based system. The token representing the share could be encoded with the rights attaching to the share (reflecting, or even in place of, the company's articles of association and any shareholders' agreement).

5.109 In a native issuance, the token does not represent a contractual right to anything; rather, it is the means by which that right is exercised. At least theoretically, there does not need to be a centralised shareholder agreement or articles in such a situation, because all of the relevant information would be contained in each token. Existing law would not allow for this, as articles are required by law and it may be difficult to argue that articles encoded within a share meet this requirement. Such a "share token" would give the holder the factual ability to vote (or perform the relevant governance action) rather than merely the legal right to do so. As discussed in earlier chapters, this is relevant to the idea of governance tokens in DAOs where those holding and using such tokens are not limited to the exercise of their legal rights, but have factual capacity by virtue simply of holding the token. We have however seen that this can be problematic in practice as not all rights and votes are easily susceptible to pre-coding. If such an issuance is possible from a technical perspective, it is likely that, before making an issuance in that way, organisations would want

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618 Digital assets: Final report (2023) Law Com No 412, para 8.81 and paras 7.68 to 7.80.

619 Digital assets: Final report (2023) Law Com No 412, para 7.68; UKJT, "Legal statement on the issuance and transfer of digital securities under English private law" (2023) paras 119 to 137.

620 Digital assets: Final report (2023) Law Com No 412, para 8.87.

reassurance that legal rights would follow these factual abilities, or at least recognise that they exist and respond to how they work.

Digital bearer securities?

5.110 As we have explained above, a company could not, at least under the current law, rely solely on the form of crypto-tokens for the issuance and trading of its shares because such tokens cannot of themselves embody the shareholding. A token that could embody a shareholding might be known as a digital or tokenised "bearer share" or "bearer security". The holder (or bearer) of the token would be the shareholder by the mere fact of holding the token rather than by virtue of being recorded on a shareholder register.[621]

5.111 The law formerly allowed a company to issue a share warrant or bearer share, dictating that the warrant's bearer was entitled to the shares specified therein. The legal ownership of the bearer share could be transferred through possession, meaning that whoever held the share warrant was the owner of the share without requiring any further evidence or registration. As a result, a company would not necessarily know the identity of the holder of a bearer share. Even if the owner identified themselves to claim a dividend, their identity would not be recorded on the register. These bearer shares were abolished under the Small Business, Enterprise and Employment Act 2015.

5.112 Should the law allow for digital "bearer" securities? If such an arrangement were permitted, possession or control of the tokenised security, for example in a digital wallet, could be sufficient to identify its owner. There would be no need for the company to maintain a register of shareholders. This may be an attractive proposition for some hybrid arrangements, because it could enable them to use a limited company as part of their structure without the administrative overheads associated with maintaining the register. A register of members may also require some off-chain activity, and may be unpalatable to token holders who wish to maintain pseudonymity.

5.113 The main reason for the abolition of bearer shares in 2015 was concern about money laundering and transparency, given that bearer shares could be held and transferred without the holder's identity appearing on any register. The Government noted at the time that abolition would ensure compliance with international standards including:[622]

(1) meeting commitments in the UK's G8 Action Plan Principles to prevent the misuse of companies and legal arrangements;[623]

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621 In a bearer document, the obligation is owed to whoever is in possession of the document. To transfer a bearer document, the bearer delivers possession of the document to another party. Possession in this context generally means both actual or legal possession/control together with the requisite intention to possess (that is, to exercise such custody and control on one's own behalf and for one's own benefit): eg *Mainline Private Hire Ltd v Nolan* [2011] EWCA Civ 189, [2011] CTLC 145.

622 Department for Business Innovation & Skills, "Transparency & Trust: Enhancing the Transparency of UK Company Ownership and Increasing Trust in UK Business – Discussion Paper" (July 2013), https://assets.publishing.service.gov.uk/media/5a7ca3dfed915d6969f464df/bis-13-959-transparency-and-trust-enhancing-the-transparency-of-uk-company-ownership-and-increaing-trust-in-uk-business.pdf.

623 G8, "G8 Action Plan Principles to prevent the misuse of companies and legal arrangements" (2013),https://www.mofa.go.jp/files/000006561.pdf.

(2) responding to recommendations to the UK made by the Global Forum on Transparency and Exchange of Information for Tax Purposes with respect to this vulnerability in our current system;[624] and

(3) meeting the Financial Action Task Force's standards in relation to transparency of company ownership and control.[625]

5.114 The prospect of tokenised or digital bearer shares would appear to provide certain DAOs and digital legal entities with a solution for issuing share tokens in digital form and resolving the challenge of maintaining a register of token holders. However, it is not clear that these potential benefits would be sufficient to consider backtracking on the policy considerations that led to their abolition in the first place. Any further consideration of digital bearer securities may therefore need to incorporate additional steps to provide the level of transparency expected in this jurisdiction and internationally.

5.115 The questions relevant to digital bearer securities recall the broader debate about the trade-offs between the ease-of-use of legal forms for businesses wishing to digitalise, and the policy priorities of economic transparency and investor and consumer protection.

5.116 In our view, the "low-hanging fruit" for promoting the growth of digital organisations in England and Wales is reviewing and removing requirements that unintentionally limit the use of particular technologies, rather than rules or restrictions which are there to achieve a particular policy objective. Legislation that is technology-neutral, prioritising function over form, can support the take-up of more efficient novel technologies as they arise. It is possible that there is a case for adjusting underlying policy objectives, such as the balance between promoting transparency and jurisdictional competitiveness. But the easier case to make is for removing obstacles in the law that are there by default, rather than by prioritisation.

Next steps

5.117 The Companies Act 2006 should be reviewed in order to determine whether reform is needed to facilitate the increased use of technology at a governance level where appropriate. The law of other business organisations such as limited liability partnerships should also be reviewed with the same aim.

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624 Global Forum on Transparency and Exchange of Information for Tax Purposes, "Peer Review Report of the United Kingdom – Combined Phase 1 + Phase 2" (2009) p 95, https://read.oecd-ilibrary.org/taxation/global-forum-on-transparency-and-exchange-of-information-for-tax-purposes-peer-reviews-united-kingdom-2011_9789264118164-en#page1.

625 Financial Action Task Force, International Standards on Combating Money Laundering and the Financing of Terrorism & Proliferation: The FATF Recommendations (first adopted by the FATF Plenary in February 2012 and updated regularly. Most recently updated in February 2023) p 22 and p 94, https://www.fatf-gafi.org/content/dam/fatf-gafi/recommendations/FATF%20Recommendations%202012.pdf.coredownload.inline.pdf.

Facilitating voting by ultimate investors

5.118 Even without the tokenisation of shares, DLT also holds potential to assist investors who hold company shares through an intermediated system.

5.119 In the modern era, most private investors in shares or bonds are unlikely to receive a paper certificate. Instead, most investors "own" securities through computerised credit entries in a register called CREST, through a chain of financial institutions, such as banks, investment platforms and brokers ("intermediaries"). A holder of shares or bonds through this type of arrangement (an "intermediated securities chain") may not have access to all the shareholder rights which they would have with a paper certificate such as, importantly, the right to vote on company resolutions. This is because they are not technically shareholders and do not appear on the register of members. Instead, they have a beneficial interest in the shares, which are owned by a beneficiary further up the chain.

5.120 Although part of the ethos of DAOs is the democratisation of decision-making through token-based governance, we do not suggest that traditional investors are likely to invest in DAO tokens in preference to intermediated shareholdings in traditional companies. However, it is possible that DAO voting processes using DLT could inform the use of the technology for voting in traditional companies.

5.121 When the Law Commission looked at the issues associated with intermediated securities in 2019,[626] we were told that one reason why companies did not facilitate voting by "ultimate investors" was the administrative burden of keeping track of who held intermediated shares at any one time and of actually processing votes via an intermediary by the relevant voting deadline. DLT was suggested as a possible solution, either removing the need for intermediation altogether or, more realistically, making it easier to keep track of ultimate investors despite their not being on the register of members.[627] The ultimate investors could be listed on a separate DLT-based register which the company would not have to maintain; it would instead be maintained by the nodes.

5.122 We noted in our 2019 paper that it was relatively early in the development of DLT to understand the full potential for its use in intermediated securities. The government's Digitisation Taskforce, launched in 2022 to drive forward the modernisation of the UK's shareholding framework, made a similar statement about DLT in its interim report.[628] Given that there is already ongoing work in this area, we do not suggest that further separate work here is necessary or desirable, but we note it here for completeness.

5.123 We note the potential for DLT-based solutions to assist with issues in intermediated security arrangements, but given the ongoing work in this area we do not suggest that anything further is necessary at this stage.

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626 Intermediated securities: who owns your shares? (2020) Law Commission Scoping Paper.

627 Intermediated securities: who owns your shares? (2020) Law Commission Scoping Paper, from para 9.52.

628 Digitisation Taskforce Interim Report (July 2023), pp 15-16, https://www.gov.uk/government/publications/digitisation-taskforce.

Chapter 6: Financial regulation and tax

6.1 Our work has focused mainly on principles of private law and, in particular, the law relating to organisations and business associations. We do not cover in any detail issues relating to, for example, financial regulation (including anti-money laundering) or tax issues. Nevertheless, we recognise that these are highly relevant to the structuring and operation of organisational arrangements, and summarise the key points as they apply to DAOs in this chapter. We also identify some potential areas of further work which might help the regulatory regime better respond to the challenges presented by DAOs.

DAOS AND FINANCIAL REGULATION

Overview

6.2 When DAOs were first being developed, there seems to have been an assumption amongst some participants that financial regulation would not and should not apply to them. Recent litigation in the United States and domestic and international moves towards cryptoasset regulation has shown that this is not a view shared by regulators. It is undoubtedly the case that financial regulations were designed with traditional organisations in mind and, as we discuss below, this means that the unique elements of DAOs do not always neatly fit within the existing framework. While this might be the case on a legal analysis, regulation is generally aimed at particular activities rather than particular types of entity. It seems unlikely that there is a policy justification for excluding organisations who carry out a relevant activity merely because of the way they are structured or the technology they use.

6.3 To date, HM Treasury's approach to cryptoasset regulation has been guided by a core design principle of "same risk, same regulatory outcome".[629] The intention has been to regulate the cryptoasset industry to the same extent as traditional financial services, where the activities carried out are the same or similar. In this section we look at how financial regulation may apply to DAOs as a result of their issuing governance tokens to participants. We suggest that the Government or the relevant regulator should review the current rules and regulations we discuss in this section to assess whether they are achieving their stated policy objectives when applied to DAO governance level activity and, if not, whether and how they should be amended or redrawn to do so.

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629 HM Treasury, *Future financial services regulatory regime for cryptoassets – Consultation and call for evidence* (February 2023), para 1.12, https://www.gov.uk/government/consultations/future-financial-services-regulatory-regime-for-cryptoassets. The consultation has now closed and HM Treasury's response can be found here: https://assets.publishing.service.gov.uk/media/653bd1a180884d0013f71cca/Future_financial_services_regulatory_regime_for_cryptoassets_RESPONSE.pdf.

Scope of our discussion about financial regulation

6.4 Cryptoassets are generally unregulated in the UK.[630] However, activities relating to cryptoassets are regulated in this jurisdiction under three regulatory frameworks:

(1) Anti-money laundering framework

Cryptoasset businesses that fall within the scope of the Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 (MLRs)[631] must register with the Financial Conduct Authority (FCA) before starting business.[632] The FCA must determine that the applicant's management and owner are "fit and proper"[633] and that the applicant has satisfactory anti-money laundering systems and controls in place.[634] The MLRs apply depending on what is done with the cryptoassets and whether this creates a money laundering risk. A DAO could fall within the MLRs as a result of exchanging its own tokens for either money or other cryptoassets if it is acting in the course of a business and carrying on business in the UK.

(2) Financial promotions framework

This framework sets out what financial promotions are and are not permitted and is relevant where certain products or activities are aimed at or otherwise "capable of having an effect in" the UK. Cryptoassets have recently been brought within this regime,[635] as we explain below. While DAOs are not specifically referred to in the rules, DAO governance tokens will be considered cryptoassets if they represent value or contractual rights and are "fungible" and "transferable". The rules may therefore affect how a DAO can advertise and promote its own tokens to UK investors, regardless of whether the firm is based overseas or what technology is used to make the financial promotion.

(3) The regulated activities framework

This framework sets out all the activities that fall within the financial services regulatory framework under the Financial Services and Markets Act 2000 (FSMA). It applies to cryptoassets where the features of a cryptoasset mean that it falls within the definition of a "specified investment". If so, firms are

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630 Unless they fall into certain categories such as specified investments (discussed below), electronic money or financial instruments under MIFID II. See FCA, *Guidance on Cryptoassets* (2019), Appendix 1, https://www.fca.org.uk/publication/policy/ps19-22.pdf.

631 SI 2017 No 692. See in particular regulations 8, 9 and 14A.

632 FSMA authorised firms are generally not required to register by the MLRs because they appear on the Financial Services Register once their applications for FSMA authorisation have been approved. However, cryptoasset exchange providers and custodian wallet providers must register under the MLRs even if they are already registered or authorised with the FCA for other activities.

633 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 58A.

634 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 56.

635 For further information about the extension of the rules to cover cryptoassets, see https://www.fca.org.uk/publications/policy-statements/ps23-6-financial-promotion-rules-cryptoassets.

required to obtain FCA authorisation in order to operate where they undertake "specified activities" in relation to "specified investments". The specified activities and investments are set out in schedule 2 to FSMA and in the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 (the RAO).[636] Although the framework does not specifically mention cryptoassets, some cryptoassets do fall within the regime. It is possible that the governance tokens issued by some DAOs could constitute security tokens which are specified investments under the framework. DAOs that make investments in property of any description, including in cryptoassets, and distribute profits or income to token holders could be a collective investment scheme (CIS). As a result, the DAO's tokens could be classed as units in a CIS, which are specified investments.

6.5 DAOs may fall within these frameworks as a result of activities linked to their governance tokens: for example, advertising their tokens to potential participants and issuing governance tokens to participants. These activities are common to many DAOs which use token-based governance. For our purposes, this is separate from the activities that occur at the product level, which relate to the interaction between the DAO and users of its business or service. Activities which are carried out at that level are activities that may fall within these regulatory frameworks in the same way as if they were being carried out by a traditional organisation. The activities of DeFi DAOs are the most obvious example.

6.6 In this section, we primarily look at financial regulation that may apply at the DAO organisational/governance level. The exception is our discussion of the regulation of CISs under the RAO where token holders may have governance powers as well as being users of the DAO's investment services. A DAO that provides a profit-sharing mechanism for token holders may be a collective investment scheme because of the investment activities it carries out.

6.7 Aside from the regulation of CISs, we do not look in depth at DeFi and other DAO activities at the product level or regulation of cryptoassets more generally, given the range of products and services that a DAO might undertake. We are aware of work both in this jurisdiction and by international bodies which considers the financial regulation of cryptoassets. This work is relevant to cryptoasset activities and DeFi products/systems, regardless of whether a DAO is involved, including:

(1) the FSB (Financial Stability Board) Global Regulatory Framework for Crypto-asset Activities (17 July 2023);[637]

(2) the OECD (Organisation for Economic Co-operation and Development report on DeFi (January 2022);[638]

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636 SI 2001 No 544.

637 Available at: https://www.fsb.org/2023/07/fsb-global-regulatory-framework-for-crypto-asset-activities/.

638 OECD, *Why Decentralised Finance (DeFi) Matters and the Policy Implications* (19 January 2022), https://www.oecd.org/finance/why-decentralised-finance-defi-matters-and-the-policy-implications.htm.

(3) the IOSCO (International Organization of Securities Commissions) final report with policy recommendations for decentralised finance (DeFi) (December 2023);[639]

(4) the HM Treasury consultation on the broader approach to cryptoassets regulation;[640]

(5) the HM Revenue and Customs consultation on the taxation of Decentralised Finance involving the lending and staking of cryptoassets;[641]

(6) the HM Revenue and Customs Cryptoassets Manual, which covers the taxation of decentralised finance;[642] and

(7) the Crypto and Digital Assets All Party Parliamentary Group (APPG) inquiry into the crypto and digital asset industry.[643]

Extraterritorial reach

6.8 A recurring theme across all aspects of regulation that we discuss in this chapter is the international nature of DAOs. Their participants and activities can be in multiple jurisdictions and impact upon multiple jurisdictions. Their basis in DLT and lack of an automatic legal characterisation means that they may have no obvious link to a particular jurisdiction unless they choose to incorporate a legal entity in a particular place. Some regulation deals with this better than others. The anti-money laundering regime generally only applies to "relevant persons" (businesses caught by the regime) acting in the course of business, where that business is carried on in the United Kingdom.[644] A wider territorial reach is achieved by the financial promotions regulations which catch promotions aimed at people in this jurisdiction regardless of the location of the person making the promotion.

6.9 There is an interpretive presumption against extraterritoriality. Therefore, regulation will only have extraterritorial reach if this was the intention of Parliament. We discuss various regulatory areas below and flag for each one where there are territorial limitations in the current regime which mean that DAOs may fall out of its scope. We also discuss areas where international work could be beneficial or where this

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639 Available at: https://www.iosco.org/library/pubdocs/pdf/IOSCOPD754.pdf.

640 HM Treasury, *Future financial services regulatory regime for cryptoassets: consultation and call for evidence* (February 2023), https://www.gov.uk/government/consultations/future-financial-services-regulatory-regime-for-cryptoassets.

641 HMRC, *The taxation of decentralised finance (DeFi) involving the lending and staking of cryptoassets* (April 2023), https://www.gov.uk/government/consultations/the-taxation-of-decentralised-finance-involving-the-lending-and-staking-of-cryptoassets.

642 Available at: https://www.gov.uk/hmrc-internal-manuals/cryptoassets-manual.

643 Further information about the APPG is available here: https://cryptouk.io/appg/.

644 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 8. Regulation 9 lists two cases where a relevant person can be regarded as carrying on business in the United Kingdom even where they would not otherwise be regarded as doing so – including where they have a registered office in the UK and the day-to-day management of the business is the responsibility of that office.

jurisdiction may want to carefully consider the appropriate territorial and extraterritorial reach of regimes regulating DAOs.

Anti-money laundering framework

6.10 Money laundering, in very general terms, describes the processing of criminal property in order to disguise its illegal origin. The Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 (MLRs) create a system of regulatory obligations for businesses under the supervision of the FCA and the relevant professional and regulatory bodies recognised within the Regulations. They impose certain responsibilities designed to reduce the risk of money laundering, including customer due diligence measures to check that people are who they say they are, risk assessments, and the setting up of monitoring systems. The MLRs sit alongside other aspects of the anti-money laundering regime including in the Proceeds of Crime Act 2002.[645]

6.11 The MLRs apply to "relevant persons" acting in the course of business carried on by them in the UK.[646] They set out an exhaustive list of "relevant persons" characterised by the activity or activities they carry out.[647] Certain businesses that fall within the scope of the MLRs, including cryptoasset exchange providers and custodian wallet providers,[648] must be registered with the FCA before starting business.[649] The FCA must determine that the applicant's management and owner are "fit and proper"[650] and that the applicant has satisfactory anti-money laundering systems and controls in place.[651]

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645 The Law Commission has previously reviewed aspects of the anti-money laundering regime in Part 7 of the Proceeds of Crime Act 2002 and the counter-terrorism financing regime in Part 3 of the Terrorism Act 2000. For more details see https://lawcom.gov.uk/project/anti-money-laundering/.

646 Money Laundering, Terrorist Finance and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 8.

647 Relevant persons include: cryptoasset exchange providers; custodian wallet providers; credit institutions; financial institutions; auditors, insolvency practitioners, external accountants and tax advisers; independent legal professionals; trust or company service providers; estate and letting agents; high value dealers; casinos and art market participants: Money Laundering, Terrorist Finance and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 8.

648 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 54(1A).

649 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, regs 54(1) and 56. FSMA authorised firms are generally not required to register by the MLRs because they appear on the Financial Services Register once their applications for FSMA authorisation have been approved. However, cryptoasset exchange providers and custodian wallet providers must register under the MLRs even if they are already registered or authorised with the FCA for other activities. The FCA additionally has a power to maintain a register of certain financial institutions: Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, regs 55.

650 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, regs 58 and 58A.

651 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 56.

6.12 Businesses (including cryptoasset businesses) that fall within the MLRs must satisfy the following general requirements. These include:[652]

(1) *Risk assessments*: the business must assess the applicable money laundering, terrorist financing risks and proliferation financing.[653]

(2) *Policies, controls and procedures*: the business must have policies, controls and procedures to mitigate and manage risks effectively and proportionately.[654] These includes staff training,[655] customer due diligence,[656] record keeping,[657] and reporting.[658] An individual in the business ("relevant person's firm") must also be appointed as a "nominated officer" authorised to receive disclosures under the applicable regulations.[659] Additionally, where appropriate with regard to the size and nature of the business, an individual must be appointed as responsible for the business' compliance with the MLRs.[660]

(3) *Sanctions reporting*: businesses must report known or suspected breaches of international sanctions.[661]

(4) *Customer due diligence/wire transfer (or "travel rule")*: the business must apply customer due diligence measures, including, whenever it establishes a business relationship, undertakes certain occasional transactions exceeding 1,000 euros or on any suspicion of money laundering or terrorist financing. This

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652 More detail may be found in the JMLSG Guidance, Part II: Sectoral guidance (2023), paras 22.29 to 22.72: https://www.jmlsg.org.uk/guidance/current-guidance/.

653 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 18.

654 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 19.

655 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 24.

656 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, regs 27-38.

657 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, regs 39-40.

658 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 74A.

659 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, regs 3, 21(3). "Nominated officer" means a person who is nominated to receive disclosures under Part 3 (terrorist property) of the Terrorism Act 2000 or Part 7 (money laundering) of the Proceeds of Crime Act 2000. "Firm" means any entity that, whether or not a legal person, is not an individual and includes a body corporate and a partnership or other unincorporated association.

660 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 21(1).

661 Sanctions (EU Exit) (Miscellaneous Amendments) Regulations 2022 SI No 819; Sanctions (EU Exit) (Miscellaneous Amendments) (No 2) Regulations 2022 SI No 818.

requires certain cross-border transfers to be accompanied by specified information about the originator and beneficiary.[662]

(5) *Change in control notification for registered cryptoasset firms*: A person who decides to acquire or increase control over an FCA-registered cryptoasset firm – so that they become a beneficial owner within the meaning of Regulation 5 or Regulation 6 of the MLRs – must submit a change in control notification and await FCA approval before completing the transaction. It is a criminal offence to acquire control of an FCA-registered cryptoasset firm without FCA approval.[663]

6.13 Failure to comply with the requirements of the MLRs can result in civil penalties, including:

(1) Fines;[664]

(2) Publication of a statement censuring a person who has contravened a relevant requirement;[665]

(3) Suspension and removal of authorisation of a person authorised under the Financial Services and Markets Act 2000;[666]

(4) Prohibition on individuals having a management role for a relevant person or payment service provider;[667] and

(5) Injunctions.[668]

6.14 The MLRs also create the following criminal offences:

(1) Contravening a relevant requirement

A person who contravenes a relevant requirement imposed on that person is guilty of an offence, if they did not take all reasonable steps and exercise all due diligence to avoid committing the offence.[669]

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662 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 27 and parts 7 and 7A.

663 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 60B and schedule 6B.

664 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, regs 76(2) and 76(3).

665 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, regs 76(2).

666 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, regs 77(1) and (2).

667 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 78.

668 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, regs 80(1) and 80(3).

669 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 86.

(2) Prejudicing an investigation

A person who knows or suspects that an appropriate officer is acting in connection with an investigation into a potential contravention of a relevant requirement and makes a disclosure they know or suspect is likely to prejudice the investigation, commits an offence.[670]

Such a person also commits an offence if they falsify, conceal, destroy, dispose of or otherwise knowingly permit the falsification, concealment, destruction or disposal of documents which are relevant to the investigation.[671]

(3) Providing false or misleading information

A person commits an offence if in purported compliance with a requirement imposed on them by the regulations, they provide information to any person which they know is (or are reckless as to whether it is) false or misleading in a material particular.[672]

A person is also guilty of an offence if they disclose information in contravention of a relevant requirement unless they reasonably believed that the disclosure was lawful or that the information had already and lawfully been made available to the public.[673]

The MLRs, cryptoassets and DAOs

6.15 The Government has identified cryptoassets as capable of being used for the purposes of money laundering and terrorist financing. The joint HM Treasury and Home Office national risk assessment of money laundering and terrorist financing (published in 2020) stated:

> Overall, the cryptoasset ecosystem has developed and expanded considerably in the last 3 years, leading to an increased money laundering risk, with criminals increasingly using and incorporating them into their money laundering methodologies. [674]

6.16 The authors added that:

> The infrastructure supporting cryptoasset use remains vulnerable to abuse by criminals seeking to clean funds through the purchase and exchange of

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670 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 87.

671 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 87.

672 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 88(1).

673 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, regs 88(3)-(4).

674 *National risk assessment of money laundering and terrorist financing 2020*, p 5, https://assets.publishing.service.gov.uk/media/5fdb34abe90e071be47feb2c/NRA_2020_v1.2_FOR_PUBLICATION.pdf.

cryptoassets. The cryptoasset ecosystem has developed, matured and expanded considerably in the last 3 years, providing additional opportunities for abuse.

Although cryptoassets use by terrorists is not widespread, there is information to suggest that terrorists may be using cryptoassets to finance some terrorist activities. This, combined with the improved accessibility of cryptoassets and the increased ability to mask the destination of funds, means that the risk of terrorist financing through cryptoassets has increased since 2017…[675]

6.17 The national assessment also noted that cryptoassets are seen as particularly vulnerable to use in money laundering because of their pseudonymous nature and the availability of mixers and tumblers or privacy-enhanced cryptoassets known as "privacy coins" which can further obfuscate identification and monitoring. They are also accessible online and have global reach so large amounts of value can be moved quickly across national borders. Uneven regulation in different jurisdictions also allows money launderers to select jurisdictions in which firms facilitating the exchange of cryptoassets are not required to perform thorough due diligence checks on customers and their transactions.[676]

6.18 These observations are made in relation to cryptoassets generally, rather than DAOs and their governance tokens. There is therefore no suggestion in the national risk assessment that DAOs are specifically being targeted or used by those wishing to launder money. Nevertheless, they issue, receive, hold and carry out activities relating to cryptoassets and therefore it is possible that they could be affected by money laundering.

6.19 A DAO could fall within the MLRs as a result of exchanging its own tokens for either money or other cryptoassets if it is acting in the course of a business and carrying on business in the UK. This could occur when issuing tokens to investors, resulting in the DAO being characterised as a cryptoasset exchange provider under the rules. The MLRs would not apply where DAO tokens are issued in exchange for services or airdropped to potential participants. These methods of issuing tokens are commonly used by DAOs to incentivise greater participation in the DAO by rewarding contributors; to pay third parties for services provided to the DAO; and to increase the number and distribution of token holders in order to try to increase decentralisation of the DAO's governance.

6.20 We discuss the application of the MLRs to DAOs in greater detail below by reference to three key questions:

(1) Could a DAO be a "relevant person", specifically, a firm or sole practitioner who is a cryptoasset exchange provider or custodian wallet provider (as defined in regulation 14A of the MLRs?

(2) When is a DAO "acting in the course of a business"?

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675 *National risk assessment of money laundering and terrorist financing 2020*, p 70, https://assets.publishing.service.gov.uk/media/5fdb34abe90e071be47feb2c/NRA_2020_v1.2_FOR_PUBLICATION.pdf.

676 *National risk assessment of money laundering and terrorist financing 2020*, p 71.

(3) When is a DAO carrying on business in the UK?

6.21 At the time of finalising this scoping paper, only 44 cryptoasset businesses had successfully registered with the FCA under the MLRs,[677] with many applicants having failed.[678] None of the registered cryptoasset businesses appear to be presenting themselves as DAOs.[679] It is not known whether any failed or pending applicants are DAOs. However, a DAO with users or members in the UK but which has not established a legal entity in this jurisdiction may well take the view that it is not operating in the UK and so not required to register with the FCA.

Could a DAO be a "relevant person", specifically, a firm or sole practitioner who is a cryptoasset exchange provider or custodian wallet provider?

Is a DAO a firm or sole practitioner?

6.22 "Cryptoasset exchange provider" and "custodian wallet provider" are both defined in the MLRs as a "firm or sole practitioner who by way of business provides" the services listed in Regulation 14A. Although it is the activities that are the focus of regulation, there still has to be a firm or sole practitioner carrying them out. The first uncertainty for a DAO is therefore whether the part of the DAO that is carrying out the role of cryptoasset exchange provider or custodian wallet provider is a firm or sole practitioner.

6.23 "Firm" is defined relatively broadly as "any entity that, whether or not a legal person, is not an individual and includes a body corporate and a partnership or other unincorporated association".[680] If the DAO is a hybrid arrangement and an incorporated legal entity is carrying out the relevant activity then it will fall within the MLRs as a "firm". However, in the case of a pure DAO, we are again required to consider the question of legal characterisation and whether the relevant part of the DAO is a general partnership, an unincorporated association or just a series of contractual relationships among individuals.

6.24 Where it is a general partnership, it will fall within the MLRs as a "firm". The term "unincorporated association" is, however, undefined. Given that the MLRs apply to a firm providing certain services *by way of business* (our emphasis) it therefore appears that "unincorporated association" is not restricted to non-business arrangements, as that term is sometimes used. Instead, it appears to be used in these regulations as a catch all residual category of organisation referring to arrangements that are not incorporated entities or partnerships but are something more than a group of disparate individuals.[681] If the DAO is simply a collection of individuals, it is also possible that all

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677 With one further operating under temporary registration. A current list is available at: https://register.fca.org.uk/s/search?predefined=CA.

678 Nikhil Rathi, FCA CEO, "Critical issues in financial regulation: The FCA's perspective", speech delivered 26 April 2022, https://www.fca.org.uk/news/speeches/critical-issues-financial-regulation-fca-perspective.

679 Having checked the FCA's register against the list of 2,443 maintained at https://deepdao.io/organizations.

680 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 3.

681 In Chapter 3, we discuss a description of an unincorporated association as (broadly) a group of people who have agreed a set of rules to collaborate for a purpose other than a common business purpose. We also

or some of the participants could be sole practitioners for the purposes of the MLRs.[682]

6.25 These uncertainties do not in our view prevent the MLRs from applying to the activities of DAOs. However, liability for compliance with the MLRs would have to be determined on a case-by-case basis and the answer would depend on statutory interpretation as well as the facts of the case.

When is a DAO a "cryptoasset exchange provider"?

6.26 A DAO could fall within the MLRs as a result of exchanging its own tokens for either money or other cryptoassets if it is acting in the course of a business and carrying on business in the UK. This could occur when issuing tokens to investors, resulting in the DAO being characterised as a cryptoasset exchange provider under the rules.

6.27 Under Regulation 14A(1) of the MLRs, a "cryptoasset exchange provider" is defined broadly as:

> A firm or sole practitioner who by way of business provides one or more of the following services, including where the firm or sole practitioner does so as creator or issuer of any of the cryptoassets involved, when providing such services—
>
> (a) exchanging, or arranging or making arrangements with a view to the exchange of, cryptoassets for money or money for cryptoassets,
>
> (b) exchanging, or arranging or making arrangements with a view to the exchange of, one cryptoasset for another, or
>
> (c) operating a machine which utilises automated processes to exchange cryptoassets for money or money for cryptoassets.

6.28 A cryptoasset is defined in Regulation 14A(3) the MLRs as:

> a cryptographically secured digital representation of value or contractual rights that uses a form of distributed ledger technology and can be transferred, stored or traded electronically … [which] includes a right to, or interest in, the cryptoasset.[683]

6.29 DAO tokens are "cryptographically secured digital representations"; they almost always use a form of distributed ledger technology; and they can be stored electronically. The main question therefore is whether the token is a "representation of

note that this is not the only way the term unincorporated association is understood and that it is sometimes used as a residual category of organisation referring to arrangements that are not incorporated entities or partnerships but are something more than a group of disparate individuals. We discuss this further from para 3.70.

682 This would mean they would all individually have to be registered with the Financial Conduct Authority.

683 Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 14A(3).

value or contractual rights". In most, if not all cases, a governance token is likely to meet this broad test, although there is no authority or direct guidance on this point.[684]

6.30 This can be illustrated with two hypothetical examples:

(1) InvestDAO enables participants to invest in blockchain-based projects. Investors transfer third-party tokens to a DAO's treasury in exchange for DAO tokens which give them governance rights in the DAO and also a share of any profits made from the investments the DAO makes. These tokens would meet the test for cryptoassets. They represent value, and they might also represent contractual rights.

(2) FundraiserDAO raised funds for a conflict zone by auctioning an NFT. In return, donors received a $DONOR token representing a fraction of the ownership of the NFT. There is no barrier to a secondary market developing in the tokens, and those tokens give holders voting rights on a range of matters including future sales of the NFT. If a secondary market develops, $DONOR tokens are bound to represent value. Even if they do not, they might represent contractual rights to vote.

6.31 The FCA guidance stresses that the regulatory definition of "cryptoasset exchange provider" captures those issuing new cryptoassets, such as initial coin offerings or initial exchange offerings.[685] As Regulation 14A(1) puts it, the definition includes "the creator or issuer of any of the cryptoassets involved", if the issuer exchanges the assets for either money or other cryptoassets. The two examples discussed above (InvestDAO and FundraiserDAO) would both meet this definition.

6.32 In some cases, however, tokens may be issued to employees or participants in return for services. It appears that this would not fall within the definition of a "cryptoasset exchange provider". The Joint Money Laundering Steering Group (JMLSG) notes that:

> the issuance of cryptoassets or their acceptance in return for goods, services, rights or actions is likely to fall outside the scope of regulation. This may, for example, be the case where cryptoassets are issued in return for click-throughs or product reviews or where they are accepted in payment for goods or services. [686]

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684 HM Treasury and JMLSG consider that this definition includes, but is not limited to, "exchange tokens", "security tokens" and "utility tokens". For descriptions of these three types of token, see HM Treasury, "Transposition of the Fifth Money Laundering Directive: consultation" (April 2019) para 2.22: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/795670/20190415_Consultation_on_the_Transposition_of_5MLD__web.pdf.

685 See https://www.fca.org.uk/firms/financial-crime/cryptoassets-aml-ctf-regime. See also HM Treasury, *Transposition of the Fifth Money Laundering Directive: response to the consultation* (January 2020), pp 5-10: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/860491/5MLD_Consultation_Response.pdf.

686 *JMLSG Guidance, Part II: Sectoral guidance* (2023), para 22.13: https://www.jmlsg.org.uk/guidance/current-guidance/. The JMLSG is a private sector body that is made up of UK Trade Associations in the financial services industry.

6.33 JMLSG guidance notes that the "FCA will have regard to the policy objectives of the legislation as well as the definition itself" and stresses that each will be decided on a "case-by-case basis."[687]

When is a DAO a "custodian wallet provider"?

6.34 A crypto wallet provider provides a means for holding, storing and transferring cryptoassets,[688] for example, through access to a software application or platform. It takes custody of private keys on behalf of customers, and therefore has full control over the cryptoassets. A non-custodial wallet will leave the customer with control and responsibility for managing their own private key and crypto holdings.

6.35 Under Regulation 14A(2), a "custodian wallet provider" is defined as:

> a firm or sole practitioner who by way of business provides services to safeguard, or to safeguard and administer—
>
> (a) cryptoassets on behalf of its customers, or
>
> (b) private cryptographic keys on behalf of its customers in order to hold, store and transfer cryptoassets,
>
> when providing such services.

6.36 The MLRs will therefore only apply to a custodian wallet provider that is safeguarding cryptoassets or private keys. Custodian wallet providers who simply provide software that allows customers to safeguard their own cryptoassets or private keys will not be within scope. It is only those providers who take responsibility for the protection of the cryptoassets or private keys that will have to comply with the MLRs.

6.37 A DAO is likely to hold cryptoassets in its treasury and these could be held on behalf of all participants. However, DAOs would not generally safeguard tokens for participants or retain/safeguard token holders' private keys. There is therefore nothing inherent in the nature of a DAO that makes it likely to meet the definition of a custodian wallet provider.

When is a DAO "acting in the course of business"?

6.38 The FCA has provided only brief guidance on its website as to when it considers an activity is carried out by way of business. It states that the following factors will be considered:[689]

- **Commercial element**: we will consider matters to assess whether the individual or organisation advertises, acts or holds itself out in such a way that suggests

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687 *JMLSG Guidance, Part II: Sectoral guidance* (2023), paras 22.11-22.13, in particular 22.13: https://www.jmlsg.org.uk/guidance/current-guidance/. The JMLSG sets out a number of activities likely or unlikely to fulfil the definition, but these are of limited use in the context of DAOs.

688 A DAO token appears to be a cryptoasset within the definition in the MLRs. We discuss this from para 6.28.

689 See Financial Conduct Authority, "Cryptoassets: AML / CTF regime - Registering with the FCA" (31 January 2024): https://www.fca.org.uk/cryptoassets-aml-ctf-regime/register.

that they are providing services by way of business related to cryptoasset services.

- **Commercial benefit**: we will consider matters to assess whether the individual or organisation receives direct or indirect benefit from this service.

- **Relevance to other business**: it is possible that cryptoasset services form only part of the overall business activities. We will consider matters to assess the significance of the cryptoasset asset service in relation to other services.

- **Regularity/frequency**: we will also consider matters to assess whether the frequency of carrying on a cryptoasset service suggests that it is being carried on as a business.

6.39 As discussed above, the MLRs extend to a cryptoasset exchange provider or custodian wallet provider that is a sole practitioner, body corporate, partnership or unincorporated association acting in the course of business. The term "unincorporated association" is not defined but appears not to be restricted to non-business arrangements. If a DAO is not a general partnership (because it does not satisfy the requirements under the Partnership Act), it could nevertheless still potentially be "acting in the course of business" and therefore fall within the MLRs in the residual category of "unincorporated association".

When is a DAO carrying on business in the UK?

6.40 A DAO will only be caught by the MLRs if it is acting in the course of business carried on by it in the UK.[690] Regulation 9(3) serves as a specific extension to the test in regulation 8 and provides that a relevant person (A) will be regarded as carrying on business in the UK, even if they would not otherwise be regarded as doing so, if:

> (a) A's registered office (or if A does not have a registered office, A's head office) is in the United Kingdom; and
>
> (b) the day-to-day management of the carrying on of A's business is the responsibility of—
>
> (i) that office, or
>
> (ii) another establishment maintained by A in the United Kingdom.

6.41 JMLSG guidance states that the application of the MLRs will be considered by the FCA on a case-by-case basis and is likely to differ for different business models. It suggests that, in most cases, the need for registration will be "triggered by the firm having a physical presence in the UK through which business is conducted". However, other factors may be considered. The fact that a firm has UK clients is unlikely, without

[690] Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, reg 8.

more, to mean that it would fall within the jurisdictional scope of the MLRs.[691] The FCA has further elaborated on this on its website, explaining that:

> Where the business has no UK office or other activity in the UK, beyond simply having a client in the UK, we are likely to consider that the business firm is not carrying on UK business. For example, if a cryptoasset exchange, registered in a jurisdiction other than the UK, and which has no offices or agents in the UK but nevertheless permits UK customers to open trading accounts and permits them to buy/sell/hold cryptoassets; we would not automatically consider that as business being carried on in the UK.[692]

6.42 We note that use of language like "office" and "establishment maintained by A" is more relevant to traditional businesses than DAOs, some of which exist largely on-chain. A hybrid arrangement may have a registered office in the UK but the relevant legal entity may just be used for a discrete part of the DAO's activities (for example, holding IP), rather than for carrying out day to day management activity of the whole DAO. A pure DAO is unlikely to have a physical office in the UK but it may have participants based in the UK who are involved in day to day management.

DAOs and MLRs: policy considerations

6.43 We think that the Government should consider whether the current scope of the MLRs effectively mitigates the risk of money laundering via DAOs in this jurisdiction. There are a number of policy considerations which we think will be relevant to any analysis and any potential revision of the rules in the future.

6.44 There is a policy question as to whether the regulations should cover activities carried out by a DAO with participants in multiple jurisdictions if some or a majority of them are in the UK, but the DAO does not have a registered or head office in the UK. If this is desirable, then the regulations will need to be revisited to provide for a broader extent. While this may be desirable from a policy perspective, this could still prove challenging from a compliance and enforcement perspective. It would be necessary to monitor the location of participants and it is possible that as participants change, the DAO could come in and out of scope of the MLRs depending on the drafting. While this is a possibility for any business, DAO tokens can change hands multiple times in a day so the location of the DAO may change more often than a business would usually change its head office or main place of business.

6.45 The existing rules are limited to businesses based in the UK, presumably because traditionally these were the most likely access points for laundered money to enter the UK economy. With cryptoassets it is the on-chain ecosystem that is impacted by laundered money in the first instance, however, there can be cross over into off-chain activities and assets. When looking at regulation of cryptoasset activity, one concern is that DeFi can become intertwined with traditional finance, and that on-chain financial services and systems could negatively impact real world economies.

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691 *JMLSG Guidance, Part II: Sectoral guidance* (2023), para 22.21: https://www.jmlsg.org.uk/guidance/current-guidance/.

692 See Financial Conduct Authority, "Cryptoassets: AML / CTF regime - Registering with the FCA" (31 January 2024): https://www.fca.org.uk/cryptoassets-aml-ctf-regime/register.

6.46 There is also a policy question as to whether DAOs that are not involved in some kind of business activity should nevertheless be caught by the MLRs. DAO tokens can be used by token holders to make a personal profit through activities such as staking. These personal profits can be achieved regardless of whether the DAO itself is a business or operating for a commercial reason. It is not clear whether this would be regarded by the FCA as an "indirect benefit" and potentially still "in the course of business". The tokens may also enter the wider cryptoasset ecosystem and be exchanged or used as collateral, thereby allowing laundered money to enter that ecosystem and be used to create profits.

6.47 We have discussed above the requirements on businesses that fall within the scope of the MLRs. These include carrying out risk assessments and customer due diligence, as well as having policies, controls and procedures in place to mitigate and manage the risk of money laundering.[693] Some of these requirements challenge key ideological characteristics of DAOs: pseudonymous participation and decentralisation. As we have seen in Chapter 5, some stakeholders have suggested that DAOs avoid carrying on their business from the UK because of the onerous requirements of the anti-money laundering rules and/or the clash between those requirements and the ideological characteristics of DAOs.

6.48 We do not suggest that DAOs should be exempted from anti-money laundering oversight simply because some aspects of their ideology make compliance with the existing regime difficult and difficult to monitor/enforce. Instead, there may be other ways to achieve the policy goals in this area. In our call for evidence we gave the example of Binance Account Bound tokens which are non-transferrable identity credentials for Binance users that have passed KYC.[694] We also noted the suggestion of Pauwels, Pirovich, Braunz, and Deeb, that by using zero-knowledge proof based crypto-tokens,[695] it may be possible to apply existing KYC concepts to software protocols without compromising the premise of simultaneously providing the requested (regulatory) transparency as well as fully protecting user privacy.[696]

6.49 We think that Government could consider the efficacy and suitability of alternative approaches to anti-money laundering regulation which seek to achieve the same policy objectives as the MLRs. We do not suggest that a new regime should be developed specifically for DAOs. The alternative approaches considered, including technological approaches, could be made available to anyone falling within the anti-money laundering regime, including legal entities seeking to make more use of digital technologies.

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693 Discussed from para 6.12.

694 Further information about Binance Account Bound tokens is available here: https://www.binance.com/en/babt.

695 A zero-knowledge proof is a cryptographic method of proving to a party that you possess some knowledge without actually revealing the underlying information. This could be applied to verify a participant's identity or certain aspects of their identity (for example, their age) without having to share or reveal personal information.

696 P Pauwels, J Pirovich, P Braunz, and J Deeb, "zkKYC in DeFi" (2022) 321 Crypto ePrint Archive: https://eprint.iacr.org/2022/321.

6.50 The global challenge represented by money laundering is well recognised and this jurisdiction, along with others, already works on cross-border initiatives and cooperation. We think that there may be scope for revisiting and potentially expanding the extra-territorial reach of the MLRs to catch more activities that have an impact in the UK.[697] In addition, we are not aware of any work specifically considering the role DAOs (and in particular, their tokens) may play in money laundering and terrorist financing across different jurisdictions and how this could be effectively mitigated. We think that this could be a useful topic for consideration at an international level.

Next steps

6.51 Government should consider reviewing the efficacy and suitability of alternative approaches to anti-money laundering regulation, including technological approaches.

6.52 There may be scope for revisiting and potentially expanding the extra-territorial reach of the Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 to catch more activities that have an impact in the UK.

6.53 It may be beneficial for international initiatives aimed at understanding and combatting money laundering and terrorist financing to consider the role that DAOs play in these areas.

Financial promotions framework

6.54 The restrictions on financial promotions are set out in section 21(1) of the Financial Services and Markets Act 2000 (FSMA) and the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (2005 order).[698] They are intended to ensure that promotions relating to certain investments are clear, fair and not misleading.

6.55 Section 21 of FSMA tightly controls who can make promotions relating to investments. A person must not, in the course of business,[699] communicate[700] an invitation or inducement to "engage in an investment activity"; this is referred to as "a financial promotion".[701] However, the restrictions on financial promotions do not apply if they are made by an "authorised person" or the content of the communication is approved for the purposes of section 21 by an authorised person.[702] Further, a communication

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697 As discussed further below, the current and proposed financial promotions/cryptoasset regulatory regime has a slightly broader extra-territorial reach.

698 Details of the promotions which are caught by the framework are contained in COBS 4, which also contains rules and guidance.

699 PERG 8.5 provides detailed guidance about the meaning of this term.

700 "communicate" includes causing a communication to be made: Financial Services and Markets Act 2000, s 21(13).

701 PERG 8.3.2 G and FCA Handbook Glossary definition of "financial promotion".

702 Financial Services and Markets Act 2000, ss 21(1)(a) and (2).

which would otherwise be subject to the restrictions on financial promotions may not be so restricted if it is covered by one (or more) of the many exemptions listed in the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005.[703]

6.56 Engaging in investment activities broadly refers to entering, or offering to enter into, an agreement, the making or performance of which by either party constitutes a controlled activity or exercising any rights conferred by a controlled investment to acquire, dispose of, underwrite or convert a controlled investment.[704] Controlled investments include subject matter such as shares, options, futures and contracts for differences.[705] Controlled activities include taking actions relating to such controlled investments, such as dealing in securities and arranging deals in investments.[706]

6.57 Recently, the 2005 order was amended to extend the financial promotions framework to include "qualifying cryptoassets", and dealing in qualifying cryptoassets.[707] Following this extension the FCA published a policy statement (PS23/6 (Financial promotion rules for cryptoassets)) setting out its policy position in relation to financial promotion rules for cryptoassets and near final Handbook rules for cryptoasset financial promotions.[708] The FCA has now published its final guidance for cryptoasset financial promotions (Finalised non-handbook guidance on Cryptoasset Financial Promotions) which provides information on, and sets out the FCA's expectations of, the communication and approval of financial promotions for qualifying cryptoassets. The guidance does not create new obligations for firms but relates to firms' existing regulatory obligations. It also sets out the FCA's views of how firms may approach ensuring that financial promotions relating to qualifying cryptoassets comply with the FCA's rules as set out in its policy statement PS23/6 (Financial promotion rules for cryptoassets).[709]

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703 SI 2005 No 1529. The exemptions are created pursuant to Financial Services and Markets Act 2000, s.21(5). Notably, there is an exemption relevant to certain promotions of qualifying cryptoassets (SI 2005 No 1529, reg73ZA).

704 Financial Services and Markets Act 2000, s.21(8).

705 PERG 8.7.3 G.

706 See part 1 of schedule 1 to the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, SI 2005 No 1529.

707 Financial Services and Markets Act 2000 (Financial Promotion) (Amendment) Order 2023, SI 2023 No 612. For further information about the extension of the rules to cover cryptoassets, see https://www.fca.org.uk/publications/policy-statements/ps23-6-financial-promotion-rules-cryptoassets.

708 Financial Conduct Authority, *Policy Statement PS23/6, Financial promotion rules for cryptoassets* (June 2023): https://www.fca.org.uk/publication/policy/ps23-6.pdf.

709 Financial Conduct Authority, F*G23/3 Finalised non-handbook guidance on Cryptoasset Financial Promotions* (November 2023): https://www.fca.org.uk/publications/policy-statements/ps23-6-financial-promotion-rules-cryptoassets.

6.58 A "cryptoasset" is defined for the purposes of the financial promotions regime broadly as:[710]

> any cryptographically secured digital representation of value or contractual rights that—
>
> (a) can be transferred, stored or traded electronically, and
>
> (b) uses technology supporting the recording or storage of data (which may include distributed ledger technology).

6.59 A "qualifying cryptoasset" is a cryptoasset which is "fungible" and "transferable".[711] The circumstances in which a cryptoasset will be treated as transferable include where it confers transferable rights, or a communication made in respect of the cryptoasset describes it as being transferable or conferring transferable rights.[712] However, some cryptoassets are excluded from the definition of a "qualifying cryptoasset", including: certain controlled investments; electronic money; and cryptoassets which are not readily transferable without redemption with the issuer and can only be used to acquire goods or services in a limited way.

6.60 The FCA has produced guidance about when certain communications will be a financial promotion. It has noted that the concept is intentionally very broad and can take many forms, including adverts placed in print, broadcast or online media, marketing brochures, emails, websites, blog posts, apps or social media posts (including, for example, on YouTube, Reddit, X, Discord and Telegram).[713]

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710 See Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, SI 2005 No 1529, sch 1, para 26F(4). The definition is very similar to that in the MLR, except that the token does not have to use distributed ledger technology. It simply states the representation must use "technology supporting the recording or storage of data (which may include distributed ledger technology)".

711 See Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, SI 2005 No 1529, sch 1, para 26F(1). Transferability includes where a cryptoasset confers transferable rights or a communication relating to the cryptoasset describes it as such: Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, SI 2005 No 1529, sch 1, para 26F(2). The definition is very similar to that in the MLR, except that the token does not have to use distributed ledger technology. It simply states the representation must use "technology supporting the recording or storage of data (which may include distributed ledger technology)".

712 See Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, SI 2005 No 1529, sch 1, para 26F(2).

713 Financial Conduct Authority, *FG23/3 Finalised non-handbook guidance on Cryptoasset Financial Promotions (*November 2023) paras 2.13 and 2.70 (FG23/3 provides guidance on applying the FCA's financial promotion rules outlined in COBs 4); Financial Conduct Authority, "Firms' preparations to comply with the cryptoasset financial promotions regime – feedback on good and poor practice" (last updated 25 November 2023), https://www.fca.org.uk/publications/good-poor-practice/firms-preparations-cryptoasset-financial-promotions-regime. For further guidance about what constitutes an invitation or inducement see PERG 8.4 (PERG 8 focuses specifically on defining the scope of the financial promotion perimeter). For guidance about how financial promotions should be communicated in social media see Financial Conduct Authority*, FG24/1 Finalised guidance on financial promotions on social media* (March 2024): https://www.fca.org.uk/publications/finalised-guidance/fg24-1-finalised-guidance-financial-promotions-social-media.

6.61 Any permitted promotion must meet the requirements set out in FCA rules.[714] For example, the promotion must carry a prominent risk warning. Whilst the required text of the warning might vary depending on the product to which the promotion relates and the medium on which it is made, the standard risk warning is as follows:

> Don't invest unless you're prepared to lose all the money you invest. This is a high-risk investment and you are unlikely to be protected if something goes wrong. Take 2 mins to learn more.[715]

6.62 First-time investors with a specific firm must also be given a 24-hour cooling-off period and before an application or order for a qualifying cryptoasset can be processed a firm must assess the specific investment as appropriate for the consumer. This involves assessing that the consumer has the necessary experience and knowledge to understand the risks involved in relation to the specific product or service offered or demanded. Furthermore, there is a ban on incentives, such as "refer a friend" or new joiner bonuses.[716] The FCA explains that this does not prevent including features or benefits that are part of the terms and conditions associated with a particular cryptoasset:

> For example, cryptoassets that serve to provide the owner with voting rights, and which are used for the purpose of establishing governance arrangements for a particular platform or project would not be considered an incentive.[717]

6.63 A person who promotes cryptoassets to UK customers in contravention of the prohibition in section 21 of FSMA may commit a criminal offence punishable by an unlimited fine and/or up to 2 years imprisonment. However, it is a defence if they can show that they took all reasonable precautions and used all due diligence to avoid committing the offence.[718]

Territorial scope

6.64 The framework covers all financial promotions capable of having an effect in the UK. This can include communications originating outside the UK if they are capable of having an effect in the UK.[719] Financial promotions do not need to be specifically directed at UK consumers to be capable of having effect in the UK. However, the framework does not apply to a communication that is made to a person who receives

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714 Financial Conduct Authority, *FG23/3 Finalised non-handbook guidance on Cryptoasset Financial Promotions* (November 2023).

715 For further information about risk warnings, see Financial Conduct Authority, "Policy Statement PS23/6, Financial promotion rules for cryptoassets", para 3.4: https://www.fca.org.uk/publication/policy/ps23-6.pdf

716 The FCA is currently consulting on amendments to the ban on offering incentives to invest in high-risk investments, including as to how this would affect financial promotions of cryptoassets: FCA Quarterly Consultation, No 40, June 2023.

717 Financial Conduct Authority, "Policy Statement PS23/6, Financial promotion rules for cryptoassets", p 24: https://www.fca.org.uk/publication/policy/ps23-6.pdf.

718 Financial Services and Markets Act 2000, s 25.

719 Financial Services and Markets Act 2000, s21(3).

the communication outside the UK or a communication that is directed only at persons outside the UK.[720]

6.65 The FCA has provided guidance about this exemption and how it may apply when promotions are made via websites and different media.[721] It has noted that some firms making global communications have put measures in place to prevent communicating promotions to UK consumers, including geo-blocking and other location-based controls to prevent UK customers from accessing promotions. Know your customer (KYC), anti-money laundering and onboarding checks have also been used to ensure that UK consumers cannot subscribe to products that were not intended to be promoted or sold in the UK.[722]

6.66 Prior to the regime being extended to cryptoassets, the FCA carried out a review of the preparations cryptoassets firms were making, including those that operate internationally. The FCA has demonstrated its intention to look beyond the UK and has also clearly stated its intention to exercise its enforcement powers to the full extraterritorial extent permitted by the rules. In a press release ahead of the new rules coming into effect for cryptoassets, it stated:

> We are concerned by the failure of many overseas and unregulated crypto firms to engage with us on the new rules. Come 8 October, we will be taking action against firms illegally marketing to UK consumers.[723]

Impact upon a DAO promoting its own tokens to UK investors

6.67 Section 21 of FSMA provides that a "person" must not, in the course of business, communicate an invitation or inducement to engage in an investment activity. "Person" is not defined in the Act, however, the Interpretation Act 1978 clarifies that "person" includes any "body of persons corporate or unincorporate.[724] This appears to be broad enough to cover a DAO whatever its legal characterisation, even though it may be less certain exactly which participants bear the obligations. "In the course of business" has its ordinary or natural meaning. The FCA has stated that it considers that this requires a commercial interest on the part of the communicator but this does not necessarily have to be a direct interest. It has also stated that the test is intended to exclude genuine non-business communications such as friends talking in a pub or

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720 The exemption for communications to overseas recipients are contained in Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, SI 2005 No 1529, art 12. The exemption for unsolicited real time communications is more restricted and will only apply if a communication is made from outside the UK and is made for the purposes of a business which is carried on outside the United Kingdom. See also PERG 8.8.1 G and 8.8.2 G.

721 See PERG 8.12.2 G – 8.12.8 G.

722 Financial Conduct Authority, *Firms' preparations to comply with the cryptoasset financial promotions regime – feedback on good and poor practice* (15 November 2023): https://www.fca.org.uk/publications/good-poor-practice/firms-preparations-cryptoasset-financial-promotions-regime.

723 Press Release: *FCA sets expectations ahead of incoming crypto marketing rules* (7 September 2023): https://www.fca.org.uk/news/press-releases/fca-sets-expectations-ahead-incoming-crypto-marketing-rules.

724 Interpretation Act 1978 sch 1.

e-mails sent by individuals using an internet chat-room or bulletin board for personal reasons.[725]

6.68 The financial promotion rules and associated guidance do not mention DAOs, DAO governance tokens, or persons marketing tokens to be used to participate in a DAO. However, a relevant financial promotion for a DAO could be an invitation or inducement to an investor to buy qualifying cryptoassets. DAO governance tokens will be considered cryptoassets if they represent value or contractual rights and are "fungible" and "transferable", especially if they can be transferred or sold in exchange for money or other cryptoassets.[726] Where a DAO's tokens provide rights and obligations akin to investments like a share or debt instrument, they may fall within the financial services regime as securities. We discuss this further below in the context of wider financial services regulation.

6.69 For a DAO whose tokens fall within the financial promotion framework, it is likely to affect how it advertises and promotes its own tokens to UK investors where these communications can be said to be in the course of business and fulfil the other criteria in section 21 FSMA. For these purposes, it does not matter that the DAO is based overseas or has no single jurisdictional base. Given the informality with which some DAOs communicate with the wider crypto ecosystem and potential participants, this may be a step change for them.

6.70 The DAO could attempt to become an authorised person in its own right in order to make the communication itself. To be authorised, it would need to carry out a regulated activity that requires authorisation and fulfil the necessary threshold conditions. If the DAO does not wish to become an authorised person, there are two other ways in which it can comply. It can:

(1) obtain approval for the content of the communication from an authorised person;[727] or

(2) register with the FCA under the MLRs. There is a special exemption if the promotion is communicated by (or on behalf of) a cryptoasset business registered in this way.[728]

The regulated activities framework

6.71 Section 19 of FSMA contains a "general prohibition" that no person may carry on a regulated activity in the UK unless they are either authorised (by the FCA or the

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725 PERG 8.5.1G and 8.5.2G. See PERG 8.5 for further guidance on the term "in the course of business".

726 Where tokens cannot be transferred for money or other cryptoassets, there is a limited exemption if the asset can only be used to acquire goods or services from the issuer; or from a limited network of service providers; or only for a very limited range of goods or services. See Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, SI 2005 No 1529, Sched 1, para 26F(3)(e).

727 As to which, see Financial Conduct Authority Policy Statement PS23/13*, Introducing a gateway for firms who approve financial promotions* (September 2023).

728 Financial Services and Markets Act 2000 (Financial Promotion) Order 2005, SI 2005 No 1529, art 73ZA. "Registered person" is defined in art 73ZA to include a cryptoasset exchange provider or custodian wallet provider, as defined in regulation 14A of the Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692, and included on the registered maintained by the FCA pursuant to regulation 54(1A) of those Regulations, and not otherwise an authorised person.

Prudential Regulatory Authority, depending on the activity) or exempt. Generally speaking, an activity is a regulated activity for the purposes of FSMA if it is "an activity of a specified kind which is carried on by way of business and … relates to an investment of a specified kind".[729]

6.72 The specified activities and investments are set out in schedule 2 to FSMA and in the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 (the RAO).[730] These include accepting deposits, managing investments, dealing in investments as agent and establishing, operating or winding up a collective investment scheme. A person who is not authorised or exempt and who carries out a regulated activity is guilty of an offence.[731]

6.73 A DAO could be subject to the regulated activities framework if it is offering financial services to users of its product / system. DAOs are often used to carry out DeFi activities and discussions about DAO regulation often include discussion of financial regulation.[732] "Person" is not defined in the rules; however, the Interpretation Act 1978 clarifies that "person" includes any "body of persons corporate or unincorporate".[733] This appears to be broad enough to cover a DAO whatever its legal characterisation. Where a DAO is carrying out financial services in the UK, it may be undertaking a regulated activity by way of business by making a financial services product or system available to users. As a result, the DAO would need to be authorised to carry out the activity,[734] and, if it was so authorised, comply with any rules imposed on carrying out that activity. This regulated business or activity is separate to the governance level activity of a DAO. This would be the same for a traditional organisation.

6.74 Take for example a limited company. If it offers financial services that fall within the regulated activities framework, it will be conducting a regulated activity and in consequence require authorisation and need to follow any relevant regulatory rules. If the company runs a coffee shop, for example, it will not be subject to the regulated activities framework. Whether or not its activities fall within the framework, the company will also be subject to the rules under the Companies Act 2006 and other applicable law relating to companies. These will apply to the organisation at governance level. In much the same way, DAOs may be conducting regulated activities within the meaning of the regulated activities framework because of the nature of their activities at the product / system level, but this does not mean that DAOs' activities will be regulated simply because they are DAOs or because they issue tokens.

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729 Financial Services and Markets Act 2000, s 22(1)(a). Some regulated activities can be carried on in relation to 'property of any kind': Financial Services and Markets Act 2000, s 22(1)(b). See also PERG 2, which provides guidance to unauthorised persons who wish to find out whether they need to be authorised and, if so, what regulated activities their permission needs to include; and to authorised persons who may have questions about the scope of their existing permission.

730 SI 2001 No 544.

731 Financial Services and Markets Act 2000, ss 19 and 23.

732 We gave a brief description of DeFi from para 2.28.

733 Interpretation Act 1978 sch 1.

734 Financial Services and Markets Act 2000, Part 4A.

6.75 DAOs may be involved in financial activities in relation to cryptoassets. The framework does not specifically mention cryptoassets and has not (yet) been extended to include "qualifying cryptoassets" as the financial promotion rules have been.[735] However, some cryptoassets already fall within the regime: the FCA has provided guidance clarifying that some e-money tokens and security tokens are "specified investments",[736] as are cryptoassets that are units in a CIS.[737] Activities relating to those cryptoassets may therefore be regulated activities.

Regulated tokens

6.76 The FCA has identified the following types of tokens.[738]

(1) Regulated tokens:

(a) Security tokens: broadly, tokens with specific characteristics that provide rights and obligations akin to specified investments,[739] like a share or a debt instrument. Regulated activities involving specified investments, including security tokens, fall within the regulated activities framework and therefore require authorisation by the FCA.

(b) E-money tokens: tokens that meet the definition of e-money under the Electronic Money Regulations 2011. Issuing e-money is regulated under the Regulations, but is also a regulated activity under FSMA when it is carried on by credit institutions, credit unions and municipal banks. Market participants that carry on regulated activities involving e-money tokens will need to ensure they have the correct permissions and follow the relevant rules and regulations.[740]

(2) Unregulated tokens: broadly, any token that is not a security token or an e-money token, including:

(a) utility tokens: these provide consumers with access to a current or prospective service or product and often grant rights similar to pre-payment vouchers. In some instances, they might have similarities with, or be the same as, rewards-based crowdfunding; and

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735 A "qualifying cryptoasset" is a cryptoasset which is "fungible" and "transferable". We discuss this definition and how it applies to the financial promotion rules under Financial Services and Markets Act 2000 from para 6.58.

736 Financial Conduct Authority, *Guidance on Cryptoassets, Feedback and Final Guidance to CP 19/3 Policy Statement PS19/22* (July 2019), from p 40, https://www.fca.org.uk/publication/policy/ps19-22.pdf.

737 Financial Conduct Authority, *FG23/3 Finalised non-handbook guidance on Cryptoasset Financial Promotions* (November 2023) para 2.19.

738 Financial Conduct Authority, *Guidance on Cryptoassets, Feedback and Final Guidance to CP 19/3 Policy Statement PS19/22* (July 2019), Appendix 1: https://www.fca.org.uk/publication/policy/ps19-22.pdf.

739 Defined in Financial Services and Markets Act 2000 and the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001, SI 2001 No 544.

740 Financial Conduct Authority, *Guidance on Cryptoassets, Feedback and Final Guidance to CP 19/3 Policy Statement PS19/22* (July 2019), Appendix 1, para 3: https://www.fca.org.uk/publication/policy/ps19-22.pdf.

(b) exchange tokens: these are used in a way similar to traditional fiat currency. However, while exchange tokens can be used as a means of exchange, they are not currently recognised as legal tender in the UK, and they are not considered to be a currency or money.

6.77 It is possible that the governance tokens issued by some DAOs could constitute security tokens. In some ways, governance tokens might look like company shares in that they may be issued in exchange for investment into the DAO, and give corresponding voting rights. Depending on the particular organisation, they may also come with other rights and obligations including potentially a right to profit distributions. The FCA has further explained:[741]

> We consider a security to refer broadly to an instrument (i.e. a record, whether written or not) which indicates an ownership position in an entity, a creditor relationship with an entity, or other rights to ownership or profit. Security tokens are securities because they grant certain rights associated with traditional securities.

6.78 Whether governance tokens issued by a particular DAO are to be regarded as security tokens can only be determined on a case-by-case basis.[742] This is a complex issue and the FCA has set out a range of things to be considered in making the assessment, including some examples which are instructive.[743]

6.79 Even if the DAO's governance tokens are security tokens, whether FCA authorisation is required will depend on the activities being carried out in relation to them. A DAO's treasury activities involving managing and dealing in investments could involve regulated activities being carried out in relation to security tokens, including where these are its own governance tokens or the tokens of other DAOs. If a DAO involves a business carrying out regulated activities in relation to security tokens – for example, the business of selling and transferring security tokens – it would need to be authorised by the FCA. However, the FCA has noted that simply issuing security tokens is not necessarily regulated:

> Securities issuance is not regulated in the same way we would regulate other market participants (like exchanges, intermediaries and advisers). Issuers of security tokens which are equivalent to shares or debentures would usually not be carrying on a regulated activity but still would need to have regard to other regulatory

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741 Financial Conduct Authority, *Guidance on Cryptoassets, Feedback and Final Guidance to CP 19/3 Policy Statement PS19/22* (July 2019) para 66.

742 Financial Conduct Authority, *Guidance on Cryptoassets, Feedback and Final Guidance to CP 19/3 Policy Statement PS19/22* (July 2019), p 52: https://www.fca.org.uk/publication/policy/ps19-22.pdf.

743 Financial Conduct Authority, *Guidance on Cryptoassets, Feedback and Final Guidance to CP 19/3 Policy Statement PS19/22* (July 2019), p 42. See also p 45: "A specified investment is not contingent on it being purchased for value, and a token can be a security token even if nothing is received for it. So, whether a token is sold at value, or distributed for free via an airdrop will not factor into deciding whether a token is a security token or not": https://www.fca.org.uk/publication/policy/ps19-22.pdf.

obligations such as the Prospectus Directive and Market Abuse Regulation (amongst others). [744]

Collective investment schemes

6.80 One area of particular interest in relation to DAOs is whether a DAO could be a collective investment scheme.

6.81 A CIS is, broadly, an arrangement that involves the participants pooling contributions to collectively invest in property (of any description) so as to participate in or receive profits or income from the property, without participants having day-to-day control over the management of the property.[745] The arrangement must provide for (i) the contributions of the participants and any resulting profits or income to be pooled, and/or (ii) the property to be managed by or on behalf of the scheme's operator.[746] The regulation of CISs may be relevant to a DAO that makes investments in property of any description, including in cryptoassets, and distributes profits or income to token holders. It is possible for a DAO to be a CIS and its tokens could therefore be classed as units in a CIS, which are specified investments. It is not the case that all investment DAOs will necessarily be collective investment schemes as defined in the Act. Any assessment of whether a DAO is a CIS will need to be made on a case-by-case basis.

6.82 A person establishing, operating or winding up a collective investment scheme in the UK will be carrying out a regulated activity under article 51ZE of the RAO and will therefore need to be authorised by the FCA to do so. Breach of this requirement is an offence punishable by either or both of a fine and/or imprisonment for a term of up to two years.[747] Any contract with investors may be voided so the investor recoups the amount invested as if it had not been invested.[748] The rules relating to promotion of CISs will also apply to the DAO. In order for a CIS to be marketed to the general public in the UK, the scheme must be regulated and it can only be promoted by authorised persons.[749]

6.83 A scheme will be a CIS if it falls within the definition at section 235 of FSMA, subject to certain exemptions. The Collective Investment Schemes Order lists several exemptions which may apply to DAOs in some circumstances, but none address them directly.[750] The exemptions relate largely to the subject matter of the investment,

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744 Financial Conduct Authority, *Guidance on Cryptoassets, Consultation Paper CP 19/3* (January 2019), para 3.69: https://www.fca.org.uk/publication/consultation/cp19-03.pdf and Financial Conduct Authority, *Guidance on Cryptoassets, Feedback and Final Guidance to CP 19/3 Policy Statement PS19/22* (July 2019), Appendix 1 para 78 to 81 and from para 84: https://www.fca.org.uk/publication/policy/ps19-22.pdf.

745 See para 6.84 below for definition in the Financial Services and Markets Act 2000, ss 235(1), (2) and (3). See also PERG 9.4.

746 Financial Services and Markets Act 2000, s.235(3).

747 Financial Services and Markets Act 2000, s 23.

748 Financial Services and Markets Act 2000, s 26.

749 Financial Services and Markets Act 2000, s 238.

750 Schedule to the Financial Services and Markets Act 2000 (Collective Investment Schemes) Order 2001, SI 2001 No 1062.

rather than the way in which investment decisions are made, and so the policies underpinning them likely apply with equivalent force to DAOs.

6.84 Section 235 of FSMA defines a collective investment scheme as follows:

> (1) In this Part "collective investment scheme" means any arrangements with respect to property of any description, including money, the purpose or effect of which is to enable persons taking part in the arrangements (whether by becoming owners of the property or any part of it or otherwise) to participate in or receive profits or income arising from the acquisition, holding, management or disposal of the property or sums paid out of such profits or income.
>
> (2) The arrangements must be such that the persons who are to participate ("participants") do not have day-to-day control over the management of the property, whether or not they have the right to be consulted or to give directions.
>
> (3) The arrangements must also have either or both of the following characteristics—
>
> (a) the contributions of the participants and the profits or income out of which payments are to be made to them are pooled;
>
> (b) the property is managed as a whole by or on behalf of the operator of the scheme.

6.85 The definition of a CIS is widely drawn and covers a broad variety of investment arrangements, not just traditional investment funds. As such, it is possible for a CIS to arise inadvertently. The definition has been found to be broad.[751] The general approach is that any cryptoasset which gives a variable return linked to the exercise of management is at risk of being determined a unit in a CIS.

Could a DAO be a CIS?

6.86 The rules around CISs do not refer to DAOs, but the definition of a CIS is technology neutral and the potential use of DAOs as collective investment schemes has long been recognised.[752] We have already noted that it is possible for a DAO to be a CIS, but it is not the case that every investment DAO will be a CIS. We do not provide a full analysis of the law relating to CISs in this paper and how it could apply to any DAO which makes investments. However, we do highlight a few areas where the common characteristics of DAOs could make such an analysis challenging. We note, however, that any assessment would necessarily have to be carried out on a case-by-case basis and consideration of these common characteristics would only be part of any analysis.

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751 *FCA v Asset Land Investment Plc* [2016] 3 All E.R. 93; J Burnie and M Ringer, "Cryptoasset regulation in the United Kingdom" in C Kerrigan, *Crypto and digital assets law and regulation* (1st ed 2024) p 97.

752 See, Dan Awrey, 'Artificial Intelligence versus Human Nature: Protecting Ourselves from the Perils of DAO-based Collective Investment Schemes' (Oxford Business Law Blog, 12 July 2016), https://blogs.law.ox.ac.uk/business-law-blog/blog/2016/07/artificial-intelligence-versus-human-nature-protecting-ourselves.

6.87 A DAO could potentially be arranged with the objectives of a CIS as described in section 235(1) and (3) of FSMA.[753] Participants could invest in the DAO in exchange for governance tokens. Their investments are pooled and used by the DAO to make further investments. The investments generate income which goes to the DAO's treasury and is distributed to token holders as a form of income or profit sharing. Compared to a conventional collective investment scheme, however, the crucial difference with a DAO could be that instead of contracting with a third-party portfolio manager, investment decisions are made on the basis of a smart contract reflecting a pre-determined decision rule.

6.88 An important factor in determining whether a DAO could be a CIS will be whether token holders (as the investors in the scheme) have day-to-day control over the management of the DAO's property, whether or not they have the right to be consulted or to give directions. If they do, then the arrangement is unlikely to be a CIS.[754] There is no one way for an investment DAO to manage its property and therefore this can vary between different DAOs. It seems clear that section 235 could capture cryptoasset investment unit trusts and similar legal structures with a clear fund manager. But it is less obvious how to interpret section 235 in the context of a smart contract driven collective investment scheme. If investment decisions are made according to a smart contract which can be altered by majority decision based on the weighted vote of DAO participants, those participants might be said to retain day-to-day control over the management of the property. The counterargument is that if investment decision rules are largely pre-programmed into the smart contract, then DAO participants can "give directions" but are not exercising day-to-day control. It is possible that the regularity with which the DAO's code is altered for investment purposes may also be relevant.

6.89 There are other situations in which day-to-day control of investments could be taken out of token holders' hands. This could occur where a subset of participants or an individual is responsible for implementing DAO proposals or otherwise holds day-to-day control. Where a trust structure is used by the DAO, trustees may have discretion regarding the operation of the trust and may operate this discretion to profit the token holders. Similarly, in a hybrid arrangement, a legal entity may have day to day control over investment decisions which ultimately provide profits for token holders.

Establishing, operating or winding up a CIS

6.90 If a DAO is a CIS then a person establishing, operating or winding up that DAO in the UK will be carrying out a regulated activity under article 51ZE of the RAO and will therefore need to be authorised by the FCA. "Person" is not defined in the rules, however, the Interpretation Act 1978 clarifies that "person" includes any "body of persons corporate or unincorporate".[755]

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753 See also PERG 9.4.

754 Financial Services and Markets Act 2000, s 235(2).

755 Interpretation Act 1978 sch 1.

6.91 A CIS will typically be structured as one of the following:

(1) A trust arrangement, where the scheme property is held by a trustee for the participants in the scheme (for example, a unit trust).

(2) An open-ended investment company (OEIC), in which investors buy shares.

(3) A limited partnership (or private fund limited partnership), in which investors become partners or acquire partnership interests.

6.92 In these examples, the person carrying out the regulated activity could be the trustee, the open-ended investment company or the general partner. Where a DAO is a hybrid arrangement and a recognised legal entity carries out one of these activities in the UK in relation to the DAO, then it will need to be authorised by the FCA to do so. Where a pure DAO carries out one of these activities in the UK, identifying which participants require authorisation will be more challenging. This could leave key compliance and enforcement questions unanswered: who has responsibility for ensuring that the DAO is authorised by the FCA? If the FCA takes enforcement action against a DAO, who should be held liable?

6.93 Only regulated activities carried on in the UK fall within the territorial scope of FSMA. FCA guidance states, in relation to regulated activities generally, that:[756]

> In many cases, it will be quite straightforward to identify where an activity is carried on. But when there is a cross-border element, for example because a client is outside the United Kingdom or because some other element of the activity happens outside the United Kingdom, the question may arise as to where the activity is carried on.

6.94 Section 418 of FSMA extends the meaning that "in the United Kingdom" would ordinarily have. It provides that a person will be carrying on a regulated activity in the UK in the following situations:[757]

(1) Where a regulated activity is carried on by a UK-based person and the day-to-day management of the activity is the responsibility of an establishment in the UK.

(2) Where a regulated activity is carried on by a person who is not based in the UK but is carried on from an establishment in the UK. This might occur where each of the stages that make up a regulated activity such as managing investments takes place in different countries. For example, a person's management is in country A, the assets are held by a nominee in country B, all transactions take place in country B or country C but all decisions about what to do with the investments are taken from an office in the United Kingdom.

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[756] PERG 2.4.1G.

[757] See also PERG 2.4.3G.

6.95 FCA guidance also states that:[758]

> A person based outside the United Kingdom may also be carrying on activities in the United Kingdom even if he does not have a place of business maintained by him in the United Kingdom (for example, by means of the internet or other telecommunications system or by occasional visits). In that case, it will be relevant to consider whether what he is doing satisfies the business test as it applies in relation to the activities in question. In addition, he may be able to rely on the exclusions from certain regulated activities that apply in relation to overseas persons (see PERG 2.9.15 G).

6.96 The Court of Appeal in *FSA v Fradley and Woodward*[759] was asked to consider the regulated activity of operating a CIS. It held that the issue was whether the activities taking place in the UK formed a significant part of the relevant regulated activity. The court concluded that communications sent to UK clients together with the maintenance of a UK bank account and UK business address were all business activities that took place in the UK and were of sufficient regularity and substance to amount to the regulated activity of operating a CIS being carried on in the UK.

6.97 Establishing, operating or winding up a CIS may therefore not be regulated under the RAO even where some or all participants are in the UK, if day-to-day-control over the management of the property is not carried out in the UK. This is the case for any CIS, not just a DAO operating a CIS. However, the cross-border and on-chain nature of DAOs adds complexity and makes them less likely to be caught by the RAO. Similar to the MLRs, the RAO requires some physical presence in the UK. As discussed above, assumptions that a business will have an office in a particular jurisdiction from which it manages its affairs are better suited to traditional businesses than DAOs. This is not the case for DAOs, whose governance activities can exist largely or entirely on-chain.

6.98 As discussed above, the FCA has said that it is looking to extend financial regulation of cryptoassets to cover services in and to consumers in the UK. This approach could mean that a DAO CIS is covered by the regulated activities framework if it conducts business in the UK.

Next steps

6.99 Commentators have argued[760] that any organisation (DAO or not) using crypto-tokens for staking or governance is currently in danger of being classified as a CIS, even when the risks to which they give rise are not those the CIS regime was intended to guard against (that is, the risk of losing investors' money). A need to regulate the exercise by managers of investment management decisions in respect of pooled assets aimed at generating wealth does not necessarily read across to DAOs.

6.100 Clarification of the position of DAOs and CISs under the current RAO framework would be welcomed by market participants. This could be in the form of additional or

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758 PERG 2.4.6G.

759 [2006] 2 BCLC 616.

760 J Burnie, M Millward, and M Kimber, "What's at stake? The legal treatment of staking" (2022) 9 *Journal of International Banking and Financial Law* 594.

amended legislation or possibly further guidance from the FCA, where appropriate, building on existing materials.[761]

6.101 Consideration should be given to clarifying the position of DAOs and Collective Investment Schemes (as defined in the Financial Services and Markets Act 2000).

Future regulation of cryptoasset activities

6.102 The Financial Services and Markets Act 2000 (FSMA) was amended in 2023 to expand the meaning of "investments" in section 22 (Regulated activities) to include "cryptoassets".[762] As discussed above, section 22 provides that a regulated activity is an activity of a specified kind which is carried on by way of business and which relates to investments of a specified kind. "Specified" means specified in secondary legislation introduced by HM Treasury. Incorporating cryptoassets within the meaning of investments in section 22 therefore means that HM Treasury now has the power to introduce secondary legislation to regulate them. This would also mean that the FCA's general rule making powers would be available, allowing the FCA to design regulatory regimes for cryptoassets.[763]

6.103 The 2023 Act also introduced a new Designated Activities Regime ("DAR") into Part 5A of FSMA which sets a prohibition against carrying out designated activities or stipulates that they must take place in accordance with the relevant rules. The regime provides a power for HM Treasury to designate certain activities so that they can be brought inside this framework. Initially the regime was expected to be used to bring activities then regulated by retained EU law within the framework. The Act enables HM Treasury to designate any activity that relates, or is connected to, financial markets or exchanges of the UK, or to financial instruments, financial products, or financial investments issued, or sold, to persons in the UK. This can include cryptoassets.[764]

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761 For example, Financial Conduct Authority, *Guidance on Cryptoassets: Feedback and Final Guidance to CP 19/3, Policy Statement PS19/22* (July 2019), https://www.fca.org.uk/publication/policy/ps19-22.pdf.

762 Financial Services and Markets Act 2000, s 22(4), amended by the Financial Services and Markets Act 2023, ss 69(3), 86(3); SI 2023 No 779, reg 4(uu). "Cryptoasset" is defined in the Financial Services and Markets Act 2000 s 417 in the same terms as in the financial promotion regulations discussed above.

763 HM Treasury, Future financial services regulatory regime for cryptoassets – Consultation and call for evidence, February 2023, para 2.7, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1133404/TR_Privacy_edits_Future_financial_services_regulatory_regime_for_cryptoassets_vP.pdf. See also Tech London Advocates Blockchain Legal and Regulatory Group, "Blockchain: legal and regulatory guidance" (Law Society, June 2023) 3rd ed, p 55.

764 Financial Services and Markets Act 2000, s 71K. See also, Financial Services and Markets Act 2023 Explanatory Note para 136 to 138.

6.104 In October 2023 HM Treasury set out its intentions to bring more cryptoasset activities into the regulatory perimeter for financial services but DAOs were not mentioned.[765] At the time of finalising this scoping paper (in June 2024), these plans had not yet been implemented.[766]

Next steps

6.105 We suggest that any future work considering the expansion of the regulated activities framework should explicitly contemplate DAOs and how they use tokens at a governance level. DAO participants would benefit from more certainty as to whether they are included in any expanded regulated activities framework and failure to consider DAO tokens could result in further speculation and the risk that they fall within the framework when this was not intentional.

6.106 Future work considering any expansion of the regulated activities framework would benefit from explicitly considering DAOs and how they use tokens at a governance level.

DAOS AND TAX

6.107 The challenges for DAOs and DAO participants in relation to taxation stem from now familiar issues: the lack of an automatic legal characterisation of a DAO, the automated and decentralised nature of control over the DAO (in this case, the DAO treasury), the location of participants in multiple jurisdictions and the challenge of identifying where the activities of a DAO or its treasury are located when these are carried out on-chain and potentially in multiple jurisdictions.

6.108 We begin this section by briefly describing how DAO treasuries work and which activities are associated with DAO treasuries involving cryptoassets. We then delve into the challenges faced by DAOs and participants in assessing their tax liabilities in this jurisdiction.

DAO treasuries and use of cryptoassets

6.109 A DAO's treasury refers to a pool of crypto-tokens used to fund the operations of the DAO. Given that a DAO could be used for different purposes, it follows that not all DAOs will use their treasuries in the same way. Some may use assets to invest in external projects while others may use the assets to reinvest in the DAO ecosystem to ensure it continues to run and develop. Treasury assets may also be used to distribute profits to individual token holders or to reward participants for contributing to the running of the DAO or providing services to the DAO.

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765 For further details see HM Treasury, Future financial services regulatory regime for cryptoassets: Response to the consultation and call for evidence (October 2023), https://www.gov.uk/government/consultations/future-financial-services-regulatory-regime-for-cryptoassets.

766 We note that since HM Treasury published its intentions there has been a change of government as a result of the UK general election on 4th July 2024.

6.110 DAO treasuries may contain a number of different types of crypto-tokens. These may include, for example, the DAO's native tokens, any NFTs that the DAO may have invested in, as well as commonly used cryptoassets such as bitcoin, which are received as payments and investments, and are likewise used for these purposes by the DAO.

6.111 DAO treasury assets are held on-chain in one or more wallets (which may be a multi-signature wallets) which are controlled by smart contracts. Some processes relating to the treasury will be automated, so transfers of cryptoassets into and out of the treasury will occur on the occurrence of predetermined events. Some or all DAO token holders will have governance rights in relation to the treasury smart contracts. These rights may allow them to propose and vote on: (a) changes to the operation of the treasury, (b) payments to participants for specific contributions to the DAO and (c) projects to invest in (where the purpose of the DAO is such).

6.112 Founders and developers who design the DAO's treasury smart contracts determine the extent of the governance rights that token holders have over the treasury. Some DAO treasury smart contracts could give token holders extensive governance rights over the treasury. In some DAOs, however, the treasury smart contracts could automate most processes, with token holders only expected or required to vote on specific variables (like fees/interest rates). While this latter arrangement suggests that token holders have very little power or control over how the assets are used, there is an argument that token holders will always have the power to propose and vote on changes to the treasury smart contracts which could, in effect, change their level of control over those smart contracts. As a result, even token holders with limited individual control could be considered (collectively) to have complete control over a DAO's treasury.

6.113 Possible activities associated with a DAO's treasury include:

(1) Founders transfer cryptoassets into the DAO treasury prior to decentralisation of control by the issuance of native tokens.

(2) Investors transfer cryptoassets into the DAO treasury and DAO native tokens are airdropped to them in return.

(3) A DAO airdrops its own native tokens to existing users based upon prior usage in order to incentivise users to increase their use of the DAO's product or protocol.

(4) A DAO treasury disburses native tokens or other cryptoassets to fund a sub-DAO for a particular aspect of the DAO's operations, creating a separate treasury for a specific purpose.

(5) Users of a DAO product/system pay fees in cryptoassets that go into the DAO treasury e.g. a DeFi DAO running a dApp that charges users fees in relation to financial services.

(6) A DAO uses cryptoassets from its treasury to carry out staking and liquidity mining and earns fees which then go into its treasury.

(7) A DAO trades its own native tokens or other cryptoassets from its treasury to buy other cryptoassets (including tokens relating to other protocols, NFTs or tokenised off-chain assets) in order to diversify its portfolio.

(8) Cryptoassets in a DAO's treasury appreciate in value. The DAO then sells these, makes a capital gain and the cryptocurrency it receives goes into its treasury.

(9) A DAO uses cryptoassets from its treasury to reward contributors, pay for services (such as legal advice or marketing services), award grants or make investments in other Web3 projects.

(10) A DAO uses cryptoassets from its treasury to invest in other projects which provide a return in cryptoassets, which go into its treasury.

(11) Cryptoassets from a DAO's treasury are distributed to participants as a form of profit sharing.

(12) A DAO uses cryptoassets from its treasury to pay a ransom in response to a cyber-attack.

Challenges for DAOs in assessing liability to tax

Identifying the appropriate tax

6.114 In this jurisdiction, the starting point is to identify the entity involved, as this will determine the appropriate tax. As we have discussed in Chapter 3, for pure DAOs this can be a challenge. The lack of a discrete and recognisable legal entity with which a pure DAO can always be associated, combined with the automated and decentralised nature of control over the DAO treasury, can lead to uncertainty as to the appropriate tax to be paid in relation to DAO treasury activities. Some of the activities described at paragraph 6.113 appear to be akin to the DAO receiving income and making profits and capital gains from its activities. But questions remain as to who is receiving this income and making these profits and capital gains? Is it the DAO itself or is it some or all of the participants?

6.115 If, for instance, there is a company or unincorporated association, then (generally) corporation tax may be payable by that legal entity. For these purposes, an organisation is an "unincorporated association" if it:

(1) is not a legal entity;

(2) is an organisation of persons or bodies (more than one) with an identifiable membership (possibly changing);

(3) has a membership who are bound together for a common purpose by an identifiable constitution or rules (which may be written or oral);

(4) is an organisation where the form of association is not one which is recognised in law as being something else (for example, an incorporated body or a partnership); and

(5) must have an existence distinct from those persons who would be regarded as its members.[767]

6.116 As discussed in Chapter 3, an "unincorporated association" is often understood to be a non-business association.[768] However, for the purposes of taxation, an organisation can be an unincorporated association even if it has trading or business objects or carries on significant commercial activities. It is also not necessary for there to be a legally enforceable contract between the persons involved.[769]

6.117 If there is a general partnership, then (generally) income tax or capital gains tax is payable by the individual partners.[770] In addition, PAYE and VAT may also be payable by legal entities and individuals alike.

6.118 We have already established that some DAOs could constitute or include a general partnership or unincorporated association. Where, however, these characterisations arise, they do so as a matter of fact and law, and do not require any formal incorporation process or confirmation. This, combined with the fact that such characterisations will not apply to all DAOs, means that such classification cannot be relied upon to determine the tax liability of DAOs in any universal way.

6.119 It is also not unheard of for disagreements to arise between organisations / individuals and HMRC as to the characterisation of an organisation or individual for the purposes of their assessment for tax.[771] The leading case about characterisation as an unincorporated association (*Conservative and Unionist Central Office v Burrell* (1982)) was, in fact, a case about tax.[772]

6.120 There is currently no specific guidance for pure DAOs as to how HMRC may characterise them or assess them or their participants for tax. In response to our call for evidence, we have heard that certainty for the purposes of taxation is one of the reasons why a pure DAO may adopt a legal entity within their structure (thereby

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767 HM Revenue & Customs, HMRC internal manual, Company Taxation Manual, CTM41305 – Particular bodies: unincorporated associations: definition: https://www.gov.uk/hmrc-internal-manuals/company-taxation-manual/ctm41305

768 See discussion from para 3.70.

769 HM Revenue & Customs, HMRC internal manual, Company Taxation Manual, CTM41305 – Particular bodies: unincorporated associations: definition: https://www.gov.uk/hmrc-internal-manuals/company-taxation-manual/ctm41305

770 A general partnership is "tax transparent" so the partners are individually responsible for tax, rather than the partnership.

771 It may also be the case that different jurisdictions characterise the DAO differently. We discuss tax and jurisdiction from para 6.126.

772 In that case, the Special Commissioners of the Inland Revenue assessed that funds of the Central Office of the Conservative party were held for the purposes of an organisation known as the Conservative and Unionist Party and that such organisation is subject to corporation tax on the basis that it was an unincorporated association and so a company within the Income Corporate Taxes Act 1970. The Central Office appealed, arguing that there was no unincorporated association and therefore the income identified in the party's income and expenditure accounts (noted as investment income and interest) would be subject to income tax rather than corporation tax. It was held on appeal in that case, that the Central Office was not an unincorporated association, however, the court was not asked to decide who would pay income tax on the income which was the subject of the case.

forming what we call a hybrid arrangement). A hybrid arrangement may wrap just the treasury element of its structure, so the assets are owned and governed by a separate legal entity. This can provide a greater level of certainty for participants in relation to how the activities of the treasury itself will be taxed.[773]

6.121 Even if the DAO is liable for its own taxes (because, for example, it incorporates as a limited company or is an unincorporated association), the individual participants may, in addition, have their own tax to pay. This may be payable on income or capital gains made through their dealings with the DAO and the associated crypto-tokens, such as if they "earn" tokens in return for contributing to the DAO.

Applying relevant tax rules

6.122 HMRC has produced guidance setting out its interpretation of the law as regards the taxation of crypto-tokens in the UK.[774] The guidance is split into guidance for individuals, and guidance for businesses. So once a DAO has assessed itself for tax, it or its participants can use the guidance to assess any tax due on cryptoasset activities. The guidance does not, however, address how a DAO should assess itself for tax.

6.123 Despite this guidance, uncertainties as to the geographic location of taxable activities may persist where cryptoasset activity is carried out by a DAO with connections to multiple jurisdictions. The result is that it can be challenging for a DAO to understand how the rules in a particular jurisdiction (including this jurisdiction) apply to its treasury activities.

6.124 Even if a DAO has incorporated a legal entity in a particular jurisdiction, for example to hold the treasury, it may not be easy to determine where the activities of the DAO take place. Concepts such as the location of "central management and control"[775] remain key to determining the tax residence of a corporation. If the DAO's governance is genuinely decentralised and token holders are spread throughout the world, this may still be a difficult concept to apply to the DAO.

6.125 In the case of a general partnership, transparent for tax purposes, or a nexus of contracts with no recognised organisational form, a taxable event may occur when an asset moves from the DAO treasury to an individual token holder. Putting aside the issue of pseudonymity, it is easier for HMRC to determine who is UK-domiciled or resident at the level of individual token holders than an unincorporated DAO in entirety. But in the case of unincorporated associations, or any DAO for which profits do not ultimately flow through to token holders, there are likely to be additional

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773 See discussion in EY Global Ernst & Young Global Ltd., *How to navigate tax and legal complexity associated with DAOs* (2 August 2023): https://www.ey.com/en_gl/tax/how-to-navigate-tax-and-legal-complexity-associated-with-daos.

774 HM Revenue & Customs, *Cryptoassets Manual* (last updated 21 August 2023): https://www.gov.uk/hmrc-internal-manuals/cryptoassets-manual.

775 *De Beers Consolidated Mines Ltd v Howe* [1906] AC 455: "A company, for purposes of income-tax, resides in the court in which its real business is carried on, which means the country in which its central management and control are actually located."

challenges establishing jurisdiction over on-chain assets the control of which is divided between participants in different countries.

Double taxation risk

6.126 There is also a risk that the activities of a DAO and its participants may fall within the scope of taxation regimes in more than one jurisdiction and be taxed more than once. This could happen if, for example, one jurisdiction determines tax based on the residence of a person receiving income, gains and profits whilst another jurisdiction taxes the source of that income, gain or profit. This is known as double taxation. It may be that the risks of some instances of double taxation can be easily identified and therefore mitigated. However, in the case of DAOs, such a risk assessment may become complicated where it is not clear how a particular jurisdiction will characterise a DAO, that is, what legal form it will recognise it as. It could be that the different jurisdictions involved will all assess a particular pure DAO as some kind of pass-through entity (such as a general partnership), but this is not guaranteed (and is likely to be undesirable for the participants). There may also be uncertainty as to how jurisdictions will assess whether on-chain activity falls within their rules. In the case of pure DAOs, there is limited certainty of legal form in many jurisdictions and no agreement between jurisdictions as to how to treat their on-chain activities.[776]

6.127 It is not novel for individuals, businesses and organisations to have some connection to multiple jurisdictions and we see this with multinational corporations, international charitable organisations, non-domiciled residents and hedge funds. Double taxation treaties and networks between jurisdictions as well as cross-border anti-avoidance tax rules, safe harbours and exclusions have been put in place to provide certainty and promote a level playing field for these types of situations.[777] However, these have developed over time to respond to the particular needs and challenges of more traditional cross-border arrangements and they do not necessarily provide the same certainty for DAOs. They do not, for example, provide certainty in relation to the lack of a recognised legal treatment for DAOs and activities that occur on-chain. Certain safe harbours and exclusions, for example those used by hedge funds, which help to avoid double taxation or clarify where tax would be paid, also do not appear to apply to DAOs.[778]

6.128 Some efforts to address tax coordination in the context of cryptoassets more broadly have begun, such as the OECD's cryptoasset reporting framework, published in August 2022. This provides for the reporting of tax information on transactions in cryptoassets in a standardised manner, with a view to automatically exchanging such

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776 EY Global Ernst & Young Global Ltd., *How to navigate tax and legal complexity associated with DAOs* (2 August 2023): https://www.ey.com/en_gl/tax/how-to-navigate-tax-and-legal-complexity-associated-with-daos.

777 For further information about double taxation treaties generally, see information provided by HM Revenue & Customs at: https://www.gov.uk/government/publications/double-taxation-treaties-overview.

778 For example, the investment manager exemption discussed in P O'Dwyer, "The Investment Manager Exemption Review" (September 2007): https://thehedgefundjournal.com/the-investment-manager-exemption-review/.

information with the jurisdictions of residence of taxpayers on an annual basis.[779] The report does not address DAOs or DAO tokens specifically, but does demonstrate international efforts to achieve tax coordination with respect to blockchain technology. Industry commentators have suggested that DAO regulation could feature in future iterations of this framework.[780]

Reporting obligations in this jurisdiction

6.129 A DAO or DAO participants may have an obligation to assess their tax liability and report this to HMRC even if liability is assessed at the level of the individual token holder. For example, if a DAO is treated as a general partnership, then it will have to fill in a partnership tax return setting out the partnership's income and disposals of chargeable assets as well as details of the partners and information about any investments made by the partnership.[781] This could be challenging, although not impossible, for DAOs. Certain members of the DAO would need to be aware of all the movements in and out of the treasury, understand how these activities are assessed for tax and know who all the partners are from time to time. It would also require the DAO to allocate responsibility to someone, for example a token holder or third party, to file an off-chain tax return to HMRC.

6.130 In addition, because the general partnership itself does not pay tax, each partner is individually responsible for paying tax due on their share of the partnership profits and will also need to fill in a personal tax return. Failure to file a partnership tax return and personal tax return will result in financial penalties for the partners involved. If a DAO is not a general partnership but a member still derives income from it or a capital gain on the sale of a token, that income or capital gain would also need to be declared in the member's personal tax return.

DAOs and tax: conclusion

6.131 The tax analysis of any DAO will be fact specific. However, there are areas where further clarity as to HMRC's approach to assessing common characteristics of DAOs could assist. Providing this clarity would benefit both DAO participants and HMRC. We have been told that some DAOs avoid this jurisdiction because of the uncertainty about taxation. Guidance may therefore also serve to make this jurisdiction more attractive.

6.132 At an international level,[782] work could be done to develop an international tax framework for DAOs, recognising that they may not have a legal entity and that activities and assets may be on-chain rather than in a particular jurisdiction. This could

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779 OECD, *Crypto-Asset Reporting Framework and Amendments to the Common Reporting Standard* (26 August 2022): https://www.oecd.org/tax/exchange-of-tax-information/crypto-asset-reporting-framework-and-amendments-to-the-common-reporting-standard.pdf.

780 EY Global Ernst & Young Global Ltd., "How to navigate tax and legal complexity associated with DAOs" (2 August 2023): https://www.ey.com/en_gl/tax/how-to-navigate-tax-and-legal-complexity-associated-with-daos.

781 HM Revenue & Customs, *Form Partnership Tax Return Guide notes* (2022) (Updated 6 April 2024)": https://www.gov.uk/government/publications/self-assessment-partnership-tax-return-sa800/partnership-tax-return-guide-notes-2022#giving-information-to-the-partners.

782 For example, at the Joint International Taskforce on Shared Intelligence and Collaboration (JITSIC) forum on tax administration.

include international treaties, cross-border information sharing and other rules or strategies to avoid double taxation.

Next steps

6.133 Consideration should be given at an international level as to whether an international tax framework for DAOs should be developed, given their cross-border nature.

Chapter 7: Next steps

7.1 Consideration should be given as to whether a fuller analysis on the applicability of the law of fiduciary duties to software developers could be conducted to temper the possible chilling effect of *Tulip Trading*.

Para 3.144

7.2 Our view is that there is no current need to develop a DAO-specific legal entity for England and Wales, however, the Government should keep this matter under review.

Para 5.51

7.3 The Law Commission has already agreed with Government to undertake a review of trust law. This will consider – in general terms rather than in the DAO context specifically – the arguments for and against the introduction of more flexible trust and trust-like structures in England and Wales.

Para 5.65

7.4 Further work should be undertaken to determine whether the introduction of a limited liability not-for-profit association with flexible governance options would be a useful and attractive vehicle for non-profit DAOs and potentially a variety of other organisations in England and Wales.

Para 5.82

7.5 The Companies Act 2006 should be reviewed in order to determine whether reform is needed to facilitate the increased use of technology at a governance level where appropriate. The law of other business organisations such as limited liability partnerships should also be reviewed with the same aim.

Para 5.117

7.6 Government should consider reviewing the efficacy and suitability of alternative approaches to anti-money laundering regulation, including technological approaches.

7.7 There may be scope for revisiting and potentially expanding the extra-territorial reach of the Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 to catch more activities that have an impact in the UK.

7.8 It may be beneficial for international initiatives aimed at understanding and combatting money laundering and terrorist financing to consider the role that DAOs play in these areas.

Para 6.51 – 6.53

7.9 Consideration should be given to clarifying the position of DAOs and Collective Investment Schemes (as defined in the Financial Services and Markets Act 2000).

Para 6.101

7.10 Future work considering any expansion of the regulated activities framework would benefit from explicitly contemplating DAOs and how they use tokens at a governance level.

Para 6.106

7.11 Consideration should be given at an international level as to whether an international tax framework for DAOs should be developed, given their cross-border nature.

Para 6.133

Appendix 1: Terms of reference

1.1 This project is sponsored by the Department for Business, Energy and Industrial Strategy (BEIS)[783] and is also of interest to Her Majesty's Treasury, noting the legal implications that Decentralised Autonomous Organisations (DAOs) may have for both UK company law – on which BEIS leads – and rules covering financial service firms and crypto-currencies for which HM Treasury has legislative primacy and where the Financial Conduct Authority and other financial regulators exercise supervisory oversight.

1.2 The project will consist of a fifteen-month scoping study of the legal implications of DAOs.

1.3 The study will explore and describe the current treatment of DAOs under the law of England and Wales and identify options for how they should be treated in law in the future in a way which would clarify their status and facilitate uptake. The study will include consideration of the following.

(1) What is the legal nature of a DAO? Is it capable of being a limited company, LLP or general partnership? Is it some other novel type of legal entity? This will include, where relevant, a consideration of the concept of sufficient decentralisation and issues of member privacy and pseudonymity in relation to DAOs.

(2) Who bears the brunt of liability if something goes wrong? Does it rest with the investors, developers, or with the DAO?

(3) Should a DAO have a separate legal personality enabling it to hold assets, sign contracts etc? How, practically speaking, could contracts or other liabilities be enforced against it?

(4) What transparency and disclosure requirements should apply? Should DAOs publish audited reports and accounts complying with company law and accounting and audit standards[784] and make other disclosures required of UK companies (such as a strategic report or corporate governance statement)? What are the alternatives?

(5) What happens if members within the DAO have disputes? What happens if the automated smart contracts or processes are hacked?

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783 Now the Department for Business and Trade.

784 Noting that while UK company law requires companies to comply with applicable accounting standards, accounting and audit standards in general fall outside the scope of private law and so outside the scope of this project.

(6) Where is the DAO located, for example, for tax and regulatory purposes? What would the governing jurisdiction of a DAO be? On what basis would it be determined?[785]

(7) How do money laundering and other regulatory concepts apply to DAOs?

(8) What is the status of the tokens issued to investors in a DAO?

(9) Who is liable for taxes if the DAO makes a profit?[786]

(10) Relevant regulatory responses in other jurisdictions.

1.4 The scoping study will identify the main options for legal reforms or innovations that might be required to existing company law and other legislation to make DAOs viable and facilitate their establishment in the UK. The overarching purpose of the project will be to consider the issues relating to DAOs from a principles-up perspective. Given the myriad of DAO implementations, the scoping study might identify different "types" or "classes" of DAOs to which different rules might need to apply.

[785] Noting that conflict of laws provisions, in general, fall outside of the scope of private law and so outside the scope of this project. The Law Commission is undertaking a separate project which will consider conflict of laws issues in respect of cryptoassets and other virtual things.

[786] Noting that tax concepts, in general, fall outside of the scope of private law and so outside the scope of this project.

Appendix 2: Acknowledgements

ADVISORY PANEL

2.1 The Law Commission met or otherwise corresponded with members of the project's advisory panel at the call for evidence stage of this project:

Academics

Professor Iris Chiu

Dr Ann Sofie Cloots

Peter Hunn (who subsequently joined the Law Commission as a lawyer on this project)

Professor Jennifer Payne

Lawyers

Natasha Blycha

James Burnie

Drew Hinkes

Joni Pirovich

Gabriel Shapiro

Market participants

Ross Campbell

Jacek Czarnecki

Chris Donovan

Jordan Fish

Steve Ghiassi

Eric Hill

Rebecca Rettig

CALL FOR EVIDENCE

2.2 The following people and organisations responded to our call for evidence:

Academics

Associate Professor Elspeth Berry

Assistant professor Eliza Mik

Dr John Picton, Dr Matthew Shillito and Dr John Tribe (joint response)

Professional bodies

The Law Society

Lawyers and law firms

Ashurst LLP

Boldr Law Limited

gunnercooke llp

Holland & Knight LLP

MCBorrelli Advisors Limited

Simmons & Simmons LLP

Stirling & Rose LLP

Market participants

Aaron Payas

Andersen LLP

Atlantic Tax Advisory

Association of Decentralized Asset Management (ADAM) and AllStars DAO Management Authority (ADMA) (joint response)

Cambridge Blockchain Society

Coalition of Automated Legal Applications (COALA) and BlockchainGov (joint response)

D2 Legal Technology

Englebert Limited and Cryptegridy Limited (joint response)

European Crypto Initiative (EUCI)

Dhivyan Kandiah

Shawn Jhanji (co-founder of Zbra DAO (responded on behalf of Zbra DAO and himself))

Rise-CVF Ltd (The Charity for Victims of Fraud) and Hatton-Li-Traders Ltd (joint response)

Khandker Tarek (K. M. Tarek Designer Brands Int'l Group (UK) Ltd)

Trakti Ltd XDAO

MEETINGS

2.3 The Law Commission met or otherwise corresponded with the following people and organisations in relation to this project:

Academics

Associate Professor Jason Allen

Professor Simon Baughen

Associate Professor Elspeth Berry

Professor Eva Micheler

Professor Rebecca Parry

Professor Kevin Werbach

Professor Dame Sarah Worthington

Government and other public bodies

Financial Conduct Authority

HM Revenue & Customs

HM Treasury

Home Office

Lawyers and law firms

Marcus Bagnall

Preston Byrne

Chris Crawford

Silke Elrifai

gunnercooke llp

Roderick l'Anson Banks

Flavia Kenyon

Charles Kerrigan

Matthew Nyman

Nicholas Stewart KC

Market participants

a16z crypto

Andersen LLP

Justice Conder

Chris Donovan

FORUS Digital

Jonathan Galea

INO (Internet Native Organization)

James Loat

Legal Nodes

Paradigm

Marta Piekarska-Geater

Joni Pirovich

Philip Rosedale

William Rowe

Dion Seymour

Fennie Wang

Zoe Wyatt

Artem Zhiganov

Other individuals

Stephen Castell

Victor Zhou

Appendix 3: DAOs and private international law

INTRODUCTION

3.1 If something went wrong in relation to a DAO, it might result in a private law claim being brought by or against the DAO or its participants. For example, a DAO could be the victim of a hacker who drains its funds.[787] In such circumstances, participants may wish to bring actions in negligence against the developers of the DAO for failing to prevent such a hack. These could include the tort of conversion for interference with their tokens (which might also require them to establish title to those tokens as a matter of property law), or breach of contract if the loss of tokens interferes with their intended distribution under a smart legal contract.

3.2 If a private law action relating to a pure DAO were brought before the courts of England and Wales, the issue would likely involve cross-border elements because of the decentralised and therefore highly international contexts in which DAOs operate. Even where a DAO uses an incorporated entity somewhere in its structure or where the dispute involves a legal entity, there is still significant scope for the dispute to have cross-border elements - for example, the claimant participants could still be dispersed all over the world.

3.3 When a private law claim involves cross-border elements, one of the parties may dispute whether the courts of England and Wales, rather than the courts of another country, are entitled to hear that action (the "jurisdiction" question). If the court concludes that it does have jurisdiction to hear the action, it may then have to decide which country's law should apply to determine the dispute (the "applicable law" question). Private international law supplies the body of rules used to answer these questions.

DAOs and PIL: the problem

3.4 We have recently published a Call for Evidence in our "Digital Asset and ETDs in private international law: which court, which law?" project (the "PIL Call for Evidence"). In the PIL Call for Evidence, we consider at length the issues which the advent of technologies such as blockchain and other distributed ledger systems pose for private international law.

3.5 As we explain in the PIL Call for Evidence, private international law is premised on the principle of territoriality: the principle that sovereign authority is limited to geographically defined territories.[788] The principle of territoriality assumes that the laws of a country apply strictly within its territorial borders, but do not generally extend

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787 This happened in relation to the DAO, as explained by F Guillaume and S Riva, "Blockchain Dispute Resolution for Decentralised Autonomous Organisations: The Rise of Decentralised Autonomous Justice" in A Bonomi, M Lehmann and S Lalani (eds), *Blockchain and Private International Law* (2023) p.554.

788 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 3.12.

beyond this.[789] This is relevant to both the jurisdiction and applicable law questions, as the methods developed by private international law to resolve both questions are premised on the principle of territoriality.

3.6 As regards the jurisdiction question, the relevant question is whether a sovereign state has the authority to adjudicate over a legal dispute.[790] In England and Wales, the jurisdiction question is resolved by reference to highly territorial considerations. As is explained further below, generally, if a person (legal or natural) is within the territorial borders of England and Wales, the court will assume jurisdiction. If they are not, the claimant must satisfy one of the criteria (a "jurisdictional gateway") which has been deemed a sufficient basis for the court to assert its jurisdiction over a defendant outside of England and Wales. These jurisdictional gateways are often expressed in territorial terms – for example, an act done or consequence suffered within the territory of England and Wales.

3.7 As regards applicable law, the applicable law rules which apply in England and Wales operate on the basis that only the law of one sovereign state can prevail as the applicable law in any given dispute.[791] It is assumed that every legal issue has an objective home in the territory of one sovereign state.[792] This state is identified by applying rules based on "connecting factors", the vast majority of which are expressed in territorial terms – for example, the place where a piece of property or person is situated.

3.8 DAOs are, by their nature (albeit to varying degrees), decentralised. The common feature amongst all DAOs is a reliance in some way on distributed ledger technology ("DLT") and smart contracts deployed on the blockchain for their structure, governance, and operations.

3.9 As we explain in the PIL Call for Evidence, the decentralised nature of DLT is a direct challenge to the territorial premise on which modern systems of private international law are based.[793] This is because it is a key feature of DLT that the register is stored across a network of computers ("nodes") that could be located anywhere in the world. DLT has therefore been described as exhibiting "omniterritoriality":[794] a term used to describe "those phenomena that cannot be linked to a specific country because they have simultaneous and equally valid connections to jurisdictions all over the world."[795]

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789 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 3.13.

790 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 3.17.

791 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 3.19.

792 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 3.20.

793 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 3.92.

794 M Lehmann, "Extraterritoriality in Financial Law" in A Parrish and C Ryngaert (eds), *Research Handbook on Extraterritoriality in International Law* (2023) p 427.

795 M Lehmann, "Extraterritoriality in Financial Law" in A Parrish and C Ryngaert (eds), *Research Handbook on Extraterritoriality in International Law* (2023) p 427.

Thus, the problem is not that the objects have no genuine connections to a single territory, but rather that they exhibit too many genuine connections to too many territories, each in equal measure.[796] The omniterritoriality of DLT therefore challenges the territorial premise of private international law, and also the methods consequently employed in private international law to resolves conflicts of jurisdiction and applicable law.

3.10 However, as we identify in the PIL Call for Evidence, use cases of DLT vary considerably in their purposes and methods, and it therefore should not be assumed that they will all cause intractable problems for private international law. Truly decentralised applications of DLT such as Bitcoin are far more likely to cause issues than, for example, use cases which rely on a crypto-token intermediary. Common examples of intermediaries are crypto exchanges such as Binance or Coinbase; legal persons who in many ways mimic traditional banking functions, and who hold crypto-tokens on behalf of their users (the relationship with whom is governed by a user agreement). Intermediaries of this type provide a significant degree of centralisation which assists in the application of jurisdictional gateways or connecting factors for the purpose of resolving issues of private international law.[797]

3.11 The same is true of DAOs. As we explain in Chapter 2, DAOs fall along a spectrum from pure DAOs to hybrid arrangements and digital legal entities. These vary in their degree of decentralisation. Pure DAOs are highly decentralised; their off-chain activity is limited, and they seek to avoid any formal legal existence. Hybrid arrangements and digital legal entities have greater potential for a degree of centralisation through their reliance on one or more forms of legal entity in their structure; indeed, as we explained in Chapter 4, this sacrifice of some level of decentralisation is an inevitability in light of the fact that most legal entities are designed for centralised operations.

3.12 This is significant for the private international law analysis; the extent to which problems are likely to arise or be truly difficult will depend on the particular DAO in question and its chosen structure, governance and operational mechanisms. Bearing this in mind throughout, we identify (and reiterate, from the PIL Call for Evidence) in this Appendix some points of potential difficulty that may be relevant for private law claims with a cross-border element which relate to DAOs.

DAOs and litigation

3.13 Whilst parties may refer to the rules of private international law outside of the context of litigation to inform their decision-making when organising their affairs, questions of jurisdiction and applicable law often arise in litigation. It is therefore useful, before discussing these questions, to make some preliminary observations as to how and when DAOs might participate in litigation.

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796 M Lehmann, "Extraterritoriality in Financial Law" in A Parrish and C Ryngaert (eds), *Research Handbook on Extraterritoriality in International Law* (2023) p 427, and Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 3.94.

797 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 3.109.

Who or what is suing or being sued?

3.14 Where a DAO uses a legal wrapper, and that legal entity is relevant to the cause of action, the question of whether the DAO (or at least, the wrapped part of the DAO) can sue or be sued is straightforward. A legal entity has legal personality and therefore has the capacity to sue or be sued in its own name, and judgment can be made against it. This will be the case if a DAO incorporates or registers as a corporate body such as a company or co-operative.[798]

3.15 This is not the case for a pure DAO, or in cases where the cause of action engages those activities or functions in a hybrid DAO which are not wrapped in a legal entity. Generally, where the DAO lacks legal personality, legal action would need to be taken by or brought against the DAO's participants rather than the DAO itself.

3.16 As we explained in Chapter 3, a pure DAO may be characterised as including a general partnership or an unincorporated association. Neither of these bodies has legal personality, and an unincorporated association cannot sue or be sued unless authorised by statute.[799] The classification of a DAO as an unincorporated association therefore will not allow the DAO to sue or be sued in its name.

3.17 However, the situation for partnerships is different. A partnership which carried on business in England and Wales at the time a cause of action accrued, whilst not having legal personality, can sue or be sued in the name of the partnership "unless it is inappropriate to do so".[800] The lack of legal personality therefore would not impact the DAO's ability to litigate, or susceptibility to litigation. However, any judgment against the DAO would create joint and several liability against its partners personally.[801]

Anonymity and pseudonymity of DAO participants

3.18 DAO participants are often anonymous or pseudonymous. This may create significant difficulty where a party seeks to litigate against a DAO and, due to the DAO's lack of legal personality or a desire to pursue individual participants or developers, must pursue anonymous or pseudonymous individuals.

3.19 In some instances, this will not be fatal to litigation. Generally speaking, when a claim is brought before the courts of England and Wales, the claim form should state the full name of each party.[802] However, there is clear scope to validly commence proceedings without naming the defendant in the claim form.[803] This method has been

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798 Cooperative and Community Benefit Societies Act 2014, s 3(3) and 3(4).

799 *Chitty on Contracts* (35th ed) para 13-065. *London Association for Protection of Trade v Greenlands Ltd* [1916] 2 A.C. 15, 20, 38. See also *EDO MBM Technology Ltd v Campaign to Smash EDO & Others* [2005] EWHC 837 (QB) at [42] citing the same text from *Chitty on Contracts* (29th ed) para 9-086.

800 Civil Procedure Rules, PD7A paras 7.1-7.3.

801 Partnership Act 1890, s 9.

802 Civil Procedure Rules, Practice Direction 7A para 4.1(1).

803 White Book 2024 para 19.1.3.

frequently employed in the cases that have come before the courts of England and Wales relating to theft of crypto-tokens by unknown hackers.[804]

3.20 However, as we explained in the PIL Call for Evidence, these cases have followed a similar pattern of facts: a hacking victim's lost crypto-tokens have been traced to an account held by an unknown person in a foreign exchange, and litigation is brought ultimately with the purpose of targeting that exchange. The claim against persons unknown may therefore only be part of this wider litigation strategy.[805]

3.21 In the DAOs context, there may not always be a centralised, identifiable body such as an exchange who can be targeted. In such circumstances, it is not clear that the expense of litigation against unknown persons would be worthwhile. For example, following the breach of a smart legal contract by an anonymous DAO participant, it may not be feasible to litigate a personal liability of this type against an unknown counterparty.

3.22 As noted above, the rules of private international law are often engaged at the point of litigation. Therefore, whilst cognisant of the possibility of bringing claims against "persons unknown", the below analysis is generally undertaken on the assumption that a defendant can be identified. Were this not the case, it would clearly not be possible to apply connecting factors which relate to identifiable features of the defendant, such as their domicile or habitual residence.[806]

JURISDICTION

3.23 To say that a court has jurisdiction means that it has the power to hear and determine a private law dispute before it.

3.24 In England and Wales, the jurisdiction of the court is linked to the service of documents. Under the common law rules, the general principle is that jurisdiction depends on service of process; it is said that "where there is service, there is jurisdiction".[807] Conversely, if service cannot be effected, then a court is unable to assert jurisdiction over the claim.

Service within the jurisdiction

3.25 In general, the courts of England and Wales take a highly territorial approach to jurisdiction, by allowing service on any person within the territorial borders of England and Wales.[808] Broadly, the test is one of physical presence; a natural person

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804 For example, *AA v Persons Unknown* [2019] EWHC 3556 (Comm).

805 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 4.101.

806 For example, a number of rules relating to contractual obligations in the Rome I Regulation provide that the applicable law is that of the country of a specified party's habitual residence.

807 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 4.33 and n159, and A Briggs, *The Conflict of Laws* (4th ed 2019) p 46. Professor Briggs makes the point that it is for this reason that the rules which define jurisdiction are, in English law, framed as rules which specify whether and when it is lawful to serve process on the defendant.

808 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 11-042.

physically present within the territory of England and Wales may be served with process and therefore brought under the jurisdiction of the courts of England and Wales.[809]

3.26 Special rules apply to determine the presence of partnerships and companies, which are relevant to DAOs. For companies, the matter is dealt with by two regimes: Part 6 of the Civil Procedure Rules, and the Companies Act 2006. The effect of the rules is as follows.

(1) If a company is incorporated in England and Wales, or is incorporated elsewhere but has a registered establishment in England and Wales, that company can be served within England and Wales.[810]

(2) A corporation or company that is not incorporated or registered in England and Wales can be served within the jurisdiction if it carries on activities or has a place of business within the jurisdiction.[811]

Whether a company has a place of business in England and Wales is a question of fact, but generally requires the place to be a fixed and definite one. The business activity must have been carried on for long enough for it to be characterised as a place of business, but need not be a substantial part of the main objects of the foreign company.[812]

Whether a corporation carries on activities in England and Wales is intended to be the "counterpart for non-trading corporations" of "place of business […] for trading companies".[813] Therefore, "any place where the corporation carries on its activities" fulfils the same function for non-trading corporations (for example, charitable companies) as "any place of business" does for trading companies".[814]

(3) However, if an overseas company does not have a registered establishment and does not carry on business or activities within England and Wales, then that company cannot be served within England and Wales.[815]

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809 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 4.34; A Briggs, *The Conflict of Laws* (4th ed 2019) p 99: "The common law takes the view that any person present in England is, or has chosen to put himself in the position of being, liable to be summoned to court by anyone else."

810 Companies Act 2006, s 1139. Ss 1139(1) and (2) of that Act set out the methods of service for companies incorporated in the UK under that Act and overseas companies with registered establishments in the UK, respectively. However, a claim form may be served on a company within England and Wales by other means where provided for by Part 6 of the Civil Procedure Rules.

811 See, for example, Civil Procedure Rules, r.6.9(2).

812 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 11-056.

813 *Hand Held Products, Inc v Zebra Technologies Europe Ltd* [2022] EWHC 640 (Ch) [54].

814 *Hand Held Products, Inc v Zebra Technologies Europe Ltd* [2022] EWHC 640 (Ch) [54].

815 In *SSL International Plc v TTK LIG Ltd* [2011] EWCA Civ 1170, [2012] 1 WLR 1842 at [41] to [63], Burnton LJ confirmed that decisions made on this point before the implementation of the Civil Procedure Rules continue to apply.

3.27 For partnerships, where a claim is against two or more persons (alleged to be)[816] in a partnership who carried on business within England and Wales when the cause of action arose, the claim must normally be brought against the partnership's name.[817] Service may be effected personally on a partner or a person who has control or management of the partnership at its principal place of business,[818] or otherwise at the usual or last known address of a partner, or at the principal or last known place of business of the partnership.[819] A claim can therefore be brought against that partnership even if the individual partners are abroad at the time, the effect of which is to extend the jurisdiction of the court over defendants who are absent from England and Wales.[820]

3.28 Service within the jurisdiction does not generally require permission of the court; it is regarded as a matter of right. This contrasts with service out of the jurisdiction which, as discussed below, requires permission of the court following satisfaction of various criteria, including an assessment as to whether the claimant has a good arguable case. The distinction between service within and out of the jurisdiction can therefore be a significant one for a claimant seeking to initiate proceedings against a defendant.

3.29 Where the defendant is a DAO, it will not always be obvious whether the necessary circumstances exist for a claimant to serve within the jurisdiction, and such circumstances may be less likely to exist in the context of DAOs. In particular:

(1) Determining whether service can take place within the jurisdiction may depend on locating DAO participants; for example, if a claim is brought personally against a participant in a pure DAO for breach of contract. The international nature of DAOs increases the likelihood that the participant will not be present in England and Wales.

(2) Where service depends on locating the DAO itself or its activities, this may be particularly difficult. For example, identifying a DAO's "place of business" within England and Wales would be relevant for asserting jurisdiction over DAOs with a legal wrapper or pure DAOs which are regarded as partnerships. This is likely to be more difficult for DAOs than in the more traditional contexts in which this test has formerly operated. It may be regarded as highly artificial to suggest that a DAO which conducts its business largely on-chain in a highly decentralised environment can be seen as carrying on business activities within England and Wales.

For example, the editors of *Dicey* explain that "the normal case will be a branch of a foreign corporation, where there will be no doubt that the place of business

816 Civil Procedure Rules, Practice Direction 7A para 7.2.

817 Civil Procedure Rules, Practice Direction 7A para 7.1 and 7.3.

818 Civil Procedure Rules, r.6.5(3)(c)

819 Civil Procedure Rules, r.6.9(2).

820 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 11-049.

is that of the corporation".[821] Matters will not be so straightforward for many DAOs, and arguments may revolve around whether it is sufficient for participants involved in the DAO's governance to be located in England and Wales. It might be argued that such participants are representatives or agents of the DAO; this would necessitate an investigation into the functions that the representative performed and all aspects of their relationship with the DAO.[822] Ultimately, whether there is a place of business within the jurisdiction cannot be determined in the abstract and will require particular case-by-case analysis.

Service out of the jurisdiction

3.30 Issues of "international jurisdiction" arise where a private law dispute has cross-border elements, and there is more than one national court in which the parties could litigate the claim. In private international law, questions of jurisdiction primarily concern the circumstances in which it is appropriate for the courts of one country to accept or decline jurisdiction to adjudicate a private law dispute with cross-border elements.[823]

3.31 Where the defendant is not physically present (according to the tests set out above) within the territory of England and Wales, the claimant must generally[824] obtain permission from the court to serve the claim form on the defendant outside England and Wales.[825]

3.32 Generally, the court will grant permission (and thereby accept international jurisdiction over the claim) if the claimant satisfies the court that the following three conditions are met.

(1) There is a good arguable case that each pleaded claim falls within one or more of the "jurisdictional gateways" set out in Practice Direction 6B of the Civil Procedure Rules.

(2) There is a serious issue to be tried on the merits of the claim.

(3) In all the circumstances, England and Wales is the proper place or appropriate forum to bring the claim.[826]

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821 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 11-057.

822 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 11-058; *Adams v Cape Industries Plc* [1990] Ch. 433.

823 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 4.10.

824 Permission may not be required where, for example, there is an agreement conferring jurisdiction on the courts of England and Wales: Civil Procedure Rules, r 6.33(2B)(a). Permission is also not required where, for example, a claim is brought by a consumer against a non-consumer not within England and Wales: Civil Procedure Rules, r 6.33(2). However, this exemption from the requirement to obtain permission only applies if no proceedings between the parties concerning the same claim are pending in the courts of any other part of the UK.

825 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 4.38.

826 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 4.39.

3.33 The jurisdictional gateways identify the connections between the intended proceedings and the territory of England and Wales that are considered sufficient to justify summoning a foreign defendant to the courts of England and Wales to answer a claim.[827]

3.34 There are currently 38 separate gateways provided for in paragraph 3.1 of Practice Direction 6B in the Civil Procedure Rules.[828] In our PIL Call for Evidence, we identified those which we consider to be the most relevant for the types of private law disputes which will arise in the digital and decentralised contexts – namely, those expressed in territorial terms, by reference to an act, person or object within the territory of England and Wales.[829]

3.35 These gateways may be similarly relevant and potentially difficult in the event that a private law dispute arose with a DAO.

3.36 As we explained in Chapter 3, a pure DAO is not automatically a legal entity in this jurisdiction. Further, as we explained in Chapter 4, hybrid arrangements may make use of legal forms but also retain components which align with the original aims of DAOs – including through significant on-chain activity, decentralised control and reliance on smart contracts. Whilst DAOs exist along a spectrum of decentralisation, many will exhibit decentralised and autonomous features to a significant degree.

3.37 Problems may arise when attempting to apply the jurisdictional gateways identified below to disputes involving DAOs. These problems may emanate both from the nature of the cause of action underlying a particular gateway, and from the territorial terms in which a number of the gateways (which apply to different causes of action) are expressed.

Contracts

3.38 Below, we set out territorial terms which are used across gateways relating to different causes of action. We analyse the gateways relevant to contractual disputes separately here because, whilst the contracts gateways also raise similar issues to those discussed below of localising digital actions, we have identified particular issues arising for smart legal contracts.

3.39 Practice Direction 6B, paragraphs 3.1(6) reads as follows:

> A claim is made in respect of a contract where the contract –
>
> > (a) was (i) made within the jurisdiction or (ii) concluded by the acceptance of an offer, which offer was received within the jurisdiction;

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827 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 4.41.

828 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 4.42.

829 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 4.43.

(b) was made by or through an agent trading or residing within the jurisdiction; or

(c) is governed by the law of England and Wales.

3.40 Practice Direction 6B, paragraph 3.1(7) reads as follows:

> A claim is made in respect of a breach of contract committed, or likely to be committed within the jurisdiction.

3.41 DAOs rely heavily on smart contracts. Where these bring into effect a bilateral legal relationship between two parties, they will be smart legal contracts. In the PIL Call for Evidence, relying on our 2021 Advice to Government on Smart Legal Contracts, we highlighted difficulties which may arise when applying the gateways for contractual disputes to disputes concerning smart legal contracts. For example, it is not obvious how the gateways can be applied when the contract has been concluded by a machine or by the operation of smart contract code;[830] should the analysis of events such as formation focus on the place of the real-world actor who is the contracting party, or the location of the participating computer?[831] Such issues may be relevant to smart legal contracts concluded in the DAO context.

3.42 A DAO with no separate legal personality cannot enter into a contract. This may cause issues where, for example, a DAO which is best viewed as an unincorporated association purports to enter into a contract. A participant who entered into the contract ostensibly on behalf of the DAO may be held to have contracted personally – and if they did so with the authority of other participants, it may be enforceable against them as co-principals.[832] However, if the intended counterparty is the DAO itself, a claimant may seek to argue that no contract exists at all.

3.43 Where a declaration that no contract exists is sought, the relevant gateway is found in Practice Direction 6B, paragraph 3.1(8), which reads as follows:

> A claim is made for a declaration that no contract exists where, if the contract was found to exist, it would comply with the conditions set out in paragraph 3.1(6).

3.44 In order for a claimant to serve a claim form out of the jurisdiction in a claim for a declaration that no contract exists, the claimant must still satisfy the court that the criteria in paragraph 3.1(6) would be fulfilled if the contract did exist. A claimant seeking to satisfy this gateway in a claim against a DAO would therefore still

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830 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 5.17.

831 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 5.18.

832 *Chitty on Contracts* (35th ed) at para 13-065: If the person or persons who actually made the contract had no authority to contract on behalf of the members they may be held to have contracted personally. On the other hand, if they had the authority, express or implied, of all or some of the members of the association to contract on their behalf, the contract can be enforced by or against those members as co-principals to the contract by the ordinary rules of agency.

encounter the issues noted above as to the difficulty in determining a location of digital events or actions, such as formation or breach, relevant to smart legal contracts.

Damage or detriment sustained in England & Wales

3.45 One of the connecting factors used across various relevant gateways is the location of damage or detriment, sustained in England and Wales. This is employed in both the tort[833] and breach of confidence gateways.[834]

3.46 Pure DAOs operate in the online and decentralised contexts. It can be difficult to localise damage in such circumstances. As we explain in the PIL Call for Evidence, a single online act may give rise to damage sustained in multiple places. Alternatively, where the damage consists of deprivation of access to an online account, damage might theoretically be sustained anywhere in the world from where the victim can access their online account by simply logging in via the internet.[835]

3.47 In the PIL Call for Evidence, we identified six cases concerning jurisdiction relating to crypto-tokens that use gateways concerning damage or detriment sustained within England and Wales.[836] These have disclosed different approaches to localising damage in this context, including:

(1) The place where the claimant was deprived of access to the misappropriated crypto-token.

(2) The place where the claimant would experience the deprivation of access to the misappropriated crypto-token.

(3) The place of the claimant's habitual residence and/or where the claimant conducts business.

(4) The place of the claimant's domicile.

(5) The location of the crypto-token when it was misappropriated.

(6) The place where the pure financial loss associated with the crypto-token was incurred.

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833 Civil Procedure Rules, Practice Direction 6B paragraph 3.1(9)(a).

834 Civil Procedure Rules, Practice Direction 6B paragraph 3.1(21)(a). The potential relevance of the breach of confidence gateway was considered by HHJ Pelling KC in *Fetch.ai Ltd v Persons Unknown* [2021] EWHC 2254 (Comm) at [10], where it was held that the private keys used by the claimants to access their crypto-tokens constituted confidential information; where those private keys were used by the defendants to access and manipulate those tokens, this gave rise to a "perfectly arguable cause of action" for breach of confidence. For further discussion of the breach of confidence gateway, see para 5.130 onwards of Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence.

835 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 5.22.

836 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 5.28.

3.48 Some of these approaches can be more easily applied to DAOs than others. Take, for example, the case of *Tulip Trading v Bitcoin Association for BSV,* in which the claimant company was deprived of its private key as a result of a hacking incident and brought consequent claims against the bitcoin software developers. Mrs Justice Falk accepted that damage or detriment was sustained in England and Wales, as it consisted of failure to regain control of the assets and this was "directly experienced in England". This was not undermined by the fact that the crypto-tokens could, in theory, have been accessed anywhere.

3.49 Such reasoning could usefully be read across to DAOs, for which litigation could conceivably arise in similar circumstances. If a DAO were the subject of hacking and a participant brought a claim in tort against the developers of the DAO, the connecting factor of damage or detriment sustained in England and Wales would be fulfilled if the participant was unable to access and control their tokens in England and Wales.

3.50 It is not clear whether, when determining whether the participant is unable to access and control their tokens in England and Wales, their residence in the jurisdiction must be established. In *Tulip Trading,* Mrs Justice Falk favoured the test of the claimant's residence, meaning its place of central management and control (located in England), rather than domicile, meaning its place of incorporation (the Seychelles), for the purpose of applying the property gateway. When moving on to decide the applicability of the tort gateway, Mrs Justice Falk again made reference to the residence of the company in the jurisdiction:

> As with [the property gateway], in my view [the claimant] has the better of the arguments on the basis of residence in the jurisdiction and any failure to regain control of the assets being directly experienced in England, and not in the Seychelles[837]

3.51 It seems that the claimant's residence in England may therefore have been a foundation for Mrs Justice Falk's conclusion that England was "the jurisdiction from which [the claimant] could have, and would, exercise control of its assets and that this is the basis on which damage would be directly felt in England", such that it was "hard to see that it could be said to sustain damage anywhere else".[838]

3.52 In any event, establishing the residence of a claimant participant should not raise any additional difficulties in the context of DAOs. Things may however be more complicated if the claimant is the DAO itself, as establishing its place of central operations may raise the same difficulties described above for identifying a place of business. However, the focus on residence rather than domicile means that if residence in England and Wales can be established, then a hybrid DAO would fulfil this test even if its legal entity was located elsewhere, for example as a United States LLC or Cayman Islands Foundation Company.

3.53 By the same logic, the alternate approaches from the case law which focus on the claimant's habitual residence or domicile in the case of a participant should be easy enough to apply. Where the claimant is the DAO itself, however, and particularly

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837 *Tulip Trading Ltd v Bitcoin Association for BSV* [2022] EWHC 667 (Ch) at [164].

838 *Tulip Trading Ltd v Bitcoin Association for BSV* [2022] EWHC 667 (Ch) [164].

where the DAO does not rely on a legal wrapper, there may be greater difficulty in establishing the place in which business is conducted or the DAO's domicile.

3.54 Another approach focuses on the location of the crypto-tokens when they were misappropriated. This test may be more difficult to apply than the place at which the claimant is deprived of access to the misappropriated crypto-token. As DAOs can exist largely or entirely on-chain, with as little reliance on outside influence as possible and with the potential for significant geographical dispersion amongst participants, to say that a token was located in the jurisdiction of England and Wales at the time of the hacking is not without significant difficulty.

3.55 Further, we highlighted in the PIL Call for Evidence that the cases concerning misappropriated crypto-tokens which have thus far come before the courts of England and Wales may concern pure economic loss. We suggested that there is a significant difference between (i) physical damage to an asset; and (ii) damage sustained by reason of having been deprived of an asset (as an entire object).[839] We highlighted the fact that given the particular physical nature of crypto-tokens, it is arguable that, at least in cases where a claimant has suffered a cyber-attack which has resulted in a loss of their crypto-tokens, they are more likely to be susceptible to tortious damage of the second type – that is, damage by reason of deprivation. This suggests that such cases would be cases of pure economic loss. The same could be true where a DAO participant is deprived of the tokens which they hold in the DAO as a result of hacking.

3.56 We have asked consultees whether they agree. If this analysis is accepted, it may be significant for the jurisdiction analysis. The Supreme Court has cautioned that where a tort claim is made in respect of pure economic loss, the issue of jurisdiction must be approached with care. In particular, it may be more difficult to determine where damage was suffered, as pure economic loss "can give rise to complex and difficult issues as to where the damage was suffered", and it may reduce the availability of the gateway to victims of hacking, as "the more remote economic repercussions of the causative event will not found jurisdiction".[840] Such a characterisation of the loss may therefore impact a claimant attempting to serve out of the jurisdiction in a claim relating to DAOs.

An unlawful act committed within England and Wales

3.57 The location where an unlawful act was committed is used as a connecting factor to found jurisdiction in a range of non-contractual claims.[841] For example, one of the gateways for tort depends on "damage which has been or will be sustained results from an act committed, or likely to be committed, within the jurisdiction".[842]

3.58 As we explain in the PIL Call for Evidence, it is equally as difficult to locate where an unlawful act occurs as it is to determine the location of damage or detriment that the

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839 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 5.48.

840 *FS Cairo (Nile Plaza) v Brownlie* [2021] UKSC 45 at [75].

841 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 5.58: Tort (gateway 9(b)), breach of confidence (gateway 21(b)), constructive or resulting trustee (gateway 15(a)), restitution (gateways 16(a) and (b)).

842 Civil Procedure Rules, Practice Direction 6B, para 3.1(9).

act causes. We identified three cases which have dealt with the issue, taking different approaches. These have focused on:

(1) the place where the victim is domiciled; and

(2) the place where the victim's computer through which the fraudulent inducement had effect is located.[843]

3.59 These approaches may be applicable to a participant acting as claimant in the DAOs context, as both approaches focus on factors related to the claimant (an identifiable party) or their computer (with an identifiable location). However, these approaches may raise some difficulties where a DAO with legal personality is acting as claimant; for example, which computer in the DAO's network would be the one relevant to locating the fraudulent inducement? Further, we have questioned in the PIL Call for Evidence whether these approaches are consistent and theoretically sound.

An object within England and Wales

3.60 Potentially relevant gateways also include those relating to property. The location of an object is the connecting factor used to found jurisdiction in claims relating to property[844] - for example, gateway 11 refers to the subject matter of the claim relating "wholly or principally to property within the jurisdiction".[845]

3.61 In the PIL Call for Evidence, we consider these gateways at length and their potential application to crypto-tokens: how can a location be ascribed to crypto-tokens, which have no physical location?[846] We highlight the fact that because crypto-tokens technically exist nowhere and everywhere at the same time,[847] there is no point of centralisation or justification for saying that a crypto-token exists in one territorial location rather than another.[848]

3.62 As we have explained, DAOs exist on a spectrum of decentralisation. The difficulty in ascribing a location to crypto-tokens is particularly pronounced for tokens held in pure DAOs. Whereas hybrid DAOs may have a point of centralisation via its legal entity, much as crypto-tokens held in crypto exchanges may have a point of centralisation via the exchange, this is unlikely to be the case for a DAO that ensures its decentralisation by focusing its activities and governance mostly or entirely on-chain. Localising a token held in a pure DAO in one particular country may therefore be regarded as highly artificial.

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843 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 5.72.

844 Gateways 11 and 15(b).

845 Civil Procedure Rules, Practice Direction 6B, para 3.1(11).

846 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 5.77 onwards.

847 A Held, "Crypto Assets and Decentralised Ledgers: Does Situs Actually Matter?" in A Bonomi, M Lehmann and S Lalani (eds), *Blockchain and Private International Law* (2023) p 250.

848 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 5.83.

3.63 Solutions have been proposed in the case law (although not relating specifically to DAOs), focussing for example on the domicile, residence or place of business of the person or company who owns the crypto-token(s) in question. In our PIL Call for Evidence, we have asked for views on whether these approaches are theoretically sound. In any event, if these solutions would require focussing on the domicile, residence or place of business of the DAO itself, then this would raise the difficulties identified above.

3.64 Moreover, in the PIL Call for Evidence we note that property matters engage temporal issues, as the location of the property may change over time. Establishing the presence of a misappropriated crypto-token in England and Wales may be more difficult if the relevant time is at the point of applying for service out, rather than immediately before the misappropriation.[849] However, the cases have taken different approaches – for example, one approach has focussed on the location of the assets before the justiciable act occurred, and another on their location at the time of the application to serve out. We have asked consultees which of these approaches, if any, should be favoured.

Jurisdiction agreements

3.65 There is scope for parties to enter into a jurisdiction agreement, also known as a choice of court agreement. The agreement may be exclusive, such that litigation must be commenced in the jurisdiction named in the agreement and to do so elsewhere would be a breach of contract, or non-exclusive, such that litigation may be, but is not required to be, commenced in the named jurisdiction.

3.66 The effect of such an agreement conferring jurisdiction on the courts of England and Wales is that the courts will have jurisdiction over the dispute and, where an exclusive jurisdiction agreement is governed by the Hague Convention on Choice of Court Agreements 2005,[850] may not be entitled to decline jurisdiction on the basis that the dispute should be decided in the court of another State. The claimant does not require the permission of the court for service out of the jurisdiction.[851]

3.67 Jurisdiction agreements are ordinarily contained in a wider contract, and therefore usually governed by the law governing the contract.[852] Therefore, whilst jurisdiction agreements are themselves excluded[853] from the applicable law rules for contracts

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849 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 5.99 onwards.

850 The Hague Convention applies to exclusive choice of court agreements in "international cases" in civil or commercial matters, concluded in writing or another means of communication rendering the information accessible: Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), paras 12-087 to 12-092.

851 Civil Procedure Rules, r.6.33(2B) Lord Collins of Mapesbury and J Harris (eds*), Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 12-084.

852 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 12-070. Note also para 12-069.

853 Article 1(2)(e) Rome I Regulation.

contained in the Rome I Regulation (discussed below), their interpretation and validity will nonetheless ordinarily be governed by the governing law of the contract.[854]

3.68 As we explain below in relation to choice of law in contracts, agreements relating to choice of law or choice of courts are an expression of party autonomy. Whilst DAOs often eschew legal formality of this type, if they are aware and avail themselves of the possibility of entering a jurisdiction agreement, then it has been suggested that recourse to party autonomy would be consistent with a DAO's commitment to self-governance and therefore "ideal […] for the selection of the competent courts". [855]

APPLICABLE LAW

3.69 The issue of applicable law determines which country's substantive law will apply in a claim with cross-border elements, to determine whether the claimant's claim against the defendant will succeed.

3.70 England and Wales employs multilateral rules to identify the applicable law in any particular case. This means that it prescribes a complete set of abstract rules that identify the objective "seat" of a particular legal issue: the "natural home" of the legal issue in one legal system or another.[856] The abstract rules rely on "connecting factors", which identify the seat of a legal issue in abstract terms by reference to the location of a particular person, place, event, or object.[857]

3.71 The court will follow a three-stage process to identify the applicable law.

(1) **Step 1: characterisation.**

The court will first ask: what kind of legal issue is in dispute between the parties?

(2) **Step 2: identify the multilateral rule and the abstract location.**

The court will then refer to the rule that applies to this particular kind of legal issue. Rules are expressed in abstract terms of a place where some act occurred or where some object is located.

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854 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 12-069 and 12-070.

855 "Introduction: The Blockchain as a Challenge to Traditional Private International Law" in A Bonomi, M Lehmann and S Lalani (eds), *Blockchain and Private International* Law (2023) p.4.

856 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 2.22.

857 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 3.21 onwards.

(3) **Step 3: identify the relevant applicable law on the facts of the case.**

Finally, the court will refer back to the facts to ascertain the place where the relevant rule points. It will then apply the law of that place to the issue in dispute.[858]

3.72 For a dispute involving DAO participants or users, step 1 requires a court to look at the issues and facts of the case to determine the nature of the dispute.[859] For example, where one of the parties argues that there is a breach of contract the court will consider whether this is a valid characterisation of the alleged relationship between the parties or wrongdoing. The concept of contract in the law of England and Wales is far narrower than it is in many civilian jurisdictions. A gratuitous agreement without any consideration will not be considered a contract under the law in this jurisdiction, but can constitute a contract in many civilian jurisdictions. A court in England and Wales may therefore need to consider a broader concept of contract when characterising issues for the purpose of identifying the relevant applicable law rule.[860]

3.73 For step 2, the court will identify the relevant applicable law rule for the issue that has been characterised and the abstract location.[861] The relevant rules which apply to different types of legal issue are set out below.

3.74 For step 3, the court will apply the applicable law rules to the facts of the case, assuming that there is no issue of public policy or overriding mandatory rules.[862]

3.75 As this three-step process makes clear, the applicable law analysis will vary depending on the type of issue in dispute. This is because the type of dispute will determine the multilateral rule that applies.

3.76 We consider some of the rules which might apply to disputes involving DAOs below. The relevant applicable law rules in England and Wales are derived from common law, statute and assimilated EU law. The rules discussed below primarily derive from common law and two key pieces of assimilated EU law:[863] the Rome I Regulation on

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858 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 6.14.

859 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 6.19.

860 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 6.27.

861 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 6.45.

862 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 6.104.

863 The Rome I Regulation and Rome II Regulation are not included in the list of revoked EU instruments contained in Schedule 1 to the Retained EU Law (Revocation and Reform) Act 2023. They therefore continue to apply and should be referred to as "assimilated law": Retained EU Law (Revocation and Reform) Act 2023, s 5(1).

the law applicable to contractual obligations,[864] and the Rome II Regulation on the law applicable to non-contractual obligations.[865]

Status, capacity and management of entities

3.77 Issues relating to the status, capacity and management of entities are excluded from the scope of the Rome I[866] and Rome II Regulations.[867] This exclusion applies to bodies "with or without legal personality, profit-making or non-profit making", and "affects all the complex acts (contractual, administrative, registration) which are necessary to the creation of a company or firm and to the regulation of its internal organisation".[868]

3.78 The exclusion is therefore sufficiently wide to cover issues relating to status, capacity and management of DAOs, irrespective of whether the DAO (i) has legal personality or not,[869] and (ii) operates for profit or not.

3.79 The relevant applicable law rules for such issues are therefore derived from common law. However, a distinction must be drawn between the law which applies to a company's status, capacity and management, and the law which applies to the "legal consequences of an act" which an officer or organ of that company has performed.[870] The legal consequences of an act, such as the making of a contract or the commission of a tort, will be governed by the law identified in the rules for contractual or non-contractual obligations under the Rome I and Rome II Regulations outlined below.

3.80 The law of the country under which the entity was formed (the entity's "constitutive law")[871] will generally govern issues relating to an entity's status, and England and

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864 Regulation on the law applicable to contractual obligations (EC) No 593/2008, Official Journal L 177 of 04.07.2008.

865 Regulation on the law applicable to non-contractual obligations (EC) No 864/2007, Official Journal L 199 of 31.07.2007.

866 Article 1(f): The regulation excludes from its scope "questions governed by the law of companies and other bodies, corporate or unincorporated, such as the creation, by registration or otherwise, legal capacity, internal organisation or winding-up of companies and other bodies, corporate or unincorporated, and the personal liability of officers and members as such for the obligations of the company or body;"

867 Article 1(d): The regulation excludes from its scope "non-contractual obligations arising out of the law of companies and other bodies corporate or unincorporated regarding matters such as the creation, by registration or otherwise, legal capacity, internal organisation or winding-up of companies and other bodies corporate or unincorporated, the personal liability of officers and members as such for the obligations of the company or body and the personal liability of auditors to a company or to its members in the statutory audits of accounting documents"

868 The Giuliano and Lagarde Report [1980] Official Journal C 282/1 of 31.10.1980.

869 Anton's Private International Law 3rd edn para 10.53: "contractual issues internal to a partnership are in principle outside the scope of the Rome Convention and of Rome I. Furthermore, it would seem that the internal affairs of unincorporated associations, e.g. many churches, fall outside the scope of the Rome Convention and Rome I."

870 A Briggs, *The Conflict of Laws* (4th ed 2019) p.337.

871 *Investec Trust (Guernsey) Ltd v Glenalla Properties Ltd* [2018] UKPC 7 [88].

Wales will recognise a foreign corporation as a corporation in England.[872] This is because "the law of an entity's creation is the only law which is apt to determine its status".[873] Importantly in the context of DAOs, this rule is not confined to entities with separate legal personality:

> The Board would not confine this rule to entities which have separate legal personality but would apply it to partnerships, including firms registered under the Limited Partnerships Act 1907 or similar foreign legislation, associations of persons without legal personality and also a Jersey or Guernsey trust.[874]

3.81 The status of an entity is not limited to its existence, powers and internal constitutional arrangements – it extends to the "attributes" with which that entity is invested by the law of the country in which it was formed.[875] An entity's constitutive law will therefore determine issues including:

(1) whether an entity exists as a matter of law;[876]

(2) the legal nature of the entity (for example, whether it is a corporation or a partnership);[877]

(3) the legal incidents that attach to the legal nature of the entity;[878] and

(4) whether an entity has been dissolved.[879]

3.82 Further, questions of an entity's status will determine the effect of its purporting to assume an obligation. As explained by the Privy Council:

> By the same token, the questions of status which the common law refers to the law of the entity's creation include what it means to say, if the entity (such as a traditional partnership or unincorporated association) does not have separate legal personality, that it has assumed an obligation. Whose liability is thereby engaged? Thus, where a contract governed by a foreign proper law is made with an English partnership, English law and not the proper law of the contract will determine whose liabilities are thereby engaged. All the partners will be jointly and severally liable.[880]

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872 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 30-012. *Investec Trust (Guernsey) Ltd v Glenalla Properties Ltd* [2018] UKPC 7 [83].

873 *Investec Trust (Guernsey) Ltd v Glenalla Properties Ltd* [2018] UKPC 7 [83].

874 *Investec Trust (Guernsey) Ltd v Glenalla Properties Ltd* [2018] UKPC 7 [89].

875 *Investec Trust (Guernsey) Ltd v Glenalla Properties Ltd* [2018] UKPC 7 [83].

876 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 30-010.

877 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 30-010.

878 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 30-010.

879 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 30-012.

880 *Investec Trust (Guernsey) Ltd v Glenalla Properties Ltd* [2018] UKPC 7 [84].

3.83 Consequently, “as a general rule” the common law will “recognise and give effect to limitations of liability which arise under an entity's constitutive law by reason of the particular status or capacity in which its members or officers assume an obligation.”[881]

3.84 As explained by the editors of *Dicey,* law of the country under which the entity was formed is also relevant for its capacity and management.[882] It will govern issues such as:

(1) the composition and powers of the various organs of an entity;

(2) whether directors have been validly appointed;

(3) the nature and extent of the duties owed by the directors to a corporation;

(4) who are the entity’s officials authorised to act on its behalf;

(5) the extent of an individual member’s liability for the debts or engagements of the entity;

(6) the ability of the entity to make a distribution to its members; and

(7) and the validity of a transfer of assets and liabilities by way of universal succession on amalgamation with another entity.[883]

3.85 These rules are particularly relevant to DAOs, as a key question discussed in Chapter 2 relates to their proper legal characterisation. Whether a DAO is a partnership or an unincorporated association would be determined by the law of the country under which the DAO was formed (if such a country can be identified). This characterisation will have consequences for the liability of participants in the DAO.[884]

3.86 This could be significant – for example, as we noted in Chapter 3, England and Wales could hold participants in a pure DAO jointly liable as partners in a general partnership or members of an unincorporated association. Other substantive laws may take more favourable approaches to the liability of participants in the event of such a characterisation of the DAO, rendering the question of which law applies a highly consequential one for the participants.

Identifying a DAO’s constitutive law

3.87 It should be easy to identify the constitutive law for a hybrid DAO which does incorporate a legal entity. For example, if it uses a Wyoming LLC or a Cayman Islands

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881 *Investec Trust (Guernsey) Ltd v Glenalla Properties Ltd* [2018] UKPC 7 [88].

882 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), Rule 187 explains that the capacity of a corporation to enter into a legal transaction is governed by (i) its constitution and (ii) the law of the country governing the transaction. All matters concerning the constitution of the corporation are governed by the lex incorporationis.

883 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 30-030.

884 A Briggs *The Conflict of Laws* (4th Edn) p.337.

Foundation Company, the law of that jurisdiction will apply to determine questions of status, capacity and management of the wrapped entity.

3.88 However, identifying the constitutive law for pure DAOs is far from straightforward. As we have explained, pure DAOs are not automatically recognised legal entities, and their appropriate legal characterisation is not obvious. Identifying the nature of a DAO must be undertaken on a case-by-case basis, rendering their legal characterisation (and therefore the identity of the country under whose law they are formed) uncertain.

3.89 It may be argued that for partnerships and unincorporated associations, a workable solution would be to focus on the law governing the contract between its partners or members – or, in the case of DAOs, between participants.

3.90 Partnerships and unincorporated associations do not have separate legal personality, and do not depend for their existence on any formal process such as registration or incorporation. As such, they have each been described as having contractual foundations. In the case of partnerships, the Law Commission in its review of partnerships noted the importance of the partnership agreement:

> A partnership can only come into existence by an agreement between the partners. Such an agreement may be written, oral or inferred from conduct in whole or in part. The partnership agreement also provides the constitution which governs the partnership and the relationship between the partners.[885]

3.91 The same has been noted for unincorporated associations. For example, one of the leading descriptions of unincorporated associations identifies them as a "creature of contract", noting that the "bond of union between the members of an unincorporated association has to be contractual".[886]

3.92 It may therefore be argued that for DAOs which are classified as partnerships or unincorporated associations, the constitutive law is best viewed as the law which applies to the contract between participants. As contractual matters related to the status, capacity and management of such entities are excluded from the Rome I Regulation, the relevant rules for determining the law of the contract would be the common law rules. Under those rules, the law expressly chosen by the parties is the applicable law.[887] Absent an express choice, the court will consider whether a choice of law ought to be implied; if no such intention can be inferred, then the contract will be governed by the system of law with which the transaction has its closest and most real connection.[888]

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885 Law Commission and Scottish Law Commission, Partnership Law Report, Law Com No 283 Scot Law Com No 192, para 3.34.

886 *Conservative and Unionist Central Office v Burrell* [1982] WLR 522, per Lawton LJ.

887 *R v International Trustee for the Protection of Bond Holders Aktiengesellschaft* [1937] AC 500 at 529, [1937] 2 All ER 164 at 106.

888 *R v International Trustee for the Protection of Bond Holders Aktiengesellschaft* [1937] AC 500 at 529, [1937] 2 All ER 164 at 106; *Amin Rasheed v Kuwait Insurance* [1983] 2 All ER 884, [1984] AC 50; Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 32-006.

3.93 For example, William Edwards has argued that:

> given that membership of a DAO has contractual or quasi-contractual elements, the most obvious test to apply is the common law test applicable to a contract where there is no express or implied choice of proper law. On that basis, the constitutive law of a DAO is that of the country with which it has the "closest and most real connection", objectively determined at the time of creation of the DAO.[889]

3.94 However, whilst attractive, this analysis may be at odds with the Privy Council's decision in *Investec Trust,* in which it was specifically noted that:

> the questions of status which the common law refers to the law of the entity's creation include what it means to say, if the entity (such as a traditional partnership or unincorporated association) does not have separate legal personality, that it has assumed an obligation. Whose liability is thereby engaged? Thus, where a contract governed by a foreign proper law is made with an English partnership, English law and not the proper law of the contract will determine whose liabilities are thereby engaged.[890]

3.95 In addition, whilst DAOs do rely on smart contract arrangements to regulate the interactions and relationships between participants, it is not necessarily the case that there will be a legal contract in place between participants. We discuss the legal relationships that might exist amongst DAO participants in detail in Chapter 3. Whether a contract exists will ultimately depend on the individual facts relating to each DAO and whether the requirements for a contract are satisfied in any particular interaction. We look at contract formalities and DAOs in Appendix 5.

DAOs with no status

3.96 If pure DAOs do not attract a legal characterisation as a partnership or unincorporated association, they are not a recognised entity under the law of England and Wales. In such circumstances, the question is whether they will be recognised by the conflict of laws rules in England and Wales. An analogy may be drawn with international organisations formed by treaty. The relevant cases have held, with respect to the status of these organisations,[891] that:

(1) Where an international organisation is created by treaty, it "has no existence" as a matter of law.[892] It therefore will not be an entity with status under the law of the United Kingdom unless and until it is accompanied by the creation of legal persona. The conflict of laws rules of England and Wales therefore do not, without more, recognise the existence of legal entities constituted under

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889 W Edwards, "Decentralised Autonomous Organisations: unincorporated companies by another name?" BJIB & FL 2022, 37(3), 147-149, 148.

890 *Investec Trust (Guernsey) Ltd v Glenalla Properties Ltd* [2018] UKPC 7 at [84].

891 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 30-015.

892 *JH Rayner (Mincing Lane) Ltd v Department of Trade and Industry* [1990] 2 A.C. 418.

international law as they recognise those constituted under foreign systems of domestic law. [893]

(2) Where an international organisation is created by treaty and is granted legal personality under the domestic law of a foreign country, it is entitled to recognition as a foreign legal entity.[894]

3.97 Therefore, DAOs with no legal personality may not have a recognised legal existence from the perspective of the law of England and Wales - which, in addition to the consequences for the DAO's existence and capacity, may in turn require individual participants of the DAO to be pursued by the claimant instead. If, however, the law of another country grants legal personality to the DAO,[895] it may be entitled to recognition as a foreign legal entity.

Contractual obligations

3.98 The Rome I Regulation provides the applicable law rules for contractual obligations. We examine the provisions which we considered most relevant to digital assets in Chapters 7 and 8 of the PIL Call for Evidence.

3.99 Broadly, the relevant rules are as follows:

(1) The starting point under Article 3 is that a contract is governed by the law chosen by the parties.[896]

(2) In the absence of choice:

(a) Article 4(1) provides rules for specific types of contracts, such as contracts for the sale of goods or supply of services.[897]

(b) If the contract does not fall within these specific contracts, then Article 4(2) provides that it will be governed by the law of the country in which the party rendering the characteristic performance under the contract has their habitual residence.[898] The characteristic performance usually means the non-money performance.

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893 In *Arab Monetary Fund v Hashim* [1991] 2 A.C. 114, it was explained that the case of *JH Rayner (Mincing Lane) Ltd v Department of Trade and Industry* [1990] 2 A.C. 418 (the "Tin" case) led to the rejection of a submission that "the English conflict of laws recognises the existence of legal entities constituted under international law just as it recognises those constituted under foreign systems of domestic law", on the basis that the reasoning in the Tin case "destroy the possibility of a common law conflict rule under which the courts can recognise the existence of an international organisation as such."

894 *Arab Monetary Fund v Hashim* [1991] 2 A.C. 114, 123.

895 For example, Vermont allows DAOs to incorporate as a Blockchain-based Limited Liability Company: F Guillaume and S Riva, "Blockchain Dispute Resolution for Decentralised Autonomous Organisations: The Rise of Decentralised Autonomous Justice" in A Bonomi, M Lehmann and S Lalani (eds), *Blockchain and Private International Law* (2023) p565.

896 Article 3.

897 Article 4(1).

898 Article 4(2).

(c) There is an exception to these rules; where the contract is "manifestly more closely connected" with a country other than that indicated by Articles 4(1) and 4(2), the law of that country can apply instead under Article 4(3).

(d) If the applicable law cannot be identified in line with any of these rules, Article 4(4) provides a residual rule - that the contract is governed by the law of the country with which it is most closely connected.

(3) Separate provision is made for certain types of contract, such as consumer contracts or contracts of employment.

3.100 We consider these rules in depth in Chapters 7 and 8 of the PIL Call for Evidence.

3.101 We suggested in the PIL Call for Evidence that the outcomes of applying the Rome I Regulation to contractual disputes concerning crypto-tokens should be relatively certain. The contract will either be governed by the law chosen by the parties, or by the law of the habitual residence of the party whose contractual performance is the characteristic performance under the contract (that is, the obligation which least resembles "payment").[899] These conclusions apply irrespective of whether the transactions are undertaken in the more centralised context of an exchange, or in more decentralised contexts such as DeFi[900] or DAOs.

3.102 The focus in the Rome I Regulation on party autonomy may be of particular relevance to DAOs. We have observed that natural language documents associated with DAOs generally do not include a governing law clause and if rights and enforcement thereof are mentioned, a DAO-specific dispute resolution procedure is often described rather than any mention of a choice of court in any jurisdiction. However, it has also been noted that party autonomy "seems to be ideal to determine the law applicable blockchain assets and transfers", as it reflects the liberal philosophy and decentralised operation of blockchain technology.[901] This is true of DAOs, which place significant focus on autonomy, self-regulation and decentralisation.

3.103 As we discuss elsewhere, participants in a DAO may seek to eschew the application of any national or international law and may envisage that "the code is law", so that disputes will never be taken to court. They may therefore never turn their minds to questions of governing law, or regard themselves as being in legally-recognised contractual relations.

3.104 However, if they do consider and accept these issues, it has been suggested that the "choice of the governing law could for instance be coded into the source code of the

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899 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 7.80.

900 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 7.26.

901 "Introduction: The Blockchain as a Challenge to Traditional Private International Law" in A Bonomi, M Lehmann and S Lalani (eds), *Blockchain and Private International* Law (2023) p.4.

software and be imposed on anyone connecting to the network."[902] Whilst this accords with the emphasis on party autonomy that is potentially workable in the decentralised context of blockchain-based assets and DAOs, it raises questions as to what amounts to a valid expression of a choice of law by parties. In particular:

(1) Can parties choose a 'law' other than the law of a country – for example, to be governed by a blockchain protocol?

(2) Can the parties express their choice of law in code?

3.105 The answer to question (1) is clearly 'no' - it is clear that the reference to parties' choice of law refers to the law of a country.[903]

3.106 The answer to question (2) is less obvious.

3.107 There are two separate issues as to whether parties can express their choice of law in code. The first is whether it is possible to express such a choice in code at all. The second is how such a choice would be identified as a matter of interpretation, for the purpose of applying Article 3 of the Rome I Regulation.

3.108 As regards expressing a choice of law in code, in our Advice to Government on smart legal contracts we noted our view that it is very difficult for parties to express a choice of law clause in code, where by code we mean operational, deterministic code.[904] This is because "a choice of law can hardly be represented in algorithmic fashion – 'if this, then that'".[905] Nonetheless, the majority of consultees thought that it would be possible to encode a choice of law clause, and we agreed that it might be possible for parties to set up an algorithmic determination of governing law. For example, the parties could program the code such that, if the current operational state of the smart legal contract is X, the law of country Y applies; if not, the law of country Z applies. In such cases, the coded provision could be said to have operational effect.

3.109 As regards interpreting a choice of law in code to determine whether it is sufficient for the purpose of applying Article 3 of the Rome I Regulation, it should be noted that the provision for party autonomy in the Rome I Regulation is generous; it does not require that the law chosen has any connection with the transaction,[906] and the choice need not necessarily be made explicit in writing but can be "clearly demonstrated" by either the terms of the contract or circumstances of the case.[907]

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902 Introduction: The Blockchain as a Challenge to Traditional Private International Law in A Bonomi, M Lehmann and S Lalani (eds), *Blockchain and Private International* Law (2023) p.4.

903 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 7.32; Smart Legal Contracts: Advice to Government (2021) Law Com No 401, para 7.55.

904 Smart Legal Contracts: Advice to Government (2021) Law Com No 401, from para 7.54.

905 Smart Legal Contracts: Advice to Government (2021) Law Com No 401, para 7.71, G Rühl, "Smart (legal) contracts, or: Which (contract) law for smart contracts?", in B Cappiello and G Carullo (eds), *Blockchain, Law and Governance* (2021) p 170.

906 Article 3(3).

907 Article 3(1).

3.110 As regards an express choice in code, we concluded in our Advice to Government on Smart Legal Contracts that the appropriate test for interpreting coded terms in a smart legal contract would be that of the person with knowledge and understanding of code – a "reasonable coder".[908] Therefore, where a choice has been made which can be recognised by a reasonable coder, that choice should be sufficient.

3.111 The choice may not, however, be written explicitly in one piece of identifiable code; it may be argued that the choice is evident, but fragmented across different pieces of code or evident from participants' expectations and interactions.

3.112 In such circumstances, the editors of *Dicey* emphasise that the question of interpretation as to whether a provision constitutes a choice of law by the parties should be looked at from a "broad Regulation-based approach, not constrained by national rules of construction".[909] Therefore, where a choice is not express:

> The circumstances which may be taken into account when deciding whether or not the parties have made an implied choice of law under Art.3 range more widely than the considerations ordinarily applicable to the interpretation of or implication of a term into a written agreement, and may allow reference to the parties' negotiating history and post-contract conduct. The test is, however, an objective one, and evidence of the unspoken intentions of either party is inadmissible. The evidence of a choice must be substantial and not merely circumstantial.[910]

3.113 Therefore, an assessment would need to be undertaken to determine whether, on an objective view and with regard to a wide range of circumstances, a true choice of law has been made by participants in the DAO (as well as related questions such as whether they intended to create legal relations).

Non-contractual obligations: tort and delict

3.114 The rules on applicable law for torts and delicts are contained in the Rome II Regulation. The general rule for torts is that the applicable law will be that of the country in which the damage occurs. This may be departed from where:

(1) both the claimant and defendant have their habitual residence in the same country at the time when the damage occurs, in which case the law of that country will apply;[911] or

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908 Smart Legal Contracts: Advice to Government (2021) Law Com No 401, para 4.32.

909 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 32-085. *Egon Oldendorff v Libera Corp* (No.2) [1996] 1 Lloyd's Rep. 380, 38 7; *Samcrete Egypt Engineers and Contractors SAE v Land Rover Exports Ltd* [2002] EWCA Civ 2019, [2002] C.L.C. 533, at [25]–[26] (where it was held that, contrary to the normal domestic rule, it was appropriate to look at the negotiating history in considering whether a choice of law was to be inferred: at [23])

910 Lord Collins of Mapesbury and J Harris (eds), *Dicey, Morris & Collins, The Conflict of Laws* (16th ed 2022), para 32-088.

911 Article 4(2).

(2) where all the circumstances of the case make it clear that the tort is manifestly more closely connected with a different country.[912]

3.115 As we explain in the PIL Call for Evidence, a key issue that arises for the governing law of torts and delicts in the decentralised context is the same that arises in relation to some of the jurisdiction gateways: localising and conceptualising the losses suffered by the claimants. As we explained above, identifying a geographical location for damage or deprivation of tokens is difficult, and the loss may be conceptualised as pure economic loss. These issues are particularly pronounced for pure DAOs, due to their being far along the spectrum of decentralisation, and carry over from the jurisdiction analysis into the applicable law analysis.

3.116 A further complication in the applicable law context arises from the relevance to the applicable law question of the CJEU's jurisprudence on localising pure economic loss. As we note in the PIL Call for Evidence, the CJEU case law on localising pure economic loss suggests that it requires a multifactorial, fact-sensitive approach and cannot depend on recourse to the injured party's domicile.[913] It is not clear whether the approach taken by the courts of England and Wales to pure economic loss in the context of jurisdiction is consistent with the approach taken by the CJEU in the applicable law question,[914] and we have therefore asked consultees for their views as to the interaction between these two strands of case law.

Property

3.117 Property issues may arise if, for example, a participant in a DAO seeks to bring an action following the theft of their tokens by a hacker against a person to whom they have subsequently traced the tokens. In such circumstances, the issue will arise as to who has better title as between the claimant participant and defendant, in which case the court would need to apply the private international law rule for property issues.

3.118 Generally, property issues are governed by the law of the place where the property object is situated (the *lex situs*).[915] As we identify in the PIL Call for Evidence, applying this rule in the decentralised and digital contexts, by attempting to ascribe a location to "omniterritorial" crypto-tokens, exemplifies the issues that these new technologies pose for private international law. In addition, we note in the PIL Call for Evidence that there are several factors which complicate property disputes, such as: the interaction of property with contract; uncertainty as to whether party autonomy should have a role to play in property law; and (as discussed above) the temporal considerations which apply to property which may change location.[916]

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912 Article 4(3).

913 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 9.18.

914 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 9.17 onwards.

915 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 12.2.

916 Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 12.17 onwards.

3.119 These problems are particularly pronounced for tokens held in DAOs. For example, unlike tokens held in a crypto-exchange, a pure DAO itself also lacks a physical location, and cannot provide a potential basis for situating the tokens. A number of potential solutions to applying the *lex situs* to property issues relating to crypto-tokens have been proposed, with approaches focussing on various different factors such as party autonomy, participants, transferors, or the original coder.[917] Recognising the difficulties in this area and the range of solutions which have been proposed, we have put a number of questions to consultees on these issues – including whether a new conflict of laws regime is needed for property issues.[918]

[917] Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 12.72 onwards.

[918] Digital assets and ETDs in private international law: which court, which law? (2024) Law Commission Call for Evidence, para 12.118.

Appendix 4: DAOs as general partnerships or unincorporated associations

GENERAL PARTNERSHIPS

4.1 The Partnership Act 1890 (the Partnership Act) sets out the three conditions that must be satisfied for a general partnership to exist:[919] there must be (1) a business, (2) which is carried on by two or more persons in common, (3) with a "view of profit".

4.2 Business is defined in the Partnership Act to include "every trade, occupation, or profession".[920] This wide definition encompasses almost all commercial activities.[921] A general partnership may arise in relation to a business generally or for a particular transaction, area, or project.[922] However, the fact alone that some activity is profitable does not necessarily turn the activity into a business.[923]

4.3 For a partnership to exist, the persons[924] must carry on their business "in common".[925] That is, "together".[926] This implies the following:[927]

(1) There must be a single business. This may, however, involve different and unrelated activities or divisions.[928]

(2) Members must be carrying on that single business together for their common benefit, accepting some level of mutual rights and duties between themselves: they must carry on that business "*together* for their common benefit".[929] Persons carrying on wholly separate businesses or else seeking only to improve their own individual profitability will not be partners.[930] Equally, activity by a person in their individual capacity does not form part of a partnership

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919 Partnership Act 1890, s 1. This section also excludes from the ambit of the Partnership Act 1890 companies registered under the Companies Act 2006 and companies formed or incorporated by or in pursuance of any other Act of Parliament or letters patent, or Royal Charter.

920 Partnership Act 1890, s 45.

921 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-05.

922 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 5-107. A "sub-partnership" may also arise, that is a partnership in a share of another partnership (R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* paras 5-109–5-115).

923 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-02.

924 The term "person" includes bodies corporate: Interpretation Act 1978, sch 1. This means that an individual and a body corporate or a group of bodies corporate may form a partnership together.

925 In the Partnership Act's words: s 1.

926 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-13.

927 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* paras 2-13–2-17.

928 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-16.

929 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-16 (emphasis in original).

930 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-07, 2-11.

business.[931] However, the business can be a benefit for someone else, for example, where partners decide to apply all profits to a charitable purpose.[932]

Members must have accepted (expressly or impliedly) some mutual rights and obligations between themselves, in particular:[933]

(a) the existence of a duty of good faith may be "highly indicative" that a partnership exists;[934]

(b) the absence of mutual rights and obligations indicates that no partnership exists;

(c) but the mere acceptance of *some* mutual rights and obligations is not, alone, sufficient to show that a partnership exists.[935]

(3) Members must be carrying on that single business (at least in part) on their own behalf. If they all run the business entirely on behalf of a single third party, there is no partnership; but if they run the business on behalf of themselves *and* one or more third parties, there may be a partnership.[936]

The business must be carried on with "a view of profit".[937] That is, the participants must intend to make a profit. This feature distinguishes partnerships from societies or clubs.[938] A partnership will only exist if the profits are intended to be realised for the common benefit of the participants.[939] This does not mean that there must be equal profit sharing between partners and does not even preclude the partners from carrying on a business with the object of applying the profits towards a charitable purpose.[940] However, if a number of firms associate together with a view to promoting high standards in the professional services which they supply to their respective clients and,

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931 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-08.

932 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-25 and fn 94.

933 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-16.

934 *Campbell v Campbell* [2017] EWHC 182 (Ch) at [90(e)].

935 See R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-16: "If, on a true analysis, each supposed partner is carrying on a separate business wholly independently of the other(s), as in the case of a mutual insurance society … or one is actually supplying … services to the other, there can in law be no partnership between them. Equally, joint venturers will not necessarily be partners." Mutual societies are also discussed by R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-71 as societies in which each member acts only for himself.

936 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-13.

937 Partnership Act 1890, s 1(1).

938 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* paras 2-23 and 2-70.

939 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-24.

940 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-25.

thereby,to improve the individual profitability of each firm's business, this will not be sufficient.[941]

4.4 Whether the three conditions are satisfied in a particular instance is a mixed question of fact and law.[942] The three conditions are the only essential preconditions to the existence of a general partnership.[943] Various evidentiary aids to determine whether a particular relationship constitutes a general partnership are also provided by legislation[944] and case law; but these aids are subsidiary to the three conditions set out in section 1 of the Partnership Act itself. The three conditions therefore represent the "ultimate test" of whether a general partnership exists.[945]

Identifying the business with a view of profit

4.5 In order for a partnership to exist participants must be carrying on a business with a view of profit.

4.6 Business is defined in the Partnership Act to include "every trade, occupation, or profession".[946] This wide definition encompasses almost all commercial activities.[947] A general partnership may arise in relation to a business generally or for a particular transaction, area, or project.[948] However, the fact alone that some activity is profitable does not necessarily turn the activity into a business.[949]

4.7 The relevant participants must be carrying on their business with "a view of profit".[950] That is, they must intend to make a profit and the profits of the business must be intended to be realised for the common benefit of the participants.[951] This does not mean that there must be equal profit sharing between partners and does not even preclude the partners from carrying on a business with the object of applying the profits towards a charitable purpose.[952] However, if participants associate only with a

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941 As was made clear in *Brostoff v Clark Kenneth Leventhal*: R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-24.

942 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 7-15.

943 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-30.

944 Principally, Partnership Act 1890, s 2.

945 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 5-01.

946 Partnership Act 1890, s 45.

947 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-05.

948 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 5-107 . A "sub-partnership" may also arise, that is a partnership in a share of another partnership (R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* paras 5-109–5-115).

949 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-02.

950 Partnership Act 1890, s 1(1).

951 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-24.

952 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-25.

view of improving the individual profitability of their own businesses, this will not be sufficient.[953]

4.8 Some pure DAOs will be associated with a product or system that generates a profit that is shared with token holders. A DAO could pool funds from token holders to invest in other crypto projects and provide a return to those token holders or collect fees from users and distribute a portion of those fees to token holders. This could be achieved by token holders voting to distribute funds to themselves or by the pure DAO issuing interest-generating tokens to investors and distributing its funds in a way analogous to dividends. A pure DAO could also acquire cryptoassets like NFTs with the intention of selling that joint property for a profit.[954]

4.9 Other pure DAOs will involve token holders in governance of a protocol or product but include no mechanism for those token holders to make a profit for their common benefit. However, where there is no mechanism for a pure DAO itself to make a profit, there may nevertheless be other ways in which token holders commonly achieve a financial gain as a result of their token holding. Whether this would satisfy the test for token holders having a view of profit for the common benefit of fellow token holders would have to be determined on the specifics of the case.

4.10 Token holders may realise a capital gain in the value of their tokens when they sell them on the open market. There is an argument that they have a view of profit with regard to the future value of their token, but their intention may not be to make a profit for the common benefit of other token holders (profit being revenue of the partnership less its costs). The capital gain to an individual token holder on selling their tokens does not represent the profit of the pure DAO or of all token holders. On the other hand, there is an argument that if all partners intend to realise a gain in this way (particularly if only in this way) then there is a view to a profit for a common benefit. Effectively token holders are developing joint property to sell, albeit that they might sell their ownership shares at different times. Investment partnerships do exactly this; the partners get involved in the partnership with a view of profit in relation to such an activity.

4.11 In some pure DAOs, token holders may gain by receiving additional DAO tokens. Not all DAOs will have the same mechanisms or reasons for allocating tokens. A DAO could issue additional tokens to reward individual participants for their contributions, for example, if they provide a service to the DAO. These token allocations could be best characterised as payments or consideration for services. In other circumstances, the allocation of additional tokens may be more appropriately characterised as a form of profit sharing. For example, additional tokens may be allocated directly as a result of the DAO making a profit with the intention that token holders obtain a greater share of the DAO and therefore a greater share of any future profits of the DAO. Some pure DAOs ‘buy back’ tokens on the secondary market. Any gain made by a token holder can either be direct (having one’s token purchased) or indirect (having one’s token increase in value due to the decrease in supply of tokens), or both. Where the DAO

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953 As was made clear in *Brostoff v Clark Kenneth Leventhal*: R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-24.

954 If persons together acquire property with the intention of selling that joint property for a profit, “a partnership will almost inevitably be created” (R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 5-18).

intends to use its profits to buy back tokens from holders, benefitting token holders generally, this resembles an (indirect) division of profits. It is arguable that if a pure DAO intends to carry out this kind of activity, token holders carrying on the business of the pure DAO would have "a view to profit". We note, however, that in most partnerships buying out a departing partner, or adjusting capital as between current partners, would not have anything to do with the partnership business or making a profit.

4.12 Finally, token holders may use their tokens to participate in lending or staking. They would do this on an individual basis and earn fees and interest as a result. These activities are carried out using a pure DAO's tokens but they are not part of the pure DAO's business or being carried out by the token holder with a view to a profit for the common benefit of all token holders.

4.13 Where there is no for-profit activity being carried on, but participants are working together at the governance level, then an unincorporated association characterisation may be appropriate. We discuss this from para 3.67.

Identifying who might be a partner

4.14 For a partnership to exist, persons[955] must carry on their business "in common".[956] That is, "together".[957] As noted above, this implies the following:[958]

(1) That there has to be a single business;[959]

(2) That members are carrying on that single business together for their common benefit, accepting some level of mutual rights and duties between themselves.[960] Persons carrying on wholly separate businesses or else seeking only to improve their own individual profitability will not be partners.[961]

(3) That members are carrying on that single business on their own behalf.[962]

4.15 Pure DAOs can have a number of different participants involved in different roles, including developers, founders, token holders, miners/validators and users. Although their efforts are all required in order to maintain the ecosystem of the pure DAO, it may be a stretch to find that they are carrying on a business in common.

4.16 Miners/validators support the infrastructure and functioning of a pure DAO and may have some business interest in doing so because they are rewarded with DAO tokens or other cryptoassets or by receiving fees. However, their activities are arguably

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955 The term "persons" includes bodies corporate: Interpretation Act 1978, sch 1. This means that an individual and a body corporate or a group of bodies corporate may form a partnership together.

956 In the Partnership Act's words: s 1.

957 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-13.

958 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* paras 2-13–2-17.

959 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-16.

960 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-16. (emphasis in original).

961 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-07, 2-11.

962 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-13.

carried out for their own businesses, that is the acquisition of tokens or for private profit, and may not participate substantively in the activities of the pure DAO or exercise control over its decisions (although if they are also governance token holders they may do so, or have the ability to do so, in that capacity). Similarly, users of a pure DAO's services engage with the business but do so by paying for the service rather than being involved in carrying it on. Participants in these roles are more like customers and are therefore less likely to satisfy the criteria to be partners in a general partnership with other pure DAO participants.

4.17 Developers, founders and token holders are more likely candidates as partners in a general partnership as they are more likely to be working together for their common benefit. A small group of developers and founders might work together to launch a pure DAO and retain control over its direction and decision making. They might contribute expertise while acting in the best interests of the project and participating in any benefits that arise. Similarly, token holders with governance rights in a pure DAO might have accepted a certain level of mutual rights and duties between them to exercise those rights conscientiously with a view to benefitting the pure DAO by managing the protocol on their own behalf (and on behalf of users of the protocol).

4.18 These are very simple examples in which a general partnership between developers and founders or a general partnership between token holders could exist. In reality, even these types of participants may not be a homogenous group because there is no single way in which a pure DAO has to structure its governance. There may be multiple different tokens within a pure DAO, giving their holders different governance rights and therefore different levels of control over the business being carried out. For example, some token holders might only be able to decide narrow questions (like risk parameters) while others may also be able to determine which projects to invest in or even be able propose and vote on modifications to the protocol or governance processes. Similarly, a group of developers may include some who are very involved in business decisions and other who are more distant from the business, perhaps just being engaged by the core development team to provide code. Section 24(5) of the Partnership Act provides that "Every partner may take part in the management of the partnership business", although this is subject to any express or implied agreement between the partners.[963] It is therefore possible for partners to agree between themselves that certain partners have the right to manage the whole or some part of the partnership's affairs to the exclusion of others.

4.19 Given that pure DAOs take different approaches to structuring their governance processes, a developer or token holder's role in one pure DAO could be significantly different to the role of those in another. It is therefore not possible to generalise that a particular type of participant (for example developers or token holders) will always be a partner in a general partnership where a business is being carried out. Any conclusion about a particular pure DAO will require careful analysis of the activities and powers of the participants involved.

Unsolicited airdropped tokens

4.20 Airdropped tokens pose an unusual scenario that may not commonly arise when analysing a business relationship from the perspective of partnership law. The

[963] See the opening words of Section 24 of the Partnership Act 1890.

airdropping of tokens involves tokens being distributed to public addresses. Airdrops are often unsolicited and may be carried out either to increase decentralisation, increase awareness of a DAO or a certain type of token or to incentivise the use of those tokens. Once a token has been airdropped into a wallet, the person who controls that wallet becomes a token holder with governance rights in a pure DAO (even though that person may not have consented to receiving the tokens and may not even realise that they have received them).

4.21 People can therefore be given governance rights which could potentially make them a partner in a general partnership in a pure DAO. However, a partnership will only arise if the partners have agreed to carry on a business together. This agreement does not have to be express (for example, in the form of a written partnership agreement) and can be inferred from the parties' conduct. Nevertheless, it is unlikely that simply receiving a token into their wallet could, without something more, make someone a partner in a general partnership forming part of a pure DAO.

4.22 There may be, however, an evidential challenge for someone attempting to analyse the situation from a partnership law perspective. If the new token holder disposes of their tokens, this is a clear indication that they do not want to be involved with the DAO. Similarly, if a new token holder immediately becomes involved in forum discussions and formal governance votes, this suggests that they do. However, inaction on the part of a new token holder does not conclusively point one way or the other so agreement and non-agreement can look very similar. There is not usually a formal process by which new token holders can confirm their agreement to carry on the business of the pure DAO. If a new token holder does not become actively involved in governance, they may still have agreed to be involved in the business but as a "sleeping partner". A new token holder may have no interest in being involved with the pure DAO, but may not dispose of their token because of the transaction costs involved. In this situation the new token holder has not agreed to carry on the business of the pure DAO despite not disposing of the tokens.

4.23 Another reason for a new token holder to retain the tokens is if they think they may make a financial gain from them in the future (other than via a share in the profits of the pure DAO). This could be the case even if they have no interest in carrying on the business of the pure DAO. This kind of scenario is unlikely to arise in a traditional partnership, because partnerships do not generally have "shares" that are transferrable, tradeable and which can be used by their holders to gain financially in other ways such as via lending and staking.

4.24 While there are evidential challenges, it is worth noting that unexpectedly becoming a token holder in a pure DAO is distinct from, for example, unexpectedly becoming a shareholder in a limited company. A person may become a shareholder as a result of inheriting shares on a shareholder's death and, as a result, they are a member of a limited company (albeit with some formalities required on the part of the company to update their records). This can happen, but does not expose that person, as shareholder, to unlimited personal liability, for example. In contrast, if a person becomes a token holder in a pure DAO, for example via an airdrop, they will arguably only become a partner in a general partnership that exists within that pure DAO if they can be seen to have agreed to carry on the business of the partnership with the other partners. If they have done so, even unwittingly, they take on the full liabilities of a

partner. If they have not so agreed, their status is unclear. We are not aware of this question having arisen in partnership law because in traditional partnerships there would be no question of there being an entirely unwitting partner.[964]

Participants who declare that they are not a general partnership

4.25 Some pure DAO participants state or attempt to agree expressly that they are not partners. This could be to try to avoid the joint and several liability that being a partner entails, or it could be that members wish to try to maintain autonomy from the state and law around general partnerships.

4.26 It is not possible for partners to avoid being in a partnership with a mere label or declaration if the preconditions of partnership are objectively fulfilled. However, this kind of declaration may carry more weight in a borderline case,[965] and may influence the interpretation given to other clauses or conduct relevant to whether a partnership exists. The impact of this kind of declaration will therefore vary with the particular circumstances.

Other characteristics of pure DAOs that are not common to traditional general partnerships

4.27 Provided that the three conditions are satisfied, a partnership may exist without displaying common characteristics of other partnerships.[966] Nevertheless, the court may consider whether an organisation displays characteristics in common with known partnerships as an aid to determining whether the organisation in question is also a partnership.

4.28 Some commentators have suggested that a general partnership characterisation is not appropriate for pure DAOs because they do not display certain common characteristics of a traditional general partnership.

Number and pseudonymity of participants

4.29 In particular, general partnerships are usually made up of relatively few partners who are known to each other (or, if not known, then at least knowable). In Lord Lindley's words of 1860:[967]

> a partnership consists of a few individuals known to each other, bound together by the ties of friendship and mutual confidence…

4.30 By contrast, DAO token holders and other participants are often pseudonymous. Whilst the real identities of certain prominent participants may be public knowledge or

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964 People acting together in a business capacity may not have realised that they had formed a general partnership, but at least their participation in the business activities would not be unwitting.

965 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-03.

966 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-30. "There are no requisite formalities for the creation of a partnership nor is there a checklist of features against which the existence of a partnership can be determined. Each case must be judged on its own facts with appropriate weight afforded to different features." Hamilton v Barrow [2023] EWHC 1743 (KB) at [78(4)].

967 N Lindley, *A Treatise on the Law of Partnership Including its Application to Joint-Stock and other Companies* (1st ed 1860) p 66.

disclosed to insiders, a typical participant may have no practical means to find out the true identities of other participants (unless they volunteer the information).

4.31 That said, while a large number of pseudonymous partners is at odds with the classic characterisation of a partnership, it is not necessarily incompatible with the statutory definition. There is no legal upper limit on the number of partners[968] and so it is possible for a vast number of persons to enter into a single partnership together. Very large partnerships do exist. In fact, large partnerships, often of strangers, with freely transferable membership (then known as "unincorporated companies") were at times common under the law of England and Wales.[969]

Freely transferable nature of token holding

4.32 A characteristic of partnership is that it is a personal relationship. It was said that:

> When persons enter into a contract of partnership, their intention ordinarily is that a partnership shall exist between themselves and themselves alone... Hence it is one of the fundamental principles of partnership law that no person can be introduced as a partner without the consent of all those who for the time being are members of the firm.[970]

4.33 In larger partnerships the relationship may not be directly personal,[971] but it is still rare that partners in a general partnership can, "without the consent of the others, transfer his interest to a third party, who will thereafter stand in his shoes".[972] Given that partners are jointly and severally liable for each other's actions it is natural that they would expect a vetting process.

4.34 Many token holders, by contrast, have that extensive freedom. Token holdings in DAOs are often (but not always) freely transferable on the secondary market.

4.35 This feature does not however prevent a DAO from being a partnership. While non-transferability is a typical feature of partnership,[973] it is not a prerequisite to the existence of the partnership relationship.[974] A partnership agreement may give a partner the right to transfer their partnership share to a third-party, making a new

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968 Prior to 2002, there was a maximum limit of twenty partners (The Regulatory Reform (Reform of 20 Member Limit in Partnerships etc.) Order 2002 (SI 2002 No 3203)).

969 For further description of the history of unincorporated companies as "a species of large partnership", see William Edwards, "Decentralised Autonomous Organisations: unincorporated companies by another name?" (2022) 3 *Journal of International Banking and Financial Law 147*.

970 Lord Lindley, *A Treatise on the Law of Partnership Including its Application to Joint-Stock and other Companies* (1st ed 1860) quoted by R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 19-77.

971 It has been argued that, even in traditional partnerships, it is possible to have "a large number of individuals not necessarily nor indeed usually acquainted with each other at all, so that it is a matter of comparative indifference whether changes amongst them are effected or not": William Edwards, "Decentralised Autonomous Organisations: unincorporated companies by another name?" (2022) 3 *Journal of International Banking and Financial Law* 147.

972 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 5-14.

973 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-29.

974 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 2-30.

partner.[975] Likewise, while the Partnership Act provides a default rule that no new partner may join without the agreement of all the existing partners,[976] this rule is not mandatory and may be excluded/amended by agreement of the partners.

4.36 When there is any change in the identities of partners, the 'old' partnership is technically dissolved and 'new' partnership is formed even if the name is the same. Any partnership name is merely a convenient way to describe the group of persons associated together at that point in time.[977] When a partner joins or leaves, that name takes on a new meaning.[978]

4.37 In the DAO context, freely transferable tokens could technically mean that the partnership is being dissolved and re-constituted multiple times a day as token holders trade their tokens. When token holders join or leave a DAO, participants tend to think of the DAO itself as pre-existing and continuing to exist – this is inherent in the language of "joining" and "leaving" a DAO. In practice, people talk of large partnerships in the same way. For example, the law firm Slaughter and May[979] would describe itself as having existed since 1889, not since 2023 with the last change in partners. Hence, the real question for a DAO is not linguistic, but rather the extent to which it can replicate the effect of having a continuing entity despite no such entity existing at law.

4.38 When a partner joins or leaves, the new partnership and leaving partners may agree contractually between themselves to take on the rights and obligations of the old partnership. However, transferring an obligation owed to a third party generally requires the consent of the third party, and cannot be done unilaterally by the partners. In other words (unless the parties agree otherwise):

(1) a new partner does not become liable to third parties for debts, contractual obligations or tortious liability incurred before they became partner.[980]

(2) a former partner remains liable to third parties for debts, contractual obligations and tortious liability incurred during their time as partner.[981]

4.39 Regarding contractual rights and liability, a DAO might achieve the effect contractually, that is in the terms of agreements (i) between the participants themselves and also (ii) between the DAO (in reality, the participants) and third

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975 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 19-93, which quotes Lord Lindley: "If partners choose to agree that any of them shall be at liberty to introduce any other person into the partnership, there is no reason why they should not".

976 Partnership Act 1890, s 24(7).

977 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 3-17.

978 R I Banks, *Lindley & Banks on Partnership (20th ed 2017)* para 3-20.

979 Slaughter & May is still a general partnership; unlike the vast majority of other (large) law firms, it has not opted to become a limited liability partnership (LLP).

980 Partnership Act 1890, s17(1).

981 Partnership Act 1890, s17(2).

parties. Contractual solutions, however, may require a conscious effort to be made, and might not assist members of a DAO who were unaware of the issue.[982]

4.40 Further, there are limits to what can be achieved contractually: contractual arrangements could not pass primary responsibility for tortious liability to non-counterparties or regulatory liability. As a consequence, even with careful drafting between participants, an outgoing DAO participant would not leave behind primary liability for torts and regulatory breaches committed by the DAO (that is, by the participants at the time) during their time as a participant.[983] It is unlikely that DAO token holders will realise that they could retain liability after they have sold their tokens.

UNINCORPORATED ASSOCIATIONS

4.41 In this section we discuss how some aspects of Lord Justice Lawton's description of unincorporated associations in *Conservative and Unionist Central Office v Burrell (Inspector of Taxes)* could apply to pure DAOs. In that case, Lord Justice Lawton described an unincorporated association as:[984]

> … two or more persons bound together for one or more common purposes, not being business purposes, by mutual undertakings each having mutual duties and obligations, in an organisation which has rules which identify in whom control of it and its funds rests and on what terms and which can be joined or left at will.

4.42 This description is widely accepted but, as we discuss in Chapter 3,[985] the term "unincorporated association" is occasionally used as a residual category of organisation to catch arrangements that are not incorporated entities or partnerships but are something more than a group of disparate individuals. Notably, the requirement that an unincorporated association has a non-business purpose is not always considered relevant.[986]

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982 Relatedly, a change in the partnership may constitute a breach or repudiation of some contracts – because the third party in reality contracted only with the partners at the time when the contract was entered into. There is often, however, a contractual solution to this contractual problem – in particular, the third party and original partners may agree (either expressly or implicitly) that the contract is to be performed by the partnership as from time to time constituted, and the new partner may agree to take on the contractual rights and obligations of the contract.

983 The drafting of DAO membership agreement(s) could give a former member a right of contribution from current members. However, such an agreement would not shift primary liability to the injured third party or regulator and would be more problematic for a DAO than for a conventional partnership: for instance, a DAO's membership will often be free-flowing and pseudonymous meaning that it would be (i) more arbitrary who happens to be holding the tokens at the time of subsequent proceedings and (ii) harder for a former member to identify, and enforce against, current members.

984 *Conservative and Unionist Central Office v James Robert Samuel Burrell (HM Inspector of Taxes)* [1982] 1WLE 522, (CA). *Hanchett-Stamford v AG and Others* [2009] Ch 173 (Ch).

985 From para 3.70.

986 We discuss the application of tax rules and financial regulation to DAOs in more detail in Chapter 6 and note that "unincorporated association" is not restricted to non-business associations in these contexts.

Non-business purpose

4.43 In order to fall within Lord Justice Lawton's description in *Burrell*, the members of an unincorporated association must be bound together for one or more common purposes but these cannot be business purposes. The purpose of an unincorporated association therefore cannot be for the financial profit of its members[987] – in contrast with partnerships which must have a "view to profit".[988] This is one of the principal distinctions between partnerships and unincorporated associations.[989] However, that the purpose of an unincorporated association must be non-profit, does not prevent the association from (1) itself making a profit, (2) having a close connection to business, or (3) even appearing to be a business at first sight. Hence, an organisation whose purpose *seems* to be profit may still be an unincorporated association in some scenarios including the following:

(1) An association can generate a profit or additional assets to remain as joint funds of the association to be used for furtherance of the association's non-business purpose. This purpose might solely benefit the members.[990]

(2) An association can be established to facilitate business: for example, to promote a particular business sector or establish business standards.[991] If a number of businesses associate together to promote the standards of their services and, thereby, improve the individual profitability of each business, they will not create a partnership, because the profit would not be for the *common* benefit of the members.[992] Associations can include industry associations, investment associations and trade associations.[993]

(3) An association can allow a member to make use of certain business infrastructure and carry on business using that infrastructure for each individual member's own account and profit. For example, in *Weinberger v Inglis*, membership of the original form of the London Stock Exchange entitled the member to have entry to and trading rights within the Stock Exchange building. Although this had the appearance of being part of a business venture, close

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987 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 2.53.

988 Discussed from para 3.36(3).

989 See, for example, N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 1.15; R I Banks, *Lindley & Banks on Partnership* (20th ed 2017), para 2-70.

990 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations (2011)*, para 1.12. In certain circumstances, such as dissolution of the association, the association may even distribute surplus profits to members (N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 11.08. *Carlisle & Silloth Golf Club v Smith* [1912] 2 KB 177, 187). However, if there is an intention to make a profit for division of the members, the organisation risks being characterised instead as a partnership. Partnership Act 1890, s 2(3): "The receipt by a person of a share of the profits of a business is prima facie evidence that he is a partner in the business, but the receipt of such a share, or of a payment contingent on or varying with the profits of a business does not of itself make him a partner in the business".

991 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 2.60.

992 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017), para 2-24.

993 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 2.60.

examination of its true purpose showed that membership merely entitled use of the exchange for individual pursuit of profit.[994]

4.44 Where a DAO's purpose is to make a profit and distribute profits to token holders, it will not be an unincorporated association as described by Lord Justice Lawton in *Burrell*. However, the activities of some DAOs will not be profit-orientated, as may be the case where the DAO's purpose is to be a social club, build a community and/or provide advocacy/lobbying. In such arrangements, there may still be other ways in which token holders and other participants can gain financially from their involvement. Token holders could see a benefit from a capital value increase in their token holdings, they could receive further DAO tokens or they could benefit from the DAO buying back their tokens. They may also use their tokens to earn fees and interest by participating in lending or staking. Miners / validators may be rewarded with DAO tokens or other cryptoassets for their involvement in supporting the infrastructure and functioning of a DAO and users of a DAO's services may do so with a view to a profit. These activities may not necessarily preclude a DAO from having a non-profit purpose as they could be analogous to the situation in *Weinberger v Inglis*.[995]

Identifying the members of an unincorporated association

4.45 As set out above, an unincorporated association is one in which two or more persons are bound together for one or more common purposes. These persons are bound by mutual undertakings each having mutual duties and obligations.

4.46 We saw in our discussion of general partnerships that it may be a stretch to suggest that all participants in a pure DAO are carrying on a business together. However, it is less of a stretch to see participants as being bound together for one or more common purposes. Participants in various different roles may well be working towards the same purpose of maintaining the ecosystem of the pure DAO. The commitment of participants to this purpose and to each other will, however, likely vary between different pure DAOs. Developers and founders or token holders with governance rights may share a commitment to seeing the pure DAO survive and succeed. Their mutual undertakings will be contained in their governance rights and the governance processes and functionality of the smart contracts. In contrast, a miner/validator or paid contributor may have no more than a passing interest in the pure DAO they are interacting with and not be bound to other participants by anything like mutual duties and obligations.

4.47 While a pure DAO may therefore include some participants within an unincorporated association, it is not necessarily the case that this will include all participants in the pure DAO ecosystem. Also, the role of developers, founders and token holders can differ between pure DAOs and even within a pure DAO. A situation could arise whereby some token holders, for example, are bound by mutual undertakings while

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994 *Weinberger v Inglis* [1919] AC 606 (HL) 622: "The right or privilege which a person acquires by the payment of an entrance fee, and the yearly subscription and subsequent election as a member, is simply the right to be admitted to the Stock Exchange building, or any particular and specified part of it, to transact the business of a broker and jobber or of either of them therein…". N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), para 2.53.

995 Discussed at para 3.73(1).

others are not. It is therefore not possible to say that a particular type of participant will always be a member where there is an unincorporated association.

Identifying the rules of the unincorporated association

4.48 An unincorporated association will come into existence when a group of people agree to co-operate for a mutual purpose other than a business. If rules are adopted by these people (the founding members) or an implicit but sufficiently clear understanding is reached between them, there is a contract forming an unincorporated association.[996] No formal action, such as registration, is required. The rules of an unincorporated association are part of the contract between members and should establish the rights and obligations between members and how the association is to be managed and run. Uncertainties and gaps are particularly common in the rules of unincorporated associations, and the courts make allowance for the nature of unincorporated associations:[997]

> usually there is a considerable degree of informality in the conduct of the affairs of [unincorporated associations], and … the courts have to be ready to allow general concepts of reasonableness, fairness and common sense to be given more than their usual weight …

4.49 As a matter of best practice written rules should address key topics such as member subscriptions, requirements for membership and voting rights as well as official positions within the association, any right of indemnity of officials of the association and the distribution of assets on dissolution of the association.[998] Some unincorporated associations will have formal written rules, but the absence of these does not preclude a group of people from being an unincorporated association.

4.50 For a pure DAO, there are a number of sources which could be identified as containing these rules. For example, the code and natural language documents associated with a DAO, for example, a constitution, covenants, bylaws and member participation agreements.

4.51 DAOs are unlike most unincorporated associations as traditionally understood, in that token holders are generally pseudonymous to each other. For example, token holders may be identified by a wallet address or forum username, but not by their legal name. Unincorporated associations have been defined as "an association of persons bound together by identifiable rules and having an *identifiable* membership."[999] However, there is no requirement under the law of England and Wales for the parties to a contract to know each other's real identities.[1000] Pseudonyms are sufficient to allow

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996 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 2.53; Weinberger v Inglis [1919] AC 606 (HL) 622.

997 *Re GKN Bolts & Nuts Ltd (Automotive Division) Birmingham Works Sports & Social Club* [1982] 1 WLR 774 at 776[F]. See N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011), paras 2.20–2.21, for further discussion of the case law associated with certainty/completeness and the rules of unincorporated associations.

998 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 2.18.

999 *Re Koeppler's Will Trust* [1986] Ch 423, 430–431 (emphasis added).

1000 *Chitty on Contracts* (35th ed), para 5-037: "the identity of the person with whom one is contracting or proposing to contract is often immaterial".

persons to enter into association with one another. However, if the code and natural language associated with a particular pure DAO do not cover some of the key aspects one would usually expect to find in the rules of an unincorporated association, then taken together they may not be sufficient to function as rules of an unincorporated association.

Joining and leaving an unincorporated association

4.52 An unincorporated association can accommodate a changing membership as members join or leave simply by applying the rules of contract. If another person wishes to join the association, they must contract with each other member to be bound by the rules of the association.[1001] If a member wishes to resign, they must follow the method prescribed by the rules. If the rules are silent on this matter then members are deemed to resign if they sufficiently manifest their intention to leave either orally, in writing, or by conduct or inertia.[1002]

4.53 Lord Justice Lawton's description of an unincorporated association in *Burrell* states that the organisation "can be joined or left at will".[1003] This refers to the characteristic of unincorporated associations, related to their contractual nature, that members are free to join and free to leave. This phrase, however, should not be understood too literally or in isolation: an association (that is, the existing membership) is also free to choose with whom they contract,[1004] and may place lawful restrictions on who can join and how.[1005] For example, a club may have an application process and require applicants to have certain experience or qualifications.

4.54 Many or most DAO token holders have the freedom to join or leave a DAO at will, often by purchasing the DAO's governance tokens either from an existing holder on the secondary market or from the DAO itself (generally in exchange for cryptocurrency or some form of work/activity). Fluid entry and exit is often considered characteristic of DAOs: "joining a DAO is a fairly simple procedure … all you need to do to join a DAO is pick one that interests you, purchase the DAO's token, and acquire access."[1006] Certain models of DAO, however, require prospective members to seek permission to join the DAO, sometimes for the purposes of anti-money laundering checks or of establishing the applicant's experience in the area.

4.55 In many (but not all) DAOs, members can transfer their membership by transferring their tokens to a new holder. By contrast, members of unincorporated associations do

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1001 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 2.17; *Amalgamated Society of Carpenters, Cabinet Makers and Joiners and Others v Braithwaite* [1922] 2 AC 440 (HL) 455.

1002 *Re Sick and Funeral Society of St John's Sunday School*, *Golcar* [1973] Ch 51 (Ch) 62.

1003 Para 3.68 above, quoting *Conservative and Unionist Central Office v Burrell* [1982] 1 WLR 522, 525 by Lawton LJ.

1004 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 4.10*s*, para 2.91.

1005 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 4.10, para 2.96.

1006 Wang Masa, "How To Join A DAO: A Completed Beginners' Guide" (21 December 2022) *Bitkan*: https://bitkan.com/learn/how-to-join-a-dao-a-completed-beginners-guide-9011.

not typically ‘transfer’ their membership: each member is a member by virtue of having entered into a contractual relationship with all the other members. An outgoing member may choose to leave the association, that is, to cease to be a party to the agreement. In some associations with a maximum number of members, the departure of a member may happen to enable a new member to join. When a member leaves an unincorporated association, they cease to have an interest in the association’s assets and their former interest passes to the continuing members.[1007] Rarely, however, will the outgoing member have the contractual right to choose the new member, much less receive payment from the new member. Even in such a case, it is questionable what, if anything, is being “transferred”.

4.56 An unincorporated association continues in existence with a changing membership until it is dissolved (1) in accordance with its rules; (2) by agreement of all persons interested; (3) spontaneously when the basis of the association has gone so that it no longer has any effective purpose; or (4) by court order.[1008] Most DAOs also appear to share this characteristic and do not purport to dissolve every time their membership changes.[1009]

[1007] N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 3.06.

[1008] N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 4.10.

[1009] This is in contrast with general partnerships. We discuss this at para 3.51.

Appendix 5: DAOs and contract formation

5.1 In Chapter 3 we suggested that various relationships within a DAO have the potential to be the subject of a legally binding contract. Examples include:

(1) The relationship between the developers who initially developed the open-source software used by the DAO (and who may retain some publishing rights over it).

(2) The relationship between developers and investors in the early stages of a DAO where developers are first seeking funding, whereby investors deposit money into the DAO treasury and, in return, become token holders.

(3) The relationship between token holders, whereby they use their governance rights for the purpose of governing the DAO.

(4) The relationship between token holders and miners / validators who carry out activities which are essential to the functioning of the protocol in return for payment in tokens out of a DAO's treasury.

(5) The relationship between token holders and contributors who contribute to the activities of the DAO in return for payment in tokens out of a DAO's treasury.

(6) The relationship between the DAO and the users of the DAO's services.

(7) The relationship between the DAO and third parties engaged by the DAO, for example lawyers, tax advisers and employees.

(8) The relationship between all DAO participants where their various roles and incentive mechanism structures are built into the infrastructure of the DAO via the rules contained in smart contracts and any natural language documents that are relevant to the DAO.

5.2 Some of these potential contracts could be bilateral, between only two participants in a DAO. However, it is more likely that any contract would have multiple parties. Some of these relationships could be understood as joint ventures (sometimes also known as alliances), which involve parties coming together for the purposes of collaboration. This can include parties contributing capital to a jointly-owned business and sharing profits or losses.[1010] It can also be an arrangement which does not involve direct profit or equity sharing, for example, sharing of resources, pilot projects, research and development collaborations, joint production arrangements and network alliances.[1011] Joint ventures are usually talked about in the context of business, where organisations join forces to grow their businesses.[1012] It is possible, however, that these kinds of arrangements could characterise the relationship between some participants

[1010] Sometimes known as an "equity joint venture": *Hewitt on Joint Ventures* (7th ed), para 1-07.

[1011] Sometimes known as a "non-equity joint venture": *Hewitt on Joint Ventures* (7th ed), para 1-07.

[1012] *Hewitt on Joint Ventures* (7th ed), para 1-03.

(including participants with different roles) in a technology mediated organisation such as a DAO.

5.3 "Joint venture" is not a term of art or a term with a specific legal meaning or treatment. The parties to a joint venture may use an incorporated legal entity like a limited company to carry out their collaborative activities. Alternatively, their relationship will be based on a simple contract between all parties, detailing their co-operation.[1013] Given the common starting point of a contract and a common purpose, a joint venture could be characterised in law as a general partnership or unincorporated association if the requisite conditions for the existence of such organisations are met.[1014] Where those conditions are not met, the relationships within joint ventures and liabilities of the parties to that joint venture will be governed by contract.

Are the rules of contract formation satisfied for these interactions?

5.4 The normal rules of contract formation under the law of England and Wales apply: that is, there must be (a) agreement (offer and acceptance), (b) consideration, (c) certainty and completeness of terms, and (d) intention to create legal relations.[1015] Each of these elements of contract formation is considered briefly below in the context of DAOs.

Agreement (offer and acceptance)

5.5 For a contract to exist "the parties [must] have reached an agreement".[1016] In most cases, a contract is formed when one party makes an offer which the other party accepts.[1017] Under the law of England and Wales, such a contract's existence does not depend on any particular form: the contract and its acceptance can be formal, informal, oral, part oral, part written, and/or implied through conduct or practice.[1018]

5.6 For some interactions between participants in a DAO, identifying the method or point of offer and acceptance will be relatively straightforward, albeit circumstance-specific. For example, two or more developers may agree to collaborate to develop software for a DAO. In the early stages of a DAO developers may make a public announcement that tokens are available in return for investment in the DAO. An offer is represented by the rules of token holding (for example, on the DAO's front-end website) and a person accepts the developers' offer by depositing crypto currency into

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1013 *Hewitt on Joint Ventures*, the leading text on this topic, refers to these arrangements as "unincorporated alliances" rather than "joint ventures": *Hewitt on Joint Ventures* (7th ed), para 3-05.

1014 We discuss the conditions required for a general partnership or unincorporated association to exist in Chapter 3.

1015 *Blue v Ashley* [2017] EWHC 1928 (Comm) at [50]. For detail, see *Chitty on Contracts* (35th ed) Part 2 (Formation of Contract), in particular ch 4 (The agreement) and ch 6 (Consideration).

1016 *Falk v Williams* [1900] AC 176; *Blue v Ashley* [2017] EWHC 1928 (Comm) at [50], by Leggatt J.

1017 *Chitty on Contracts* (35th ed), ch 4 (para 4-001).

1018 *MWB Business Exchange Ltd v Rock Advertising Ltd* [2018] UKSC 24, [2019] AC 119 at [7] by Lord Sumption; UKJT Legal Statement at [137]. Exceptions to this general rule include: contracts for the sale or other disposition of an interest in land, contracts of guarantee, regulated consumer credit agreements and deeds.

a DAO's treasury or via an application process which results in them acquiring the DAO's token.[1019]

5.7 Where a DAO token is freely transferrable, the offer to potential token holders could again be represented by the rules of the token holding and acceptance by new token holders occurs when they become the holder of a token and agree to those rules.

5.8 Contributors to the DAO may act in response to a request from DAO token holders posted on an off-chain forum or may volunteer their services. In these interactions the key question will be which token holders are making or accepting the offer. Is it all the token holders or just those who have actively voted or been involved in the interaction? Similarly, where someone uses a DAO's services, are they accepting the offer of those services from all token holders or just developers? In these cases, additional evidence may assist to support the conclusion that an agreement has been reached with particular participants. This could include any rules of the system which set out how contributors can become involved in a DAO and how they may be remunerated.

5.9 The role of miners / validators is built into a DAO's protocol, therefore this could be interpreted as an offer which is accepted through the conduct of a miner / validator. Support for the proposition that the deployment of a computer program can amount to a contractual offer can be found in *Thornton v Shoe Lane Parking*.[1020] In that case, the defendant installed a machine in its car park, which would automatically grant entry to the car park when money was inserted into the machine. Lord Denning MR explained that the defendant, in holding out the machine as being ready to receive money, was making an offer to customers to use the car park in exchange for payment.[1021] The same reasoning could apply in the case of miners / validators scenario: a person who deploys a piece of code on a smart contract platform which automatically transfers payment in the event of completion of an action or activity could be considered to be making an offer.

5.10 Lord Denning MR continued to find that agreement was reached "at the very moment when [the customer] put his money into the machine";[1022] this was the acceptance. Just as the insertion of money into the machine in *Thornton* was considered to be an acceptance, the carrying out of a particular activity by a miner / validator could also be considered an acceptance. The law of England and Wales generally requires an acceptance to be "communicated" to the offeror.[1023] However, in a unilateral contract,

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[1019] For more detailed discussion of offer and acceptance in the context of DLT systems, see Smart legal contracts Advice to Government (2021) Law Com No 401, in particular paras 3.8–3.18 and 3.26–3.38.

[1020] [1971] 2 QB 163.

[1021] *Thornton v Shoe Lane Parking* [1971] 2 QB 163 at 169.

[1022] *Thornton v Shoe Lane Parking* [1971] 2 QB 163 at 169.

[1023] The reason being that it may be unfair to hold the offeror bound before they know the offer has been accepted: H Beale (ed), *Chitty on Contracts* (35th ed) para 4-055; see *Entores Ltd v Miles Far East Corporation* [1955] 2 QB 327, 333, by Denning LJ; *Holwell Securities v Hughes* [1974] 1 WLR 155, 157, by Russell LJ.

where a party makes a promise to do something if someone else performs a specified act, performing the act is sufficient for acceptance.[1024]

5.11 Offer and acceptance may present a particular problem in cases of airdropped tokens. As a result of an unsolicited airdrop to their wallet, a person could become a token holder with governance rights in a DAO without wishing to or being aware of their new token holding. On becoming aware of their token holding they may dispose of the token, but alternatively they may prefer to let an unwanted token remain in their wallet because of the transaction fees involved in transferring tokens or because they may be able to make a financial gain in the future from the token.

5.12 If they continue to hold the token but do not exercise any governance rights and have no intention of exercising governance rights, has there been an agreement (offer and acceptance)? If a person has done nothing to acquire or use the tokens then this could be significant. A straightforward failure to exercise governance rights may be relevant, but on the facts may not be sufficient to show that there is no agreement. In DAOs which have a low voter turnout, as is common in DAOs as in many other contexts,[1025] the conduct of an accepting new token holder and a non-accepting new token holder may appear externally identical.

Consideration

5.13 An agreement to enter into a contract must be supported by mutual consideration. "Consideration" means a promise or (in the case of a unilateral contract) performance by one party in exchange for a promise by the other party.[1026] Under the law of England and Wales, a gratuitous promise or gift is generally not binding.[1027]

5.14 In clubs and societies, often the consideration given by the member includes their membership fee and the consideration given by the association includes the benefits of membership. Alternatively, if there is no membership fee, consideration is constituted entirely by the "mutual duties and obligations"[1028] between the member and the club.

5.15 In a general partnership, partners generally make a capital contribution to the partnership when becoming a partner, or may otherwise contribute a particular skill, or perform "some act which may result in liability to third parties".[1029] Otherwise

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[1024] H Beale (ed), *Chitty on Contracts* (35th ed) para 4-059; *Carlill v Carbolic Smoke Ball Co* [1893] 1 QB 356; *Harvela Investments Ltd v Royal Trust of Canada (CI) Ltd* [1986] AC 207, 224, by Lord Diplock; *Soulsbury v Soulsbury* [2007] EWCA Civ 969, [2008] Fam Law 13 at [50] by Longmore LJ; *Air Transworld Ltd v Bombardier Inc* [2012] EWHC 243 (Comm), [2012] 1 Lloyd's Rep 349 at [79] by Cooke J.

[1025] "Voter Fatigue. People generally don't vote or don't vote often. On average, US presidential elections have a 60% turnout, while local elections have 15%. Though many DAOs have turnouts in the single digit percentages.": Alex Poon, "DAO governance is not working. Now what?" (9 December 2022): https://www.charmverse.io/post/dao-governance-is-not-working-now-what.

[1026] A Burrows, *A Restatement of the English Law of Contract* (2nd ed 2020) p 8.

[1027] The exception is a promise made by deed, which does not require consideration to be legally binding.

[1028] *Conservative and Unionist Central Office v Burrell* [1982] 1 WLR 522, 525, by Lawton LJ.

[1029] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017), para 6-01, citing The Herkimer (1804) Stewart's Adm.Rep. 17 at 23; Andersons' Case (1877) L.R. 7 Ch D. 75, and its citing with apparent approval in *Sidhu v Rathor* [2020] EWHC 1916 (Ch) at [47], [310]).

consideration can be represented by the mutual obligations that the partners undertake.[1030]

5.16 Is there likely to be consideration when a participant becomes involved in a DAO? Some DAOs use token offerings to raise capital. In these cases, the consideration is clear: the investor gives cryptocurrency in return for receiving the DAO token; the DAO gives the token in return for receiving the cryptocurrency. Alternatively, the token holder may, and other participants such as a miner/validator or developer almost certainly will, contribute services. However, some DAOs do not issue their tokens as a means to raise capital or receive services; and, in many DAOs, an initial token holder may sell their tokens to a subsequent token holder, who will pay the initial token holder but not pay anything further to the DAO. In these latter types of situation, consideration may be represented by the rules of the DAO: the new member and the DAO (the existing members) promise to each other to abide by the rules.

Certainty and completeness of terms

5.17 For a contract to exist, its terms must be reasonably certain and complete. If terms are too vague to be enforceable, or incomplete because the parties have failed to agree on essential matters, there can be no contract between them.[1031]

5.18 The terms need only be "reasonably certain".[1032] An agreement will be found to be unenforceable for these reasons only if it is "legally or practically impossible to give to the parties' agreement any sensible content".[1033] The courts are eager to uphold agreements;[1034] concluding that an agreement intended to be legally binding is too uncertain is "very much a last resort."[1035]

5.19 In some DAOs, agreement between participants may be formal and express – such as in a participation or membership agreement. In other DAOs, this agreement might be set out or evidenced less formally or piecemeal, for example in the white paper, discussion forums, the website, the code, participants' conduct and past practice between participants. Whether or not these rules are sufficiently certain and complete as to comprise a contract between the participants of a particular DAO will depend on the individual facts.

1030 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017), para 6-01.

1031 H Beale (ed), *Chitty on Contracts* (35th ed) paras 4-145 and 4-185.

1032 *Hillas & Co Ltd v Arcos Ltd* (1932) 1478 LT 503, 514, by Lord Wright.

1033 *Scammell v Dicker* [2005] EWCA Civ 405, [2005] 3 All ER 838 at [30] by Rix LJ.

1034 See, eg, *Mamidoil-Jetoil Greek Petroleum Co SA v Okta Crude Oil Refinery AD* (No.1) [2001] EWCA Civ 406 at [46] and *MRI Trading AG v Erdenet Mining Corporation LLC* [2013] EWCA Civ 156, [2013] 1 Lloyd's Rep 638.

1035 *Blue v Ashley* [2017] EWHC 1928 (Comm) at [61], going on to quote Toulson LJ in *Durham Tees Valley Airport v bmibaby* [2010] EWCA Civ 485, [2011] 1 Lloyd's Rep 68, at [88]: "Where parties intend to create a contractual obligation, the court will try to give it legal effect. The court will only hold that the contract, or some part of it, is void for uncertainty if it is legally or practically impossible to give to the agreement (or that part of it) any sensible content." The language of "last resort" was also used in *Astor Management AG v Antalaya Mining Plc* [2017] EWHC 425 (Comm), [2018] 1 All ER (Comm) 547 at [64] by Leggatt J, cited with approval in Openwork Ltd v Forte [2018] EWCA Civ 783 at [27] by Simon LJ.

Intention to create legal relations

5.20 Where an offer is accepted, it is a further requirement to be a contract that the parties intend to create legally enforceable rights and obligations.[1036] Obligations intended to be moral, honourable, or social only are not contractual. For example, a group of friends meeting to play games might not intend to create any legally binding obligations between them,[1037] but a larger group involving strangers and shared facilities might intend (expressly or impliedly) that there would be legal redress for breaches or misconduct.

5.21 Whether an agreement between DAO participants is intended to be legally binding must depend on its own facts. Certain DAOs clearly intend to create legal relations – for example, because they have professionally drafted agreements between participants which expressly include governing law and dispute resolution clauses, often with reference to arbitration.[1038]

5.22 Other DAOs are silent on the issue. But where DAO participants are numerous, unknown to each other, and/or control significant assets together, then it may be more likely that they would want their agreement to be enforceable.[1039] Conversely, when DAO members are few, known to each other, and/or do not control significant assets together, they may not intend that there could be legal enforcement of their agreement. Members of a purely social DAO, for example, might not intend that their rights and obligations be legally enforceable.

5.23 When a DAO is commercial in nature, there will be a presumption that participants intend to create legal relations with each other: this presumption is rebuttable, but that burden is "a heavy one".[1040]

5.24 The idea that there might be a legally enforceable agreement between DAO participants may be alien or repugnant to some participants who may enter DAOs in the hope that their association is beyond the reach of law. A court will generally not consider the subjective beliefs of parties to a contract, but will instead consider their objective conduct and the language of their agreement.[1041] However, in a case where there is no written agreement, evidence of the subjective understanding of the members may be admissible to show whether they intended their agreement to be legally binding.[1042]

1036 *Blue v Ashley* [2017] EWHC 1928 (Comm) at [55]. *Chitty on Contracts* (35th ed), paras 4-207–4-253.

1037 N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 1.05.

1038 For example, CowDAO Participation Agreement (February 2022), clauses 28 and 29: https://gateway.pinata.cloud/ipfs/Qmf9MYhcG2pFrDoVy13p6FWeVF4nG9HbJvRfYYbhazTCFe.

1039 Unless they object to this from an ideological standpoint.

1040 *Barbudev v Eurocom Cable Management Bulgaria EOOD* [2012] EWCA Civ 548, 2 All ER (Comm) 963 at [30]; *Edwards v Skyways* [1964] 1 WLR 349 at 354–355.

1041 *RTS Flexible Systems Ltd v Molkerei Alois Muller GmbH & Co KG* [2010] UKSC 14, [2010] 1 WLR 753 at [45]; *Barbudev v Eurocom Cable Management Bulgaria EOOD* [2012] EWCA Civ 548, 2 All ER (Comm) 963 at [30].

1042 *Blue v Ashley* [2017] EWHC 1928 (Comm) at [64].

5.25 Where a DAO's participants expressly state that they do not intend there to be any legally binding agreement between them, their disclaimer may be effective. The courts of England and Wales have given effect to clauses denying contractual intention.[1043] Where all relevant participants of a DAO genuinely intend not to be legally bound, and express that lack of intention, a court will be unlikely to impose contractual obligations upon them.[1044] Whether such a disclaimer actually negates contractual intention is a question of interpretation.[1045] Equally, a declaration that there is no partnership will not be effective when the conditions of partnership are satisfied, but it may affect the interpretation of other aspects of the relationship.[1046] We have not seen evidence that such disclaimers are common in practice when establishing DAOs. It appears most common that participants are silent on the issue. Even where there is no enforceable contract between participants in a DAO, the DAO (and consequently its participants through joint liability) may still have other legal obligations and liabilities such as in tort or under a regulatory regime.

5.26 DAOs are often described as "trustless"; that is, not requiring members to know or trust their fellow members. Some might argue that a "trustless" organisation has no need of legal obligations between participants because what they can and cannot do is determined by the code. In a DAO whose smart contracts are comprehensive and automatically self-enforcing, some might argue that there is no need for legal enforcement: contractual obligations and court oversight would be superfluous.[1047]

5.27 Presently, however, it appears that in most DAOs, much activity occurs off-chain and in natural language thereby involving a degree of 'trust' – for example, trust that a participant's proposal will be transferred to the voting mechanism in accordance with the agreed governance procedure. And even in a hypothetical DAO in which all activity is carried out on-chain, there might still be questions of interpretation whether the smart contracts are operating as actually agreed. In such cases, there would

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[1043] *Rose and Frank Company v J R Crompton and Brothers* [1925] 1 AC 445; *Jones v Vernon's Pools Ltd* [1938] 2 All ER 626; *Appleson v H Littlewood Ltd* [1939] 1 All ER 464.

[1044] "I can see no reason why, even in business matters, the parties should not intend to rely on each other's good faith and honour, and to exclude all idea of settling disputes by any outside intervention, with the accompanying necessity of expressing themselves so precisely that outsiders may have no difficulty in understanding what they mean. If they clearly express such an intention I can see no reason in public policy why effect should not be given to their intention." (Scrutton LJ quoted in *Edwards v Skyways* [1964] 1 WLR 349 at 355).

[1045] *R v Lord Chancellor's Departments Ex p Nangle* [1991] ICR 743; *Home Insurance Co v Administratia Asigurarilor* [1983] 2 Lloyd's Rep 674.

[1046] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 5-05.

[1047] For example, desire to exclude institutional influence played a part in the development of DLT: P de Filippi and A Wright, *Blockchain and the Law: The Rule of Code* (2018) pp 5 to 8 (noting that distributed ledger technology may enable parties to create their own "private regulatory frameworks", and could precipitate a shift from "legal rules and regulations administered by government authorities to codebased rules and protocols governed by decentralised blockchain-based networks").

remain a role for the court to interpret the DAO participants' agreement[1048] and provide remedies where needed.[1049]

[1048] We discuss contractual interpretation of code in Smart legal contracts Advice to Government (2021) Law Com No 401, Chapter 4 (Interpretation of smart legal contracts) and conclude that coded terms can (and should) be susceptible to contractual interpretation.

[1049] We discuss enforcement of code in Smart legal contracts Advice to Government (2021) Law Com No 401, Chapter 5 (Remedies). In that paper, we concluded that it would be premature to conclude that contractual remedies are of minimal relevance to smart legal contracts. In particular, although smart legal contracts are likely to reduce the incidence of non-performance, that is not necessarily the same as reducing defective performance. In fact, we think smart legal contracts may sometimes bring an increased risk of defective performance, given the scope for code to perform in ways the parties did not expect or intend.

Appendix 6: Further reading

The resources below are intended to provide a selection of foundational, supplementary, or additional resources that readers may find useful to consult on particular topics. Some may be cited or referenced in the scoping paper for specific purposes.

A Dickinson, “Cryptocurrencies and the Conflict of Laws” in D Fox and S Green (eds), *Cryptocurrencies in Public and Private Law* (1st ed, 2019).

A Fairpo, “Taxation of Cryptocurrencies” in D Fox and S Green (eds), *Cryptocurrencies in Public and Private Law* (1st ed, 2019).

A Sims, DAOs (Decentralised Autonomous Organisations) v DINOs (DAO in Name Only or Decentralised in Name Only) (February 2024), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4716559.

A Walch, “In Code(rs) We Trust: Software Developers as Fiduciaries in Public Blockchains” in P Hacker et al (eds), *Regulating Blockchain: Techno-Social and Legal Challenges* (1st ed, 2019).

C Brummer, “Disclosure, Dapps and DeFi” (29 June 2022), https://stanford-jblp.pubpub.org/pub/disclosure-dapps-defi.

C L Reyes, “If Rockefeller Were a Coder” (2019) 87(2) *The George Washington Law Review* 373.

C L Reyes, “Autonomous Corporate Personhood” (2021) 96 *Washington Law Review* 1453.

D Kerr and M Jennings, “A Legal Framework for Decentralised Autonomous Organisations” (2022), https://api.a16zcrypto.com/wp-content/uploads/2022/06/dao-legal-framework-part-1.pdf.

D Kerr and M Jennings, “A Legal Framework for Decentralised Autonomous Organizations - Part III: Model Decentralized Unincorporated Nonprofit Association Act” (5 March 5 2024), https://ssrn.com/abstract=4749245.

D M Ibrahim, “Corporate Law on the Blockchain” (19 September 2023) *William & Mary Law School Research Paper No. 09-477*, https://ssrn.com/abstract=4576723.

D McKinnon, C Kuhlman and P Byrne, “Eris – The Dawn of Distributed Autonomous Organizations and The Future of Governance” (17 June 2014), https://archive.is/2014.11.08-075607/http:/hplusmagazine.com/2014/06/17/eris-the-dawn-of-distributed-autonomous-organizations-and-the-future-of-governance.

E Naudts, “The Future off DAOs in Finance: In Need of Legal Status” *European Central Bank Occasional Paper Series No* 331, https://www.ecb.europa.eu/pub/pdf/scpops/ecb.op331~a03e416045.en.pdf.

F Guillaume, “Aspects of Private International Law Related to Blockchain Transactions” in D Kraus, T Obrist, and O Hari (eds), *Blockchains, Smart Contracts, Decentralised Organisations and the Law* (1st ed, 2019).

I Grigg, “Why the Ricardian Contract Came About: A Retrospective Dialogue with Lawyers” in J G Allen and P Hunn, *Smart Legal Contracts: Computable Law in Theory and Practice*.

J Atik, “Hard Forks on the Bitcoin Blockchain: Reversible Exit, Continuing Voice” (23 June 2018), https://stanford-jblp.pubpub.org/pub/hard-forks-bitcoin.

J Brassey, R Burns, and L Knight, “What the DAO?” (2022) 28(6) Trusts & Trustees 517.

J Choi, “DAOs: Empowering the Community to Build Trust in the Digital Age” (10 February 2022), https://stanford-jblp.pubpub.org/pub/dao.

J G Allen, “Bodies Without Organs: law, Economics, and Decentralised Governance” (4 January 2021), https://stanford-jblp.pubpub.org/pub/law-econ-decentralised-governance.

K F K Low, E Schuster, and W Y Wan, “The Company and Blockchain Technology (16 November 2022) *LSE Legal Studies Working Paper No. 18/2022*, https://ssrn.com/abstract=4278823.

L Pinheiro, “Laws Applicable to International Smart Contracts and Decentralized Autonomous Organizations (DAOS)”, Centro de Investigação de Direito Privado (CIDP) Research Paper No. 02/2023, https://ssrn.com/abstract=4467408.

L X Lin, “Deconstructing Decentralized Exchanges” (5 January 2019), https://stanford-jblp.pubpub.org/pub/deconstructing-dex.

M Jennings and D Kerr, “The DUNA: An Oasis for DAOs” (8 March 2024), https://a16zcrypto.com/posts/article/duna-for-daos.

M Jennings, “Principles & Models of Web3 Decentralization” (2022), https://a16z.com/wp-content/uploads/2022/04/principles-and-models-of-decentralization_miles-jennings_a16zcrypto.pdf.

M Landoni and G C Peters, “Taxing Blockchain Forks” (27 June 2020), https://stanford-jblp.pubpub.org/pub/taxing-blockchain-forks.

M Schillig, “Decentralized Autonomous Organizations (DAOs) under English Law”. King’s College London Law School Research Paper (16 September 2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4221221.

M Shenk, S Van Kerchoven, and J Weinberger, “The Crown, the Market and the DAO” (24 June 2023), https://stanford-jblp.pubpub.org/pub/crown-market-and-dao.

O E Williamson, *The Mechanisms of Governance* (1st ed, 1996).

P De Filippi and A Wright, *Blockchain and the Law: The Rule of Code* (1st ed, 2019) 146-155.

R S Haque, R S Silva-Herzog, and N M Rosario, “Blockchain Development and Fiduciary Duty” (28 June 2019), https://stanford-jblp.pubpub.org/pub/blockchain-dev-fiduciary-duty.

S Hassan and P De Filippi, “Decentralized Autonomous Organization” (2021) 10(2) *Internet Policy Review* 10 (2).

S Van Kerchoven and U W Chohan (eds), *Decentralized Autonomous Organizations: Innovation and Vulnerability in the Digital Economy* (1st ed, 2024).

S Worthington, “Four Questions on Fiduciaries” (2016) 2(2) *Canadian Journal of Comparative and Contemporary Law* 723.

T Sharma, Y Kwon, K Pongmala, H Wang, A Miller, D Song, and Y Wang, “Unpacking How Decentralized Autonomous Organizations (DAOs) Work in Practice”. *arXiv preprint arXiv:2304.09822* (2023), https://arxiv.org/abs/2304.09822.

W A Kaal, “Blockchain-Based Corporate Governance” (4 Jan 2021), https://stanford-jblp.pubpub.org/pub/blockchain-corporate-governance.