Decentralised autonomous organisations (DAOs)

Call for evidence

November 2022

THE LAW COMMISSION – HOW WE CONSULT

About the Law Commission: The Law Commission was set up by section 1 of the Law Commissions Act 1965 for the purpose of promoting the reform of the law. The Law Commissioners are: The Rt Hon Lord Justice Green, Chair, Professor Sarah Green, Professor Nicholas Hopkins, Professor Penney Lewis, and Nicholas Paines KC.

Topic of this call for evidence: Decentralised Autonomous Organisation (DAOs). This call for evidence seeks information from stakeholders about how DAOs are structured and operated, and about how the law might best accommodate different types of DAO now and in the future. It also seeks views about where the law of England and Wales might be inhibiting the establishment and operation of DAOs.

Team working on the project: The following members of the Commercial and Common Law team have contributed to this call for evidence: Laura Burgoyne (team manager); Matthew Kimber (team lawyer); Teresa Trepak (team lawyer); Thomas Wingfield (research assistant); Luke Broadway (research assistant).

Geographical scope: This call for evidence considers the law of England and Wales.

Availability of materials: The call for evidence is available on our website at https://www.lawcom.gov.uk/project/decentralised-autonomous-organisations-daos/.

Duration: We invite responses from 16 November 2022 to 25 January 2023.

Comments may be sent:

Using an online form at https://consult.justice.gov.uk/law-commission/call-for-evidence-daos (where possible, it would be helpful if this form was used).

Alternatively, comments may be sent:

By email to   DAO@lawcommission.gov.uk.

By post to   DAOs project, Commercial and Common Law Team, Law Commission, 1st Floor, Tower, 52 Queen Anne's Gate, London, SW1H 9AG.

(If you send your comments by post, it would be helpful if, whenever possible, you could also send them electronically.

After the call for evidence: We will use the views and evidence received during this call for evidence to assist us in producing a scoping study. The scoping study will consider how DAOs can operate under the existing law in England and Wales and will identify any areas potentially in need of further consideration and potential reform. At this stage, we have not been asked to make recommendations for law reform.

Consultation Principles: The Law Commission follows the Consultation Principles set out by the Cabinet Office, which provide guidance on type and scale of consultation, duration, timing, accessibility and transparency. The Principles are available on the Cabinet Office website at: https://www.gov.uk/government/publications/consultation-principles-guidance.

Information provided to the Law Commission: We aim to be transparent in our decision making, and to explain the basis on which we have reached conclusions. We may publish or disclose information you provide in response to Law Commission papers, including personal information. For example, we may publish an extract of your response in Law Commission publications, or publish the response itself. We may also share responses with Government. Additionally, we may be required to disclose the information, such as in accordance with the Freedom of Information Act 2000. We will process your personal data in accordance with the General Data Protection Regulation.

Please state clearly whether your submission is to be treated as confidential if you are naming the particular DAO involved in your consideration of legal issues. We appreciate the potentially significant legal risks surrounding DAOs and encourage sanitised or anonymised submissions where it is inappropriate to provide details about a particular DAO

Consultation responses are most effective where we are able to report which consultees responded to us, and what they said. You may want your response to be anonymous, for example because it contains sensitive information about you or your family, or because you are worried about other people knowing what you have said to us. If you ask us to treat your response anonymously, we may refer to what you say in your response, but will not reveal that the information came from you.

Alternatively, if you consider that it is necessary for all or some of the information that you provide to be treated as confidential and so neither published nor disclosed, please contact us before sending it. Please limit the confidential material to the minimum, clearly identify it and explain why you want it to be confidential. We cannot guarantee that confidentiality can be maintained in all circumstances and an automatic disclaimer generated by your IT system will not be regarded as binding on the Law Commission.

We list who responded to our consultations in our reports. If you provide a confidential response your name will appear in that list. If your response is anonymous we will not include your name in the list unless you have given us permission to do so.

Further information about how we handle data is available at: Further information about how we handle data is available at: https://www.lawcom.gov.uk/document/handling-data/.

Any queries about the contents of this Privacy Notice can be directed to: enquiries@lawcommission.gov.uk.

Contents

Glossary

We recognise that the proper meaning or interpretation of some of the entries in the glossary below remain disputed, even within the crypto-token and DeFi markets.[1] As such, we intend that the glossary entries are used for introduction and guidance only. We do not intend the glossary to be definitive or comprehensive.

Nonetheless, we think that it is important to begin to develop broad agreement on the best method for describing the constituent elements of crypto-token ecosystems (as well as DAOs). Feedback on the glossary entries will assist us in achieving a consistent and accurate approach towards the use of these terms in our scoping study. We encourage stakeholders to comment on the glossary entries, and to provide additional and/ or alternative entries where appropriate.

Question 1.

1.1　Please provide comments on the glossary entries and provide additional and / or alternative entries where appropriate.

Term	Definition
Algorithm	A finite sequence of instructions, typically used to solve a class of specific problems or to perform a computation.
Anonymity	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.
AML	Anti-money laundering.

---

[1]　We also 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.

Term	Definition
Automaticity / automation	In the context of a smart contract, "automatically" describes how a smart contract is capable of running deterministically or programmatically according to pre-specified functions triggered by certain events (such as blockchain transactions). Smart contract automaticity may also be referred to as "self-execution".
Autonomous	In the context of a decentralised autonomous organisation (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 deterministically or programmatically according to pre-specified functions. Others suggest that "autonomous" is a broader, descriptive term used to encapsulate the idea that a DAO is a type of loose-knit, technology-mediated social structure that is capable of operating independently from outside or centralised control. See from paragraphs 2.39 for more discussion on this concept.
BBLLC	Blockchain-based limited liability company. A new type of Vermont company introduced under a 2018 law. See paragraph 4.51.
BEIS	Department for Business, Energy & Industrial Strategy of the UK Government.
bitcoin	The native notional quantity unit which exists within, and as a result of, the Bitcoin system.
Bitcoin	The blockchain system which is constituted by the active operation of the Bitcoin protocol rules.
Blockchain	A method of recording data in a structured way. Data (which may be recorded on a database or ledger) 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	See "Protocol / Software Protocol".
Censorship-resistance	Censorship in the context of blockchain systems is, in general, intended to be more broadly defined than the colloquial use of "censorship", such that it refers to the ability of external actors being able to prevent or stop certain actions. Censorship-resistance is therefore a measure of whether a particular blockchain system or other set of technology, such as a software protocol is susceptible to

Term	Definition
	such attempts.
CFTC	The Commodity Futures Trading Commission, regulator of the US derivatives markets.[2]
COALA	Coalition of Automated Legal Applications, a non-governmental working group which has produced a draft model law for DAOs.[3]
Code	Instructions given to computers through the use of a programming language.
Computer program	A collection of instructions written in code that are executed by a computer.
Consensus mechanism	A combination of system rules and specific algorithms which must be followed to achieve consensus between participant nodes regarding the current state of the distributed ledger or structured record in a secure way.
Cryptoasset	A cryptoasset constitutes a composite of a crypto-token and any associated or linked property or other legal rights that are recognised in law as existing as a consequence of having legal rights in relation to that crypto-token. Sometimes the term cryptoasset is used interchangeably with crypto-token or token (see below).
Crypto-token / token	A broad term used to describe notional "objects" or "assets" constituted within actively operated blockchain systems. A principal function of a crypto-token is that it can perform an operation (or an action) such as authenticating a message or transaction within the crypto-token system. For further description, see Digital Assets (2022) Law Commission Consultation Paper, No 256, Chapter 10 and Appendix 4, available at: https://www.lawcom.gov.uk/project/digital-assets/.
CryptoUK	A trade association of the cryptoasset sector in the UK.[4]
DAO	Decentralised Autonomous Organisation. There is no unified understanding or definition of a DAO. In simple terms, a DAO is a novel type of technology-mediated social structure or organisation of

---

[2]   https://www.cftc.gov/.

[3]   https://www.lextechinstitute.ch/model-law-for-decentralized-autonomous-organizations-daos/?lang=en.

[4]   https://cryptouk.io/.

Term	Definition
	participants.
	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	The term decentralised is used in a number of ways in relation to DAOs. It can be used to refer to the features or characteristics of some of the composite elements of DAOs, including the technological architecture on which they rely. It can also be used to refer to or describe the loose social structure or organisational form itself, including its inherent governance or decision-making features.
	We discuss the concept of decentralisation in more detail from paragraphs 2.34 and 5.8.
Decentralised finance / DeFi	A general term for automated and decentralised[5] and / or disintermediated applications (Dapps) providing financial services (or the ability to recreate some of the elements thereof using open-source software) on a (generally decentralised and often blockchain-based) settlement layer, including payments, lending, trading, investments, insurance, and asset management.
Deployment	For a smart contract, sending (a series of) transaction(s) to the participants within the blockchain system together with an offer to pay a transaction fee to blockchain miners / validators who create a block which stores a copy of those smart contracts on that blockchain.
Developer	A software engineer involved in the development of software: broadly, this might include contributing code, design, business, legal or other support.
Distributed ledger	A digital store of information or data. A distributed ledger is shared (that is, "distributed") amongst a network of computers (known as "nodes") and may be available to other participants. Participants approve and eventually synchronise additions to the ledger through an agreed consensus mechanism.
ether	The native notional quantity unit which exists within, and as a result of, the Ethereum system.

---

[5] As above, the term decentralised can refer to a variety of different constituent parts and elements of these systems.

Term	Definition
Ethereum	The blockchain system which is constituted by the active operation of the Ethereum protocol rules.
FCA	Financial Conduct Authority, the UK's independent regulator of financial services firms and financial markets.
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.
Financial Markets Law Committee (FMLC)	An organisation based in London centred on the furtherance of legal certainty in financial law.[6]
Foundation	A form of ownerless legal entity which may be incorporated under the laws of some jurisdictions. See paragraph 4.43.
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 and shares in a company.
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	A participant that undertakes certain activities within a blockchain system that uses a proof-of-work consensus mechanism (see "proof-of-work").
MLRs 2017	The UK's Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 as amended.
Multi-signature	Multi-signature arrangements are also referred to as M-of-N arrangements, with M being the required number of signatures or keys to authenticate an operation and N being the total number of

---

6   http://fmlc.org/.

Term	Definition
	signatures or keys involved in the arrangement.
Natural language	Language that has developed in the usual way as a method of communicating between people, for instance English or Welsh, rather than language that has been created for a specific purpose or application.
Natural language contract / traditional contract	A contract in which all of the terms are recorded in natural language, either orally or in writing.
Network	See "Protocol / Software Protocol".
Non-Fungible Token ("NFT")	A token, generally a crypto-token, that has a unique identification number (or mechanism). For further description, see Digital Assets (2022) Law Commission Consultation Paper, No 256, Chapter 15, available at: https://www.lawcom.gov.uk/project/digital-assets/.
Off-chain / on-chain	"Off-chain" refers to actions or transactions that are external to the distributed ledger, structured record or blockchain. "On-chain" refers to actions or transactions that are recorded by a state change to the distributed ledger, structured record or blockchain.
Open-source	Computer code that is publicly accessible and licensed by its developer(s) for others to use and modify without charge. See, for example, the Open Source Initiative's definition available at https://opensource.org/docs/osd.
Permissioned	Requiring authorisation to perform a particular activity.
Permissionless	Not requiring authorisation to perform a particular activity.
Private key	See "Public-private key cryptography".
Proof-of-stake[7]	Proof-of-stake is a consensus mechanism which relies on certain network participants (referred to as "validators"). Validators — participants who have "staked" tokens — are permitted to participate

---

[7] Extracted from 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. Note, this is a very high level, colloquial description and there are other resources which discuss consensus mechanism in much greater detail and technical accuracy. Many consensus mechanisms are also highly protocol-specific. Matthew Kimber is a lawyer on this project.

Term	Definition
	in the system's consensus process. A validator is chosen (often at random) to construct and propose a new block containing new transactions, thereby updating the state of the distributed ledger or structured record for propagation across the network. 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 his stake (either through penalties or by a process called slashing). The consensus mechanism is focussed on penalising bad behaviour, meaning that participants do not interfere with the consensus for fear of receiving a penalty — thus making the economic cost of illicitly overriding the system so high as to not be (economically) viable. So, while proof-of-work (see below) focuses on maintaining a high computational resource (hardware plus energy) 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.
Proof-of-work[8]	Proof-of-work is a consensus mechanism which relies on certain network participants (referred to as "miners") to expend computational resources to find a value within defined parameters (thus, undertaking "work" and requiring electricity which has a market value). The first participant to find the value is rewarded with the ability to construct and propose a new block containing new transactions, updating the state of the distributed ledger or structured record for propagation across the network. Most miners 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. Proof-of-work consensus mechanisms are based on the thesis that the energy cost of illicitly overriding the consensus should be so high as to not be (economically) viable.
Protocol / Software Protocol	Software engineers (who may or may not be employed by a particular organisation or legal form) develop code. Specifically, those software engineers develop code that is used to create smart contracts. Those (or other) developers develop a set of rules which specify how a combination of those smart contracts operate

---

8   Extracted from 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. Note, this is a very high level, colloquial description and there are other resources which discuss consensus mechanism in much greater detail and technical accuracy. Many consensus mechanisms are also highly protocol-specific. Matthew Kimber is a lawyer on this project.

Term	Definition
	together. This set of rules is often referred to as a *"software protocol"* or *"protocol"*. Protocols can be used to specify rules for many different things, including the rules for the operation of blockchain systems or DeFi products. However, a protocol is not an active product in itself. Protocols must be followed 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 — a *"blockchain system"* in respect of blockchain protocols and a working software product in respect of software protocols. Some protocols are themselves deployed to underlying blockchain systems to leverage the underlying functionality and networks of those systems. See also from paragraph 2.3 for further discussion of these terms.
Pseudonymity	See "Anonymity" for a description of anonymity and pseudonymity.
Public key	See "Public-private key cryptography".
Public-private 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.
Smart contract	Computer code that, upon the occurrence of a specified condition or conditions, is capable of running automatically, deterministically or programmatically 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 by a computer program. There are essentially three forms a smart legal contract can take, depending on the role played by the code. These are:

Term	Definition
	1. Natural language contract with automated performance. 2. Hybrid contract. 3. Solely code contract. For further information, see Smart legal contracts, Advice to Government (2021) Law Com No 401, available at: https://www.lawcom.gov.uk/project/smart-contracts/.
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.
Validator / validation	A participant that undertakes certain activities within a blockchain system that uses a proof-of-stake consensus mechanism (see "proof-of-stake").

Chapter 1: Introduction

1.1   In simple terms, a decentralised autonomous organisation ("DAO") is a novel type of technology-mediated social structure[1] or organisation of participants made up of several composite elements. The novel part is that many of the actions and functions of this type of organisational structure (both in terms of governance and its activities) can be redesigned to use and / or facilitate the creation, modification and maintenance of open-source software-based systems.[2] The primary example of these software-based systems is code that performs certain actions deterministically or programmatically, built into a network of smart contracts deployed to public blockchains.[3]

1.2   DAOs have been described as:[4]

> a way to organise people, a social-coordination technology that relies on blockchain-based smart contracts and incentives to facilitate individuals collaborating and taking actions with collective impact.

1.3   By automating or programming some elements of organisational activity, and distributing or open-sourcing related software products and data, DAOs have the

---

[1]   See Amicus Curiae brief document filed by LexPunk in the ongoing *Commodity Futures Trading Commission v Ooki DAO (formerly d/b/a bZx DAO)* litigation (Case Number 3:22-cv-05416): "Amicus Curiae Brief of LexPunk Regarding Plaintiff's Motion for Alternative Service" (filed 17 October 2022), 2, available at: https://fingfx.thomsonreuters.com/gfx/legaldocs/zdpxolloyvx/frankel-CFTCvbZeroX--lexpunkamicus.pdf. See also: "DAOs are a new technologically-enabled form of social coordination", set out in a motion filed by Paradigm Operations LP for leave to file an Amicus Curiae brief in the ongoing *Commodity Futures Trading Commission v Ooki DAO (formerly d/b/a bZx DAO)* litigation (Case Number 3:22-cv-05416): "Motion for Leave to file Amicus Curiae Brief of Paradigm Operations LP and for Leave to Participate in Upcoming Hearing" (filed 17 October 2022), Exhibit A: "Brief of Amicus Curiae Paradigm Operations LP", 1, available at: https://fingfx.thomsonreuters.com/gfx/legaldocs/znvneyyeepl/frankel-CFTCvbZeroX--paradigmamicus.pdf.

[2]   See motion filed by DeFi Education Fund for leave to file an Amicus Curiae brief in the ongoing *Commodity Futures Trading Commission v Ooki DAO (formerly d/b/a bZx DAO)* litigation (Case Number 3:22-cv-05416): "Motion for Leave to File Amicus Curiae Brief of DeFi Education Fund Regarding Plaintiff's Motion for Alternative Service" (filed 4 October 2022), 3, available at: https://fingfx.thomsonreuters.com/gfx/legaldocs/jnpweqqewpw/frankel-CFTCvbZeroX--defiamicus.pdf.

[3]   P De Filippi and R Mauro, "Ethereum: the decentralised platform that might displace today's institutions" (25 August 2014) *Internet Policy Review*, available at: https://policyreview.info/articles/news/ethereum-decentralised-platform-might-displace-todays-institutions/318.

[4]   See motion filed by Paradigm Operations LP for leave to file an Amicus Curiae brief in the ongoing *Commodity Futures Trading Commission v Ooki DAO (formerly d/b/a bZx DAO)* litigation (Case Number 3:22-cv-05416): "Motion for Leave to file Amicus Curiae Brief of Paradigm Operations LP and for Leave to Participate in Upcoming Hearing" (filed 17 October 2022), Exhibit A: "Brief of Amicus Curiae Paradigm Operations LP" (30 November 2022), 2, available at: https://fingfx.thomsonreuters.com/gfx/legaldocs/znvneyyeepl/frankel-CFTCvbZeroX--paradigmamicus.pdf.

potential to reduce information and transaction costs, and so offer an alternative to existing organisational structural arrangements.[5]

1.4   Many thousands of DAOs exist today. Huge amounts of value flow through, are created, extinguished, used and sometimes lost by DAOs. This raises questions about the legal status and liabilities of DAOs. The Law Commission has been asked to investigate these questions, and this call for evidence is a step in that process.

1.5   DAOs that operate in the market today exist on a wide spectrum. As broad, technologically-mediated social / organisational structures, DAOs use a variety of different organisational structuring tools. Some include a legal form or incorporated entity in their organisational structure, such as a general partnership or limited company. The legal consequences of using existing legal forms or incorporated entities are clear. Others use tools and processes to add practical and operational decentralisation[6] to (some of) their activities, seek to relinquish (differing) levels of practical and legal control over (certain) functions within the structure, use and rely on open-source software, and reduce information asymmetry through public disclosures. Many DAOs use a combination of these techniques as part of their overall organisational structuring.

1.6   As such, the term DAO does not necessarily connote any particular type of organisational structure and therefore cannot on its own imply any particular legal treatment. The legal treatment of any particular organisation which is described as a DAO will instead depend on how its particular organisational arrangements are structured. In this call for evidence we use the term DAO as shorthand for descriptive purposes only, without intending that term to describe any particular organisational structure.

1.7   Broadly, our preliminary view is that the law of England and Wales provides a variety of flexible legal tools and principles that market participants can rely on to provide a high degree of legal certainty when structuring their organisational arrangements. This does not change simply because an organisational arrangement is loosely described as a DAO. However, we are aware that very few DAOs have chosen to organise in the jurisdiction of England and Wales.[7] We would like to understand the reasons for this.

1.8   In this call for evidence, we ask stakeholders for information on how DAOs are structured and operated, about how the law might best accommodate different types of DAO structures now and in the future and how DAOs themselves might integrate into existing legal frameworks. We also ask where the law of England and Wales

---

[5]   See also J Davidson and W Rees-Mogg, *The Sovereign Individual* (1997) p 353, in which the authors predict the emergence of the "virtual corporation", an entity that will spread the responsibilities previously held by managers among a network of independent participants.

[6]   We briefly discuss what is meant by "decentralisation" from para 2.34 below and discuss a non-exhaustive list of methods to achieve varying levels of "decentralisation" in Chapter 5 at para 5.9.

[7]   We are interested in whether DAOs that choose to organise their arrangements in other jurisdictions nonetheless choose to use the law of England and Wales (or jurisdictions with laws that are loosely based on the law of England and Wales).

might be inhibiting the establishment and operation of DAOs,[8] which alternative jurisdictions DAOs choose to structure their arrangements in, and why.

BACKGROUND TO THIS PROJECT

1.9 Since 2020, the Law Commission of England and Wales has been working on a range of projects aimed at facilitating the use of emerging technologies, including on smart (legal) contracts and digital assets (including 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 many market participants have exposure to or interact with DAOs (either directly, or via DAO-related governance or utility tokens).

1.10 The sponsoring department for the DAOs project is BEIS, given its responsibility for company law and the corporate forms within that legal framework. HM Treasury also has an interest given that the broader approach to crypto-tokens from both a private law and regulatory perspective is within its remit. The DAOs project was announced by the then Economic Secretary to the Treasury, John Glen MP in a speech in April 2022:[9]

> These projects are helping ensure that we remain at the cutting edge of legal innovation, just as we did with the limited liability companies in the 19th century, and the legal framework for derivatives and securitisation markets in the 1990s. English law can and should provide the legal foundation for the use of these borderless technologies.

1.11 The DAOs project complements our existing work and will contribute significantly to a comprehensive package of law reform aimed at facilitating the use of emerging technologies and making the law of England and Wales a clear and reliable choice in an increasingly on-line and decentralised world.

1.12 We are also aware of a number of other initiatives and projects which are considering DAOs under the law of England and Wales.[10] Those include:

(1) the planned HM Treasury consultation on the broader approach to cryptoassets regulation;[11]

---

[8] Including what prevents England and Wales being chosen as a geography for a DAO to incorporate or register to do business in England and Wales to operate, restructure and wind down a DAO using the law of England and Wales.

[9] Keynote Speech by John Glen MP, Economic Secretary to the Treasury, at the Innovate Finance Global Summit during Fintech Week 2022, available at: https://www.gov.uk/government/speeches/keynote-speech-by-john-glen-economic-secretary-to-the-treasury-at-the-innovate-finance-global-summit. See also the discussion by Richard Fuller MP the Economic Secretary to the Treasury on DAOs and the crypto-token ecosystem more broadly, *Hansard* (HC), 7 September 2022, vol 719, col 96WH.

[10] We are also interested in hearing from stakeholders about any other work that is being undertaken in relation to DAOs.

[11] This is planned future work in addition to the recent HM Treasury consultation about crytoassets and stablecoins available at: https://www.gov.uk/government/consultations/uk-regulatory-approach-to-cryptoassets-and-stablecoins-consultation-and-call-for-evidence.

(2)   the HM Revenue and Customs call for evidence on the taxation of Decentralised Finance involving the lending and staking of cryptoassets;[12]

(3)   the HM Revenue and Customs Cryptoassets Manual, which covers the taxation of decentralised finance;[13]

(4)   an on-going project on DAOs which is being undertaken by The Financial Markets Law Committee. We sit as an observer on this project; and

(5)   an on-going project on DAOs which is being undertaken by CryptoUK. We sit as an observer on this project.

THE PURPOSE AND SCOPE OF THIS WORK

1.13   We will use the views and evidence received during this call for evidence to assist us in producing a scoping study. The scoping study will consider how DAOs can structure their organisational arrangements under the law of England and Wales and will identify any areas in need of further consideration and potential law reform, which could be taken forward either by the Law Commission or the Government. At this stage, we have not been asked to make recommendations for reform. A scoping study is therefore distinct from a full Law Commission law reform project.

1.14   Our full terms of reference are attached as an appendix.

1.15   Our work focuses on principles of private law and the law relating to the formation of organisational structures, including statutory rules for incorporation of formal legal entities. The questions in this call for evidence are accordingly limited in scope and do not cover in any detail issues relating to, for example, regulation, tax, data protection, anti-money laundering or counter-terrorist financing issues. Nevertheless, we recognise that these issues are highly relevant to the way DAOs structure their organisational arrangements, are used and operated and we ask for further information and evidence on these issues in Chapter 6.

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[14]), and some relevant policy areas are within the legislative competence of Westminster.[15] On the other hand, there may be some differences of law and practice in devolved jurisdictions.

---

[12]   Available at: https://www.gov.uk/government/consultations/call-for-evidence-the-taxation-of-decentralised-finance-involving-the-lending-and-staking-of-cryptoassets/the-taxation-of-decentralised-finance-involving-the-lending-and-staking-of-cryptoassets-call-for-evidence.

[13]   Available at: https://www.gov.uk/hmrc-internal-manuals/cryptoassets-manual.

[14]   Companies Act 2006, s 1299.

[15]   For example, in Scotland, "money laundering" and "business associations" are reserved to the UK Government: Scotland Act 1998, sch 5, paras A5 and C1 respectively.

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 as major issues 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, and invite stakeholders to draw these matters to our attention. 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.

THIS CALL FOR EVIDENCE

Responding to this call for evidence

1.18 We welcome responses by 25 January 2023.

1.19 While this call for evidence is open to all, it is an information-gathering exercise and is primarily directed at stakeholders who have experience of participating in, using, advising on, or analysing DAOs, particularly from a legal perspective.

1.20 We welcome responses from all stakeholders with general knowledge of DAOs, and are particularly interested to hear from stakeholders with first-hand experience. If your knowledge is based on your experience of a particular DAO, please make this clear in your response and provide relevant details about that DAO. Please also indicate in your response if you understand there to be a range of opinion on a particular issue.

1.21 We recognise that respondents' answers to the questions in this call for evidence might vary significantly depending on the specific DAO to which the respondent is referring. When providing a response to a question, please specify the DAO you are talking about and any key characteristics they have.

1.22 Please state clearly whether your submission is to be treated as confidential if you are naming the particular DAO involved in your consideration of legal issues. We appreciate the potentially significant legal risks surrounding DAOs and encourage sanitised or anonymised submissions where it is inappropriate to provide details about a particular DAO.

Structure of this call for evidence

1.23 This call for evidence is separated into five further chapters.

1.24 In the next chapter, we explain how we use the term "DAO" in this paper. We explicitly recognise that market participants and commentators now use the term DAO to describe a broad spectrum of organisational structures and that there is no singular, authoritative understanding or definition of what a DAO is. We describe some of the common composite elements or building blocks of a DAO which we then discuss in more detail in the following chapters.

1.25 In Chapter 3, we begin by considering whether it is possible for the law to regard DAOs in their simplest and broadest form as either an unincorporated association or a general partnership. We then consider the potential legal consequences and risks of this starting point. We also acknowledge that many DAO organisational structures do

not neatly fit in these categories because they seek to modify this starting point and / or mitigate the potential risks that it gives rise to in some way.

1.26 In Chapter 4, we recognise that some DAOs choose to add a legal form or incorporated entity to their organisational structure. Primary examples of this include adding to their organisational structure a limited liability company, or a limited liability partnership.

1.27 We also discuss how some DAOs set up under the law of other jurisdictions use legal forms that are not available in England and Wales, such as some form of specific, statutorily created legal "DAO" entity (for example, the Wyoming DAO LLC). Alternatively, some DAOs choose to use an ownerless foundation company or a special purpose trust as part of their organisational structuring.[16] We ask whether the law of England and Wales would benefit from law reform which would introduce additional legal forms or incorporated entities (including a potential new form of entity specifically tailored to DAOs).

1.28 The law of England and Wales, and law in other jurisdictions which is based on the law of England and Wales, has long been used to facilitate complex legal organisational structures. We consider that it remains a powerful tool for those DAOs that choose to add a legal form or incorporated entity to their organisational structure. Broadly, we consider that such legal tools intentionally add a centralising element to the organisational structure of the DAO in question, and that the legal consequences of such legal forms or incorporated entities are clear. We ask for examples of the use by DAOs of these types of centralising element. We also ask for feedback as to why market participants often may not choose not to use the law of England and Wales to structure their arrangements, the problems market participants face in England and Wales, and how those problems could be alleviated.[17]

1.29 In Chapter 5, we consider DAOs that provide open-source software infrastructure (which is often referred to as a "protocol" or "software protocol") for market participants who are active in the crypto-token and decentralised finance markets. Many such DAOs might choose not to add a legal form, incorporated entity or other centralising element to their organisational structure. Alternatively, some DAOs will choose to separate the activities of an incorporated company (or other legal form or incorporated entity) involved in software development from the open-source software infrastructure which they provide, modify or maintain. These DAOs use tools and processes to add practical and operational decentralisation to (some of) their activities. They seek to relinquish or otherwise distribute (differing) levels of practical and legal control over (certain) functions of the DAO, and use and rely on open-source software, the automatic operation of code and reducing information asymmetry through public disclosures. We ask market participants for feedback on the characteristics of these types of DAOs and the novel challenges that market participants face when using these organisational tools.

---

[16] For more detailed consideration of these options, see DAO Legal Entity Matrix, available at: https://daos.paradigm.xyz/.

[17] See Chapter 4, Questions 8 to 11.

1.30 We go on to consider and ask questions on how the clear application of existing principles of the law of England and Wales to the way in which DAOs choose to structure their arrangements could provide greater legal certainty. In particular, we ask for further input from stakeholders on how the law of England and Wales might help to draw clear distinctions between:

(1) a DAO as a broad, descriptive term for a technology-mediated social structure or organisation of participants, made up of several composite elements;

(2) incorporated companies (or other legal forms or incorporated entities) involved in open-source software development, deployment, modification and maintenance;

(3) software protocols;[18] and

(4) different participants within the DAO (including individual contributors, developers and token holders).

1.31 We ask for feedback on how the law of England and Wales might provide greater certainty as to legal risk, liability and attribution between these component parts of a DAO.

1.32 We are conscious that different DAOs are likely to use a combination of centralising and decentralising elements to structure an organisation which is specific to their particular business, purpose or operation.[19] For example, many DAOs that use legal entities as part of their organisational structure might also use decentralised smart contracts as part of their internal operational and governance processes. Similarly, even those DAOs that do not rely heavily on legal entities as part of their structure might still require a legal form or other structure for particular purposes, such as to hold intellectual property rights. And many DAOs explicitly and intentionally separate their different component parts, which we discuss in more detail below and in Chapter 5.

1.33 For the purposes of this call for evidence, we have also chosen to separate the discussion on the component parts of a DAO because we think that the analysis in respect of each is different. The use of legal forms or entities within a DAO organisational structure will rely heavily on existing legal (often statutory) rules and existing case law and precedent that apply to other common types of organisational structure, such as private equity or venture capital funds. This is well-trodden ground and the law applicable to these entities is relatively clear.

1.34 The use of decentralised structural elements as part of an organisational structure is less clear from a legal perspective. It is much more likely to rely on principles of private law, such as contract, trust and potentially the recognition of duties of care in certain circumstances. Although those legal principles are relatively certain, they are not well-developed in relation to the decentralised structural elements that we discuss in Chapter 5. We are interested in whether the law of England and Wales can add

---

18 Which we discuss in more detail at para 2.10 below.

19 In this way, DAOs are free to engage in an overall legal risk profiling exercise and cost / benefit analysis appropriate for the particular organisation in question.

additional legal certainty in this respect. In particular, we ask for feedback on whether (and if so, how) DAOs can structure their arrangements so as to delineate circumstances in which their component elements can be separated — and how the law might recognise this. In other words, how should existing legal principles relating to liability and attribution work in the context of DAOs that have a number of different component parts including (1) incorporated companies (or other legal forms or incorporated entities) involved in software development; (2) software protocols;[20] and (3) different participants within the DAO (including individual contributors, developers and token holders).

1.35 In Chapter 6, we ask for feedback as to how market participants deal with various practical issues relating to DAOs. We acknowledge that the answers to these questions are likely to be very different depending on the combination of structuring techniques used by the DAO in question. Nevertheless, we consider that feedback on these issues is important for the purposes of our project. We also give stakeholders an opportunity to provide additional open feedback and / or to highlight issues that this call for evidence does not cover specifically but which should be covered by the project.

---

[20]   Which we discuss in more detail at para 2.10 below.

Chapter 2: What is a DAO?

2.1 In simple terms, a DAO is a novel type of technology-mediated social structure[21] or organisation of participants comprised of a variety of composite elements. While this description might seem overly simplistic, we consider that it is important to recognise the inherent breadth and flexibility of the DAO organisational form. As such, this call for evidence is not concerned with attempting to define a DAO as a particular type of (existing or potential) organisational structure. Nor does it suggest that a DAO needs to take certain state-mandated or formalistic steps which are prescribed by a particular legislative framework. Equally, because the term DAO does not necessarily connote any particular type of organisational structure, it cannot in itself imply any particular legal treatment.

2.2 In addition, we consider that it is helpful to begin by describing certain composite elements of DAOs. We think that this exercise is an important definitional building block in the process of applying existing legal principles to DAOs. Specifically, framing our discussion around the composite elements of DAOs is critical for breaking a DAO down and analysing the various relationships that may exist within that DAO. Only then is it possible to analyse the potential legal implications that stem from those relationships, both independently and in combination. As such, we encourage feedback from stakeholders on the high-level descriptions set out below (as well as the entries in the Glossary).

2.3 The below descriptions are high-level for the purposes of this call for evidence only. For a more detailed overview of the different crypto-token ecosystem functions performed by various participants, see Shapiro, "A Functionalist Framework for DeFi Regulation".[22] We anticipate that our scoping study will need to consider a similarly detailed framework if it is accurately to reflect the realities of how DAOs are structured and operate.

Key concepts

Summary

2.4 There are a number of broad composite elements which may be used by DAOs, some of which we outline at a high level below.[23]

2.5 Software engineers (who may or may not be employed by a particular organisation or legal form) develop code. Specifically, those software engineers develop code that is used to create smart contracts. Those (or other) developers develop a set of rules

---

[21] See Amicus Curiae brief document filed by LexPunk in the ongoing *Commodity Futures Trading Commission v Ooki DAO (formerly d/b/a bZx DAO)* litigation (Case Number 3:22-cv-05416): "Amicus Curiae Brief of LexPunk Regarding Plaintiff's Motion for Alternative Service" (filed 17 October 2022), 2, available at: https://fingfx.thomsonreuters.com/gfx/legaldocs/zdpxolloyvx/frankel-CFTCvbZeroX--lexpunkamicus.pdf.

[22] (2022), available at: https://lexnode.substack.com/p/a-functionalist-framework-for-defi.

[23] We note that within each composite element described here there may also be a variety of additional nuance, technological constraints, economic incentives, and co-operative and antagonistic incentive mechanisms.

which specify how a combination of those smart contracts operate together. This set of rules is often referred to as a *"software protocol"* or *"protocol"*.

2.6 Protocols can be used to specify rules for many different things, including the rules for the operation of blockchain systems or DeFi products. However, a protocol is not an active product in itself. Protocols must be followed 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 — a *"blockchain system"* in respect of blockchain protocols and a working software product in respect of software protocols. Some protocols are themselves deployed to underlying blockchain systems to leverage the underlying functionality and networks of those systems.

2.7 For example, developers might work on some smart contract code. Those developers (likely along with many others) might use that smart contract code to define a set of blockchain protocol rules that are intended (when followed by a network of participants) to manifest a blockchain system. One way to achieve a large network of participants is to make the blockchain protocol rules open-source, meaning anyone can run that particular code and interact with others who run it (where specified in the code). Participants need not run the code. However, they may be incentivised to do so for a variety of different reasons (such as "miner" or "validator" rewards — see below at paragraph 2.19). At a certain scale, the desired properties of the blockchain system will be manifested by the active operation of its blockchain protocol by the participants in the network.

2.8 Software protocols that specify the rules for DeFi products might themselves rely on the existence of a working blockchain system. Such software protocols will assume certain continued functions of a blockchain system and then specify rules for how participants within that blockchain system can interact with the DeFi protocol. Again, the DeFi protocol is itself simply code designed by software engineers. For the DeFi protocol to achieve its designed purpose, it must also be actively operated by (a network of) participants, or leverage the properties of an underlying blockchain system operated by a network of participants.

2.9 DAOs can therefore be thought of in broad terms as a technology-mediated social structure or organisation of participants concerned with the operation of a particular combination of the composite elements summarised above and described in more detail below.

Software protocols

2.10 DAOs are often closely associated with open-source software systems, commonly referred to as "protocols" or "software protocols" when implemented wholly or partly in relation to blockchain systems. Very broadly, a protocol is a set of software code that specifies or embodies rules or algorithms for the operation of a particular system and determining and effecting changes to that particular system or the protocol itself.

2.11 Software protocols can be highly complex or relatively simplistic and might take different forms. Examples of highly complex protocols are the Bitcoin protocol and the Ethereum protocol which specify the rules for the Bitcoin system and the Ethereum system respectively. Each of those blockchain-based systems are manifested by the

active operation of a particular set of protocol rules by a network of participants. The protocol rules of those systems govern, among other things, the generation, authentication, sending and validation of data within the system. The protocol rules also govern how changes to the distributed ledger of the system can be made and verified. For the purpose of this call for evidence we refer to these types of protocols as "blockchain protocols". We refer to the network of participants who run that code as a "network". We refer to the blockchain systems that are manifested by the active operation of a particular blockchain protocol by a network of participants (including computers / participants / validators that operate the software) as a "blockchain system".

2.12   Software protocols do not necessarily specify rules for the manifestation of blockchain systems. Instead, some protocols are deployed to existing blockchain systems for a particular purpose and to leverage the functionality of the underlying blockchain system. For example, many DeFi software protocols specify a set of smart contracts which facilitate trading, borrowing, lending, and other financialisaton of digital assets, including crypto-tokens.[24] For the purpose of this call for evidence we refer to these types of protocols as DeFi protocols. However, not all protocols deployed to existing blockchain systems will necessarily involve the creation of infrastructure for financial / transactional purposes.

2.13   More simply, a software protocol can be thought of as "a set of smart contracts — the computer programs that run on the blockchain and do stuff — or at least a set of rules for creating them".[25] Software protocols in this sense can be conceptualised as digital infrastructure which include code that performs certain actions deterministically or programmatically.[26]

Blockchain systems

2.14   Software protocols consist of a set of smart contracts which are, in general, deployed to certain general-purpose blockchain systems, such as Ethereum.[27]

2.15   The blockchain systems to which these smart contracts are deployed include different methods of recording data in a structured way.[28] Broadly, they can be thought of as "databases that operate and are maintained by a globally distributed, unaffiliated set

---

[24]   See, for example Aave which is: "a decentralized non-custodial liquidity markets protocol where users can participate as suppliers or borrowers." Available at: https://github.com/aave/aave-v3-core.

[25]   See M Levine, "The Crypto Story" (2022), available at: https://www.bloomberg.com/features/2022-the-crypto-story/?leadSource=uverify%20wall.

[26]   G Shapiro, "How Protocol DAOs should Work from a Cryptolaw(-ish) Perspective" (2022), available at: https://lexnode.substack.com/p/how-protocol-daos-should-work-from.

[27]   See Amicus Curiae brief document filed by LexPunk in the ongoing *Commodity Futures Trading Commission v Ooki DAO (formerly d/b/a bZx DAO)* litigation (Case Number 3:22-cv-05416): "Amicus Curiae Brief of LexPunk Regarding Plaintiff's Motion for Alternative Service" (filed 17 October 2022), 3, available at: https://fingfx.thomsonreuters.com/gfx/legaldocs/zdpxolloyvx/frankel-CFTCvbZeroX--lexpunkamicus.pdf.

[28]   For example, with some blockchains, data (which may 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.

of network [participants] who receive, process, and store transactions and their results."[29]

2.16 Software protocols build on blockchain systems for a particular purpose — generally to leverage their underlying functionality and network. Software protocols (as a system of smart contracts) come into existence by being deployed to a blockchain system by sending (a series of) transaction(s) to the participants within the blockchain network. These transactions are normally sent together with an offer to pay a transaction fee to blockchain miners. The transactions, on acceptance by the miners / validators, result in the smart contracts being recorded in the blockchain / state database / structured record of the blockchain system.[30]

2.17 The operations made permissible by the deployed smart contracts that constitute the software protocol are subsequently available to be executed by miners / validators. Again, any transactions that include operations of the software protocol will be recorded in the blockchain / state database / structured record of the blockchain system (on acceptance by the miners / validators).[31]

2.18 This is a critical point for two reasons. First, because while the software protocol, as deployed to a blockchain system, specifies certain potential functionality, it relies on (and to an extent assumes the participation of) other participants within the blockchain system's network in accordance with a specific blockchain protocol. Second, the underlying blockchain system itself is, in general, separate from a DAO that may be associated with a particular software protocol and separate from the majority of participants in that blockchain network.

Miners / validators

2.19 Miners / validators that participate in a blockchain system are therefore also separate from any particular DAO that is associated with a particular software protocol deployed to a blockchain system. Miners / validators have a core function within blockchain systems — participating in (computational) functions necessary to the continued operation of the system.

2.20 Software protocols do therefore assume — and depend on — the continued active participation in blockchain systems by miners / validators, as well as other participants. As such, they indirectly rely on miners / validators within a blockchain system's network for the following (among other things):[32]

---

[29] See M Iansiti and K R Lakhani, "The Truth About Blockchain" (2017), available at: https://hbr.org/2017/01/the-truth-about-blockchain. This article was referred to in an Amicus Curiae brief document filed by LexPunk in the ongoing *Commodity Futures Trading Commission v Ooki DAO (formerly d/b/a bZx DAO)* litigation (Case Number 3:22-cv-05416): "Amicus Curiae Brief of LexPunk Regarding Plaintiff's Motion for Alternative Service" (filed 17 October 2022), 3, available at: https://fingfx.thomsonreuters.com/gfx/legaldocs/zdpxolloyvx/frankel-CFTCvbZeroX--lexpunkamicus.pdf.

[30] G Shapiro, "A Functionalist Framework for DeFi Regulation" (2022). Available at: https://lexnode.substack.com/p/a-functionalist-framework-for-defi.

[31] G Shapiro, "A Functionalist Framework for DeFi Regulation" (2022). Available at: https://lexnode.substack.com/p/a-functionalist-framework-for-defi.

[32] As summarised by G Shapiro, "A Functionalist Framework for DeFi Regulation" (2022). Available at: https://lexnode.substack.com/p/a-functionalist-framework-for-defi.

(1)   proposing blocks (which may contain transactions authenticated by interactions between blockchain system users and the software protocol);

(2)   accepting or endorsing proposed blocks (which may contain transactions authenticated by interactions between blockchain system users and the software protocol) for addition to the blockchain system's state database or structured record;

(3)   executing software protocol's smart contract code (for example, calling a certain function with certain parameters on a smart contract) resulting in inclusion of the results of that computation in a block they propose;

(4)   "enforcing the software protocol" in performing the above actions (that is, performing them in accordance with the rules of the blockchain protocol (as assumed by the design of the software protocol) and the rules of the software protocol itself (as deployed)); and

(5)   receiving block rewards in accordance with the rules of the blockchain protocol and / or transaction fees from requesters for having their proposed blocks successfully added to the blockchain system's state database or structured record.

2.21   Software protocols do not and cannot achieve this functionality independently — instead they assume it as part of their design such that they can leverage the functionality of the underlying blockchain system to perform particular operations when run. These operations could therefore arguably be considered distinct from a DAO itself (even if that DAO is associated with a particular software protocol deployed to a blockchain system). On the other hand, if these operations are not considered distinct from an associated DAO, the law will need to develop consistent and coherent explanations as to why, including a detailed analysis of all of the various participants within blockchain ecosystems.

Developers

2.22   Developers are software engineers who design and write the software required for smart contracts, blockchain protocols, software protocols, and the broader crypto-token ecosystems. Developers are human persons, who use a variety of software, hardware and perhaps pre-existing blockchain protocols, blockchain systems and other software protocols in their work. Often this is because such software is itself open-source and freely available.

2.23   An interesting feature of the role that developers play within the broader crypto-token ecosystems is that the software code they write is typically "free-open-source-licensed, or at least source-available, and lacks a model of traditional proprietary software monetisation (for example, selling licenses)".[33] Open-source software is 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. One of the general purposes of open-source software is

---

[33]   G Shapiro, "A Functionalist Framework for DeFi Regulation" (2022). Available at: https://lexnode.substack.com/p/a-functionalist-framework-for-defi.

to encourage iterative development of the software itself by a large number of (often unrelated) developers and other participants in a collaborative and public manner.

2.24 Developers might be closely associated with a DAO and / or a particular software protocol, by focusing their work on a specific software protocol (or related software, such as a front-end website). Developers might act individually, in loosely grouped teams or as part of a business entities such as an incorporated company (or other legal form or incorporated entity, such as a Swiss Foundation) involved in software development.

Software protocol token holders

2.25 Many blockchain protocols specify rules for the implementation of crypto-tokens which each represent a notional unit of account within that particular blockchain system (such as bitcoin in the Bitcoin system or ether in the Ethereum system). Smart contracts deployed to blockchain systems can also specify rules for the implementation of crypto-tokens that are primarily intended to represent and be used as either "fungible" tokens or "non-fungible" tokens.

2.26 Some software protocols include rules for the implementation of (fungible or non-fungible) crypto-tokens that can be used for specific functions related to that software protocol. For example, some software protocol-specified tokens allow holders to participate in "governance" decisions relating to a particular software protocol. Some software protocol-specified tokens give holders additional benefits or utility when interacting with that particular protocol.[34] Some software protocol-specified tokens might also be structured to, in some way, capture all or part of the value of a software protocol.[35] Many such software protocol-specified tokens are transferable within public (relatively) liquid crypto-token markets, and may be valued by market participants regardless of the specific legal and / or smart-contract governed rights that relate to those software protocol-specified tokens. In addition, as discussed above, the manifestation of any such software protocol-specified token does not rely solely on the software protocol itself — it also relies on the active operation of the underlying system to which the software protocol is deployed.

2.27 We consider that software protocol-specified tokens are likely to be objects of property rights in themselves.[36] As discussed above, software protocol-specified tokens might also be linked to some sort of participation interest, value or right (which may be related to a software protocol), as defined by the code of the particular token / software protocol.[37] Creating effective governance arrangements in relation to

---

[34] For more detailed discussion, see P Kothe, "Governance Tokens – The New Medium Of Power?" (2021), available at: https://datarella.com/governance-tokens-the-new-medium-of-power/.

[35] "Money earned within a DAO can be collectively programmed to reinvest in new opportunities, to pay dividends to members, or to be allocated in any number of creative ways": Galaxy Fund Management, "What are DAOs?" (2022), available at: https://www.galaxyfundmanagement.com/crypto-101/what-are-daos.

[36] See Digital Assets (2022) Law Commission Consultation Paper No 256 for a detailed consideration of this topic. Available at: https://www.lawcom.gov.uk/project/digital-assets/.

[37] For example, a linked participation interest could be structured as an interest to participate in certain distributions made by, or the assets of, a DAO. Linked value might be some kind of external value, such as gold, treasury bills or government bonds. A Linked right might include some legal right such as a contractual

software protocols is complex and is the topic of a significant amount of research and discussion.[38]

2.28 Software protocol-specified token holders may or may not be closely associated with a DAO and / or a particular software protocol. Many developers, early venture capital investors and operational contributors (for example, in executive or quasi-executive roles) in the day to day running of a DAO might be allocated software protocol-specified tokens (sometimes by the software protocol itself). Allocation might occur through DAO-based governance processes or some other form of arrangement (for example, a contractual arrangement between participants). The latter may be particularly common in circumstances where a software protocol is in the early stages of development. Equally, software protocol-specified tokens are often available in public (relatively) liquid crypto-token markets. It is therefore possible for an internet user with no previous knowledge of, experience with, or exposure to a DAO or a software protocol to acquire software protocol-specified tokens (particularly where they are admitted to trading on crypto-token exchanges).

Interrelationships between participants within crypto-token ecosystems

2.29 We set out the above non-exhaustive description of some of the participants within broader crypto-token ecosystems to help assist with the descriptions and questions in the rest of this call for evidence.

2.30 We think that clear mapping of crypto-token ecosystems is important if the law is accurately to consider how existing legal principles could (and should) apply to the various participants within crypto-token ecosystems. This is particularly true when a variety of those participants interact together using a "DAO" descriptor or designation. We consider that clarity on these legal principles will help market participants who are structuring DAOs to do so in a flexible, but legally certain, environment.

2.31 In particular, in Chapter 5 we ask for feedback on three highly important questions which relate to the liability of certain participants within crypto-token ecosystems:

(1) whether it is ever appropriate (and if so, in what circumstances) for software engineers / developers of open-source code for software protocols to owe duties of care and / or fiduciary duties to users of those software protocols;[39]

---

debt. Linked utility would include some additional functionality, such as the ability to log in to a specific website / forum, or ability to do particular things only as owner of the token. Each of these things can theoretically be linked to a token, and a token could even include a combination of these elements or change over time.

[38] See, for example: C Jentzsch, "Decentralized Autonomous Organisation to Automate Governance" (2017) p 2, available at: https://lawofthelevel.lexblogplatformthree.com/wp-content/uploads/sites/187/2017/07/WhitePaper-1.pdf; and V Buterin, "Bootstrapping A Decentralized Autonomous Corporation: Part 2: Interacting With the World" (2013), available at: https://bitcoinmagazine.com/technical/bootstrapping-an-autonomous-decentralized-corporation-part-2-interacting-with-the-world-1379808279.

[39] And / or users of the blockchain systems that are constituted by the active operation of those protocols by a network of participants that are unrelated to the developers.

(2)   whether it is ever appropriate (and if so, in what circumstances) for holders of software protocol-specified tokens to be liable to users of the software protocols in which they hold tokens; and

(3)   how the distinction between an incorporated company (or other legal form or incorporated entity) involved in software development and an open-source software protocol does or should operate as a matter of law and whether it is ever appropriate (and if so, in what circumstances) for the law to disregard that distinction.

Question 2.

2.32   To assist in our understanding of the different crypto-token ecosystem functions performed by various participants, please provide feedback on the high-level descriptions in Chapter 2.

Understanding the terms "decentralised", "autonomous" and "organisation"

2.33   While DAOs are generally referred to as being "decentralised", "autonomous" and "organisations", there is a broad spectrum of nuance to the use of those terms. That variation translates to the DAOs currently seen in the market. In many cases, we consider that the terms "decentralised" and "autonomous" may in fact refer to some of the features or characteristics of some of the composite elements of DAOs, as opposed to referring to or describing the loose social structure or organisational form itself. Nonetheless, we ask participants for further feedback below.

"Decentralised"

2.34   Some consider that the term decentralised is used to express the concept that decision-making and oversight is widely dispersed or distributed within a particular organisational structure. In other words, to express the idea that there is no central body responsible for the governance of a particular DAO. In practice, this often means that a particular DAO or associated software protocol will include certain rules or functions that operate deterministically, or programmatically. Where this is not the case, a particular software protocol might then specify in what circumstances (and at what threshold levels) certain limited decisions or changes can be made. Decision-making above the programmatically defined processes is generally effected through voting by tokens associated with or specified by the software protocol.[40] Decision making within an incorporated company (or other legal form or incorporated entity) involved in software development that exists within a DAO organisational structure is made in accordance with the rules of the particular entity (which may or may not have dispersed ownership).

2.35   That said, not all commentary agrees on whether decentralisation in this context refers only to a particular DAO's governance or instead to its architecture (or to both). Where

---

[40]   Y Hsieh, "The Rise of Decentralized Autonomous Organizations: Coordination and Growth within Cryptocurrencies" (2018) *Electronic Thesis and Dissertation Repository* 5393, 96, available at: https://ir.lib.uwo.ca/etd/5393.

decentralisation is instead taken to refer to a DAO's architecture, that term could refer to a variety of things, depending on the DAO in question. For example, it might refer to the level of decentralisation of the blockchain system to which a particular software protocol that is associated with a DAO is deployed. It might refer to the particular software protocol itself, as a system of smart contracts based on open-source code. It might refer to software protocol-specified tokens which themselves are likely to have been created by deployment of smart contracts to a blockchain system.[41] Even so, decentralisation in the software context can itself be understood in different ways.[42] It can be assessed by reference to a variety of factors. For example, Srinivasan and Lee refer to, among other things, tests for miner or validator decentralisation, client decentralisation, developer decentralisation, node (participant) decentralisation and ownership decentralisation.[43] Some of these elements recognise that decentralisation (even in a software context) can also refer to the relative concentration or dispersion of (governance) power over the network — how many individuals or organisations ultimately control the computers that manifest the system.

2.36 It is therefore possible to describe decentralisation as a broad theoretical concept but what decentralisation looks like for any particular DAO can differ depending on the organisational structure of the DAO in question and can also change over time.

2.37 Many DAOs are intentionally not initiated using many decentralised elements because this is sometimes seen to give rise to an unacceptable level of risk, particularly with regard to untested software protocols or smart contracts. Instead, their participants might seek ever-increasing decentralisation as a goal to work towards. Conversely, as DAOs become more successful, their participants might choose to include clear and well-tested legal structures within their organisational arrangements, thus adding an element of centralisation to a previously decentralised organisation. And some DAOs apply a mixed approach. We think all three approaches are possible under the law of England and Wales.

2.38 We discuss decentralisation and the concept of "sufficient decentralisation" in more detail in Chapter 5.

"Autonomous"

2.39 The need for human oversight within a DAO is potentially reduced (as compared with a traditional off-chain organisation) where the DAO's network of smart contracts controls a large part of the activities and governance of the organisation.[44] For example, in a traditional technology company, there is normally a combination of both

---

[41] For example, once a smart contract / set of smart contracts / software protocol is deployed to a blockchain system, and 'administration keys' are destroyed, those smart contracts can operate automatically / deterministically / programmatically without a model of governance. Often, therefore, the level of decentralisation is judged by reference to the underlying blockchain system.

[42] V Buterin, "The Meaning of Decentralization" (2017), available at: https://medium.com/@VitalikButerin/the-meaning-of-decentralization-a0c92b76a274.

[43] See B Srinivasan and L Lee, "Quantifying Decentralization" (2017), available at: https://news.earn.com/quantifying-decentralization-e39db233c28e.

[44] S Farrell, H Machin, and R Hinchliffe, "Lost and found in smart contract translation – considerations in transitioning to automation in legal architecture" (2018) 33(1) *Journal of International Banking Law and Regulation* 24, 29.

a distributed automated platform (such as a website or social media platform) and a centralised business organisation managed by people (led by the CEO, CFO and so on). One feature of a DAO is that it has potential to remove some elements of the latter part — that is, the need for centralised management to support the automated platform.

2.40   Some systems use a variety of technical design choices such as the use of public-private key cryptography and complex distributed consensus mechanisms to allow for the deployment of deterministically or programmatically executing smart contracts to them.[45] While these smart contracts may require external input to trigger their execution, they do not require human or external oversight to run.[46]

2.41   However, DAOs are not completely operationally autonomous. DAOs also rely heavily on individuals within their organisational structure to perform certain tasks that automated processes cannot. The number and role of human actors involved in a DAO will vary depending on the purpose and structure of the DAO. Founders and developers will be involved at the start of a DAO's life, and may be one and the same people. They might well continue to be associated with the DAO (or its associated software protocol) as it matures, but be joined by other participants who may or may not also be holders of the software protocol-specified tokens. In addition, a DAO that adopts a legal form within its structure — such as a limited company — will also then have human actors involved with that entity. The founders or developers of a DAO might want directly to control the legal entities within a DAO's organisation and become, for example, a limited company's shareholders and directors. Finally, a DAO might want to engage humans to assist it in areas such as legal advice, accounting, public relations and general administrative work.

2.42   There is some divergence in commentary surrounding whether the term DAO remains appropriate when describing these types of complex organisational structuring arrangements. Buterin, in his early writings, distinguished between (i) DAOs and (ii) mere decentralised organisations (DOs) based on the level of human involvement in the organisation's governance.[47] DAOs, Buterin thought, were "automated at the center, human at the edges",[48] capable of operating themselves, and could function even if no two members spoke the same language.[49] Others consider that a DAO is "designed to run autonomously on a blockchain and is solely controlled by code,

---

[45]   R D Leonhard, "Corporate Governance on Ethereum's Blockchain" (2017) pp 6-7, available at: http://dx.doi.org/10.2139/ssrn.2977522.

[46]   In this context we are talking principally about smart contracts themselves, rather than smart legal contracts which are smart contracts used to define and perform the obligations of a legally binding contract. Smart legal contracts were the focus of a previous Law Commission project: Smart legal contracts: Advice to Government (2021) Law Com No 401, available at: https://www.lawcom.gov.uk/project/smart-contracts/.

[47]   V Buterin, "DAOs, DACs, DAs and More: An Incomplete Terminology Guide" (6 May 2014), available at: https://blog.ethereum.org/2014/05/06/daos-dacs-das-and-more-an-incomplete-terminology-guide/.

[48]   V Buterin, "DAOs, DACs, DAs and More: An Incomplete Terminology Guide" (6 May 2014), available at: https://blog.ethereum.org/2014/05/06/daos-dacs-das-and-more-an-incomplete-terminology-guide/.

[49]   V Buterin, "Ethereum: A Next-Generation Smart Contract and Decentralized Application Platform" (2014), available at: https://ethereum.org/669c9e2e2027310b6b3cdce6e1c52962/Ethereum_Whitepaper_-_Buterin_2014.pdf.

without any need for human involvement" whereas a DO still requires human intervention in some way.[50]

2.43 There is also some disagreement in market commentary about what the "autonomous" aspect of a DAO refers to. Some think that a DAO is autonomous because it is operationally independent and distinct from humans.[51] Others, suggest that "autonomous" refers to *self-governance*, rather than mere automatic or programmatic execution, so a DAO can only be defined as such if the organisation is secured from outside influence or control. Shapiro, for example, places use of "censorship-resistant technologies" at the heart of his definition of what a DAO is.[52] Similarly, Hassan and De Filippi note that:[53]

> It is unclear whether a DAO must be fully autonomous and fully automated (ie the DAO should operate without any human intervention whatsoever), or whether the concept of "autonomy" should be interpreted in a weaker sense, (ie while the DAO, as an organisation, may require the participation of its members, its governance should not be dependent on the whims of a small group of actors).

"Organisation"

2.44 DAOs fall within the broad description of an organisation as an association of two or more participants pursuing a common interest or purpose. The means of becoming a participant within a DAO is normally prescribed by the DAO itself, but may not be. It could be as straightforward as purchasing a software protocol-specified token associated with a particular DAO or it may be that recognition as a participant is more exclusive (for example, requiring potential participants to pass know-your-customer checks or be personally invited to join). Where participants can come and go simply by purchasing or acquiring a software protocol-specified token associated with a particular DAO, the number and diversity of participants might be very fluid.

2.45 While the participants within some DAOs might know each other, many participants are likely to participate on a pseudonymous or anonymous basis. In this scenario, participants might derive comfort from the fact that they interact with each other via blockchain-based software protocols and smart contracts.

---

[50] 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.

[51] See Q DuPont, "A history and ethnography of 'The DAO', a failed decentralized autonomous organisation" in M Campbell-Verdyn (ed), *Bitcoin and Beyond* (2017).

[52] G Shapiro, "Defining Real and Fake DAOs" (2022), available at: https://lexnode.substack.com/p/defining-real-and-fake-daos.

[53] S Hassan and P De Filippi, "Decentralized Autonomous Organization" (2021) 10(2) *Internet Policy Review*, available at: https://doi.org/10.14763/2021.2.1556.

> **Question 3.**
>
> 2.46 We recognise that there is no singular, authoritative understanding of what a DAO is. However, please explain how you understand each of the individual descriptors of a DAO:
>
> (1) decentralised;
>
> (2) autonomous; and
>
> (3) organisation.

What are DAOs used for?

2.47 DAOs have been set up for a number of different purposes. CoinMarketCap lists thousands of DAOs, many of which are associated with software protocols and software protocol-specified tokens with a large market capitalisation.[54] There are also DAOs in which participants do not seek to make any profit. We briefly consider below some examples of the different purposes and objectives for which DAOs have been created.

Grants DAOs

2.48 Grants DAOs provide the opportunity for communities to donate funds and use the DAO to decide on how that capital is allocated to various contributors in the form of governance proposals. Grants DAOs allow niche communities to apply capital quickly, easily and efficiently without the requirement for formal, registered structures. A well-known example is Uniswap Grants DAO. Harvard Law's Blockchain and Fintech Initiative received $20 million in grant funding from the Uniswap Grants DAO in July 2021.[55]

DeFi protocols

2.49 Many DAOs are closely associated with software protocols that allow certain finance-like operations to be executed within blockchain systems and are sometime referred to as "Protocol DAOs". They can be created to support / manage resources and governance for a particular project. As we discuss above, software protocols might also specify software protocol tokens (some of which might have a secondary market value). Well-known examples are MakerDAO (associated with Dai, a decentralized stablecoin) and Lido DAO (associated with liquid staking services).

---

[54] Market capitalisation is a measure of the value of a given token, calculated by multiplying a single token's price by the number of tokens in circulation. "Top DAO Tokens by Market Capitalization" (CoinMarketCap), available at: https://coinmarketcap.com/view/dao/.

[55] See "Harvard's blockchain group sells half of $20M grant from Uniswap DAO" (theblockcrypto.com), available at: https://www.theblockcrypto.com/post/111185/harvard-law-blockchain-initiative-uniswap-dao.

Investment DAOs

2.50 Some DAOs are set up as investment clubs which focus on generating a return. Investment DAOs normally have more restrictive rules than other DAOs, but allow groups of individuals to come together to invest larger amounts of capital with low barriers to entry. Investment DAOs also allow members to pool capital and invest in projects at their earliest stages. For example, MetaCartel Ventures is a permissioned, for-profit investment DAO whose goal is to fund promising projects building new Ethereum applications.

Service DAOs

2.51 Service DAOs are effectively talent allocators. They often use blockchain-based and publicly available credentials to funnel and allocate resources from one DAO to another in areas such as legal, creative, governance, marketing, development and treasury management. Work is often rewarded with tokens, providing some related reward or incentive to create value. For example, HoneyDAO is a collective of influencers, investors, developers and founders available to help improve DeFi projects.

Social DAOs

2.52 Social DAOs are a collection of people organised around a particular interest or club, such as organisation of off-chain events or management of a treasury. Tokens of social DAOs might, among other functions, gate access to off-chain events similar to a private members club.

Collector DAOs

2.53 Collector DAOs are curator groups that seek to acquire collectibles, such as NFTs and other objects and to curate which of those objects have long-term value. An example is PleasrDAO which acquired the famous doge meme NFT.

Media / advocacy / lobbying DAOs

2.54 These DAOs are organised around certain purposes or initiatives such as supporting freedom of the press globally or supporting the education and onboarding of new users. BanklessDAO, for example, shares news about the "bankless" de-centralised finance ecosystem and uses media to promote the use of "bankless" crypto and open finance products.

DAO Operating Systems

2.55 DAO operating systems are used to create other DAOs. These projects offer different templates, frameworks and tools for communities to pool resources and start their DAO. They commonly offer smart contracts and interfaces to facilitate blockchain-based actions or interactions for decentralised communities. DAO operating systems make it possible to start a DAO with limited technical skills. Examples are Aragon or Daostack.

Question 4.

2.56 Are you aware of any DAOs that use the jurisdiction of England and Wales and / or the law of England and Wales as part of their organisational structuring arrangements? If so, please provide details, including the purpose of the DAO and how it utilises the law of this jurisdiction.

Chapter 3: The starting point: DAOs as unincorporated associations or general partnerships?

3.1 DAOs operating in the market today exist on a wide spectrum. And DAOs, as a broad category of organisational structures, use a variety of different tools to mitigate different practical and legal risks.

3.2 In this chapter, we consider DAOs in their simplest and broadest form as unincorporated arrangements, or associations of participants without formal constitution or registration or separate legal identity. Some industry associations take a similar approach:[56]

> [The authors of the quoted paper] view DAOs and [multi-signature arrangements] in their truest form as unincorporated associations. Although the term "unincorporated association" is legally ambiguous and sometimes refers to a specific entity type, we use the term to refer to a superset of many unincorporated organizational types: partnerships, joint ventures, not-for-profit associations, investment clubs, etc. Roughly speaking, *unincorporated* associations are formed whenever two or more persons join together, usually under a common name, for the accomplishment of one or more common purposes.[57] (emphasis added)

3.3 We begin by analysing the potential legal consequences and risks of this starting point under the law of England and Wales — particularly whether a DAO could be treated as an unincorporated association or a general partnership from a legal perspective — and ask stakeholders for their views.

3.4 In the following chapters, we consider two methods by which DAOs operating in the market today seek to modify this starting point and / or mitigate the potential risks and legal consequences that it gives rise to:

 (1) the use of legal forms, incorporated legal entities, or legal tools such as ownerless foundation companies or special purpose trusts, as part of their organisational structure; alternatively or in combination with this option,

 (2) the use of tools and processes to add practical and operational decentralisation to (some) activities, the relinquishing of (differing) levels of practical and legal control over core functionality of the DAO, and the use of open-source software,

---

56 See *LexPunk Legal Defense Protocol v1.0* p 5, available at: https://github.com/LeXpunK-Army/LeXpunK_DAO_Defense_Protocol/blob/main/Operator's%20Manual%20-%20LeXpunK%20Legal%20Defense%20Protocol.pdf.

57 We note that participants may join together in this way but then choose to take the additional step of incorporating their organisation (for example, by registering as a limited company), If they take this further step then their organisation will have an incorporated legal form with a legal identity separate from its members and it would therefore not be an unincorporated association.

the automatic operation of code and reducing information asymmetry through public disclosures.

Given that many DAOs use a variety of these methods, it may not be appropriate to treat them as unincorporated associations or general partnerships, because they do not neatly fit in either category.

The baseline legal characterisation of a DAO

3.5 Our starting point is to consider DAOs as unincorporated arrangements or associations of participants. Without more, the law of England and Wales might characterise this type of organisational structure in a number of ways,[58] each of which could give rise to different levels and types of legal and practical risk:[59]

(1)   as an unincorporated association;

(2)   as a general partnership;[60]

(3)   as a form of trust arrangement; or

(4)   as an arrangement for joint ownership of assets.

3.6 We consider these organisational forms / arrangements below and ask for views about how these might apply to DAOs in practice.

3.7 Importantly, the law of England and Wales does not recognise these organisational forms as having distinct legal personality. This means that a DAO treated in this way by the law cannot have a legal personality separate from its participants. It therefore cannot (as a separate legal entity) hold property, acquire rights, or incur obligations in

---

[58]   See also *LexPunk Legal Defense Protocol v1.0*, available at: https://github.com/LeXpunK-Army/LeXpunK_DAO_Defense_Protocol/blob/main/Operator's%20Manual%20-%20LeXpunK%20Legal%20Defense%20Protocol.pdf. We note that the Commodity Futures Trading Commission (CFTC) recently applied this "starting point" legal analysis in relation to Ooki DAO. However, we note that in that case the "centralising" and "decentralising" elements used by Ooki DAO to mitigate the risks of the "starting point" legal analysis were not considered in detail. The legal analysis also presents problems because the DAO (as an unincorporated association) was defined as those holders of Ooki tokens that voted on governance proposals with respect to running the business. See: https://www.cftc.gov/PressRoom/PressReleases/8590-22. The merits of this logic were discussed by Commissioner Summer K. Mersinger in a dissenting statement available at: https://www.cftc.gov/PressRoom/SpeechesTestimony/mersingerstatement092222.

[59]   Limited partnerships and charitable trusts are also examples of unincorporated legal entities which can exist under the law in England and Wales. We do not consider these forms further as both require registration to form, making it impossible for a DAO to be characterised as such unless the participants specifically wish to organise in this way.

[60]   This is distinct from a limited liability partnership which requires registration at Companies House and has separate legal personality.

its own name;[61] nor can it limit the liability of its participants for the debts and obligations of the organisation.[62]

3.8 This baseline characterisation may be undesirable for DAOs for many reasons. We discuss how the baseline characterisation is commonly modified or mitigated in practice in Chapters 4 and 5. In this chapter, we consider the baseline characterisation in more detail.

UNINCORPORATED ASSOCIATIONS

3.9 There is no statutory definition of an "unincorporated association", however, the term does appear in statute[63] and the courts have provided a description on numerous occasions.[64] In 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:[65]

> … 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.

3.10 Examples of organisations which might operate as unincorporated associations are many, from a small amateur football club which collects subscriptions and organises games, to (unincorporated) charities that receive grants from local authorities to carry out services. These associations are not created inadvertently or by operation of statute — the members of them choose to form an association and contract with each other.

3.11 The key criteria for an unincorporated association are that it should:

(1) **Consist of two or more persons with a common purpose other than making a profit**

Unincorporated associations are prevented from undertaking business for profit because of the practical difficulties which would arise for third parties in dealing

---

[61] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) paras 2-34 to 2-35.

[62] The exception here is limited partnerships (LP), which draw a distinction between "general partners" and "limited partners". Only the general partners are liable for the debts and obligations of the firm; the limited partners' liability is limited: Limited Partnerships Act 1907, s 4. This liability shield comes with trade-offs however: a limited partner cannot participate in the LP's management and cannot bind the firm: Limited Partnerships Act 1907, s 6.

[63] For 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.

[64] 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.

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

with a business which has a large fluctuating body of members.[66] We note *Weinberger v Inglis* (1919) which considered membership of the original form of the London Stock Exchange. Membership may have had the appearance that a member was part of a business venture, but close examination of its true purpose showed that membership merely entitled a member to have entry to and trading rights within the Stock Exchange building.[67]

Although not established for a business purpose or for profit, an association will nevertheless usually have funds of some kind. Income from member subscriptions is to be pooled in pursuit of the association's purpose other than business for profit.[68] Income is used to cover the running costs of the association, and any incidental profits which are made (for example from investments) must be applied to the objects of the association rather than be shared by its members.[69]

(2) **Have contractual relations between those persons**

An unincorporated association will come into existence when a group of people agree to co-operate for a mutual purpose other than 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.[70] No formal action, such as registration, is required.

(3) **Be governed by rules**

The rules of the 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. 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.[71]

(4) **Be non-temporary**

---

[66] *Smith v Anderson* (1880) 15 Ch D 247 (CA) 273 (James LJ).

[67] N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 2.53; *Weinberger v Inglis* [1919] AC 606 (HL) 622.

[68] *Lloyd v Loaring* (1802) 6 Ves 773 (Ch) 31 ER 1302 (Lord Chancellor); *Re Recher's Will Trusts, National Westminster Bank Ltd v National Anti-Vivisection Society Ltd* [1972] Ch 526 (Ch) 538 (Brightman J); *London Association for Protection of Trade v Greenlands Ltd* [1916] 2 AC 15 (HL) 38 (Lord Parker of Waddington); *Smith v Anderson* (1880) 15 Ch D 247 (CA) 273 (James LJ); *Wise v Perpetual Trustee Co Ltd* [1903] AC 139 (PC) 149; *R v Webb* (1811) 14 East 406, 104 ER 658.

[69] *Blackpool Marton Rotary Club v Martin (Inspector of Taxes)* [1998] STC 823, 830 (Hoffmann J); *Worthington Rugby Football Club Trustees v Inland Revenue Commissioners*, sub nom *Frampton and Another (Trustees of Worthing Rugby Football Club) v IRC* [1985] 1 WLR 409 (Ch) 413 (Peter Gibson J); *Fletcher v Income Tax Commissioners* [1972] AC 414 (PC); *Carlisle & Silloth Golf Club v Smith* (1912) 6 TC 48, 55; *Bohemians Club v Acting Federal Commissioner of Taxation* (1918) 24 CLT 334.

[70] N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 2.01.

[71] N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 2.18.

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.[72] 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, by conduct or inertia.[73]

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 has gone so that it no longer has any effective purpose; or (4) by court order.[74]

(5) **Not have distinct legal personality**

An unincorporated association does not have a legal identity separate from its members.[75] Its members may choose to take the additional step of incorporating their organisation, for example, by registering as a limited company. However, if they do take this step then their organisation will no longer be an unincorporated association. It will have an incorporated legal form with a distinct legal personality from its members.

Consequences of characterisation as an unincorporated association

3.12 An unincorporated association does not have a legal identity separate from its members.[76] So the association itself cannot own property or enter into contracts with third parties.

3.13 Usually a contract will be entered into by an individual member or one or more of the executive committee members on behalf of the unincorporated association. The normal rules of agency will apply so if an agent makes it clear that they are contracting on behalf of an unincorporated association, the contract will be made only with the persons who are the agent's principal. There are two main classes of person who are likely to be held liable as principals under such a contract:[77]

(1) the entire membership of the unincorporated association at the date of the contract; or

---

[72] 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.

[73] *Re Sick and Funeral Society of St John's Sunday School*, *Golcar* [1973] Ch 51 (Ch) 62.

[74] N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 4.10.

[75] We discuss the consequences of this further from para 3.12.

[76] *Re Smith, Johnson v Bright-Smith* [1914] 1 Ch 937, 948, by Joyce J: "the Courts consider the persons of whom the society or association is composed to be the legatees – the named society or association being in truth only a compendiuous or conventional designation for the aggregate of the members."

[77] N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 7.04.

(2)   some or all of the members of the executive committee at the date of the contract.

3.14   Liability therefore attaches to the persons who were members at the time the contract was entered into and who authorised the contract. Members do not become liable under a contract just because they are members or become members of an unincorporated association.[78] Members who are liable under a contract are jointly and severally liable for the full amount due unless liability is expressly limited under the contract to the amount of the association's funds. So a creditor could pursue just one member.

3.15   If the association is a charity, its property will be held on trust by trustees for its charitable purposes. However, if it does not have exclusively charitable purposes then its property will be held by way of a 'sub-species of joint tenancy'[79] on behalf of its members and subject to the contract between them as to the rules of the association.[80] All members of the association from time to time will be joint tenants of the association's property but they will be contractually restrained from severing their share. Usually, one or more of the officers of the association will be the legal owners of the assets and hold them on a bare trust for the current members, subject to the rules of the association. This will be necessary where the assets are land or shares.[81]

3.16   The rules of the association may also set out any right of indemnity of officials and trustees against the assets of the association in respect of liabilities incurred from activities undertaken on behalf of the association.[82]

GENERAL PARTNERSHIPS

3.17   General partnerships are governed by the Partnership Act 1890 and are defined as the "relation which subsists between persons carrying on a business in common with a view of profit".[83] This definition thus sets out three conditions for a relation of partnership to exist:

(1)   **There must be a "business"**

        The 180 Act says "business" includes "every trade, occupation, or profession".[84]

(2)   **The business must be carried on by persons acting in common**

---

[78]   *Wise v Perpetual Trustee Co* [1903] AC 139 (PC).

[79]   *Hanchett-Stamford v AG and Others* [2009] Ch 173 (Ch) 188.

[80]   N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 1.14: This is the 'contract-holding' theory propounded by Cross J in *Neville Estates Ltd v Madden* [1962] Ch 832 (Ch) 849, which is now the accepted theoretical explanation of how non-charitable associations hold property.

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

[82]   N Stewart, N Campbell and S Baughen, *The Law of Unincorporated Associations* (2011) para 2.18.

[83]   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.

[84]   Partnership Act 1890, s 45.

In other words, the persons must be carrying on a single business together for their common benefit, accepting some level of mutual rights and obligations as between themselves.[85] Persons carrying on wholly separate businesses or else seeking only to improve their own, individual profitability will not be partners.[86]

The term "persons" includes bodies corporate,[87] meaning an individual and a body corporate or a group of bodies corporate may form a partnership together.

(3) **The persons must have a view of profit.**

This means that the partners must have the intention to make a profit, even if a profit is not actually realised.[88] "Profit" means the net amount remaining after paying out of the receipts of a business *all* the expenses incurred in obtaining those receipts. This is in contrast with "gross returns", for example, the royalties received by an author.[89] The element of profit is one of the characteristics which distinguishes a general partnership from an unincorporated association.[90]

3.18 A partner relationship arises from contract, although there are no formalities to satisfy, and a partnership agreement may be express or else be inferred from the parties' conduct. A partnership will therefore be formed where one or more persons (who become partners) have made a binding agreement with each other to carry on a business in common with a view of profit. As we discuss below, a general partnership does not have legal personality separate from the partners who constitute it.[91] Therefore if a partner leaves the partnership or a new person joins, technically the old firm is dissolved and replaced by a new firm of partners who take on the assets and liabilities of the old firm and continue its business.[92] It is possible, although currently unusual, for a partnership agreement to give a partner the right to transfer their share to a third party and make the third party a partner in their place.[93] Again, this would result in the old firm being dissolved and a new firm created.[94] In the past,

---

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

[86] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) paras 2-07, 2-11.

[87] Interpretation Act 1978, sch 1.

[88] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-09.

[89] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 2-08. See the classic definition of the word "profit" by Fletcher Moulton LJ in *Re Spanish Prospecting Co Ltd* [1911] 1 Ch 92, 98. See also *Gresham Life Assurance Society v Styles* [1892] AC 309, 322, by Lord Herschell and *Beauchamp v FW Woolworth Plc* [1990] 1 AC 478, 489, by Lord Templeman. Note further *Customs & Excise Commissioners v Bell Concord Educational Trust Ltd* [1990] 1 QB 1040.

[90] Unincorporated associations can only be established for a purpose other than making a profit. We discuss this further at para 3.11.

[91] General partnerships in Scots law do; Partnership Act 1890, s 4(2).

[92] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) 3-05.

[93] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) 10-295 and 19-60.

[94] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 19-63.

partnerships with a large number of partners and freely transferable shares were more common than they are today.[95]

3.19 Determining whether a partnership has been constituted is a question of fact and law; the parties cannot decide this for themselves.[96] In particular, a court will do the following:

(1) **Scrutinise the parties' agreement to ascertain their true intentions**

Importantly, a court will look to the substance of the parties' relationship rather than any label that the parties choose to use. Simply saying that a relationship is a "partnership" is not itself conclusive as to whether a partnership actually exists, although it may be relevant.[97] Equally, an express declaration by parties that their interaction does not constitute a partnership will not decide the matter: a court may yet infer that the parties are partners if other facts suggest that this is their real status.[98]

(2) **Consider whether any common features of partnership are present**[99]

These include:

(a) joint participation in the profits and losses of the business;

(b) mutual agency of the partners;

(c) contributions to a stock of common assets and / or capital;

(d) basic non-assignability of the partnership relation; and

(e) a relation of mutual trust and confidence between the partners.

(3) **Consider other relevant evidence**

There is, in principle, no end to the range of evidentiary factors that may be relied upon to show that a partnership has been constituted. Section 2 of the Partnership Act 1890 provides some guidance on the weight to be given to certain facts,[100] including that the sharing of profits is, on its face, strong evidence of a relation of partnership.[101] Beyond that, written agreements or correspondence using the name of the partnership, any partnership tax returns, a joint bank account, or the use of property by several persons jointly may all

---

[95] W Edwards, "Decentralised Autonomous Organisations: unincorporated companies by another name?" (2022) 3 *Journal of International Banking and Financial Law* 147.

[96] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) paras 5-04 to 5-05, 7-11.

[97] *Protectacoat Firthglow Ltd v Szilagyi* [2009] EWCA Civ 98, [2009] IRLR 365, by Smith LJ at [61]: "one cannot create a partnership by signing a document which calls itself a partnership agreement".

[98] *Weiner v Harris* [1910] 1 KB 285, 290.

[99] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) paras 2-07 fn 45, 2-13, 2-14. 3-07, 12-01.

[100] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 5-03.

[101] Partnership Act 1890, s 2(3).

suggest a relation of partnership, though no single factor is likely to be conclusive.[102]

Consequences of characterisation as a partnership

3.20 Like unincorporated associations, general partnerships in England and Wales do not have legal personality separate from the partners who constitute them,[103] again meaning that they cannot enter contracts, own, or grant security over, assets. Any property is normally held in the names of individual partners as trustees for the partnership. No debt can exist between any member of the partnership and the partnership itself and the partnership cannot technically be a creditor or debtor of its members.[104] Partners do not have any rights or liabilities against the partnership itself because it has no separate legal identity. Rights and liabilities of the partnership are actually rights and liabilities of the partners either against third parties or each other.[105] However, actions can be brought by or against partners in the name of the partnership.[106] A partner is both a principal and an agent of their co-partners. As principal, a partner is personally liable to meet the debts or liabilities of the partnership, whether or not they could be met out of the partnership assets.[107]

An unincorporated association or a general partnership?

3.21 A DAO could be classified as a general partnership if there is an express or inferred agreement between persons to carry on a business in common with a view to profit. Whether that is the case will depend on the specific DAO in question, and its nature, objects, and operations. We anticipate that for some DAOs, particularly where participants do not have a profit motive or if a profit motive is subsidiary to some other purpose for participating in the DAO, the possibility of inferring a partnership agreement will be small, but they might instead be an unincorporated association. For other, explicitly commercial DAOs, a categorisation as a partnership might be more likely, though it would still require showing that (some or all of) the DAO's participants were acting "in common".[108]

3.22 Our initial thinking is therefore that a DAO might be characterised as an unincorporated association or a general partnership under the law of England and Wales. By this we mean a DAO which has not taken any of the additional steps that

---

[102] See generally: R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) paras 7-23 to 7-34.

[103] General partnerships in Scots law do; Partnership Act 1890, s 4(2).

[104] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 1-10 and 3-04.

[105] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) paras 3-04, 3-06 and 3-07.

[106] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 3-04; Civil Procedure Rules 1998/3132, rule 7.2A and Practice Direction 7A.

[107] R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) para 3-07.

[108] We note that these arguments were made explicitly by the CFTC in a Consolidated Opposition document filed in the ongoing *Commodity Futures Trading Commission v Ooki DAO (formerly d/b/a bZx DAO)* litigation (Case Number 3:22-cv-05416): "Plaintiff's Consolidated Opposition to Amicus Curiae Motions for Reconsideration of Order Granting Plaintiff's Motion for Alternative Service" (filed 14 November 2022). See in particular on p 17: "an unincorporated association is simply "a voluntary group of persons, without a charter, formed by mutual consent for the purpose of promoting a common objective." Available at: https://e5315971-ddfe-4959-a693-76f92283b127.usrfiles.com/ugd/e53159_ac8bfe72f2b04723a3e0e65635804474.pdf.

we discuss in this call for evidence, for example either structuring itself with a variety of incorporated or unincorporated entities or using decentralising elements.

3.23 However, we also recognise the important differences between DAOs that operate in the market today and this starting point. Characterising DAOs as either unincorporated associations or general partnerships would fail to consider in detail the different crypto-token ecosystem functions performed by participants within those ecosystems,[109] and fail accurately to reflect the realities of how DAOs are structured and operate in the market today. To find that a DAO was an unincorporated association or general partnership would also leave unanswered difficult questions which are likely to become more relevant as decentralised infrastructure is used more commonly. Specifically, whether and how liability can and should be attributed as between different crypto-token ecosystem participants.[110]

3.24 In the following chapters, we attempt instead to interrogate these issues. To begin, we consider two methods by which DAOs operating in the market today seek to modify the starting point described above and / or mitigate the potential risks and legal consequences that it gives rise to:

(1) "centralising elements" (Chapter 3); and, alternatively or in combination with this option;

(2) "decentralising elements" (Chapter 4).

---

[109] In particular, it ignores the relationship (and distinctions) between (1) a DAO as a broad, descriptive term for a technology-mediated social structure or organisation of participants comprised of a variety of composite elements; (2) incorporated development companies (or other legal forms or incorporated entities); (3) DeFi Protocols; and (4) different participants within the DAO (including individual contributors, developers and DeFi Protocol token holders).

[110] We do however recognise that to find that a DAO was either an unincorporated association or a general partnership does answer this question in a blunt and simplistic way — by attributing joint and several personal liability to the "partners" (howsoever defined).

Question 5.

3.25 In this question we are interested in the legal treatment of a DAO which has not taken any of the additional steps that we discuss in this call for evidence, for example either structuring itself with a variety of incorporated or unincorporated entities or using decentralising elements.

Please explain whether your answer is based on general knowledge of DAOs or based on specific examples of DAOs of which you have first-hand knowledge or experience. We note that respondents might choose to answer this question more widely in the context of the discussion set out in Chapters 4 and 5 on how DAOs seek to modify the general starting point. In this respect, see also Question 21.

3.26 Do you agree that the general starting point for DAOs might be that they are characterised as an unincorporated association, or a general partnership under the law of England and Wales?

3.27 How common do you think it is for DAOs to meet the criteria to be characterised as an unincorporated association?

In particular:

(1) Do many DAOs currently in existence or contemplation fulfil the following criteria:

    (a) the DAO consists of two or more persons with a common purpose other than making a profit;

    (b) the DAO is governed by rules, including in relation to how participants can join and leave;

    (c) the DAO is non-temporary, so continues to exist even as its participation changes; and

    (d) the DAO has no distinct legal personality?

(2) Are there any aspects of a DAO's operations which make it unlikely that it would be characterised as an unincorporated association?

(3) Do you have examples of any other aspects of a DAO's structure or operations that might suggest the existence of an unincorporated association?

3.28 How common do you think it is for DAOs to meet the criteria to be characterised as general partnerships as described from paragraph 3.17 of this call for evidence?

In particular:

(1) Do many DAOs currently in existence or contemplation fulfil the following criteria:

TRUST STRUCTURES

3.29   Some simple DAOs might be better analysed as a simple asset holding structure based on the law of trusts. A trust arises when one person (the settlor) transfers property to another person (the trustee) to hold for some other person (the beneficiary).[111] In essence, trusts are asset management structures, and are ways of holding property such that the property's management is separated from its benefits.[112]

3.30   There may be good reasons for trust arrangements to be put in place in respect of crypto-tokens or other objects of property rights. 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.[113] However, 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: certainty of intention, subject matter and object.[114] We considered in detail how trust arrangements could be constituted in respect of crypto-tokens in our digital assets consultation paper.[115]

3.31   While it is possible that some simple DAOs might be better analysed as a trust, we consider that in many cases a trust will not arise. However, some DAOs will choose to use a trust as a constituent part of their overall organisational structuring. Common examples of this include the use of a special purpose trust, which we discuss in more detail in Chapter 3 below. We consider that the use of trusts in respect of crypto-

---

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

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

[113]   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).

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

[115]   See Digital Assets (2022) Law Commission Consultation Paper No 256, Chapter 16, available at: https://www.lawcom.gov.uk/project/digital-assets/.

tokens under the law of England and Wales is clear. As such, if on a proper analysis a DAO is structured as, or uses a trust, then we consider that the law is capable of addressing those issues.

> **Question 6.**
>
> 3.32 Please identify any problems that the current law in England and Wales presents for the use of trust arrangements as a constituent part of a DAO's overall organisational structuring.

JOINT OWNERSHIP OF ASSETS

3.33 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.[116] 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:[117]

  (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.

3.34 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.[118]

3.35 If a 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 DAO would not simply hold property without a specific purpose. Participants usually pool tokens and other property to deploy towards more or less specific aims. We therefore think it is more likely that some 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.

---

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

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

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

Question 7.

3.36 Do you consider that the current law in England and Wales presents any problems relating to the use of joint ownership arrangements as a constituent part of a DAO's overall organisational structuring? If so, how?

Chapter 4: The use by DAOs of centralising structural elements

4.1   In this chapter, we consider how the starting point base-case analysis described in the previous chapter — and the potential legal and practical difficulties inherent in that characterisation — can be modified, and the risks mitigated by adding centralising structural elements to a DAO. We consider how some DAOs choose to use formal, incorporated legal entities within their organisational structure to mitigate risk. One of the most obvious reasons DAOs do this is to separate some of their component parts described in Chapter 2 — most obviously to separate an incorporated company (or other legal form or incorporated entity) involved in software development from a particular software protocol and from holders of software protocol-specified tokens.

4.2   There are currently a range of different bodies corporate that can be established under the law of England and Wales, and which DAOs could potentially utilise, including:

(1)   private companies limited by shares;

(2)   private companies limited by guarantee;

(3)   public companies limited by shares;

(4)   unlimited companies;

(5)   community interest companies;

(6)   limited partnerships (LPs);

(7)   private fund limited partnerships (PFLPs);

(8)   limited liability partnerships (LLPs);

(9)   charitable incorporated organisations (CIOs); and

(10)   registered societies (co-operative societies and community benefit societies).

4.3   Alternatively, or in combination with these elements, we consider how some DAOs choose to use other legal tools such as an ownerless foundation company or a special purpose trust as part of their organisational structure. We also briefly discuss how some DAOs choose to use other state-mandated incorporated entities specific to DAOs (such as the Wyoming DAO LLC).

4.4   Broadly, we consider that such legal tools are used intentionally to add a centralising element to the organisational structure of the DAO in question.[119]

4.5   We ask why DAOs might choose to use an incorporated entity or other centralising element in their organisational structuring and also, by contrast, why some DAOs do not wish to do this, either in England and Wales or at all.

ALTERNATIVE OPTIONS TO CENTRALISATION/INCORPORATION

4.6   In this chapter we ask about the centralising elements that DAOs can and sometimes do choose in their organisational structures, including those which use incorporated sub-DAOs within their structure. We are also interested in why DAOs choose *not* to use such elements.

4.7   In the next chapter, we consider in more detail some of the practical ways in which DAO organisational structures use tools and processes to add practical and operational decentralisation to (some of) their activities. Some DAOs achieve this through a variety of means including relinquishing (differing) levels of practical and legal control over core functionality of the DAO, and relying on open-source software, the automatic operation of code and reducing information asymmetry through public disclosures.

WHY USE A CENTRALISING ELEMENT?

4.8   A DAO operating entirely by interactions on blockchain systems might find itself in a position where it wants, or is forced, to interact with the world external to a blockchain system. This could be where it wants to engage developers or other third parties to work on some of the constituent elements of the DAO, most likely the related software protocol, hold off-chain assets or raise finance in fiat currency. If a software protocol is hacked,[120] this could also lead to off-chain consequences such as litigation which might prompt DAO participants to consider their personal liability.

4.9   In response to off-chain pressures or situations, a DAO could choose to adopt a legal or incorporated entity as part of its organisational structuring. The participants within a DAO might have links to a particular jurisdiction and therefore opt to utilise a legal form in that jurisdiction. The participants might have advisers who point them in the direction of legal forms or incorporated entities which are commonly used by organisations such as theirs. In this section, we look at incorporated entities in England and Wales and consider whether, and if so how, they can play a role in the organisational structure of DAOs. We also briefly consider legal entities in other jurisdictions which have either been created specifically for DAOs or which we know DAOs have used as part of their organisational structuring.

---

[119]   Some argue that a centralising element could have the effect of diluting the autonomous nature of an organisation to such an extent that it would no longer properly qualify as a DAO. For more on this argument, see G Shapiro, "Defining Real and Fake DAOs" (2022), available at: https://lexnode.substack.com/p/defining-real-and-fake-daos.

[120]   Note that "hack" in this context is only used as a broad descriptive term and may or may not imply changes being effected to the software protocol itself — it could also imply use consistent with the operation of the software protocol.

OPTIONS FOR USE OF AN ENTITY INCORPORATED UNDER THE LAW OF ENGLAND AND WALES

4.10 In England and Wales forming a body corporate requires an act of incorporation. The precise act, together with any procedural requirements that must be satisfied prior to incorporation, will vary depending on the body corporate in question.

4.11 Once incorporated, most entities will have a legal identity separate from their members but not all entities afford their members limited liability. They may also have ongoing corporate governance disclosure, transparency and filing requirements in order to operate effectively and remain in good standing. These may include:

  (1)   providing a registered address for communications;

  (2)   preparing and filing annual accounts;

  (3)   providing personal details of decision makers, for example company directors or partners in a limited liability partnership;

  (4)   maintaining a register of people with significant control over the organisation;

  (5)   complying with accounting and audit standards; and

  (6)   making other disclosures (such as strategic reports or corporate governance statements).

4.12 We briefly discuss some of the incorporation requirements and key characteristics of different entities below.

Private companies limited by shares

4.13 A private company limited by shares is incorporated by registering the company with the registrar for companies at Companies House who issues certificates of incorporation. The procedure for registration is set out in the Companies Act 2006. One or more persons must subscribe their name to a "memorandum of association" and deliver it to Companies House, together with an application for registration and a statement of compliance.[121] The registration application must provide certain information, such as the company's name, intended registered address, any proposed articles of association, statement of initial shareholdings (if limited by shares), and information about its one or more directors (at least one of whom must be a natural person) and any person or entity with significant control over the company.[122]

4.14 Once incorporated, a private company limited by shares will have a legal identity separate from its shareholders and shareholders' liability is limited to the amount, if any, unpaid on the shares held by them.[123]

---

[121]   Companies Act 2006, ss 7 to 8, 13.

[122]   Companies Act 2006, ss 9 to 12A.

[123]   Companies Act 2006, s 3(2) and Insolvency Act 1986, s 74(2)(d).

Private companies limited by guarantee

4.15 The registration process at Companies House for Companies limited by guarantee is similar to that for companies limited by shares.[124] In addition, a statement of guarantee must also be lodged with Companies House setting out a statement from each of the subscribers to the company's memorandum that if the company is wound up while they are a member or within one year of their ceasing to be a member, they will contribute (up to a specified amount) to the assets of the company.[125]

4.16 Companies limited by guarantee have a legal identity separate from their members but have no share capital. Instead, their members undertake to "underwrite" the company to a predetermined amount which becomes payable in the event of the company being wound up with debts to pay.[126] They are usually used for not-for-profit organisations.

Public companies limited by shares

4.17 Together with the requirements for private companies summarised above,[127] a public company must (i) appoint at least two directors and a company secretary, providing specified information about them and (ii) obtain a trading certificate from Companies House that the share capital is at least £50,000 or the euro equivalent prior to starting trading.[128] Once incorporated, the company's disclosure requirements are more onerous than those of a private limited company. For example, it cannot file abbreviated accounts even if it is a small or medium-sized company and it is subject to a shorter permitted period for delivering accounts to Companies House.[129]

4.18 If a company wishes to offer its shares to the public it may incorporate or re-register as a public company limited by shares. This is because private companies limited by shares are prohibited from offering their securities to the public.[130]

4.19 As is the case with private companies limited by shares, once incorporated, a public company limited by shares will have a legal identity separate from its shareholders and the liability of members is limited to the amount, if any, unpaid on the shares held by them.[131]

---

[124] See para 4.13.

[125] Companies Act 2006, s 11(3).

[126] Companies Act 2006, s 3(3) and Insolvency Act 1986, s 74(3).

[127] See para 4.13.

[128] Companies Act 2006, ss 761 to 767.

[129] Companies Act 2006, s 441 and s 442.

[130] Companies Act 2006, s 755.

[131] Companies Act 2006, s 3(2) and Insolvency Act 1986, s 74(2)(d).

Unlimited companies

4.20 Unlimited companies are incorporated in much the same way as limited companies,[132] although unlimited companies' ongoing disclosure obligations are less onerous because they are exempt from filing accounts to Companies House or return of allotments of shares unless issuing a new class of share.[133] These less onerous disclosure requirements are one reason why a company may be formed as an unlimited company as opposed to one of the other forms of company described in this section.

4.21 Once incorporated, an unlimited company has a legal identity separate from its members. However, there is no limit on the liability of the members of the company,[134] so when an unlimited company is wound up, the present members and (in certain situations) past members will be liable to contribute to the company's assets to any amount sufficient for payment of its debts and liabilities.[135]

Community interest companies (CICs)

4.22 CICs are companies limited by shares or by guarantee which have a specific aim of benefiting a community. Their income, assets and profits must be put towards this aim. Together with the incorporation requirements for limited companies,[136] a community interest company must evidence to Companies House that the company will benefit the community[137] (and thereafter provide an annual community interest report).[138]

4.23 A CIC has a legal identity separate from its members. The liability of members on winding up will depend on whether the CIC is limited by shares or guarantee.[139]

Limited partnerships (LPs)

4.24 LPs must be registered with Companies House, and changes to the partnership, including changes to the partners or the names of any partners, must be notified.[140]

4.25 LPs set up under the law of England and Wales do not have separate legal personality.[141] LPs have two categories of partner: one or more general partners with

---

[132] See para 4.13.

[133] Companies Act 2006, s 448 and s 556.

[134] Companies Act 2006, s 3(4).

[135] Insolvency Act 1986, s 74.

[136] See para 4.13.

[137] Companies (Audit, Investigations and Community Enterprise) Act 2004, ss 35 to 36A.

[138] Companies (Audit, Investigations and Community Enterprise) Act 2004, s 34.

[139] See paras 4.14 and 4.16.

[140] Limited Partnerships Act 1907, s 9.

[141] Although change in this regard has been proposed over the years; see for example Law Commission and Scottish Law Commission, *Partnership Law* (2003) Law Com No 283, Scot Law Com No 192.

responsibility for managing the LP's business (and unlimited liability for the LP's debts and obligations),[142] and limited partners who have limited liability up to the amount they have contributed.[143]

Private fund limited partnerships (PFLPs)

4.26 PFLPs were introduced in 2017,[144] they allow for a limited partnership (LP) model to be used without some of the encumbrances that come with standard LPs. At present, they can only be used by "collective investment schemes", as defined in section 235 of FSMA.[145] They are very commonly used as a vehicle for venture capital funds set up under UK law. Like LPs, PFLPs must be registered with Companies House, and changes to the partnership, including changes to the partners or the names of any partners, must be notified.[146] PFLPs set up under the law of England and Wales do not have separate legal personality.[147]

4.27 Like LPs, PFLPs have two categories of partner: one or more general partners with responsibility for managing the LP's business (and unlimited liability for the LP's debts and obligations),[148] and one or more limited partners, who do not take an active role in management and have limited liability up to the amount they have contributed.[149] However, a PFLP differs from an LP in the several ways, including:

(1) limited partners in a PFLP do not have to contribute capital or property to the PFLP and, if they do, they can withdraw it without being liable for debts and obligations to the amount withdrawn;[150]

(2) there is a non-exhaustive list of permitted activities that a limited partner in a PFLP can undertake without being regarded as taking part in management (which would risk the partner's limited liability).[151] These activities include taking part in various decisions about the running of the PFLP and approving the general partner's actions. In particular, it appears that the permitted activities list has been helpful in providing clarity and comfort for participants in PFLPs that they can preserve their limited liability status; and

---

[142]   Limited Partnerships Act 1907, s 4(2A).

[143]   Provided they do not take part in the management of the LP: Limited Partnerships Act 1907, s 6(1).

[144]   Introduced principally by amendments to the Limited Partnerships Act 1907 made by the Legislative Reform (Private Fund Limited Partnerships) Order 2017SI 2017/514.

[145]   Limited Partnerships Act 1907, s 8D.

[146]   Limited Partnerships Act 1907, s 9.

[147]   Although change in this regard has been proposed over the years; see for example Law Commission and Scottish Law Commission, *Partnership Law* (2003) Law Com No 283, Scot Law Com No 192).

[148]   Limited Partnerships Act 1907, s 4(2A).

[149]   Provided they do not take part in the management of the LP: s 6(1).

[150]   Limited Partnerships Act 1907, s 4(3A)(a).

[151]   Limited Partnerships Act 1907, s 6A.

(3)   limited partners do not have to comply with duties under the Partnership Act 1890[152] to render accounts and account for profits from competing businesses as such duties are inappropriate to their status as passive investors rather than managers.

Limited liability partnerships (LLPs)

4.28   Registration requirements for LLPs resemble those for private companies, including registration at Companies House with information for each member and persons with significant control.[153]

4.29   An LLP has a separate legal identity from its members[154] and has unlimited capacity so it can do anything that a legal person can do.[155] On winding up of an LLP, members are generally only liable up to the amount they have contributed. Members will be liable to contribute in certain circumstances, including if they have agreed to do so with other members in the partnership agreement[156] or if they have been involved in wrongful or fraudulent trading.[157]

4.30   The LLP members act as the agents of the LLP and, in general, are only liable up to the amount they have contributed to the LLP. Limited liability may be eroded in certain circumstances (including, for example, if the LLP continues to trade with a sole LLP member for more than six months, where personal guarantees are given or there is wrongful trading or fraudulent trading).

Charitable incorporated organisations (CIOs)

4.31   A CIO is formed when the Charity Commission registers the CIO as a charity in the register of charities.[158] Any one or more persons may apply to have a CIO registered by the Charity Commission. The applicants must provide a copy of the CIO's proposed constitution, along with any other documents prescribed by the CIO regulations or requested by the Charity Commission.[159]

4.32   A CIO has a legal identity separate from its members, who have limited liability. They are either liable to contribute up to a specified amount to the assets of a CIO if it is wound up or not liable to make any contribution at all.[160]

---

[152]   Limited Partnerships Act 1907, s 6(5)(f) disapplies section 28 and 30 of the Partnership Act 1890.

[153]   Limited Liability Partnerships Act 2000, s 2.

[154]   Limited Liability Partnerships Act 2000, s 1(2).

[155]   Limited Liability Partnerships Act 2000, s1(3).

[156]   Insolvency Act 1986, s 74, applied to LLPs by Limited Liability Partnership Regulations 2001, Schedule 3.

[157]   Insolvency Act 1986, ss 213 and 214 as applied to LLPs by Limited Liability Partnership Regulations 2001, Schedule 3.

[158]   Charities Act 2011, s 209.

[159]   Charities Act 2011, s 207.

[160]   Charities Act 2011, s 205(2) and (3).

Registered societies (co-operative societies and community benefit societies)

4.33 Co-operative and community benefit societies must register with the Financial Conduct Authority (FCA) who will issue an acknowledgment of registration bearing the FCA's seal.[161] To be registered, a society must satisfy the FCA that certain statutory conditions have been complied with, including that the society's rules contain provision for such matters as the society's name, its objects, its registered office, its procedures for appointing and removing committees, managers, and officers and so on.[162]

4.34 A registered society has a legal identity separate from its members and may sue and be sued by its registered name.[163] The liability of members is limited to the share capital they hold in the society and the amount of any unpaid share capital.[164]

Question 8.

4.35 Do you consider that the current law in England and Wales relating to the formation of bodies corporate presents problems for those DAOs that choose to use an incorporated entity as part of its organisational structuring?

If so:

(1)   Do you have examples, or specific evidence, of those problems?

(2)   What could be done to solve those problems?

Question 9.

4.36 What are the biggest benefits of using incorporation as part of its organisational structuring that might lead a DAO to consider this option?

---

161   Co-operative and Community Benefit Societies Act 2014, ss 2 to 3.

162   Co-operative and Community Benefit Societies Act 2014, ss 2(2), 14.

163   Co-operative and Community Benefit Societies Act 2014, s 3(4).

164   Co-operative and Community Benefit Societies Act 2014, s 3(3).

LEGAL FORMS USED BY DAOS IN OTHER JURISDICTIONS

4.41 DAOs have used legal forms or incorporated entities in other jurisdictions to launch, manage and operate their organisational structures successfully. Some have been created specifically for DAOs, accommodating some of their unique features while also providing the certainty for participants and third parties that accompanies incorporation. Other legal forms or incorporated entities have certain features which are attractive to DAOs but were not designed with DAOs in mind. The following examples include legal forms or incorporated entities which stakeholders have suggested, but this does not seek to be an exhaustive list of the options for DAOs.

Ownerless foundation company

4.42   Some jurisdictions – including the Cayman Islands, Panama and Switzerland – offer the opportunity to set up ownerless foundations.[165] These entities are "ownerless" in the sense that they can be structured so that they have no shareholders and are instead overseen by a supervisor or supervisory authority who has no ownership of, or economic entitlement to, the foundation itself. They were not designed specifically for use by DAOs, but we understand that they have certain characteristics which may make them attractive legal forms for DAOs.

4.43   As with other legal forms we have discussed, they offer separate legal personality. They might therefore be used by a DAO to hold its treasury of, for example, tokens or intellectual property, pay for services and / or act as a service provider, including by entering into contracts and engaging in other activities with third parties on behalf of the DAO.

4.44   We understand that these legal forms give DAOs more or less flexibility to design a governance structure in which the foundation's directors act according to the best interests of the DAO and / or on the votes of DAO token holders. So, while the DAO does not "own" the foundation, token holders can direct, inform or input on the decisions of the foundation if its rules so provide. Depending upon the jurisdiction, the foundation company may also have one or more supervisors or supervisory authorities who oversee the directors to ensure that they observe their obligations to the DAO.

4.45   These legal forms might also be chosen because their jurisdictions are attractive. This could be for a number of reasons, including favourable tax treatment, degree of transparency, supervision or regulation, and availability of support services (including legal and accountancy services), as well as their broader approach to the crypto ecosystem.

Special purpose trust

4.46   A special purpose trust (for example, in the Cayman Islands or Guernsey) is another legal form that a DAO can utilise to hold its assets.[166] A DAO's founders or token holders can transfer assets to trustees of the special purpose trust. Special purpose trusts do not have beneficiaries. Instead, the trustees will manage and deal with the assets in accordance with the specified purpose set out in the trust agreement. The purpose could be, for example, to promote the use by network participants of the software protocol related to the DAO or wider ecosystem development. As well as having to act in line with the trust agreement, trustees also have a general fiduciary

---

[165]   Cayman Islands: The Foundation Companies Law 2017, available at: http://www.dlp.gov.ky/portal/pls/portal/docs/1/12408397.PDF; Switzerland: Civil Code, arts 80 to 89, available at: https://fedlex.data.admin.ch/eli/cc/24/233_245_233; Panama: Foundation Law (no 25) 1995, available in Spanish in Panama Official Gazette no 22,804, at: https://www.gacetaoficial.gob.pa/gacetas/22804_1995.pdf and unofficial English translation, at: https://bcca.com.pa/PIF.pdf.

[166]   Carey Olsen, "A guide to non-charitable purpose trusts in Guernsey" (23 March 2017), available at: https://www.careyolsen.com/briefings/guernsey-non-charitable-purpose-trusts; Carey Olsen, "Types and uses of Cayman Islands law trusts" (29 June 2021), available at: https://www.careyolsen.com/briefings/types-and-uses-cayman-islands-law-trusts#Common%20types%20of%20cayman%20trusts.

duty to act in the best interests of the trust and can be removed by other trustees if they fail to do so.

4.47 DAO founders or token holders can therefore design the trust agreement so that the trust and trustees serve the interests of the DAO. A trust agreement could also provide more direct control for DAO token holders by allowing them to direct trustees to remove a trustee who does not act in the best interests of the trust and direct trustees to terminate the trust and transfer the assets to a different entity. The trust must also have an enforcer who monitors the trustees and can take action against them if they are not acting in accordance with the purpose of the trust.

4.48 These special purpose trusts provide the potential benefit that they do not require any registration or government filing at the time of formation or any ongoing filing or reporting obligations. They do not, however, have separate legal personality, so trustees must act on behalf of the trust.

4.49 The law of England and Wales does not recognise such special purpose trusts.[167]

Other state-mandated incorporated entities specific to DAOs

4.50 In recent years, some jurisdictions have elected to create additional corporate forms specifically to encourage DAOs to use that specific incorporation element within their organisational structuring — and therefore (partially) to structure their organisation within that jurisdiction. For example:

(1) **Vermont**
In 2018, Vermont created the Blockchain-based Limited Liability Company (BBLLC) "for the purpose of operating a business that utilizes blockchain technology for a material portion of its business activities"[168] (although not itself referring to DAOs).

(2) **Wyoming**
In 2021, Wyoming enacted a supplementary act to enable DAOs to register as a "DAO LLC".[169]

(3) **Marshall Islands**
In 2022, the Marshall Islands passed an amendment to its Non-Profit Entities Act to enable a DAO to register as a non-profit limited liability company (LLC).

---

[167] L Tucker, N Le Poidevin, J Brightwell, *Lewin on Trusts* (20th ed 2020), 5-054 to 5-056.

[168] Vermont, An Act relating to Blockchain Business Development, 2018, No 205, available at: https://legislature.vermont.gov/bill/status/2018/S.269.

[169] Wyoming Decentralized Autonomous Organization Supplement, SF0038, No 73, available at: https://www.wyoleg.gov/Legislation/2021/SF0038 (amended in 2022 by Decentralized Autonomous Organizations – Amendments, SF0068, No 16, available at: https://www.wyoleg.gov/Legislation/2022/SF0068).

(4) **Tennessee**
     In 2022, Tennessee amended its corporation code to include provision for
     "decentralized organisations".[170]

4.51 This legislation has been heralded by some.[171] On the other hand, the concept of a
      DAO-specific corporation and its particular legislative implementations to date has
      found its critics.[172]

4.52 We understand that DAO-specific incorporations may not be attractive to all DAOs for
      practical, legal or ideological reasons, especially those that wish to maintain or
      increase their degree of decentralisation. However, we also understand that other
      stakeholders might find a use for these entities: for instance, if they wish to set up a
      simple DAO and immediately benefit from limited liability; or if they wish to incorporate
      a limited liability sub-DAO as part of a more complex DAO organisational structure.

4.53 We are interested in hearing from stakeholders with first-hand experience of choosing
      one of these DAO-specific entities, including (a) the reasons why they chose that
      particular entity and (b) how it fits into their wider organisation (if any). We are also
      interested in hearing from stakeholders who considered adopting one of these forms
      but then chose not to (and, if so, why not and what they chose instead). We are also
      interested in hearing from stakeholders who have considered these issues as advisers
      to DAOs, or from a theoretical or academic perspective.

4.54 The laws introduced to date have similarities, but also differences, including in their
      definitions, preconditions for registration, ongoing obligations and governance
      requirements. And, outside of legislative chambers, commentators have proposed
      other approaches to the corporate recognition of DAOs. For example, the Coalition of
      Automated Legal Applications (COALA), a non-governmental initiative, has proposed
      a quite different approach in its model law, pursuant to which qualifying DAOs would
      be recognised as equivalent to a company without the need for formal registration.[173]

4.55 We welcome views on existing and proposed legislation and, ultimately, the most
      effective legislative approach.

---

[170] Tennessee Public Chapter No 852 / Senate Bill No 2854 / House Bill No 264, available at:
       https://publications.tnsosfiles.com/acts/112/pub/pc0852.pdf.

[171] See, eg, A Bull, "Regulators Everywhere Should Follow Wyoming's DAO Law" (8 July 2021) *Coindesk*,
       available at: https://www.coindesk.com/markets/2021/07/08/regulators-everywhere-should-follow-wyomings-
       dao-law/.

[172] See, eg, J Teague, "Starting a DAO in the USA? Steer Clear of DAO Legislation" (7 June 2022), available
       at: 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), available at: https://lexnode.substack.com/p/wyomings-legal-
       dao-saster.

[173] See COALA, *Model Law for Decentralized Autonomous Organizations (DAOs)* (2021), available at:
       https://www.lextechinstitute.ch/wp-content/uploads/2021/06/DAO-Model-Law.pdf.

Question 12.

4.56 Are there jurisdictions other than England and Wales that provide a legislative approach to legal forms that is more effective or attractive for use by DAOs?

4.57 What are the advantages and disadvantages of those other jurisdictions, legal regimes or legal forms for DAOs in arranging their organisational structuring?

Please include practical examples in your response to the extent possible. If there are advantages, please explain how the structure led to the choice of that jurisdiction.

4.58 For the reasons discussed in this paper, we broadly consider that DAO-specific incorporations inevitably add a "centralising" element to the organisational structure of a DAO. As such, our initial view considers law reform in this area not as a panacea for DAO organisational structuring, but instead as a potential additional structuring option for those DAOs that would wish to take advantage of it.

4.59 We are interested in whether stakeholders consider that a new form of entity specifically tailored to DAOs could or should be introduced under the law of England and Wales. Although we do not currently suggest any particular form or requirements, it is important to bear in mind that any new entity would almost certainly need to include the same kind of requirements as existing structures (such as registration, reporting and transparency requirements). We are interested in how such requirements could be tailored to DAOs.

Question 13.

4.60 Do you consider that England and Wales could or should introduce a new form of entity or recognition specifically tailored to DAOs? If so, please explain why this would be helpful for DAOs and how such an entity could be structured (including the potential trade-offs of formalising such an entity).

Chapter 5: The use by DAOs of decentralising structural elements

5.1 In this chapter, we consider the use by DAOs of organisational structuring elements other than the use of a particular legal form or incorporated entity. Options include the use of tools and processes to add practical and operational decentralisation to (some) activities. For example, the relinquishing of (differing) levels of practical and legal control over core functionality of the DAO and use of open-source software, the automatic operation of code and reduction of information asymmetry through public disclosures. We understand that many DAOs in the market use these techniques in combination with some of the centralising elements discussed in Chapter 4. We also understand that some DAOs use these techniques explicitly and intentionally to separate constituent elements of a DAO (such as a software protocol) from any centralising elements (such as a limited company or a corporate structure). We broadly describe these tools and techniques as decentralising elements, to separate them from the legal forms and incorporated entities we discuss in Chapter 4.

5.2 Our preliminary view is that the law of England and Wales is a facilitative and flexible tool for the use and implementation of such arrangements and that it can provide a high degree of legal certainty that might be lacking in other jurisdictions. In particular, we think that the law of England and Wales ought to be able to provide a high level of legal certainty where market participants actively choose to separate a DAO from any centralising elements (such as a limited company or other corporate structure).

5.3 Notwithstanding this, DAOs that do not add a centralising element to their organisational structure (or, alternatively, actively choose to separate a DAO from any centralising elements) and rely solely on decentralising elements, are relatively uncommon in the market (particularly in England and Wales).[174] As such, we are interested in hearing the views of stakeholders as to the efficacy and / or legal and practical problems with the use of these types of structuring tools. In particular, we are interested in hearing from stakeholders whether the law of England and Wales provides a facilitative and legally certain environment within which to structure such arrangements, and, if not, why not.

PRIVATE LAW PRINCIPLES

5.4 We make two other observations about the use by DAOs of the organisational structuring elements discussed in this chapter.

---

[174] Buterin recognises this point: "By far the greatest number of organizations, even in a crypto world, are going to be 'contractual' second-order organizations that ultimately lean on these [decentralised] first-order giants for support, and for these [contractual/centralised] organizations, much simpler and leader-driven forms of governance emphasizing agility are often going to make sense. But this should not distract from the fact that the ecosystem would not survive without some non-corporate decentralized forms keeping the whole thing stable." See: V Buterin, "DAOs are not corporations: where decentralization in autonomous organizations matters" (2022), available at: https://vitalik.eth.limo/general/2022/09/20/daos.html.

5.5   First, the organisational structuring elements that we discuss below generally form part of the private law of England and Wales and are principles-based.[175] Therefore, reliance on these principles of private law should provide a high degree of certainty for market participants who structure their arrangements to be consistent with those principles. However, a reliance on private law principles will not provide the same clarity for market participants as compliance with specific standards (whether created through the common law, statute or regulatory guidance). Nor will it provide the level of clarity that clear, rules-based approaches provide (such as compliance with the statutory formalities required to register a limited company).

5.6   Second, the types and levels of risk that DAOs are able to mitigate by the use of decentralising elements are likely to be both different and more limited than the use of centralising elements — at least under the state of the current law. For example, reliance on decentralising elements might help DAOs to limit avenues of liability (or mitigate potential liability) for certain of their participants, such as developers and / or participants. But those limitations will work differently to, and do not amount to the same thing as, limited liability for the directors and members of a limited company, for example.

5.7   However, the use of decentralising elements can be a valid, effective and desirable legal structuring tool for some DAOs. We do not consider that DAOs will use these techniques or rely on any one of these legal principles in isolation. Instead, each DAO has the option actively to choose to use a combination of these structuring techniques as part of an overall legal risk profiling exercise and cost / benefit analysis appropriate for the particular organisation in question. To the extent that the law of England and Wales provides greater legal certainty with respect to each of the below elements, it will be better able to provide a flexible, facilitative and clear private law regime for DAO organisational structuring.

DECENTRALISATION

5.8   Many DAOs intentionally use tools and processes to add practical and operational decentralisation to (some of) their activities and relinquish or otherwise distribute practical and legal control over core functions and / or responsibilities within the organisation. This principal feature runs through various practical and legal organisational structuring techniques that DAOs use, which we broadly describe as decentralising elements.

5.9   Real-world examples of this include:

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

---

[175]   For example, the existing legal principles that help to define when a duty of care arises (and when it has been breached). We discuss issues relating to duties of care below at para 5.33.

(2)   open-sourcing intellectual property (for example, using the Creative Commons CC0 tool,[176] a non-charitable purpose trust[177] or a foundation[178] for holding intellectual property rights);

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

(4)   design of governance mechanisms to prevent concentration of control (to encourage high levels of participation, quadratic voting,[179] or preference-based voting etc);

(5)   flexible and open participation mechanisms (which generally result in a constantly shifting, changeable and unidentified body of developers / wider participants); and

(6)   the deployment of sub-DAOs that can function independently of others / the wider community or organisational structure to separate out functions within the DAO.[180] We understand that sub-DAOs are often created as or rely on one of the legal forms that we describe in more detail in Chapter 4.

5.10   Many of these techniques originated (at least in part) as a response to the concept of "sufficient decentralisation" which was introduced in 2018 in a speech by William Hinman, who at the time was the director of the United States Security and Exchange Commission's Division of Corporation Finance.[181] Hinman was explicitly addressing

---

[176]   The CC0 tool allows a creator to "dedicate the work to the public domain by waiving all of his or her rights to the work worldwide under copyright law, including all related and neighbouring rights, to the extent allowed by law", see https://creativecommons.org/publicdomain/zero/1.0/legalcode and https://creativecommons.org/publicdomain/zero/1.0/.

[177]   Non-charitable purpose trusts do not have beneficiaries. Instead, they are established for specified non-charitable purposes. They are, in general, not available under the law of England and Wales. However, some jurisdictions have enacted statutes which expressly validate non-charitable purpose trusts outside of the small group of specific exceptions recognised at common law. We consider these structures in more detail in Chapter 4, given that they are likely to add a centralising element to a DAO organisational structure, unless completely separated from the DAO.

[178]   For example, the foundation company under Cayman Islands law (see, for example https://www.ogier.com/publications/the-foundation-company-as-a-decentralised-autonomous-organisation-dao-in-the-cayman-islands) or the Swiss Foundation (see https://mirror.xyz/0x43d06b9eBFB0c76A448fBd5B6faa2cfba81901d6/CYm-hNaniW0C1Mn9KR677jn4o9okGugkKC3C8iD9k28). We consider these structures in more detail in in Chapter 3, given that they are likely to add a centralising element to a DAO organisational structure, unless completely separated from the DAO.

[179]   Very broadly, a form of voting in which voters are able to express the strength of their preferences.

[180]   On this basis "sub-DAO" may not be the best term for those groups that operate completely independently.

[181]   See W Hinman, "Digital Asset Transactions: When Howey Met Gary (Plastic)" (2018), available at: https://www.sec.gov/news/speech/speech-hinman-061418. We note however that the status of the speech and related analysis that Hinman undertook during his time at the SEC are central points of dispute in a number of ongoing open cases involving the SEC, in particular *The Securities and Exchange Commission v Ripple Labs Inc* (20-cv-10832 (AT) (SN)). See also *SEC v Telegram Group Inc* (2020) 19-cv-9439 (PKC) (SDNY), in which Hinman's speech was seemingly indirectly considered in the context of a preliminary injunction against the issuance of a new crypto-token, see A Fader, "SEC v. Telegram: SDNY Weighs in on

the concept of sufficient decentralisation for the purposes of a specific, US securities law question.[182] Nevertheless, Hinman recognised that the concept of sufficient decentralisation was a multi-faceted issue and that many projects (and particular crypto-assets) fall on a spectrum of decentralisation.

5.11 The concept of decentralisation runs through many of the practical and / or legal considerations for structuring DAOs, including those discussed below. In particular, it may be important for the proper understanding of the component parts of a DAO that we discuss in Chapter 2. However, we also recognise that this concept is not limited in its application to DAOs, that it has received the most focused consideration in the USA with regard to securities laws[183] and regulation, and that it is a nuanced and evolving concept.[184] Nevertheless, we consider that there are a number of real-life, practical situations in which the concept of decentralisation is, or could become, important:[185]

(1) decentralisation for making better decisions in certain specific types of decision-making environments. In particular, those environments that do not need quick decision making but instead can rely on slower decision-making processes;

(2) decentralisation for censorship resistance. Censorship resistance in this sense is intended to be more broadly defined than the colloquial use of "censorship", such that it refers to the ability of external actors being able to prevent or stop certain actions. There may be value in some applications being able to continue functioning while being resistant to attacks from external actors. In contrast, more centralised structures could be seen as providing increased vulnerability or attack vectors in some cases; and

(3) where the provision of basic (normally on-line) infrastructure is the focus of a decentralised organisation. In those situations, the continued functionality of that on-line infrastructure, such as its predictability, robustness and neutrality is likely to be valued above the efficiency that centralisation can provide.

---

the Gram ICO" (2020), available at:
https://www.americanbar.org/groups/business_law/publications/blt/2020/05/sec-v-telegram/.

[182] Broadly, whether current sales of certain crypto-tokens constitute an "investment contract" for the purposes of the *Howey* test, first described in *Securities and Exchange Commission v W.J. Howey Co* (1946) 328 US 293.

[183] As opposed to detailed consideration under the law of England and Wales.

[184] For further detail and discussion see G Shapiro, "Defining decentralization for law" (2020), available at: https://lex-node.medium.com/defining-decentralization-for-law-58ca54e18b2a; J Garcia, J Leung, "Data Points to Measure Blockchain Network Centralization" (2020), available at: https://ketsal.com/wp-content/uploads/2020/10/Ketsal-Open-Standards-Measures-of-Blockchain-Network-Centralization-Oct-21-2020.pdf; J Brukhman, "Are Blockchain Voters 'Dummies'?" (2019), available at: https://blog.coinfund.io/are-blockchain-voters-dummies-4a89a376de69; B Srinivasan and L Lee, "Quantifying Decentralization" (2017), available at: https://news.earn.com/quantifying-decentralization-e39db233c28e; and Commissioner Hester M Peirce, "Running on Empty: A Proposal to Fill the Gap Between Regulation and Decentralization" (2020), available at: https://www.sec.gov/news/speech/peirce-remarks-blockress-2020-02-06.

[185] The following three examples are taken from V Buterin, "DAOs are not corporations: where decentralization in autonomous organizations matters" (2022), available at: https://vitalik.eth.limo/general/2022/09/20/daos.html.

5.12 We consider that the most practical, efficient and effective way for the law to recognise and facilitate innovation in these areas is first to recognise the existence, and then the importance of decentralisation itself. As such, we are interested to understand stakeholders' views on the concept of decentralisation (and / or sufficient decentralisation) and how it could usefully be refined, clarified and applied under the law of England and Wales (if at all). We recognise that both from a practical and legal perspective, the concept of decentralisation is likely to be relevant in various areas, some of which we touch on below. But even in the examples given below, such as crypto-tokens, smart contracts and distributed protocols, there are likely to be different layers and / or levels of decentralisation, which could potentially impact the efficacy of that "decentralising" element. Given that this is a practical reality of the modern world, we consider that the law of England and Wales will need to consider it sooner or later.

5.13 We consider that doing so could potentially give the jurisdiction of England and Wales a competitive advantage against other jurisdictions with less-well developed factual and legal concepts of decentralisation. We are interested in whether stakeholders agree with this view and with the advantages and disadvantages of further legal development in this area.

5.14 We acknowledge that as part of this process, it is useful to start by describing the constituent participants in blockchain systems and software protocols which will inform the debate on the broader concept of decentralisation. Decentralisation in this sense could be taken to mean how participation, roles and responsibilities are allocated within blockchain systems and crypto-token ecosystems, and whether the participants, and the allocation of roles and responsibilities is different to other traditional systems. For that reason, we ask stakeholders for feedback on the different crypto-token ecosystem functions performed by various participants at the beginning of this call for evidence at Question 2.

Question 14.

5.15 Do you think that the concept of decentralisation (and / or sufficient decentralisation) could usefully be refined, clarified or applied under the law of England and Wales?

If so, please explain why and how, and give examples.

THE USE OF CRYPTO-TOKENS

5.16 One way in which DAOs add a layer of practical and operational decentralisation to their operations is through the use of crypto-tokens. The level of practical and operational decentralisation that this will achieve will vary significantly depending on the type of crypto-token that is used by the DAO and whether or not that crypto-token is linked to anything else (such as a physical thing external to the blockchain system in which it is instantiated, a legal right, or another thing within the blockchain system).

5.17 In addition, crypto-tokens themselves are likely to exist on a spectrum of decentralisation and so using a crypto-token within a DAO's organisational structure will not necessarily add a decentralising element to a DAO — it could lead to

centralisation in some cases. For example, some crypto-tokens (such as bitcoin and ether) exist as protocol-level determined notional units of account within the relevant blockchain system. Those types of crypto-token are often widely distributed and held, with different levels of control / power within the particular blockchain system dispersed in different ways. Where the protocol is decentralised, the characteristics of those particular tokens are relatively difficult for a centralised body of actors to change. Other crypto-tokens (such as certain NFTs) can be encoded such that (differing levels of) control over the token remains with the controller of the smart contract which deployed the token. Where tokens are constructed like this, it might be relatively easy for a centralised body of actors to change the characteristics of the token in question. Therefore, depending on other practical and legal constraints, the issue of crypto-tokens is not necessarily a decentralising element in itself.

5.18 Nevertheless, the use of crypto-tokens will be important for some DAOs. This is likely to be for a number of reasons. First, some DAOs may hold crypto-tokens within their treasury, receive or send crypto-tokens or otherwise interact with the wider crypto-token ecosystems in some way.[186] Second, some software protocols associated with DAOs use software protocol-specified tokens for various purposes, including to provide holders of those tokens with enhanced utility or (limited) governance rights with respect to a particular software protocol. Nevertheless, we recognise that not all DAOs (or related software protocols) distribute or intend to distribute tokens to (all of) their participants, and that some DAOs (or related software protocols) choose to distribute tokens to their participants.[187] We are also aware that such software protocol-specified tokens can confer a variety of rights (such as voting / governance rights) on token holders. Those tokens are sometimes treated by market participants as objects of value, notwithstanding that they might not confer any rights to participate in the profits of the DAO as a whole — or even in any profits or proceeds received by the related software protocol.

5.19 In our consultation paper on digital assets, we considered in depth the different ways in which a crypto-token might be linked to something else.[188] We noted that many crypto-tokens are not linked to anything external to the blockchain system in which they are instantiated. In such situations, the token itself constitutes the asset of interest or value. Within the system they represent only a quantity of a notional unit of account (such as bitcoin or ether) which is intrinsic or endogenous to its respective blockchain system.[189]

5.20 We also noted that some crypto-tokens are used either to represent something external to the blockchain system or are in some way linked to something external to the blockchain system, or indeed to another crypto-token. For example, a crypto-token

---

[186] And doing so often requires fees to be paid in the notional unit of account of the underlying blockchain system, requiring DAOs to hold and use those tokens.

[187] This can be the case even where the business or operations of the DAO itself are tangential, or even unrelated to, the wider crypto ecosystem and market.

[188] See Digital Assets (2022) Law Commission Consultation Paper No 256, Chapter 14, available at: https://www.lawcom.gov.uk/project/digital-assets/.

[189] For an in-depth consideration of this point in relation to bitcoin, see C Warmke, "Electronic Coins" (2022) (2(1)) *Cryptoeconomic Systems*, available at: https://cryptoeconomicsystems.pubpub.org/pub/warmke-electronic-coins/release/1.

might purport to link to an intangible thing (like an equity or debt security), or a legal right against an obligor (like a contractual debt) or to a tangible thing (like goods or land). Some crypto-tokens can be linked to other crypto-tokens which may be instantiated within the same blockchain system (for example, fractional versions of fungible tokens distributed in connection with a locked NFT or "wrapped" versions of crypto-tokens, or a basket of other crypto-tokens).

5.21 We discussed in detail the different ways to constitute a link between a crypto-token and something else. We also considered that the strength of any such link is likely to depend on a number of factors, including the exact wording of any contractual terms or the approach of possible future legislative provisions relating to the link.

5.22 We recognise that holders of software protocol-specified tokens may or may not be closely associated with a DAO and / or a software protocol. Many developers, early venture capital investors and executives involved in the day to day running of a DAO might be allocated software protocol-specified tokens. Equally, because software protocol-specified tokens are often available in public (relatively) liquid crypto-token markets and on centralised exchanges, it is possible for an internet user with no previous knowledge, experience with or exposure to a DAO or a software protocol to acquire software protocol-specified tokens.

5.23 Therefore, on its face the use of crypto-tokens, and software protocol-specified tokens in particular, is not problematic for a DAO. However, it is increasingly clear that some holders of software protocol-specified tokens might be treated as members of an unincorporated association or as partners in a partnership, where a DAO is regarded by applicable law as being an unincorporated association or a general partnership.[190] This is not a theoretical risk to holders of software protocol-specified tokens. The US Commodity Futures Trading Commission (CFTC) recently applied this "starting point" legal analysis in relation to Ooki DAO. The members of the unincorporated association were defined by the CFTC as those holders of Ooki tokens that voted on governance proposals with respect to running the business.[191]

5.24 Edwards argues that this interpretation is possible under the law of England and Wales:

Today, the position is in one sense as it was between 1825 and 1844: there is no statutory prohibition on a large partnership with freely transferrable share capital.[192]

5.25 However, this argument assumes at least two points. First, that a DAO can be considered in completeness as a partnership. We discuss this at paragraph 5.72 below. Second, that the holding of a software protocol-specified token is equivalent in

190 The US Commodity Futures Trading Commission (CFTC) recently applied this "starting point" legal analysis in relation to Ooki DAO. The members of the unincorporated association were defined by the CFTC as those holders of Ooki tokens that voted on governance proposals with respect to running the business. See: https://www.cftc.gov/PressRoom/PressReleases/8590-22.

191 See: https://www.cftc.gov/PressRoom/PressReleases/8590-22.

192 W Edwards, "Decentralised Autonomous Organisations: unincorporated companies by another name?" (2022) 3 *Journal of International Banking and Financial Law* 147.

some ways to the holding of share capital in a business, or equivalent to the holding of a partnership interest in a business.

5.26 We are interested in stakeholder's views on the second issue. In particular, we are interested in whether software protocol-specified tokens are designed to confer similar rights on holders to the holding of share capital in a business, or equivalent to the holding of a partnership interest in a business. Following on from this first question, we are interested in stakeholders' views on whether it is appropriate for holders of software protocol-specified tokens to be liable to users of the software protocols in which they hold tokens. If stakeholders consider that such liability is appropriate, we are interested to hear in what circumstances that would be appropriate. If stakeholders consider that such liability is not appropriate, we are interested to hear the reasoning behind this view.

5.27 We are also interested in whether, and if so, how, stakeholders consider that the law of England and Wales could provide greater legal clarity on these particular issues.

Question 15.

5.28 To assist in our understanding of the use of crypto-tokens by DAOs, please provide further information on whether software protocol-specified tokens are designed to confer similar rights on holders to the holding of share capital in a business, or equivalent to the holding of a partnership interest in a business.

5.29 Do you consider that it is appropriate for holders of software protocol-specified tokens to be liable to users of the DeFi Protocols in which they hold tokens? Please explain your answer by reference to particular types of software protocol-specified tokens. Do you consider that the law of England and Wales could provide greater legal clarity on these issues? If so, how?

THE USE OF SMART CONTRACTS AS PRACTICAL AND LEGAL TOOLS

5.30 DAOs often integrate smart contracts (or software protocols) within their organisational structures. In essence, smart contracts are made up of computer code that is capable of running deterministically or programmatically according to pre-specified functions. Often smart contracts are deployed to decentralised blockchain systems. Smart contracts, software protocols and blockchain systems are typically "free-open-source-licensed, or at least source-available, and lack a model of traditional proprietary software monetisation (for example, selling licenses)".[193] Where this is the case, the use of smart contracts or software protocols is likely to add a decentralising element to the operational structure of a DAO because, among other things:

---

[193] G Shapiro, A Functionalist Framework for DeFi Regulation, (2022). Available at: https://lexnode.substack.com/p/a-functionalist-framework-for-defi.

(1)   The DAO relinquishes a degree of practical and legal control over some core functionality which is instead achieved by the operation of the (open-source) smart contract / software protocol (itself deployed to a blockchain system).

(2)   The (open-source) smart contract / software protocol and its code are publicly available (and can be interacted with by anyone in the public market) reducing information asymmetry.

5.31   We consider that it is important that the law of England and Wales provides a flexible and clear legal regime for the development and deployment of open-source code. We are interested in whether stakeholders consider that the law of England and Wales currently provides this flexible and clear environment.

5.32   In particular, we are interested in how stakeholders view the ongoing interaction / relationship between the developers and deployers of open-source code and the users of such code.

DEVELOPER LIABILITY

5.33   The courts of England and Wales have begun to consider principles in respect of the duties of care and / or fiduciary duties that developers of open-source software protocols (such as the Bitcoin protocol). In particular, whether (and if so, how) developers might owe duties of care to users of those protocols / users of the blockchain systems that are constituted by the active operation of those protocols by a network of participants that are unrelated to the developers.

5.34   The development and refinement of these legal principles will provide much-welcomed legal clarity regarding the potential liability of those that contribute to the development and deployment of open-source software protocols. This clarity will also be relevant for unincorporated arrangements or associations of participants who might choose to structure their organisational arrangements around open-source software protocols. Overall, this legal certainty could act as a strong incentive mechanism for contribution to the ongoing development of open-source software protocols (and open-source software in general).

5.35   Given the importance of these principles to the ongoing development of the law of England and Wales, we consider them in more detail below.

5.36   The principal case to date on this issue is *Tulip Trading v Bitcoin Association for BSV*.[194] In that case, it was alleged that the owner of bitcoin and other crypto-tokens had entrusted the care of its tokens to the developers of the Bitcoin software protocol.[195] It was alleged that those developers exercised "complete power over the system" through which such tokens were held,[196] and therefore were legally obligated to develop and issue software updates to facilitate the recovery of any system-constituted tokens to which the owner had lost access. However, in the context of a challenge to jurisdiction, the court firmly rejected the proposition that (on the pleaded

---

[194]   [2022] EWHC 667 (Ch).

[195]   The active operation of the Bitcoin protocol by a network of participants manifests the Bitcoin system.

[196]   [2022] EWHC 667 (Ch) at [65].

facts) there was a serious issue to be tried that those developers owed to the owner of the system-constituted tokens fiduciary and tortious duties of this nature.[197]

5.37 In that case, the court was required to consider the preliminary issue of jurisdiction in the context of whether to set aside an order granting Tulip Trading Limited permission to serve proceedings on persons outside the jurisdiction.[198] Given that the case concerned a challenge to jurisdiction, the court had to consider whether permission to serve out of the jurisdiction should have been granted. As such, the claimant had to satisfy the court (among other things) that:[199]

> There is a serious issue to be tried on the merits of the claim (being a substantial question of fact or law or both), as to which it must be demonstrated that there is a real, as opposed to a fanciful, prospect of success.

5.38 In a detailed judgment Mrs Justice Falk held that Tulip Trading Limited did not establish a serious issue to be tried on the merits of the claim.[200] However, in August 2022, Lady Justice Andrews granted leave to appeal the decision.[201]

5.39 On the pleaded facts and claims, Mrs Justice Falk held that the arguments in the case did not have a real, as opposed to a fanciful, prospect of success.[202] Even so, we note the significance of the issues underlying the first instance judgment and welcome a further pronouncement on these points from the Court of Appeal. Indeed, in granting leave to appeal, Lady Justice Andrews acknowledged the importance of legal clarity in this respect, saying:[203]

---

[197] The court did, however, think it at least conceivable that some other form of (narrower) duty or duties on developers and / or controllers might be engaged in other circumstances. See [2022] EWHC 667 (Ch) at [74] and [98].

[198] Being, on Tulip Trading Limited's case, the developers of the software protocols in respect of four blockchain systems manifested by the active operation of those protocols by a network of participants: (a) Bitcoin Satoshi Vision; (b) Bitcoin Core; (c) Bitcoin Cash; and (d) Bitcoin Cash ABC.

[199] [2022] EWHC 667 (Ch) at [36]. In addition, the court must be satisfied that (i) is a good arguable case that the claim falls within one or more of the "gateways" for which leave to serve out of the jurisdiction may be given; (ii) that in all the circumstances (A) England is clearly or distinctly the appropriate forum for the trial of the dispute, and (B) the court ought to exercise its discretion to permit service of the proceedings out of the jurisdiction. The court considered these issues *obiter* (in passing only), as it found that there was no serious issue to be tried on the merits.

[200] [2022] EWHC 667 (Ch) at [171].

[201] See M Cross, "Court of Appeal to consider crypto 'duty of care'" (15 August 2022) *The Law Society Gazette*, available at: https://www.lawgazette.co.uk/law/court-of-appeal-to-consider-crypto-duty-of-care/5113426.article.

[202] See also N Yeo, "Tiptoe through the tulips: fiduciary and common law duties of care in cryptocurrency" (2022) 37(7) *Journal of International Banking and Financial Law* 474-476; M Thorne and R Keating "Analysis: Tulip Trading Limited v Bitcoin Association for BSV and others [2022] EWHC 667 (Ch)" (2022) *Society for Computers and Law*, available at: https://www.scl.org/articles/12572-analysis-tulip-trading-limited-v-bitcoin-association-for-bsv-and-others-2022-ewhc-667-ch; and S Baker and J Bihary, "From cryptic to (some) clarity: English law and policy rising to the challenge of cryptoassets" (2022) 37(9) *Journal of International Banking Law and Regulation* 311-316.

[203] See M Cross, "Court of Appeal to consider crypto 'duty of care'" (15 August 2022) *The Law Society Gazette*, available at: https://www.lawgazette.co.uk/law/court-of-appeal-to-consider-crypto-duty-of-care/5113426.article.

The issue as to whether developers owe duties of care and / or fiduciary duties to the owners of digital assets and if so, what is the nature and scope of those duties is one of considerable importance and is rightly characterised as a matter of some complexity and difficulty.

5.40 These issues are particularly important for contributors to the ongoing development of open-source software, including those developers that participate in the development and deployment of open-source software protocols within or associated with a DAO. The *Tulip Trading* case is therefore helpful in that it established a number of factual scenarios in which there is no real prospect of success of establishing the existence of fiduciary duties[204] on developers of open-source software protocols, meaning that those type of developers have clear guidance as to their legal position. On the other hand, lack of certainty could significantly reduce the ability for software engineers to contribute to technological developments under the law of England and Wales. As Rosario et al. suggest:[205]

The imposition of fiduciary duties on protocol developers and the risk of liability that determination entails could potentially end the viability of open-source production. Open-source production has emerged in recent decades as a startling paradigm of human interaction that has enabled innovative new models of social organization and is increasingly responsible for producing more of the world's information.

5.41 Nevertheless, we also consider that there are likely to be factual scenarios that differ from those in the *Tulip Trading* case. Mrs Justice Falk recognised this explicitly in her judgment:[206]

I can see that it might be arguable that, when making software changes, developers assume some level of responsibility to ensure that they take reasonable care not to harm the interests of users, for example by introducing a malicious software bug or doing something else that compromised the security of the Network. Further, if the [developers] do control the Networks as [Tulip Trading Limited] alleges, it is conceivable that some duty might be imposed to address bugs or other defects that arise in the course of operation of the system and which threaten that operation.

5.42 The strength of these arguments is likely to differ depending on a variety of factual considerations, including the nature of the protocol, network, blockchain system, smart contract and / or token in question, and their respective levels of decentralisation. Other factors that are likely to be relevant are the terms of any relevant licence(s), and the extent to which there has been abrogation or relinquishing by developers of practical and legal control over core functionalities of the protocol, network, blockchain system smart contract and / or token in question. In these circumstances, the courts might have to apply existing principles of law to new factual scenarios, such as where

---

[204] Such that the developers would be legally obligated to develop and issue software updates to facilitate the recovery of any network tokens to which the owner had lost access.

[205] R S Haque, R S Silva-Herzog, B A Plummer, N M Rosario, "Blockchain Development and Fiduciary Duty" (2019), available at: https://ssrn.com/abstract=3338270.

[206] [2022] EWHC 667 (Ch) at [98].

there has been damage or loss to objects of property rights like crypto-tokens, or where damage or loss is purely economic.[207]

5.43 Our initial view is that the law of England and Wales is therefore well-placed to provide clear principles in respect of the duties of care that developers of open-source software protocols (such as Bitcoin). In particular, whether (and if so, how) developers might owe duties of care to users of those protocols.[208] These principles are likely to develop not only with respect to software protocols (such as Bitcoin) but also other products, such as smart contracts and tokens. Often such smart contracts and tokens themselves rely on an underlying blockchain system which is manifested by the active operation of a particular software protocol by a network of participants.

5.44 We consider that this common law clarity will help to make the jurisdiction of England and Wales a legally certain and facilitative environment within which those looking to create, innovate and build using open-source code can structure their organisations and operations.[209]

5.45 We are interested in the views of stakeholders as to the importance to DAOs of legal certainty with respect to the scope of duties of care and / or fiduciary duties of developers of open-source code for software protocols.

---

[207] Mrs Justice Falk explicitly acknowledged this in considering whether a common law duty of care on the part of developers could exist: see *Tulip Trading v Bitcoin Association for BSV* [2022] EWHC 667 (Ch) at [86].

[208] And / or users of the blockchain systems that are constituted by the active operation of those protocols by a network of participants that are unrelated to the developers.

[209] See Richard Fuller MP, the Economic Secretary to the Treasury: "As crypto technologies grow in significance, the UK Government are seeking ways to achieve global competitive advantage for the United Kingdom. We want to become the country of choice for those looking to create, innovate and build in the crypto space" (*Hansard* (HC), 7 September 2022, vol 719, col 96WH).

Question 16.

5.46 Please describe how you characterise the relationship between (i) DAOs; (ii) developers and / or incorporated companies (or other legal forms or incorporated entities) involved in software development; (ii) software protocols based on open-source code.

5.47 What are the legal uncertainties and / or risks that you consider are inherent in this characterisation?

5.48 Do you consider that it is ever appropriate (and if so, in what circumstances) for developers of open-source code for software protocols / blockchain protocols to owe of duties of care and / or fiduciary duties to users of those software protocols?[210]

5.49 How important is legal certainty with respect to the scope of duties of care and / or fiduciary duties of developers of open-source code for software protocols / blockchain protocols for DAOs and their participants?

5.50 Do you consider that greater legal clarity could be provided on these issues? If so, in what areas or respects?

SMART LEGAL CONTRACTS

5.51 We consider that the law of England and Wales provides a flexible and clear legal regime for the use of smart legal contracts — smart contracts that are used to define and perform the obligations of a legally binding contract. We discuss smart legal contracts in detail in our advice to Government on smart legal contracts.[211] Broadly, we agree with Sir Geoffrey Vos (speaking extra-judicially):[212]

> We should try to avoid the creation of a new legal and regulatory regime that will discourage the use of new technologies rather than provide the foundation for them to flourish.

5.52 We consider that the law of England and Wales has been highly successful in this respect. It provides a clear and consistent private law regime that accommodates the use of smart legal contracts without resorting to the creation of a fundamentally new legal regime or an overly-inclusive, overly-proscriptive or overly-prescriptive regulatory regime.

---

[210] And / or users of the blockchain systems that are constituted by the active operation of those protocols by a network of participants that are unrelated to the developers.

[211] Smart Legal Contracts: Advice to Government (2021) Law Com No 401, available at: https://www.lawcom.gov.uk/project/smart-contracts/.

[212] Sir Geoffrey Vos, "Cryptoassets as property: how can English law boost the confidence of would-be parties to smart legal contracts?" (2 May 2019) Joint Northern Chancery Bar Association and University of Liverpool Lecture, available at: https://www.judiciary.uk/wp-content/uploads/2019/05/Sir-Geoffrey-Vos-Chancellor-of-the-High-Court-speech-on-cryptoassets.pdf.

5.53 For example, the law of England and Wales is capable of dealing with all aspects of smart legal contracts: formation (agreement, consideration, certainty, intention, formalities), interpretation (including implied terms) and remedies (including rectification, vitiating factors, breach, frustration and illegality).

5.54 We are interested in whether, and if so how, DAOs use smart legal contracts as part of their organisational structuring.

5.55 For example, in many cases involving DAOs and software protocols, smart contracts (as opposed to smart legal contracts) are used to perform executory obligations of legal agreements or to transact without the express intention of the transaction being a function of, or creating, any legal obligation. Of course, the law may impose or impute a legal obligation based upon conduct but in most cases, transactions conducted by code are not expressly or impliedly intended to give rise to contractual relations. We are therefore interested in stakeholders' views on the relationship between a user and an (open-source) smart contract / software protocol that can be interacted with by anyone in the public market. We are interested in whether such relationships can be properly regarded as constituting smart legal contracts as between a user and (i) a DAO; and / or (ii) a software protocol.

Question 17.

5.56 Please provide further input on whether, and if so how, DAOs use smart legal contracts.

5.57 Please describe your view on the nature of the relationship between a user and an (open-source) smart contract / software protocol that can be interacted with by anyone in the public market. In particular, please provide your view on whether such relationships can be properly regarded as constituting smart legal contracts as between a user and (i) a DAO; and / or (ii) a software protocol.

5.58 Please also set out any areas in which you consider that the law of England and Wales could provide greater legal clarity on the use of smart legal contracts by DAOs.

Privacy

5.59 We are interested in how stakeholders consider that the privacy of users and participants can be protected where organisational structures and market systems rely on open-source code and publicly accessible transactional data. We request further input from stakeholders on whether the private law of England and Wales is currently adequate in this respect.

Question 18.

5.60 How do you consider that the privacy of users and participants could or should be protected where organisational structures and market systems rely on open-source code and publicly accessible transactional data? Please also set out any areas in which you consider that the law of England and Wales could provide greater legal clarity in this respect.

Legal personality

5.61 We are interested in whether stakeholders think that there are any circumstances in which a smart contract should, in itself, be treated as having a legal personality. We are also interested in the opposite view — the arguments for why a smart contract should not be treated as having legal personality. We note that this could be important for a variety of different reasons. For example, where smart contract code is treated as a "person" it would fall within the scope of a variety of legal and regulatory regimes.[213]

5.62 This issue is clearly highly relevant to DAOs. Were smart contracts capable of having legal personality then this would open up clear avenues for the limitation of liability for (some) software protocols as legal persons.[214] On the other hand, extending legal personality to smart contracts / software protocols risks legal and regulatory overreach or interference with the free circulation of information and the development / deployment of open-source code.[215] In addition, it risks an incorrect allocation of risk and (limitation of) liability to code which can only run deterministically and has no control or influence over other participants within the crypto-token ecosystem. Our

---

[213] For a detailed consideration of the treatment of automatically / deterministically / programmatically executing code as a "person" for the purposes of the United States Treasury Department's Office of Foreign Assets Control regime, see: J Brito and P Van Valkenburgh, "Analysis: What is and what is not a sanctionable entity in the Tornado Cash case" (2022), available at: https://www.coincenter.org/analysis-what-is-and-what-is-not-a-sanctionable-entity-in-the-tornado-cash-case/. We note that on 9 November 2022 the US Treasury Department's Office of Foreign Assets Control (OFAC) re-designated the "entity" Tornado Cash pursuant to Executive Order 13694 and 13722. The "entity" Tornado Cash was defined as a "person", being an individual or an entity, defined as "a partnership, association, trust, joint venture, corporation, group, subgroup, or other organization." See: https://home.treasury.gov/policy-issues/financial-sanctions/faqs/added/2022-11-08. FAQ 1076 suggests that OFAC does not treat smart contracts as "persons", but instead "includes as identifiers on the Specially Designated Nationals and Blocked Persons List specific virtual currency wallet addresses *associated with* blocked persons." (emphasis added).

[214] The COALA DAO Model Law takes this concept and applies it to certain DAOs that use smart contracts (or, alternatively, certain smart contracts that qualify as DAOs): "In a State that has transposed or adopted the ML into their domestic legal system, a DAO that is constituted according to the requirements of the transposed or adopted legal rules will qualify and be recognized as a legal entity by that State. This will result in the DAO being granted legal personality in any State that has adopted or transposed the ML, which is essential to guarantee the legal effect of the DAO's action." See COALA Model Law for Decentralised Autonomous Organisations (2021), available at: https://coala.global/wp-content/uploads/2021/06/DAO-Model-Law.pdf.

[215] For more detail on this argument in the context of whether information can attract property rights, see: Digital Assets (2022) Law Commission Consultation Paper No 256, Chapter 3, available at: https://www.lawcom.gov.uk/project/digital-assets/.

preliminary view is that it is not appropriate for smart contracts / software protocols to have legal personality, but we ask stakeholders for their view.

5.63 We consider that the deployment of smart contracts / software protocols to blockchain systems using open-source code is often an integral part of the organisational structuring of a DAO. As such, we are interested in whether stakeholders consider that the law of England and Wales could provide greater legal clarity as to whether a smart contract could be treated as having legal personality.

Question 19.

5.64 Are there any circumstances in which a smart contract (or collection of smart contracts) / a software protocol could (or should) be treated as having legal personality? Please explain your answer and set out any areas in which you consider that the law of England and Wales could provide greater legal clarity in this respect.

SEPARATING THE CONSTITUENT ELEMENTS OF A DAO

5.65 In Chapter 2, we began by describing certain constituent elements of DAOs. We said that we think that this exercise is an important definitional building block which will help to enhance the debate as to the application of existing legal principles to DAOs. We noted that some of those constituent elements include (1) incorporated companies (or other legal forms or incorporated entities) which may contribute to software development; (2) software protocols; and (3) different participants within the DAO (including individual contributors, developers and holders of software protocol-specified tokens).

5.66 We understand that an important organisational structuring feature for many DAOs is the ability to distinguish and separate as a legal matter certain constituent elements of a DAO.

5.67 In this chapter, we discuss the relationship between holders of software protocol-specified tokens and the users of those software protocols / the blockchain systems to which they are deployed. We also discussed the relationship between developers / deployers of open-source code and the users of software protocols / the blockchain systems to which they are deployed.

5.68 In this section, we are interested in hearing more from stakeholders as to how the distinction between an incorporated company (or other legal form or incorporated entity) involved in software development and an open-source software protocol does / should operate as a matter of law. We are also interested in whether stakeholders consider that it is ever appropriate (and if so, in what circumstances) for the law to disregard that distinction.

5.69 We are interested in whether, and if so how, the law of England and Wales can help to add legal certainty in this respect.

5.70 How does / should the distinction between an incorporated company (or other legal form or incorporated entity) involved in software development and an open-source software protocol (each associated with a particular DAO) operate as a matter of law?

5.71 Could the law of England and Wales help to add legal certainty to the structuring of such arrangements? If so, how?

GENERAL PARTNERSHIPS

5.72 In Chapter 3 we considered whether a DAO as an unincorporated arrangement or association of participants could be characterised as a general partnership under the law of England and Wales.[216]

5.73 Among other things, we noted that determining whether a partnership has been constituted is a question of fact and law.[217] In particular, we noted that a court will consider whether any common features of partnership are present.[218] These include:

(1) joint participation in the profits and losses of the business;

(2) mutual agency of the partners;

(3) contributions to a stock of common assets and / or capital;

(4) basic non-assignability of the partnership relation; and

(5) a relation of mutual trust and confidence between the partners.

5.74 Many DAOs will have some or all of the features above. But we consider that some DAOs will not. In fact, some DAOs intentionally use a variety of structuring elements explicitly to ensure that the above features are not present. For example, many holders of software protocol-specified tokens do not receive a right to joint participation in the profits and losses of the business that the software protocol (and / or any associated incorporated company (or other legal form or incorporated entity) involved in software development) undertakes. There is generally no relationship of mutual agency between DAO participants. Instead, holders of software protocol-

---

216 This argument was made explicitly under US law in the US District Court for the Southern District of California in the case of *Sarcuni v bZx DAO* (2022), see: https://dockets.justia.com/docket/california/casdce/3:2022cv00618/732409. The US Commodity Futures Trading Commission (CFTC) also recently applied this "starting point" legal analysis in relation to Ooki DAO. See: https://www.cftc.gov/PressRoom/PressReleases/8590-22. However, we are not aware of any similar arguments being made before an English or Welsh court, although see W Edwards, "Decentralised Autonomous Organisations: unincorporated companies by another name?" (2022) 3 *Journal of International Banking and Financial Law* 147 for commentary on this point.

217 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) paras 5-04 to 5-05, 7-11.

218 R I Banks, *Lindley & Banks on Partnership* (20th ed 2017) paras 2-07 fn 45, 2-13, 2-14, 3-07, 12-01.

specified tokens are generally permitted to participate in (limited) governance decisions specifically relating to the software protocol only. However, even where this is the case, a single holder of a software protocol-specified token cannot normally unilaterally act to bind or alter the software protocol (and / or any associated incorporated company (or other legal form or incorporated entity) involved in software development). Nor does a holder of a software protocol-specified token generally have authorisation powers and / or the ability to bind a software protocol (and / or any associated incorporated company (or other legal form or incorporated entity) involved in software development) into business contracts.[219] Often this is achieved at a technological level — for example, by requiring voting thresholds maintained by smart contracts for certain actions. DAO participants might acquire software protocol-specified tokens but may or may not contribute to a common stock of assets and / or capital — often they do not. In addition, software protocol-specified tokens are generally transferrable and liquid — there is not normally a prohibition on transfer of the token.[220] And DAO participation is often very large and participants hold software protocol-specified tokens through anonymous smart contract addresses.[221] It is therefore not realistically possible that a relationship of mutual trust and confidence exists between all of the holders of software protocol-specified tokens to the same extent as with the partners in a partnership.

5.75 In this chapter, we asked stakeholders for further input as to how they consider that the law does (or should) characterise the relationships between certain constituent elements of DAOs. In this section, we ask stakeholders whether they consider that, on balance, it is appropriate for DAOs to be characterised as general partnerships.

5.76 As we note above, some DAOs use the structuring elements described in this call for evidence explicitly to ensure that the features described in paragraph 5.73 are not present. Our initial view is that there are good arguments that those DAOs would not and should not be characterised as general partnerships under the law of England and Wales. To characterise such unincorporated arrangements or associations of participants as general partnerships would risk undermining the certainty and importance of partnership law. It would also risk imposing unnecessary restrictions and liability on individuals who have explicitly chosen to organise in ways that are intended to avoid a partnership relationship.

5.77 We are interested in the views of stakeholders on this issue. In particular, we are interested in whether stakeholders consider that there is a real risk that where they structure their DAO to ensure that the features described in paragraph 5.73 are not present, it could be characterised (or re-characterised) as a general partnership. We are also interested in whether, and if so how, stakeholders consider that greater legal clarity could be provided on this issue.

---

[219] Indeed, entering the DAO into business contracts is a core practical difficulty for many DAOs.

[220] Note that we would not characterise a token transfer as an assignment, although a token transfer could be used to effect a legal assignment of rights depending on how such rights were linked to the token. For more detail on this see Digital Assets (2022) Law Commission Consultation Paper No 256, Chapter 13, available at: https://www.lawcom.gov.uk/project/digital-assets/.

[221] Which may or may not be publicly associated with a real person or a pseudonym.

> **Question 21.**
>
> 5.78 Do you consider that there is a real risk that a DAO that is structured to ensure that the features described in paragraph 5.72 are not present could be characterised (or re-characterised) as a general partnership under the law of England and Wales? Please explain your reasoning.
>
> 5.79 Do you think that this characterisation (or re-characterisation) is appropriate for those DAOs that are structured to ensure that such features are not present? If not, why not?
>
> 5.80 Do you consider that the law of England and Wales could provide greater legal clarity on this issue?

OTHER PRACTICAL AND LEGAL STRUCTURING TOOLS

5.81 We are aware that the private law principles discussed in this chapter do not in themselves provide a complete picture of the organisational structuring arrangements that DAOs use.

5.82 We are also aware that DAOs use a variety of practical and legal structuring tools in both their blockchain based and non-blockchain based activities. We would therefore like to learn more from stakeholders as to how DAOs structure their arrangements with respect to the following (non-exhaustive) list of issues:[222]

   (1)   protocol development;

   (2)   business development;

   (3)   growth and marketing;

   (4)   intellectual property;

   (5)   governance decisions;

   (6)   finance (data / financial performance / budget recommendations / holding funds);

   (7)   legal (publishing and receiving legal analysis / advice);

   (8)   recruiting and personnel; and

   (9)   administration.

---

[222] See also M Boiron, "Sufficient Decentralization: A Playbook for web3 Builders and Lawyers" (2022), available at: https://variant.fund/articles/sufficient-decentralization/.

Question 22.

5.83　Please explain any other practical and legal structuring tools that DAOs use in both their blockchain based and non-blockchain based activities. If possible, please explain how you see these techniques interacting with principles of private law (including those discussed in Chapter 5).

Chapter 6: Practicalities of operating a DAO under the law of England and Wales

6.1 DAOs, as a broad category of technology-mediated social structure or organisation of participants made up of several composite elements, are used for a variety of purposes, including both for profit and non-profit purposes. As we discuss above, many DAOs operate both through blockchain systems and externally to a blockchain system, and use a combination of structuring elements as part of an overall legal risk profiling exercise and cost / benefit analysis appropriate for the particular organisation in question.

6.2 The ways in which some DAOs combine these structuring elements means that the way in which they deal with the practicalities of running an organisation might be different to traditional organisations.

6.3 We are interested in hearing more from stakeholders on the practicalities of operating a DAO under the law of England and Wales. In this chapter we outline some principal issues below, but this is not intended to be an exhaustive list of those issues that DAOs face and we encourage stakeholders to highlight other issues.

PARTICIPANT DISPUTES

6.4 As we have discussed, different DAOs are likely to use different organisational structuring techniques, meaning that their governance structures are not likely to be uniform. Decision-making powers might therefore be restricted to the founders of the DAO, or, alternatively, such powers might be dispersed through the various composite elements of a DAO's organisational structure. For example, a DAO's organisational structure might include (1) incorporated companies (or other legal forms or incorporated entities); (2) software protocols; and (3) different participants within the DAO (including individual contributors, developers and holders of software protocol-specified tokens). Each of those constituent elements might have particular governance influence (legal or social) over particular parts of the DAO.

6.5 Where a DAO adopts one or more legal forms or incorporated entities, those forms are likely to have established methods of managing disputes among participants. For example, a partnership agreement, rules of an unincorporated association or a shareholder agreement between shareholders in a limited company may set out a dispute resolution process.

6.6 Similarly, some aspects of a DAO's governance or decision-making processes might be undertaken automatically, programmatically or deterministically through the use of smart contracts or the operation of software protocols. Some decisions might be taken by individual developers or employees in incorporated development companies (or other legal forms or incorporated entities). There are also likely to be some decisions which are made by participants who hold software protocol-specified tokens and choose to exercise their right to vote.

6.7   There are a number of ways in which participant disputes could arise in this context. Some participants may find that they do not have the same voting power as other participants and are consistently outvoted, or not listened to, when decisions are being made. This could be for a number of reasons. Power within each governance process could be concentrated — for example, within an incorporated company. Alternatively, holders of software protocol-specified tokens might have limited governance or decision-making power based the type of token they hold. Or holders of small amounts of software protocol-specified tokens might be outvoted by holders of larger amounts. Another example is where decision-making becomes slow because the governance processes or low participation mean that decisions are not being made.

6.8   Difficulties in reaching consensus (or managing conflicts) between participants and in-built limits on effective participation mean that "decentralized organisations may suffer from governance problems".[223] While smart contracts can eliminate certain governance or decision-making tasks, and hence achieve certain operational efficiencies, "they do not eliminate the social and political dimensions of governance".[224] Additionally, DAOs might fragment governance and decision-making processes as compared to traditional, more centralised organisational structures. This might mean that participating in governance or decision-making process for DAOs becomes more difficult as an individual. Aaron Wright describes this difficulty:

> Humans do not have an infinite capacity for information and exhibit well-understood bounds to rationality, limiting the capacity of DAO-members to engage fully in an organization's governance structure … costs still lurk in the simple task of reaching group consensus, which could in turn frustrate the ability of participatory DAOs to take action … direct voting through distributed consensus may be difficult to achieve because it requires people to remain consistently engaged and attentive to an organization's activities on an ongoing basis. For many, gathering all of the information necessary to make a well-informed decision could prove too time-consuming and complex, dissuading participation. Questions thus emerge as to whether DAOs will operate with the same degree of efficiency, or even comparable efficiency, as more hierarchical organizations. The social friction caused by ongoing voting may ultimately hobble these organizations, limiting their ability to generate social and economic gains.[225]

6.9   We are interested in how DAOs manage their governance and decision-making processes in practice, including where such processes have worked and have not worked. We are also interested in whether the law of England and Wales hinders the ability for DAOs to structure their governance or decision-making processes in ways most appropriate for the DAO in question.

---

[223] A Lafarre and C Van der Elst, "Blockchain Technology for Corporate Governance and Shareholder Activism" (2018) *Tilburg Law School Legal Studies Research Paper Series*, p 8, available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3135209.

[224] A Wright, "The Rise of Decentralized Autonomous Organisations: Opportunities and Challenges" (2021) 4.2 *Stanford Journal of Blockchain Law & Policy* 152, 165.

[225] A Wright, "The Rise of Decentralized Autonomous Organisations: Opportunities and Challenges" (2021) 4.2 *Stanford Journal of Blockchain Law & Policy* 152, 165. However, these potential problems may be overcome or mitigated through novel forms of voting mechanism: see E Arsenault, "Voting Options in DAOs" (December 2020) available at: https://medium.com/daostack/voting-options-in-daos-b86e5c69a3e3.

TAXATION

6.12 Different legal entities and associations of participants are subject to their own taxation regimes. Some are treated as transparent for tax purposes, for example general partnerships. This means that the activities of the partnership are treated as carried on by the individual partners and not the partnership as a body. In contrast, a limited company or an unincorporated association itself will be subject to corporation tax on any profits it makes.

6.13 Given the myriad options for structuring a DAO's organisation, there is unlikely to be a single common taxation regime which applies to DAOs as a whole. Nevertheless, we are interested to understand from stakeholders how the market currently understands the tax position of particular DAOs in England and Wales. We are also interested in any areas of uncertainty which can arise as a result of the common features or structuring approaches of DAOs, including determining the relevant jurisdiction for tax purposes.

6.14 We are also aware of a number of other projects which are considering tax issues in the context of the crypto-token markets and DAOs, including the following:

    (1) the HM Revenue and Customs call for evidence on the taxation of decentralised finance involving the lending and staking of cryptoassets;[226]

    (2) the HM Revenue and Customs Cryptoassets Manual, which covers the taxation of decentralised finance;[227]

    (3) an ongoing project on DAOs which is being undertaken by The Financial Markets Law Committee. We sit as observer on this project; and

    (4) an ongoing project on DAOs which is being undertaken by CryptoUK. We sit as observer on this project.

---

[226] Available at: https://www.gov.uk/government/consultations/call-for-evidence-the-taxation-of-decentralised-finance-involving-the-lending-and-staking-of-cryptoassets/the-taxation-of-decentralised-finance-involving-the-lending-and-staking-of-cryptoassets-call-for-evidence.

[227] Available at: https://www.gov.uk/hmrc-internal-manuals/cryptoassets-manual.

6.15 We will aim to include references to the work done on these projects in our scoping study.

Question 24.

6.16 How do DAOs (or the constituent parts thereof) assess their tax obligations and (if relevant) residence for tax purposes? Are there any particular areas of uncertainty for DAOs currently operating in the market?

6.17 Are there any ways in which the taxation regime and tax consequences for DAOs (or the constituent parts thereof) could be simplified and / or improved?

Please explain whether your answer is based on general knowledge of DAOs or based on specific examples of DAOs of which you have first-hand knowledge or experience.

ANTI-MONEY LAUNDERING

6.18 Individuals and businesses might be subject to anti-money laundering regulations. Generally, the applicable regime in the United Kingdom focuses on certain *activities* undertaken by *specific persons*, as opposed to the underlying asset. In particular, individuals and businesses that do carry out *specific activities* in the United Kingdom will need to comply with the Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017 (the "MLRs 2017").[228] In addition, an individual or business must act by way of business as set out in Regulation 14A (1) of the MLRs 2017 to be within scope (see paragraph 6.21 below for more information). Broadly, this includes "cryptoasset exchange providers"[229] (including Cryptoasset Automated Teller Machine (ATM), Peer to Peer Providers and issuing new cryptoassets in an Initial Coin Offering (ICO) or in an Initial Exchange Offering) and "custodian wallet providers". Individuals and businesses should take advice to consider whether their business requires FCA registration, as needed.

---

[228] Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, reg 8(2)(j)-(k). For definitions, see reg 14A(2); for guidance, see https://www.fca.org.uk/firms/financial-crime/cryptoassets-aml-ctf-regime.

[229] We note that the term "exchange services", as set out in the European Union's Fifth Money Laundering Directive 2018/843, ("5MLD"), was transposed into the law of England and Wales in a way that potentially captures a broader range of services than the definition under 5MLD. The domestic transposition is located at reg 14A of the Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, SI 2017 No 692. This broader domestic implementation encompasses crypto-to-crypto exchanges, as well as initial coin offerings and initial exchange offerings. These may all be relevant to the activities undertaken by DAOs. Despite this, it is possible that other jurisdictions might expand their Anti-money Laundering and Combating the Financing of Terrorism (AML/CFT) frameworks along similar lines to the UK with respect to crypto-related activities. This is particularly so following the publication of the Financial Action Task Force, *Updated Guidance for a Risk-based Approach: Virtual Assets and Virtual Services Providers* (October 2021) paras 77 to 79. For further information on the domestic transposing of the 5MLD in relation to crypto-exchange services, see: HM Treasury, *Transposition of the Fifth Money Laundering Directive: consultation* (April 2019) paras 2.34 to 2.38 and HM Treasury, *Transposition of the Fifth Money Laundering Directive: response to the consultation* (January 2020) para 2.19.

6.19 Cryptoasset exchange or custodian wallet providers in business in the UK therefore have a number of anti-money laundering obligations, including: (a) successfully registering with the Financial Conduct Authority ("FCA") prior to starting business, (b) carrying out risk assessments, (c) putting in place policies, controls and procedures to mitigate and manage money-laundering risks and (d) in the future, accompanying certain cross-border cryptoasset transfers with specified information about the originator and recipient.

6.20 We consider that these regulations could potentially cause practical difficulties and / or legal uncertainty for DAOs for the following reasons.

"Making arrangements with a view to"

6.21 First, the question as to whether a DAO falls within the scope of the regulations is not necessarily clear. Some DAOs will use or be associated with smart contracts, software protocols, and crypto-tokens / software protocol-specified tokens, but might not operate a business that involves the provision of exchange or custody services. Where they do not, there could be a question as to whether a DAO nonetheless falls within scope of the regulations.

6.22 A principal consideration is the interaction between DAOs and the definition of "cryptoasset exchange provider", being an entity which is "making arrangements with a view to" the exchange of cryptoassets and cryptoassets / fiat. UK based cryptoasset exchange providers are generally registrable with the FCA under the MLRs 2017.

6.23 Although the terminology "making arrangements with a view to" is vague, helpful guidance is provided by the Joint Money Laundering Steering Group which states:[230]

> It is not intended to capture a firm that only provides a forum where buyers and sellers can post their bids and offers, such as a bulletin board where the availability of the assets are merely made known and the parties trade at an outside venue.

6.24 This suggests that more is required than simply directing DAO users to where cryptoassets can be acquired. This is also reflected in the HM Treasury Transposition of the Fifth Money Laundering Directive: Response to the Consultation which states:[231]

> Responses were divided on whether firms facilitating peer-to-peer exchange services should be brought into the scope of the MLRs. Many responses expressed reservations about the difficulty of doing so when the market has not fully matured. There was, however, some agreement that where the provider is a centralised entity that is completing, matching or authorising a transaction between two people, such entities could be brought into scope of the MLRs. It is the government's view that proceeding on this basis is proportionate to the risk as currently understood.

---

[230] See Joint Money Laundering Steering Group (JMLSG), *Prevention of money laundering/combating terrorist financing, Guidance for the UK Financial Sector, Part II* (2020) para 22.11.

[231] See HM Treasury, *Transposition of the Fifth Money Laundering Directive: response to the consultation* (January 2020) para 2.20.

6.25 This suggests there must be active "completing, matching or authorising a transaction" to trigger being a cryptoasset exchange provider.

6.26 We are aware, however that a broader interpretation of the "making arrangements with a view to" language has been suggested, which is predicated on following the FCA Handbook of Rules and Guidance approach to interpreting the Financial Services and Markets Act 2000 (Regulated Activities) Order 2001 (the "RAO"). In this respect, we would note that the meaning of wording can be specific to different activities, and indeed there is separate guidance on the meaning of "making arrangements with a view to" in the insurance context[232] and the securities context.[233] In addition, the nature of the RAO regime is different to the MLRs, being an authorisations regime concerned with, for example, conduct of business requirements, whereas the MLRs is a registration regime focused on dealing with money laundering.

"Carrying on a business in the United Kingdom"

6.27 Another requisite characteristic for the MLRs 2017 regime to apply is that the relevant persons are carrying on business in the United Kingdom. The MLRs 2017[234] and relevant guidance[235] emphasise the significance of having a physical presence in the United Kingdom. However, the nature of DAOs means that a DAO may do its business without any traditional physical presence — by virtue of decentralised management using a network of smart contracts deployed to a blockchain system. Where DAOs do fall within scope, we are also aware that there might be practical difficulties in compliance with these regulations, such that it is possible that legitimate businesses could be prevented from operating in the UK because they are unable to comply.

Each DAO must assess its own regulatory obligations

6.28 As we observe in this call for evidence, there is no single legal definition of a DAO, and there are a myriad of different business models and purposes for DAOs. As such, whether any particular DAO (or constituent part thereof) falls within scope of the MLRs 2017, is a complex and evolving area and would need to be considered on a case by case basis.

6.29 Nonetheless, we understand that as at the date of this call for evidence, no "DAO" has applied for registration with the FCA and therefore that there are no DAOs within the

---

[232] Insurance is dealt with by the Financial Conduct Authority, *FCA Handbook of Rules and Guidance* (2022) at PERG 5.6.

[233] Securities are dealt with by the Financial Conduct Authority, *FCA Handbook of Rules and Guidance* (2022) at PERG 8.32.

[234] Money Laundering, Terrorist Financing and Transfer of Funds (Information on the Payer) Regulations 2017, reg 7.

[235] Information available on the Financial Conduct Authority website: https://www.fca.org.uk/cryptoassets-aml-ctf-regime/register; Joint Money Laundering Steering Group (JMLSG), *Prevention of money laundering/ combating terrorist financing, Guidance for the UK Financial Sector*, Part II: Sectoral Guidance, June 2020 (amended July 2022), paras 22.20-22.28. Available here: Current Guidance – JMLSG. The JMLSG is a private sector body made up of UK trade associations in the financial services industry. Its guidance been approved and applied by HM Treasury, the FCA and the courts.

current FCA supervisory population. Nor are there currently any DAOs on the FCA's list of the unregistered cryptoasset businesses.

6.30 We are interested in hearing more from stakeholders about these and other issues.

"Regulatory equivalence"

6.31 We are also interested in hearing stakeholders' views on whether (and if so, how) it is possible to achieve the policy goals in this area in ways that better incorporate novel technology. For example, we understand that there are market-based initiatives to use certain crypto-tokens for KYC processes, such as Binance's recently launched Binance Account Bound token. [236] In this respect, Pauwels, Pirovich, Braunz, and Deeb suggest that, using zero-knowledge proof based crypto-tokens, 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. [237]

---

[236] For more detail, see: https://www.binance.com/en/support/faq/how-to-mint-binance-account-bound-bab-token-bacaf9595b52440ea2b023195ba4a09c

[237] P Pauwels, J Pirovich, P Braunz, and J Deeb, "zkKYC in DeFi" (2022) 321 *Crypto ePrint Archive*, available at: https://eprint.iacr.org/2022/321.

Question 25.

6.32 Do you consider that anti-money laundering regulations apply to DAOs (or one or more of their constituent elements)? In particular:

(1)   Do many DAOs (or one or more of their constituent elements) currently in existence or contemplation fulfil any of the following criteria:

(a)   the DAO (or one or more of its constituent elements) is a "cryptoasset exchange provider" or "custodian wallet provider"; and

(b)   the DAO (or one or more of its constituent elements) is carrying on business in the United Kingdom?

(2)   In relation to the activities undertaken by DAOs, should different interpretative approaches be taken between "making arrangements with a view to" in the context of the RAO and the MLRs 2017?

(3)   If "making arrangements with a view to" under the MLRs 2017 is interpreted using the same approach as that under the RAO, what would be the impact on DAOs based in the UK?

(4)   Are there any aspects of a DAO (or one or more of its constituent elements) which would make it more or less likely that anti-money laundering regulations would apply?

6.33 To the extent that anti-money laundering regulations do apply, are any of the requirements particularly challenging for a DAO to comply with (for example, whether, given the nature of the entity, how and what they would be able to register)? If so:

(1)   Do you have examples, or specific evidence, of those challenges?

(2)   What could be done to solve those challenges, including by reference to the use of novel technology to achieve the same policy goals?

(3)   Where DAOs replicate the activities of those subject to the MLRs, do you consider that it is appropriate to treat DAOs similarly to other "businesses" subject to the MLRs? If not, please explain why.

(4)   What steps do DAOs take to make users and participants aware of any potential risks of interacting with either a DAO or an open-source software protocol and to help inform their decision-making?

Please explain whether your answers are based on general knowledge of DAOs or based on specific examples of DAOs of which you have first-hand knowledge or experience.

Other regulatory issues

6.34 We are aware that DAOs might be subject to a variety of different regulatory regimes, depending on the type of business or activity with which the DAO is engaged. We have not attempted to provide a comprehensive list of these complex and multi-faceted issues.

6.35 However, we are interested in further feedback from market participants on these issues. We are interested in situations where DAOs face regulatory issues in this jurisdiction that are particularly challenging for that DAO to comply with or where the current law presents challenges, difficulties or opportunities for DAOs. We are also interested to understand how DAOs determine the jurisdiction applicable to them for regulatory purposes.

Question 26.

6.36 Please describe any particular areas of regulatory uncertainty for DAOs currently operating in the market.

6.37 Please describe any situations where DAOs face regulatory issues that are particularly challenging for those DAOs to comply with or where the current law presents challenges, difficulties or opportunities for DAOs.

6.38 Are there any ways in which the applicable regulatory regime and practical consequences for DAOs (or the constituent parts thereof) could be simplified and / or improved?

6.39 How do DAOs currently determine questions at to the jurisdiction applicable to them for regulatory purposes?

Please explain whether your answer is based on general knowledge of DAOs or based on specific examples of DAOs of which you have first-hand knowledge or experience.

FURTHER QUESTIONS

Other issues

6.40 In the preceding paragraphs, we summarise the issues we currently plan to consider in the scoping study. These issues have been derived from initial conversations with stakeholders, including our advisory panel, and our own research.

6.41 We are keen to hear from stakeholders whether there are other issues which we should consider in relation to DAOs and which should be included in the scope of our work.

Question 27.

6.42 We welcome suggestions from stakeholders as to other issues which should be included in our scoping study. For each issue, we would be grateful for the following information:

(1) a summary of the issue / problem;

(2) an explanation of why the issue needs to be considered. For example, problems that it causes / could potentially cause to DAOs in practice; and

(3) suggestions as to what could be done to address the issue, and any evidence of the costs and benefits of the solution.

Appendix 1: Terms of reference

The project will consist of a fifteen-month scoping study of the legal implications of DAOs.

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[238] 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?

(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?[239]

(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?

---

[238]   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.

[239]   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. See https://www.lawcom.gov.uk/project/conflict-of-laws-and-emerging-technology/.

(9)   Who is liable for taxes if the DAO makes a profit?[240]

(10)   Relevant regulatory responses in other jurisdictions.

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.

---

[240]   Noting that tax concepts, in general, fall outside of the scope of private law and so outside the scope of this project.