KEY POINTS

- On 16 November 2022, the Law Commission announced that it will begin work on a scoping study into decentralised autonomous organisations (DAOs).
- Contributions to the Law Commission's work must be informed by a good understanding of the nature of the projects that are operated as DAOs and the underlying reason why they are established.
- DAOs are economic projects with both a monetary policy and a fiscal policy.
- The legal analysis of a DAO or other Web3 or blockchain project involves tasks such as breaking down the operation of the smart contracts into their constituent parts, in particular, to show the flow of value created and transferred, and then applying a legal analysis to these.
- To be a crypto lawyer requires an understanding of the technologies and the architecture of the project.

Feature

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The point of DAOs; and of crypto lawyers

In this article, Charles Kerrigan explains the underlying reasons why projects are established as DAOs and the unusual set of capabilities needed by crypto lawyers.

A decentralised autonomous organisation (DAO) is a novel organisational structure now common in Web3 projects.

To understand that statement, it is necessary to know that:

- DAO is pronounced as an acronym (not an initialism);
- Web3 is a generic term referencing versions of the internet that run on decentralised networks – a simplified explanation of Web3 would say: Web1 enabled reading on the internet – online newspapers; Web2 enabled reading and responding on the internet – social media platforms; Web3 enables user-owned platforms where work is rewarded in proportion to value created. Web3 and the metaverse are closely connected. The metaverse generally refers to virtual (online) worlds. Web3 is a broader term focused on the economies of these worlds;
- decentralised networks (the best-known examples of which are Bitcoin and Ethereum) are characterised by control of the network being held in the hands of users pursuant to a set of hard-coded rules, known as a consensus protocol;
- consensus protocols are methods by which users of the networks verify the genuineness of transactions to be added to the blockchain: because anyone can submit information to be recorded on a blockchain, there must be processes to determine which transactions to store and which to ignore;
- as a matter of terminology I will use the term "crypto" throughout this article in rather a loose way – it is a term that always requires definition but here I mean it in its widest sense to refer to projects and technologies related to native cryptoassets (that is, those with no existence outside of a blockchain) and digital assets (that is, those that are digital copies of another asset such as equity or debt that has been tokenised).

(For the purposes of this article, I will not consider the extent to which examples of decentralised projects are in practice really decentralised (either for the purposes of applicable financial regulation or as a matter of the internal rules of a particular project), although this is an important question in particular in relation to the legal characterisation of a specific project.)

In non-legal communities a DAO can be described as an online group with a common purpose that has some commercial elements. Or, more vividly, as a crowd with a bank account.

The legal literature on DAOs abounds in enthusiastic discussion of how the true nature of a DAO is to be characterised under the laws of different jurisdictions. Under English law, it is generally assumed that a DAO would by default be an unincorporated association or a partnership. However, there are two caveats to this. First, that there is an underlying assumption in this view that the DAO will not have the benefit of legal and tax structuring advice and so its characterisation will simply lie where it falls on an *ex post facto* English legal analysis. Second, that no one really knows because no DAO has yet been tested in an English court.

A June 2022 paper titled *Legal Wrappers and DAOs*, co-written by two American lawyers, Chris Brummer of Georgetown University Law Center and Rodrigo Seira of Paradigm (a crypto/Web3 investment firm), sets aside that assumption. The paper starts from a position that a DAO may make a deliberate choice how to structure itself under a particular law. It notes the characteristics of a DAO as "dispersed and fluid memberships, and blockchain-based governance" and sets out the legal problem at hand, that DAOs "are unanticipated by legal wrappers modeled after 20th century corporations, nonprofits and partnerships". The paper considers that appropriate wrappers familiar to US lawyers can include unincorporated DAOs, DAO LLCs and limited co-operative associations, among others. Foundations established in Cayman, Guernsey and elsewhere are also recognised options outside the US. In all cases, the purpose of the DAO is identified as the starting point for considerations of legal structures and the tax treatment of the structure – and participants should be investigated in advance, as with any new business establishment.

The point of a wrapper is to enable a DAO to engage with traditional entities and rules. A wrapper would give legal personality and therefore the ability to contract, and protections from liability for managers and owners.

The current UK government has a policy aim to be a global hub for cryptoasset innovation. This includes ensuring that English law is aligned with the ambition. In furtherance of this, the Law Commission has announced, at the request of the

government, that it will begin work on a scoping study into DAOs.

So, it is timely to encourage some discussion of DAOs among lawyers. While some of this will continue the speculative discussion of the correct characterisation of DAOs under English law, that will be best resolved through the Law Commission's work. Contributions to the work, however, must be informed by good understanding of the nature of the projects that are operated as DAOs and the underlying reasons why they are established as DAOs, rather than something else.

We need to know what members of DAOs think that they are doing in working through a DAO; in other words, what is the point of a DAO?

THE TAO OF A DAO

Since we saw above that DAOs are most often used for Web3 projects, we must look at the two things together. Web3 projects and their associated DAOs are designed as holistic economies. To be successful they must attract users and developers. To give a simple example, a game (A) needs a balance of users to play it and developers to build it. Both communities must be rewarded. Rewards can take the form of tokens (A-coins). Since there are many similar games (B, C, and D) offering (B-coins, C-coins, and D-coins) so users and developers may at any time leave A to join B, C, or D because it pays better.

"Pays better" is a simplified way of saying a number of things about the mix of incentives involved in different projects. Continuing our simple example of a game:

- if A pays 10 A-coin for an hour of work and B pays 1 B-coin for an hour of work, then A pays better;
- but that depends on the exchange rate between A and B;
- and also the exchange rate between A-coin and B-coin and fiat currency, in other words new projects contain many (advertent and inadvertent) opportunities for arbitrage: it may be practically or technically easier to convert A-coin for USD than to convert B-coin for USD; it may be that there is a market for exchanging A for B and then B for USD on preferential rates; and so on;
- the utility of A-coin may be better or preferable to the utility for B-coin, for example, A-coin may be embedded in a digital image that is perceived to be a luxury item, while B-coin may not;
- since A and B are games, the fact that A has better gameplay than B means that players could be expected to spend more time playing A;
- since gaming is now a social activity, the fact that your friends all play A and not B will make it likely that you will spend more time on A; user-adoption is a key feature of all Web3 projects;
- since the game is not owned by a company that instructs its employees to build it and run it, the existence, quality and development of the game depend on developers being incentivised;
- if A is successful, that may be because power users are attracting others to the game; they should be rewarded for this;
- as the game develops, management-type functions need to be performed; these may be operational (such as whether to launch Game v.2, technical (such as whether to update the code) or strategic (such as entering into a relationship with another game or DAO);
- A-coin is issued to players and to developers in proportion to their efforts as a reward for their work, in accordance with rules in the smart contracts operating in the blockchain.

This is a simple example, but we can see that these are economic projects. Tokens are naturally economic because they have a price and are tradable at all times.

Tokens, in the example above, A-coin, B-coin and C-coin, are the method by which value is shared between users and developers. The interest and the challenge of these projects is that building a successful project involves building a full economy. (When you read the inevitable bad press that follows from the law of human nature that get rich quick schemes attract bad actors, also be aware of the fact that crypto builders have big ideas and are tireless.)

In these terms the project has both a monetary policy (that is, managing the supply of "money" to promote economic growth in the project) – in our cases, setting the rate at which tokens are issued to create an "inflation rate" in the economy of the project; and a fiscal policy (that is, the use of revenue in the project) – in our cases, setting the level of transaction fees and taking decisions on the use of funds in the treasury of the project (the treasury being a wallet holding funds invested in or earned by the project). In a conventional economic model, transaction fees are tax and use of treasury funds is spending, so these projects can be seen to be a variation on traditional tax and spend economic models, albeit not always following traditional economic policies.

The paragraph above is a basic model. Projects may have more than one token. For example, a protocol token may be used for transactions with third parties, that is, to deal with supply and demand of the project's products; and a utility token may be used for transactions to deal with supply and demand within the project system. Projects may obtain revenues from sources other than transaction fees, for example providing technology, advice or time to another project. Projects may invest inside and outside their systems. The likelihood of each of these things happening is related to a combination of the founder team vision, community voting, the success of the project (as a whole or in part), and the type of project that is intended, as will be apparent from the categories set out below.

As in the "real" world, projects are both an economy and a community. Citizenship in the community is often evidenced by holding an NFT. This is an example of a use case for NFTs: some tokens must be non-fungible. A token representing your digital identity in an economic system can't be susceptible to transfer, copying or fractionalisation.

To summarise, the design of the tokens in the system must cover:

- governance (decision-making and enforcement, like shareholder rights and governing law for a company);
- economics (incentives, like share capital and currency in a company);
- technology (which blockchain to build on and how to do so);
- regulation (whether the project will perform regulated activities or not);

- community (whether the project is by invitation only or open to all),

among other things.

The point about community is generally important. DAOs are groups of like-minded people more than they are anything else, certainly anything that a lawyer would recognise. Each of them has a culture, is often experimental with a bold aim in mind and they are often deliberately trying to do a new thing or an old thing in a way that hasn't been tried before. Communication is constant, back and forth on online channels, using memes and jokes. DAOs are fun, a way to work with your friends, and often very funny (more or less on purpose depending on the project …). Successful DAOs have a unique culture: what I refer to as the Tao of a DAO.

Although DAOs are still new, there are some established categories of projects. A basic categorisation would include:

- **DAO operating systems**: providing the technology on which DAOs are built, a kind of off-the-shelf toolkit for builders.
- **Protocol DAOs**: dealing with matters of governance (like a constitution or by-laws for a project) – such as UniSwap (note that all DAOs must have some system of governance whether operated through a protocol DAO or in some other way on the blockchain).
- **Investment DAOs**: funds pooled by members to invest in other crypto (often DAO) projects – such as BitDAO.
- **Grants DAOs**: providing funds on a non-commercial basis for the development of projects or infrastructure – such as Gitcoin.
- **Service DAOs**: teams that provide consulting and professional services-type services to other DAOs – interesting for lawyers, including "Legal DAOs" such as Lex DAO and Thing3.
- **Social DAOs**: a membership club where an NFT is often the "membership card" – such as Bored Ape Yacht Club (but also including informal forums without established structure where enthusiasts meet and talk online but do not create financial or technology products or systems – these may be no more than a branded Discord channel.
- **Media DAOs**: connected to media firms as a method of brand extension consistent with their target market, usually crypto native firms like crypto websites and newsletters – such as Decrypt DAO.

Brummer and Seria also categorised types of DAOs, adding Collector DAOs, Philanthropic DAOs and Lobby DAOs to the list, the purpose of each of which is apparent from the names.

There are some quite different businesses within these categories and the categories themselves imply a degree of homogeneity between projects that does not exist in practice. For that reason, it is difficult to make any generic comment about how any businesses of this nature would be characterised under English law. Some are simply software without characteristics that could constitute legal personality. It is certainly possible that a simple DAO project that does not take advice may be an unincorporated association. Other projects may be properly characterised as futures or options or more similar to an unlicensed alternative investment fund or collective investment scheme. A project that takes advice and uses a wrapper will be advised how to stay within the parameters of the wrapper. In practice, most DAOs that take advice use foundation structures outside the UK.

In addition to established issues of applicable financial regulation and those issues discussed in the Law Commission's Digital Assets Consultation Paper (flowing from the nature and legal characterisation of digital assets), the legal analysis of a DAO or other Web3 or blockchain project involves tasks such as breaking down the operation of the smart contracts into their constituent parts, in particular, to show the flow of value created and transferred, and then applying a legal analysis to these. Each project is different. Smart contracts establish different connections between tokens that are recorded on the blockchains:

- they create rights that are inherent in tokens (that is, proprietary rights), which may be different to contractual (that is, personal) rights established by terms and conditions in a contract that is not a smart contract;
- they transfer tokens between nodes on a blockchain; they move value by effecting a "state change" on a blockchain but value can also be moved by off-chain activity, such as a beneficial transfer under a paper contract;
- they control funds by using "multi-sig wallets" (that is by the operation of private keys that are controlled by a number of but not all members);
- they put into effect the decisions of the community by voting rights granted by governance tokens (either directly: "on-chain" or indirectly: "off-chain" where votes are cast online in message boards or chat groups but the smart contract that effects them is controlled by administrators).

These are examples of the types of analysis conducted in a project review.

THE PHILOSOPHY OF WEB3

At its essence Web3 aims for users to be paid for their work in the online world and share in the benefits of value that now accrues to the most successful online platforms, that is, scaling and network effects. Users own their content and they contribute to a (decentralised) store of assets and are owners of both what they produce and have a share of the means of production. Just as Bitcoin was a response to the "failures" of the banks at the time of the 2008 financial crash, so Web3 is a response to what its advocates refer to as the extractive model of Web2, in other words that online social media companies encourage user engagement to generate data to feed their algorithms to sell the attention of the users to commercial parties. Users are either having their data mined for someone else's benefit or they are unpaid content creators on privately owned platforms. This was strikingly put in the famous phrase: "if the product is free, then you are the product".

HISTORY AND CONTEXT

Although the phrase "you are the product" is closely associated with Web2, it is older than the internet and was first used to describe

television. This issue has a history far older than the online world. Karl Polanyi, an Austro-Hungarian economist working in the first half of the 20th century, wrote about the history and consequences of market societies, in particular, believing that they commodified social relations. By the second half of the 20th century, Milton Friedman, an American economist, was able to envisage, in effect, a spot market in labour, in other words complete deregulation of employment relations. The debate continues in the present day. Robert Kuttner, an American economic journalist, reviewing *The Rise and Fall of the Neoliberal Order: America and the World in the Free Market Era* by Gary Gerstle in the 21 July 2022 issue of the *New York Review of Books* considered the globalised market where World Trade Organisation rules have made capitalism "more impervious to regulation" because free market rules sit above national regulations and give corporations enforceable extra-territorial rights. Traditionally, the state had a role in defining the market. Through globalisation based on neoliberalist principles the market can be shielded from the regulatory state and expand market principles into social domains.

The above paragraph is short and simplistic but designed simply to note that any legal and regulatory analysis of DAOs should take into account their context and that this context is not limited to currency, or payments, or the evolution of the internet. Web3 projects are global, because the internet is global but they operate at a local level. Kuttner argues that elements of national capitalism have been disempowered by globalisation, including enforceable tax policies, trade agreements and workers' rights. Each of these exists within Web3 project systems. As I have written before, crypto is a Rorschach test – your conclusions about its questions tell you more about your views than they do about crypto.

THE NATURE OF THE FIRM

'The Nature of the Firm' is a 1937 article by Ronald Coase, a British economist. The article looked for an explanation of why individuals joined together in business entities of various types rather than working on an individual basis. Coase's work illuminates questions that we have about DAOs, which are either "firms" in his terms or some alternative to them. In any event, before we attempt legal characterisations, we should take account of his work.

Fundamentally, Coase saw firms as entities established to pay what he called "transaction costs". These included search and information costs (for example, finding sellers if you are a buyer), bargaining and decision costs (for example, agreeing terms) and policing and enforcement costs (for example, enforcing terms).

A firm would rationally emerge as a service provider for market transactions whenever the costs of that firm performing a certain role were less than the cost to a buyer or seller in that market of carrying out the role themselves through the market. Simplified, Coase's view is that if there were no transaction costs, there would be no economic basis for the existence of any firms. The need for firms arises from the fact that it costs something to enter into transactions.

Exchanges are an example of firms providing these services. Exchanges have rules governing the rights and duties of buyers and sellers carrying out transactions on the exchange facilities. Coase explains the need for exchanges in two ways. First, because physical facilities were scattered and in broad ownership and second, because economic parties rely on the legal system of the state because the difficulties and costs of somehow establishing a private legal system are too great.

A point of particular interest to us is that Coase objected to theories of exchange that take no account of the institutional settings of the transactions. So, we can see that Coase was interested in why people organise their commercial endeavours the way they do. And also, that the context of these endeavours is important. The contexts that Coase was dealing with have changed in significant ways since his time. And in ways that illuminate the points that I want to consider.

First, Coase actually envisaged back in 1937 that production could be carried out in a decentralised way by contracts between individuals. The reason that it was not, was because of economic incentives. The recent development of decentralised finance brings his argument back to life.

Second, while physical facilities are still scattered, a substantial proportion of commerce (and, by definition, 100% of online commerce relating to digital goods and services) no longer relies on physical facilities.

Third, information is no longer expensive. One of the defining legal problems of the digital age remains: under what circumstances can information be owned.

Fourth, in Coase's time economists assumed the applicability of marginal cost theory. It costs more to make more things because increased production requires additional input costs. But software and intangible assets can be copied and re-used at zero marginal cost.

Coase had a traditional starting point that economics studies the relationship between ends and means where some scarcity applies to means. But Web3 and DAO business models reduce scarcity (and therefore cost) in search, bargaining and policing because these activities take place on chain and can be automated.

The argument for firms is now less strong.

THE CONCEPT OF THE CORPORATION

Another landmark paper in the history of the firm is also relevant to us. John Kay, a British economist, wrote a paper in 2017 titled 'The Concept of the Corporation' in which he set out the history of the theory of corporations.

Kay describes corporations as vehicles to solve principal-agent problems. This is immediately interesting to us because members of DAOs are both principals and agents in relation to different transactions. A governance token is used to exercise control; an ownership token is used to record ownership. In many projects, DAO members may (but will not be required to) hold both governance and ownership tokens.

Kay notes that what he calls Coase's "markets and hierarchies" theory of the firm became dominant among economists, overshadowing the work of Edith Penrose, who characterised corporations as social organisations. Penrose described a firm as having a "collection of capabilities". This phrase captures many groups and their

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relationships that come together to form DAOs.

While it is true that Penrose's characterisation is a close fit for how many DAOs would describe themselves, operationally they behave in the way described by those economists that followed Coase. Those economists saw corporations as empty shells existing only through their external relationships, defined by contract and subject to corporate law. Instead of contracts, DAOs exist through smart contracts and, where there is no legal wrapper, through nothing else.

As is often the case with crypto, opposite theories can both appear to be vindicated simultaneously.

THE POINT OF CRYPTO LAWYERS

All this leads to my concluding point. It is all very exciting; it is all very difficult; and more lawyers need to get involved.

The work of lawyers differs depending on the market cycles. Lawyers support core development work throughout the cycle. In a bull market, lawyers have token fundraising work; when a technical event (such as the Merge) occurs, lawyers advise how it affects the legal characterisation of existing projects; when there is a new token standard, (for example for NFTs) this may affect the analysis of intellectual property rights and revenue flows; in a bear market, liquidations and acquisitions are common.

To be a crypto lawyer requires an unusual set of capabilities:

- **to have an understanding of the technologies**: for example, projects build on different public blockchains or build their own proprietary blockchain; these work in different ways that affect the analysis of legal and regulatory issues;
- **to be able to understand the architecture of a project**: for example, the rights attaching to tokens (that are critical for determining if a token is a utility or a security, that is, inside or outside the UK regulatory perimeter) are often complex; as can be seen from the range of DAO structures noted above, clients are often looking for business model advice: a lawyer working on a Web3 project without understanding how it is built is like a real estate lawyer buying a building without doing a site visit;
- **to have an understanding of tokenomics**: the example set out above in the section "The Tao of a Dao" is a very simple model of the type of economics used in Web3 projects; to analyse the legal and regulatory characteristics of a project requires an ability to follow the much more complex real examples;
- **to be able to work within a context of some legal uncertainty**: as the work of the Law Commission of England and Wales and other bodies demonstrates, there is a degree of uncertainty with respect to the characterisation of crypto and digital assets and implementation of laws associated with that characterisation; there are therefore some special risk factors that lawyers take into account in their ways of working; crypto lawyers are therefore property (but not real property) lawyers with a good understanding of regulatory issues, corporate finance structures, commercial contracts and data and technology laws;
- **to have a good enough understanding of international rules on the topic**: Web3 projects are inherently international but jurisdictions are all crypto-friendly (or unfriendly) to different degrees at different times; English lawyers still advise on English law but with a familiarity with the latest understanding of foundational issues: for example the recent public communications of SEC Chairman Gary Gensler are relevant to any analysis of the level of decentralisation of a project and also to confirm the established market understanding of the difficulty of concluding that any token is not a security (under the US Howey test), the consequence of which is that many projects geo-block persons in the US;
- **to have access to specialist tax advice**: HMRC publishes regular updates and consultations on the taxation of cryptoassets; in addition, matters of international tax and the taxation of intellectual property rights apply to most projects;
- **to have access to risk management support**: this is in part in order to advise clients that may need support in relation to financial crime, chain analytics, establishing bank accounts and services for custodying digital assets, but also to enable external law firms to do appropriate diligence to support decisions on which potential clients to onboard;
- **to have access to technical support**: for example, in order to conduct smart contract audits which, broadly, involve a combination of technical and legal work to validate that a smart contract will perform as expected and with the intended legal effect;
- **to understand what the client is trying to do**: can you see the Tao of your client DAO?;
- **to know who your client is**: because, if a regulator is unsure who they are regulating (see on this point the current arguments in the US about Ooki DAO), it may be equally unclear if you are acting for the DAO, its members, its developers, its funders or tokenholders, or a combination of these – something you need to know …

while, of course, retaining the objectivity required to advise in the client's best interest and subject to professional rules.

The point of DAOs is to provide a suitable method of doing business in the new economies. Just as joint-stock companies were treated with suspicion when first established, so DAOs are unfamiliar and legally uncertain. The point of crypto lawyers is to become familiar with them and help resolve the uncertainty. ■

Further Reading:

- Decentralised Autonomous Organisations: unincorporated companies by another name? (2022) 3 JIBFL 147.
- Financial Crime Update (2020) 7 JIBFL 496.
- LexisPSL: Banking & Finance: Practice Note: Blockchain: the legal and regulatory issues.
- Laws and legal principles relating to blockchain and distributed ledger technologies: a taxonomy (2019) 5 JIBFL 307.