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Implied Organizations and Technological Governance

Shawn Bayern

IMPLIED ORGANIZATIONS AND TECHNOLOGICAL GOVERNANCE

SHAWN BAYERN*

ABSTRACT

Common law historically adapted creatively and gracefully to the emergence of new types of organizations. Today, statutory forms of organizations predominate. But statutory organizational forms may be ill-suited to govern the novel, loosely coupled, and rapidly changing organizations that can arise through distributed technological mechanisms. This Article suggests that the common law of implied organizations can be a fertile ground for legal responses to technological organizations and indeed may be important not just for regulating such organizations but for giving them important legal capabilities.

* Associate Dean for Academic Affairs and Larry & Joyce Professor, Florida State University College of Law. Thanks to the other symposium participants for helpful discussions.

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INTRODUCTION

Common law has developed significant experience with implied organizations—that is, with informal factual patterns of human activity that give rise to legal rights, duties, or other legal relationships for individuals and groups even though neither the individuals nor the groups have ever formally registered the existence of a legal organization.[1] The clearest examples of what I call implied organizations are general partnerships[2] and unincorporated nonprofit associations.[3] In both cases, a legal organization—often a legal *entity* with legal personhood under today's statutory law—can be created without any formal registration with the state and, in some cases, without any intent to create a legally recognized organization.[4]

Whereas the number and types of formal registered organizations have proliferated in the last few decades,[5] the development of new types of implied organizations has stagnated. That is, there has been little new effort to classify factual patterns of organizations as having significance under organizational law—the law that provides for the governance, internal affairs, and legal interfaces of

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1. *See, e.g.*, Smith & Edwards v. Golden Spike Little League, 577 P.2d 132, 134 (Utah 1978) (recognizing an implicit common law organization); Shortlidge v. Gutoski, 484 A.2d 1083, 1086 (N.H. 1984) ("Each member of an association, organized for profit, by virtue of his membership in the association is a partner of every other member of the association and is thereby jointly liable with those other members for the contract debts validly incurred in the name of the association.").

2. *See generally* REVISED UNIF. P'SHIP ACT (NAT'L CONF. OF COMM'RS ON UNIF. STATE L. 1997) [hereinafter RUPA (1997)] (defining general partnerships).

3. *See generally* REVISED UNIF. UNINCORPORATED NONPROFIT ASS'N ACT (NAT'L CONF. OF COMM'RS ON UNIF. STATE L. 2008) [hereinafter UUNAA] (defining unincorporated nonprofit associations).

4. *See, e.g.*, RUPA (1997) § 202 cmt. 1 ("[P]artnership is created by the association of persons whose intent is to carry on as co-owners a business for profit, regardless of their subjective intention to be 'partners.'").

5. For example, RUPA permits general-purposes limited liability partnerships (LLPs). *See* RUPA (1997) § 1001. The modern Uniform Limited Partnership Act provides for limited partnerships (LPs) and limited liability limited partnerships (LLLPs). *See* UNIF. LTD. P'SHIP ACT § 102(9), (11) (NAT'L CONF. OF COMM'RS ON UNIF. STATE L. 2001). Additionally, the Uniform Limited Liability Company Act provides for very flexible statutory limited liability companies (LLCs). *See generally* REVISED UNIF. LTD. LIAB. CO. ACT (NAT'L CONF. OF COMM'RS ON UNIF. STATE L. 2006) [hereinafter RULLCA].

organizations. But the development of new practical modes of human organizations, such as blockchains and other decentralized online economic communities, suggests at least the possibility that the common law might recognize their existence and attach legal relationships to them. Drawing from existing principles of organizational law in the United States, this Article explores what an incrementally developed common law of implied organizations for blockchains and similar novel forms of organizational governance might begin to look like.

Part I briefly lays out some background about organizational law and the factual types of human organizations that modern technological mechanisms, such as blockchains, make possible, and it distinguishes those organizations from more traditional factual arrangements such as the classical general partnership. Part II lays out several examples in which bottom-up legal responses to new types of human organizations are within the power of common law judges, and then it provides reasons that these responses are likely to be superior to courts' failure or refusal to recognize changes in factual organizational forms and technological development. Part II is normative, but its goal is exploratory rather than definite; its purpose is to spark ideas and support the continual generativity of the common law, not to anticipate particulars in detail or to lay out a specific regulatory framework. In other words, it is focused on basic tools, not a comprehensive legal response.

Part III discusses potential common law solutions to what is likely to remain one of the most difficult problems in the law's response to blockchains: the governance of "off-chain" governance mechanisms and the relationship between technological and human features of the governance of novel organizations. Though Part III draws from specifics of the law of closely held organizations, it, too, is explorative rather than definite: it is too early to commit to particular regulatory solutions. Still, my hope is that highlighting how the common law doctrines governing business organizations have been useful in the past will help show ways that organizational law can be relevant and adaptive in the future.

I. IMPLIED FACTUAL ORGANIZATIONS, PAST AND PRESENT

I use the term *organizational law* to refer generally to the law governing private organizations of any kind, including incorporated and unincorporated organizations set up for profit, not for profit, or in a manner ambivalent to profit.[6] As conceptual background, one clear division that organizational law can draw is between statutory and nonstatutory organizations; the trend has been toward statutory organizations[7] and toward codification of many details that were previously left to the common law.[8] A related conceptual division is between legal organizations that arise intentionally and explicitly and those that arise implicitly (and perhaps accidentally); for the purposes of this Article, an *explicit* organization involves formal registration with a legal jurisdiction[9] whereas an *implicit* organization does not.[10] The two categories cut across each other:

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6. Organizational law conventionally draws a distinction between for-profit and not-for-profit enterprises. *See generally, e.g.*, Henry B. Hansmann, *The Role of Nonprofit Enterprise*, 89 YALE L.J. 835 (1980). But as a basic matter of modern organizational law at the state level—that is, putting aside such matters as federal taxation—organizational statutes often do not care whether a particular entity is structured as a for-profit enterprise, a nonprofit, or anything else. *See, e.g.*, RULLCA § 104(b) ("A limited liability company may have any lawful purpose, regardless of whether for profit.").

7. *See supra* note 5.

8. *See* Donald J. Weidner, *LLC Default Rules Are Hazardous to Member Liquidity*, 76 BUS. LAW. 151, 154 (2020) ("On occasion, the [RUPA drafting committee] added default rules that reflected language that appeared in agreements drafted and negotiated by some of the sophisticated business counsel involved in the drafting process.... [Among other things,] the result was longer and more technical default rules.").

9. *See, e.g.*, RULLCA § 201 (requiring a "certificate of organization" to be filed with the state).

10. *See supra* note 4 and accompanying text. Implicit and explicit are matters of degree, not binary endpoints, and it is important to bear in mind that the law can be much more complex and adaptive than these academic categories or conceptual divisions suggest. For example, many states now support the notion of *series LLCs*, which permit an organizer to register a single explicit legal organization but then to create infinitely many implicit sub-organizations without formal or public registration. *See, e.g.*, DEL. CODE ANN. tit. 6, § 18-215 (2014). In other cases, related statutes can make explicit organizations even more explicit than they would otherwise be under organizational law itself; for example, the relatively new federal Corporate Transparency Act requires that some registered organizations declare the identities of their owners or controllers to a federal agency. Corporate Transparency Act of 2019, H.R. 2513, 116th Cong. (2019).

there are implicit statutory organizations,[11] explicit statutory organizations,[12] and implicit common law organizations.[13]

To be clear, a legal organization may exist even if no statute recognizes its particular form,[14] and one may exist even if the parties have not intended for it to exist.[15] This Article focuses on nonstatutory, implicit organizations. My argument is only that this type of organization may be helpful for courts and commentators to consider as a response to novel, decentralized modes of factual governance among humans (and among existing, conventional organizations). My argument is not that this type of organization should be the exclusive approach within organizational law to new modes of technological governance. For example, there are already explicit statutory organizations in the form of Vermont's "Blockchain-based Limited Liability Companies" (BBLLC)[16] or Wyoming's decentralized autonomous organization (DAO) statute.[17] The main question this Article aims to explore is how the legal system should respond to the presence, needs, potential rights, and potential obligations of novel, implicit (that is, legally informal and unregistered) decentralized communities.

The rest of this Part (1) lays out background on traditional organizations in order to distinguish them from novel modes of technological governance; (2) describes those new forms of governance, with some comments on the role of technology and the role of other factual characteristics of the organizations; and (3) draws attention to the special problems of implicit modern technology-mediated organizations, such as DAOs.

A. Traditional Organizations

Most traditional legal organizations are relatively simple and, under one familiar analysis, fall into two patterns. First, *closely held*

11. *See supra* note 4 and accompanying text.
12. *See supra* note 10 and accompanying text.
13. *See, e.g.*, Smith & Edwards v. Golden Spike Little League, 577 P.2d 132, 134 (Utah 1978).
14. *See id.*
15. *See supra* note 4 and accompanying text.
16. VT. STAT. ANN. tit. 11, § 4173 (2022).
17. WYO. STAT. ANN. § 17-31-104 (2022).

organizations involve a handful (or sometimes several handfuls) of people who act, to varying degrees, as managers or at least semi-knowledgeable owners.[18] The standard example of this type of entity is a family business.[19] The business may be large or small, but it has a handful of owners, most or all of whom probably know one another;[20] the factual and legal norms of governance are the norms of interpersonal relationships and individually reasonable expectations.[21] In these organizations, ownership is usually—though not exclusively—tightly associated with control and operation.[22] That is, the relatively small group of owners generally have some hand in the management and operation of the organization.[23]

Second, *publicly held organizations*, typically corporations, have a widely distributed group of shareholders who have the right to elect a board of directors, which then appoints and oversees the executive managers of the organization.[24] Ownership does not directly confer control, but there are usually formal democratic governance norms—some of which have been eroded in the past few decades[25]—under which owners may vote for or against those in charge.[26] To put it differently, shares confer a variety of formal

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18. *See, e.g.*, 1 F. HODGE O'NEAL & ROBERT B. THOMPSON, O'NEAL AND THOMPSON'S CLOSE CORPORATIONS AND LLCS: LAW AND PRACTICE (2020) (analyzing the legal rules appropriate to closely held corporations).

19. *See, e.g.*, *id.* § 1.6; Meiselman v. Meiselman, 307 S.E.2d 551 (N.C. 1983).

20. *See* 1 O'NEAL & THOMPSON, *supra* note 18, §§ 1.2, 1.3.

21. *See, e.g.*, *Meiselman*, 307 S.E.2d at 557 ("Th[e] characterization of close corporations as little more than 'incorporated partnerships' rests primarily on the fact that the 'relationship between the participants [in a close corporation], like that among partners, is one which requires close cooperation and a high degree of good faith and mutual respect.'" (second alteration in original) (quoting F. HODGE O'NEAL, CLOSE CORPORATIONS § 9.02 (1971))); Donahue v. Rodd Electrotype Co. of New Eng., Inc., 328 N.E.2d 505, 512 (Mass. 1975) ("[T]he close corporation bears striking resemblance to a partnership. Commentators and courts have noted that the close corporation is often little more than an 'incorporated' or 'chartered' partnership." (first citing Ripin v. Atl. Mercantile, 98 N.E. 855, 856 (N.Y. 1912); and then citing Clark v. Dodge, 199 N.E. 641, 643 (N.Y. 1936))).

22. *See* 1 O'NEAL & THOMPSON, *supra* note 18, § 9.2.

23. *See id.*

24. *See Donahue*, 328 N.E.2d at 511-17 (contrasting closely held corporations with public corporations).

25. *See generally, e.g.*, Lucian A. Bebchuk & Kobi Kastiel, *The Perils of Small-Minority Controllers*, 107 GEO. L.J. 1453 (2019) (discussing the rise of dual-class share structures that cement the right of minority shareholders to cement their own long-term control over corporations).

26. *E.g.*, MODEL BUS. CORP. ACT § 7.21 (AM. BAR ASS'N, amended 2020) (regulating the

rights that are usually very distant from the control and operation of the entity, if they are connected to control and operation at all.

Organizations (particularly public corporations) are often for profit, although precisely how and why are the subject of significant academic debate and the occasional court case.[27] In the general case, organizations may be nonprofit, for profit, or anything in between, such as "low-profit" organizations,[28] for-profit businesses with a social purpose or providing a public benefit,[29] and businesses that may legally be "for profit" but have arranged, as a matter of private agreement or interpersonal norm, to restrain their pursuit of profits.[30] Indeed, state limited liability company (LLC) statutes often take no particular interest in the economic or noneconomic goals of an organization, assuming they are legal.[31]

Though some privately held businesses may have many owners and may factually take on some characteristics of public organizations, these two types of organizations reflect two traditional paradigms of factual and legal organizational governance. Despite their differences, they have many features in common: operational management is centralized, and the group of managers is usually

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voting of shares in a corporation).

27. *See, e.g.*, eBay Domestic Holdings, Inc. v. Newmark, 16 A.3d 1, 34 (Del. Ch. 2010) ("Having chosen a for-profit corporate form, the craigslist directors are bound by the fiduciary duties and standards that accompany that form."); Dodge v. Ford Motor Co., 170 N.W. 668, 684 (Mich. 1919) ("[I]t is not within the lawful powers of a board of directors to shape and conduct the affairs of a corporation for the merely incidental benefit of shareholders and for the primary purpose of benefiting others, and no one will contend that, if the avowed purpose of the defendant directors was to sacrifice the interests of shareholders, it would not be the duty of the courts to interfere."); Lynn A. Stout, *Why We Should Stop Teaching* Dodge v. Ford, 3 VA. L. & BUS. REV. 163, 173 (2008) ("Advances in economic theory have made clear that shareholders generally are not, and probably cannot be, the sole residual claimants in firms.").

28. *See, e.g.*, J. William Callison & Allan W. Vestal, *The L3C Illusion: Why Low-Profit Limited Liability Companies Will Not Stimulate Socially Optimal Private Foundation Investment in Entrepreneurial Ventures*, 35 VT. L. REV. 273 (2010) (evaluating the low-profit limited liability company (L3C) form as several states attached L3C provisions to their LLC statutes following Vermont in 2008).

29. *See, e.g.*, FLA. STAT. § 607.501 (2022) (authorizing and laying out rules for "social purpose corporation[s]").

30. *See, e.g.*, FLA. STAT. § 607.601 (2022) (setting out the rules for "benefit corporation[s]"); *see also* Michael B. Dorff, *Why Public Benefit Corporations?*, 42 DEL. J. CORP. L. 77, 85 (2017) ("At this point, any statement about the future popularity of benefit corporations is highly speculative. Benefit corporation statutes are too new to judge their likely success.").

31. *See supra* note 6.

relatively small (even when elected by a large dispersed group);[32] management is in the hands of humans who act as fiduciaries;[33] the oversight of managers is vested in a group that is also usually relatively small;[34] and at least some interpersonal norms govern the managers.[35] An additional point to consider before proceeding is that while public general partnerships are not unheard of, all or at least the vast majority of public entities have been explicitly created by statute.[36] Accordingly, the only typical traditional examples of implicit organizations are those involving relatively few people who are relatively tightly connected to each other and to the organization—the traditional general partnership or unincorporated nonprofit association.[37]

B. Blockchains, Cryptographic Technology, and Technology Neutrality

Blockchains—and, it is worth saying at the outset, any other mechanisms for decentralized technological governance—potentially change the traditional picture that the previous Section painted. Before demonstrating those changes, it will be helpful to make a few

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32. *Compare* Meiselman v. Meiselman, 307 S.E.2d 551, 553-56 (N.C. 1983) (describing the structure of an enterprise owned by two brothers), *with* MODEL BUS. CORP. ACT § 8.03 (AM. BAR ASS'N, amended 2020) (providing for a board of directors made up of "one or more individuals," ordinarily a manageable group of people who meet regularly face-to-face).

33. *Compare* RUPA (1997) § 401 (laying out the duties of partners in general partnerships), *with* MODEL BUS. CORP. ACT §§ 8.30, 8.42 (laying out the duties of corporate directors and corporate officers, respectively).

34. *See* MODEL BUS. CORP. ACT § 8.03.

35. *See supra* notes 32-33.

36. *Cf.* Mohsen Manesh, *Legal Asymmetry and the End of Corporate Law*, 34 DEL. J. CORP. L. 465, 479-80 (2009).

37. But see Christine Hurt, *Extra Large Partnerships*, *in* FIRM GOVERNANCE: THE ANATOMY OF FIDUCIARY OBLIGATIONS IN BUSINESS 40, 40-41 (Arthur Laby & Jacob H. Russell eds., 2020), for a different perspective on this point—though one focused on the limited liability partnership (LLP) form, which, for the purposes of this Article, is an explicit organization because it requires registration. LLPs are essentially just general partnerships with a liability shield, and the existence of very large LLPs highlights that the organizational *form* of the general partnership is not limited to small organizations. *See id.* But LLPs are registered and normally have clear operating agreements, *see* UNIF. LTD. P'SHIP ACT § 201 (NAT'L CONF. OF COMM'RS ON UNIF. STATE L. 2001), so they are different from the implicit organizations that I discuss in this Article.

factual and technological points about modern technologies for decentralized governance.

First, simply as background, a blockchain is a technological mechanism to let distributed computers create an authoritative *sequence* of transactions without, as is commonly observed, any necessarily "trusted" centralized third party to coordinate timing.[38] It will be useful to describe blockchains in a little more detail than usual, both because they are widely misunderstood and because, in analyzing them legally, it is helpful to understand the precise technological contribution that they make.

The "blocks" in blockchains are simply groups of transactions.[39] Transactions themselves are not especially complicated: using modern cryptography, the holder of a digital asset can prove (purely as a matter of straightforward mathematics) that they know a secret associated with the asset without disclosing that secret.[40] In a digital economic system, that proof of knowledge can serve as a sort of prima facie evidence of ownership, and it permits the owner to send an authenticated message purporting to transfer the asset to someone else.[41] The notion of such a transfer gets off the ground because only one person—the putative owner—can digitally authenticate the transfer; only they know the secret associated with the asset, and their message proves this knowledge to the world without disclosing it.[42]

However, the problem with accepting such a message on a distributed computer network is that the owner of the same asset might well have recently transmitted a similar message to a different recipient halfway around the world. There is therefore no way for a recipient of a purported transfer to know that they are the

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38. *See* Shawn Bayern, *Of Bitcoins, Independently Wealthy Software, and the Zero-Member LLC*, 108 NW. U. L. REV. 1485, 1487-88 (2014).

39. *See* SATOSHI NAKAMOTO, BITCOIN: A PEER-TO-PEER ELECTRONIC CASH SYSTEM 2 (2008), http://bitcoin.org/bitcoin.pdf [https://perma.cc/5UEY-UFKW].

40. *See* BRUCE SCHNEIER, APPLIED CRYPTOGRAPHY: PROTOCOLS, ALGORITHMS, AND SOURCE CODE IN C 483-502 (2d ed. 1996) (describing algorithms for digital signatures using public-key cryptography).

41. *See id.*

42. All these capabilities are conferred by means of any of a variety of mathematical systems known as *public-key cryptosystems*; such a system depends on the existence of mathematical operations that are hard to reverse but easy to verify. See *id.* for technical background.

only recipient of such a transfer.[43] On a traditional centralized network, recipients could simply validate the transaction with a central transfer agent, monitor, broker, or the like; picture a centralized company that stores and validates gift card balances, such as Amazon.[44] To put it differently, fifteen years ago, before the advent of blockchains, the conventional wisdom was that without the ability to rely on a central party, recipients of digital assets could not confidently rely on a message purporting to transfer them.[45]

A blockchain solves this problem by providing rules that govern the admission of new groups (blocks) of transactions to an authoritative sequential record (the blockchain).[46] All participants know these rules and can verify if a new candidate block meets them.[47] Blocks are often expensive to produce; on a proof-of-work blockchain such as Bitcoin, computers randomly try to produce blocks until they meet the rules for their addition to the chain—for there is no way to know in advance whether a candidate block will meet the rules except to try it out.[48] (Trying it out is the "work" in a proof-of-work system.)[49] Transactions are not recognized until they are included in a valid block, which then everyone can inspect. Over a period of about an hour (in Bitcoin), all participating computers will reach a common understanding of which blocks are valid.[50] And because that consensus includes the *order* of the blocks, the original owner of bitcoins cannot purport to transmit them to two different people; only the first recorded transaction will be valid.[51] Recipients who have received an authenticated message purporting to transmit bitcoins to them can wait about an hour if they want to be sure that the bitcoins are now really theirs.[52]

I have given this description partly to demystify blockchains (which still retain, after a decade, an aura of mystique and

43. *See* NAKAMOTO, *supra* note 39, at 2.
44. *See* Bayern, *supra* note 38, at 1489-90.
45. *See generally* NAKAMOTO, *supra* note 39.
46. *See id.* at 2.
47. *See id.* at 3.
48. *See id.* at 3-4.
49. *See id.* at 3.
50. *See id.*
51. *See generally id.*
52. *See id.*

sometimes even reverence among nontechnical lawyers and policymakers) and partly to demonstrate that the technology was created, for Bitcoin, to solve a very particular problem. Blockchains are proposed for all sorts of applications, but the one problem they solve is the sequencing of transactions in a network without a centralized trusted party.[53] Decentralized but secure operations of many kinds—voting, escrow or the pledging of assets as security among small groups, and authentication of long-term ownership of digital assets—are all possible using forty-year-old technology that has nothing to do with blockchains.[54] If nothing else, making this point should help courts and regulators recognize that the law's response to decentralized governance ought to be technology neutral unless particular features of the technology have particular implications for factual and social practices or norms. For example, it makes little sense for Vermont to specifically recognize "Blockchain-based Limited Liability Companies"[55] for at least two reasons: first, as a policy matter, there is no reason to privilege blockchains over any other technologies; second, any database, system of records, or communication system can be cast in the *form* of a blockchain, making the statute's connection to a particular technology irrelevant and misleading.[56]

Many proposed applications of blockchains have little to do with open-ended decentralization. Some would use software resembling Bitcoin's blockchain but restrict its use to a few participants, essentially turning it into an overly complicated way to communicate within a small group.[57] Others use the notion of a "blockchain"

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53. *See id.* at 4.

54. See generally SCHNEIER, *supra* note 40, for a discussion of the technological tools that make this possible. I leave the design of real-world applications that use these tools as an exercise for the technologically inclined reader.

55. VT. STAT. ANN. tit. 11, § 4173 (2022).

56. *See* SHAWN BAYERN, AUTONOMOUS ORGANIZATIONS 13 (2021) ("[A]ny software-based decision-making scheme could be expressed as a blockchain even if it is not natively or internally structured as one."). As described further in the book:

> [I]t would not be difficult to produce a blockchain "shell" or "wrapper" around any other algorithm—for example, by having an existing algorithm be executed, confirmed, or otherwise recognized by a distributed system that produced a chain of blocks—and that should be sufficient for Vermont's statute.

Id. at 13 n.21.

57. *Cf.* Edmund Schuster, *Cloud Crypto Land*, 84 MOD. L. REV. 974, 994 (2021) (critiquing private, permissioned blockchains).

simply as a marketing-friendly description of classical software, such as databases or secure authentication. Some appear to appreciate blockchains for their ability to let parties create irrevocable records—that is, electronic records that they can issue but then not later modify secretly.[58] Again, all these uses do not really depend on blockchains; they can be achieved through much simpler, longstanding, conventional uses of cryptography and other technologies. For example, simple cryptographic signatures—again, a decades-old technology—make it impossible to deny or alter a previously announced, authenticated record (at least, as much as blockchains do).

To make this point more explicitly, a decentralized online community need not be formed through a distributed sequence of transactions stored in a blockchain, and, conversely, not every blockchain is meaningfully a distributed ledger that makes use of the specific contributions of blockchain technology. Some blockchains appear merely to be used for form's sake, as if a marketer is claiming, "We store your money in a safe," but the safe is left open and guarded by an armed officer so that any security provided by the arrangement comes from the officer rather than the safe.

The upshot of this discussion so far, for the purposes of this Article's thesis, is that it is not the technological features of blockchains alone that suggest any new mode of organizational regulation. In some ways, the use of particular technologies has been a red herring for policymakers, at least as regards the governance of the organizations that the technologies have enabled or promoted. What matters instead are the social features of these organizations. In determining the law's appropriate responses to novel organizational forms, more attention needs to be paid to the organizational structure of humans than the technology that is being used (although, of course, the technology needs to be understood in order to describe the organization properly). The next Section discusses the relevant features of organizations such as

58. *See, e.g.*, Ken Moon, *Blockchain and the Law—Irrevocable Record Systems and Smart Contracts*, LAWTALK (N.Z.), June 1, 2018, at 50, 50, https://issuu.com/nzlawsociety/docs/lawtalk-918?e=5224343/61926073 [https://perma.cc/GF3U-HLB2] ("Because blockchain stores data permanently and irreversibly, it may be used to record all manner of legal facts to provide legally irrefutable public registers.").

DAOs and other types of technology-mediated communities that cryptography and the modern internet make possible.

C. Implicit Modern Technological Organizations

As a quick notional example that may be useful to keep in mind throughout the remainder of the Article's discussion, a DAO or other blockchain-based organization could involve ten thousand individual participants who live around the world, each of whom has purchased a digital asset that is initially worth ten dollars and that confers some voting rights in the governance of the organization. The organization, which is likely at the moment to be implemented via a blockchain, has no centralized human or technological coordination, although, of course, particular humans originally used particular software to set it in motion.[59] Voting and economic payouts are achieved solely using distributed technological means.[60] The organization might have been set up for profit, not for profit, or anything in between. It is not registered as a legal organization with any legal jurisdiction. Its original technological governance may result in programmatic actions that are solely (in the first instance) technological—for example, based on the participants' votes, the release of funds or other digital assets that are themselves stored on a blockchain. Or in principle there could be an informal agreement, or something that purports to be a legally binding agreement in some legal jurisdiction, that attempts to permit the DAO to take action beyond the merely technological.

As this example suggests, novel features of DAOs and other new forms of technology-based organizations of which the law of organizational governance may need to take note are that they have the potential to be (1) very loosely coupled, (2) massively scaled, and (3) geographically distributed—all as matters of fact, not law. Because the law has not caught up, such organizations often have no particular legal identity at all. The result is that modern technology, including blockchains, has permitted private parties to create organizations that have several of the features of public

59. *See* Bayern, *supra* note 38, at 1488 (describing how Bitcoin was originally created by Satoshi Nakamoto with the purpose of creating a decentralized system).

60. *See id.*

companies: number of participants, loose coupling rather than interpersonal interaction between them, wide distribution of participants, and formalization of participation (so that rules rather than interpersonal norms govern their interactions).[61] But they lack—or at least can lack—an explicit entry into the legal system. That is, unlike nearly all public companies, they have made no formal legal-organizational election and so are, for the purposes of this Article's discussion, implicit organizations rather than explicit ones.

Moreover, because of the geographical distribution of the organizations—they can easily span different domestic and international jurisdictions, can have participants not necessarily subject directly to any such jurisdictions, and can exist largely in nonlocalized fashion, so that there may be no sensible way to ask "where" the "organization" is in the first place—they may raise new questions about choice of law, conflicts of laws, and how to proceed toward sensible organizational governance.[62] For example, they may not have a clear jurisdiction of organization, frustrating the internal-affairs doctrine in organizational law, which tries to identify a single jurisdiction that is responsible for internal governance questions that arise for legal organizations.[63]

Finally, these organizations can do away with conventional forms of human governance by giving power to an agreement, typically expressed as software, that can serve some or all of the roles that organizational managers traditionally have played.[64] For example, decisions about the control or strategic direction of an organization can be made through algorithms alone, rather than by a traditional meeting of a group of managers; decisions about authority, dissolution, distributions, and so on can be made similarly.[65] In the last

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61. *See* Carla L. Reyes, *(Un)Corporate Crypto-Governance*, 88 FORDHAM L. REV. 1875, 1881 (2020) ("Blockchain technology proponents often herald the technology as a tool for disrupting the corporate sphere and further democratizing society; however, more functional similarities exist between blockchains and corporations than are often acknowledged." (footnote omitted)).

62. *See, e.g.*, Emma K. Macfarlane, Note, *Strengthening Sanctions: Solutions to Curtail the Evasion of International Economic Sanctions Through the Use of Cryptocurrency*, 42 MICH. J. INT'L L. 199, 205 (2020) ("State-by-state regulation of cryptocurrencies has problematic implications for cross-border investigations and predictability in application.").

63. For a general discussion of the traditional internal-affairs doctrine that also applies it to technological organizations in particular, see BAYERN, *supra* note 56, at 110-15.

64. *Cf., e.g.*, *id.* at 18-45.

65. *Id.*

several decades, organizational law has clearly made operating agreements more powerful, at the expense of later owners, participants, or managers,[66] but the factual codification of rules in an algorithm that is at least partly beyond the control of the participants represents a factual acceleration of that trend—and one that is different from empowering shareholder agreements in corporations or the operating agreements of LLCs because it is self-enforcing, rather than simply a legal trend about the power of legal instruments to be enforced by judges.

To put that differently, organizations like DAOs may be able, through technology, to do away with centralized management altogether, substituting either preconceived rules or something analogous to direct democracy over the powers and whims of a centralized organizational manager or a small group of them.[67] They may do this in a self-enforcing way, so that technology itself binds the wealth of the organization to particular processes. A conventional organization such as an LLC could easily implement direct democracy by operating agreement;[68] such an arrangement, if it led to questions about legal rights and obligations, would involve a simple matter of interpreting and applying the LLC statutes and the individual LLC's operating agreement.[69] But a DAO is more complicated, from the law's perspective, because as an implicit organization, it has not necessarily explained to the law how the law should relate to it.[70]

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66. *Id.*; *see also* Shawn Bayern, *Are Autonomous Entities Possible?*, 114 NW. U. L. REV. ONLINE 23, 29-34 (2019), https://scholarlycommons.law.northwestern.edu/cgi/viewcontent.cgi?article=1270&context=nulr_online [https://perma.cc/VK88-L4EM] (discussing this trend in organizational law).

67. *See* WORLD ECON. F., DECENTRALIZED AUTONOMOUS ORGANIZATIONS: BEYOND THE HYPE 3 (2022).

68. BAYERN, *supra* note 56, at 76-116; *see also* RULLCA § 110(d) (laying out the flexibility of LLC operating agreements, which do not require boards of managers, et cetera); *cf.* MODEL BUS. CORP. ACT § 7.32(a)(1) (AM. L. INST. 2021) (permitting a shareholder agreement in a corporation that "eliminates the board of directors or restricts the discretion or powers of the board of directors," a structure that is otherwise normally required in the corporate form).

69. *See* Bayern, *supra* note 66, at 29-32.

70. I do not mean to suggest DAOs *must* be implicit. Indeed, much of *Autonomous Organizations* explains how to make autonomous organizations of any type explicit even in the absence of legal members of an LLC. *See* BAYERN, *supra* note 56, at 46-75.

As I suggested in the previous Section, these factual features of DAOs are what matter for my argument in this Article.[71] Their technological implementation is not what matters. As a simple example of that proposition, if two people create a simple DAO to form a for-profit business without making any formal organizational filing, they have created a general partnership under modern American partnership law.[72] I do not mean to suggest that most DAOs are general partnerships—most probably are not—but nothing about the use of a technology or label prevents the background case law or statutes from interpreting factual activity and trying to make sense of it.

Similarly, a group of people who set up a small technologically managed organization for a nonprofit end have created a relatively traditional unincorporated nonprofit association; they have simply done so by means of technology.[73] What is interesting from the perspective of the theory of organizational law is not the mere use of technology but the enablement, by technology or otherwise, of novel forms of human organization. The relevant innovation to which this Article aims to draw attention is an organization that is (1) legally implicit, (2) widely distributed, (3) massively scaled, and (4) nonlocalized.

The question is what to do about the needs, potential rights, and potential liabilities of such organizations. The next Part takes up that question.

II. COMMON LAW RESPONSES TO IMPLICIT ORGANIZATIONS

One possible response to the new forms of organizations described in the previous Part is simply to ignore them as a matter of organizational law, much in the way that organizational law ignores many other associations between people, such as friendships, mentorships,

71. *See supra* Part I.B.

72. *See* RUPA (1997) § 202(a) ("[T]he association of two or more persons to carry on as co-owners a business for profit forms a partnership, whether or not the persons intend to form a partnership.").

73. *See* UUNAA § 2(11) ("'Unincorporated nonprofit association' means an unincorporated organization ... joined under an agreement that is oral, in a record, or implied from conduct, for one or more common, nonprofit purposes.").

or educational courses. That is not obviously a terrible response to DAOs for any individual or even for a regulator.

To begin with, note that ignoring DAOs from the perspective of organizational law does not make them immune to all regulation, exempt from criminal laws, and so forth. DAOs and other uses of blockchains or similar technologies do not exist in a legal vacuum; if they are used in ways that cause tortious harm or if they are used to commit crimes, the law can already respond to the torts or crimes. At most, the decentralization enabled by technology, and some particular technological tools such as encryption, create an enforcement challenge. But that is nothing new; it is true, for example, of legal enforcement in the "dark web"[74] or against the owner of a mobile phone who has communicated with terrorists and refuses to unlock the phone.[75]

Moreover, ignorance by organizational law does not necessarily fail to protect individual rights with respect to decentralized organizations such as blockchains. For example, even without recognizing a DAO as a legal *organization*, property law can recognize the intangible personal property associated with ownership of digital assets that are important to the DAO (for example, because they confer governance or economic rights).[76] If such assets are property, the owners may be protected by the tort of conversion; benefit from criminal laws associated with theft; and (at least in theory) obtain restitution in the event they are extracted by duress, mislaid, or incorrectly transmitted.[77] Again, there could be enforce

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74. *See Taking on the Dark Web: Law Enforcement Experts ID Investigative Needs*, NAT'L INST. OF JUST. (June 15, 2020), https://nij.ojp.gov/topics/articles/taking-dark-web-law-enforcement-experts-id-investigative-needs [https://perma.cc/V23U-U32J] ("The dark web's anonymity not only encourages illegal activities, it keeps many law enforcement agencies largely unaware of its existence, even while their jurisdictions are impacted by online transactional crimes.").

75. *See* Robert Graham, *How Terrorists Use Encryption*, 9 CTC SENTINEL, June 2016, at 20, 20-25 (describing how terrorists use encryption on phones and computers and the challenges it poses to law enforcement officials).

76. *See* Shawn Bayern, *Dynamic Common Law and Technological Change: The Classification of Bitcoin*, 71 WASH. & LEE L. REV. ONLINE 22, 31 (2014), https://scholarlycommons.law.wlu.edu/cgi/viewcontent.cgi?article=1001&context=wlulr-online [https://perma.cc/6ULR-TU6V] ("As noted earlier, owning a bitcoin has something in common with owning a stock or a partnership interest; both are intangible personal property that can be valuable on their own without direct implication of further legal relationships.").

77. *See id.* at 31 n.25 (citing MODEL PENAL CODE § 223.0(6) (AM. L. INST. 2014)); Roee

ment problems in implementing these theories of legal recovery,[78] but the technological nature of the property does not pose a categorical or theoretical problem for the law.[79]

There is a plausible argument that the protections provided by criminal and property law regimes are sufficient and that otherwise it is too early to pass statutes or regulations to try to govern DAOs. Under that way of thinking, our experience with them is not great enough, the potential for innovation is too great to risk smothering, and so on.[80] I take no specific position as to the details of regulatory matters concerning blockchains and DAOs. My argument here, however, is that common law processes can—and probably should—take at least some basic notice of new factual forms of human organization.

To be clear, I have no single particular policy goal in saying that: my argument is not that DAO participants should have unlimited liability for obligations incurred by DAOs, for example, or that the organizers and maintainers of blockchains must have special legal duties to their participants. My principal observation is simply that the tools and processes of the common law of organizations can and probably should serve, at the very least, as a "glue" to achieve three very general pragmatic goals. First, they can enable DAOs and similar organizations to interact with the rest of the legal system, both as the holder of legal *rights* and as the responsible party for legal *obligations*, whatever those rights and obligations may turn out to be. Second, they can provide a value-creating structure that prevents the need for DAOs to inefficiently duplicate legal structures in areas in which the law poses no danger even to extreme skeptics of government. Third, they can give effect, in the event of otherwise irreconcilable disputes, to those reasonable expectations of DAO participants that the law can detect, within the parameters and consistently with the goals of whatever legal agreements or software arrangements the participants have adopted.

Sarel, *Property Rights in Cryptocurrencies: A Law and Economics Perspective*, 22 N.C. J.L. & TECH. 389, 419 (2021).

78. *See* Sarel, *supra* note 77, at 393.

79. *See* Bayern, *supra* note 76, at 30.

80. *See* Sarel, *supra* note 77, at 391.

In other words, there are reasons to recognize DAOs as legal organizations through common law processes, and the risks of doing so turn out to be very small and not inconsistent with the expectations of participants. And because DAOs may already accidentally fall under the ambit of existing organizational statutes that recognize implied organizations—such as the Revised Uniform Partnership Act (RUPA)[81] or the Uniform Unincorporated Nonprofit Association Act (UUNAA)[82]—it may be inevitable that courts will need to develop interstitial law to adapt those statutes to situations unforeseen when the regulatory concepts of those statutes were drafted. As the Supreme Court has stated:

> [The] appreciation of the broader role played by legislation in the development of the law reflects the practices of common-law courts from the most ancient times. As Professor Landis has said, "much of what is ordinarily regarded as 'common law' finds its source in legislative enactment." It has always been the duty of the common-law court to perceive the impact of major legislative innovations and to interweave the new legislative policies with the inherited body of common-law principles—many of them deriving from earlier legislative exertions.[83]

This Part proceeds in two ways. First, it briefly revisits the notion of traditional implied organizations to suggest the range of lessons we might learn from them. Second, it offers some examples for how the common law can provide useful and appropriate responses for and to organizations such as DAOs.

A. Lessons from Traditional Implied Organizations

As discussed in Part I, it is important to remember that traditional law has long recognized the existence of organizations, and the various rights and obligations associated with them, just

81. *See* RUPA (1997) § 202(a).

82. *See* UUNAA § 2(11).

83. Moragne v. States Marine Lines, Inc., 398 U.S. 375, 392 (1970) (citation omitted) (quoting Landis, *Statutes and the Sources of Law*, *in* HARVARD LEGAL ESSAYS 213, 214 (1934)).

because private parties have chosen to take private action.[84] Because of the rise of explicit statutory forms such as corporations and LLCs, the notion of implied organizations seems increasingly counterintuitive to nonspecialists, such as students, nonlawyers, and elected officials. But the notion is a well-established part of our law.

As the Uniform Partnership Act of 1914 put it, "A partnership is an association of two or more persons to carry on as co-owners a business for profit"[85]—without any necessary formalities—but the treatment of private activity (or "an association") as a legally significant organization predates statutes.[86] Indeed, it predates common law; as legal historian J.J. Henning wrote, "Partnership law is as old as commerce itself. Its history as a profit-sharing device can be traced from the ancient Near-Eastern civilizations to its present day position as one of the most important forms of business enterprise."[87] Professor Henning recognizes in Roman law not only "the basic concept of partnership as a consensual contract of the utmost good faith as well as the relationship constituted by it between the partners *inter se* are concerned"[88] but also "the liability

84. *See supra* Part I.

85. UNIF. P'SHIP ACT § 6(1) (amended 2013) (UNIF. L. COMM'N 1997).

86. *See, e.g.*, ANDREAS TELEVANTOS, CAPITALISM BEFORE CORPORATIONS: THE MORALITY OF BUSINESS ASSOCIATIONS AND THE ROOTS OF COMMERCIAL EQUITY AND LAW 16-17 (2020) ("Whereas a corporation has to be deliberately created, a partnership would come into existence automatically whenever joint traders acted as 'partners.' The first English partnership law treatise, written by the barrister William Watson, described a partnership in civilian terms, as 'a voluntary contract, between two or more persons, for joining together their money, goods, labour, and skill, or either or all of them, upon an agreement that the gain or loss shall be divided proportionally between them, and having for its object the advancement and protection of fair and open trade.'" (quoting WILLIAM WATSON, A TREATISE OF THE LAW OF PARTNERSHIP 1 (2d ed. London, J. Butterworth 1887))).

87. J.J. Henning, *The Mediaeval* Contractum Trinius *and the Law of Partnership*, 13 FUNDAMINA 33, 33 (2007).

88. *Id.*; *see also* TELEVANTOS, *supra* note 86, at 17 (noting that early English statements defining partnerships "seem to be indebted to contemporary civil law formulations," even if "not quite accurate"). Andreas Televantos observes the early English common law's sensitivity to different purposes for which the question of a partnership's existence might be evaluated: "It should be noted that many cases drew a distinction between a partnership as between the partners, and a partnership as between the partners and third parties. The latter did not involve running a business together and was not a true partnership" but involved only a concept that amounted to partnership by estoppel. *Id.* The point is that even early common law was able to apply different policies, rather than just definitions of concepts, to different legal questions.

... of partners to third parties for partnership obligations" and even "the entity theory of the legal nature of partnership."[89]

The common law's recognition of traditional implied partnerships enabled courts to apply a variety of rights and obligations to them. For example, there could be specific contractual duties among the partners because of their particular agreements,[90] general fiduciary duties among the partners because of their close relationship of trust,[91] and individual liability to third parties as a result of the partners' profit and loss sharing (and perhaps the reasonable expectations of the third parties).[92] These are the sorts of concepts lawyers think of when they think of the basic legal incidents associated with partnership law.

But there can also be lesser-known changes to partners' legal status that come about through common law processes. For example, *Carlen v. Drury*, an English case from 1812,[93] recognized quite a modern principle in treating a relatively large partnership's agreement as providing a means for alternative dispute resolution that the court would not interfere with if it were a sufficient forum for addressing the parties' rights:

> I agree with what has been urged for the Plaintiffs, that, if the Means of Redress, provided by the Parties themselves in the Articles, are not effectual, this Court will interfere. These Parties have however put themselves under the Controul [sic] of a Committee as to many Things of considerable Importance to their Interest. They seem to have been aware of the Inconvenience, arising from the Number of Proprietors; and, as it was material for them to guard against Disputes, so likely to be generated under this Order of Things, Managers are provided; and that this might not be insufficient, Two annual Meetings are to be held....
>
> ....

89. Henning, *supra* note 87, at 33.

90. This body of law was codified, and its modern version is in many of RUPA's default rules. *See* RUPA (1997) § 103 (laying out the limits of the partnership agreement).

91. *See id.* § 401 (codifying a modern projection of these rules).

92. *See, e.g.*, *id.* § 306.

93. (1812) 35 Eng. Rep. 61, 62-63; 1 V. & B. 155, 157-68 (Lord Eldon LC).

> ... I think I cannot now interfere: the Plaintiffs having a Remedy in their own Hands, to which they have not resorted: desiring to be understood, not to repudiate the Jurisdiction; but that I will not interfere, before the Parties have tried that Jurisdiction, which the Articles have themselves provided.[94]

I highlight these features of the common law's recognition of general partnerships not to suggest that any of them are necessarily appropriate to any particular DAOs but to suggest that they demonstrate the common law's flexibility in response to implied organizations. Historical common law tools can also provide a source of ideas for how the common law should respond to new forms of organizations. For example, fiduciary duties may not be appropriate in the widely distributed context of large public blockchains in which parties specifically avoid having a relationship of trust.[95] But the law could well recognize some DAO property as held by an organization, or it could treat a blockchain's technical procedures for a kind of simple dispute resolution as "effectual" and therefore decline to decide a dispute it would otherwise decide.[96] This is similar to the way modern tort law may well refrain (by means of recognizing "no duty" rules) from imposing negligence liability when an effective alternative forum exists, as in injuries in sports or those covered by administrative compensation schemes.[97]

We can draw a different type of lesson from the history of organizations, particularly implied organizations. Even when those organizations are regulated by statutes that have been formally passed by legislatures, and indeed even in express organizations and not just in implied organizations, organizational law has evolved to be very friendly toward implied terms—informal

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94. *Id.*

95. *Compare* Angela Walch, *In Code(rs) We Trust: Software Developers as Fiduciaries in Public Blockchains, in* REGULATING BLOCKCHAIN: TECHNO-SOCIAL AND LEGAL CHALLENGES 58, 58 (Philipp Hacker et al. eds., 2019) (arguing that "certain developers of public blockchains act as fiduciaries" and should be treated as such), *with* Reyes, *supra* note 61, at 1922 ("[E]ngaging in an open and transparent discussion about the appropriate level and nature of fiduciary duties in the blockchain governance context reveals the trade-offs inherent in every imposition of corporate fiduciary duties.").

96. *See Carlen*, 35 Eng. Rep. at 61; 1 V. & B. at 155.

97. *See* Stephen D. Sugarman, *Why No Duty?*, 61 DEPAUL L. REV. 669, 671-75 (2012) ("One justification for finding that no duty exists is that the victim who turns to tort law is looking in the wrong place for a remedy.").

agreements among business parties, oral terms rather than written terms, and so on.[98] For example, the 2014 version of RUPA defines a "[p]artnership agreement" as comprising "the agreement, whether or not referred to as a partnership agreement and whether oral, implied, in a record, or in any combination thereof, of all the partners of a partnership."[99] Even the modern Revised Uniform LLC Act, which applies only to explicitly registered organizations, treats agreements as part of LLC operating agreements "whether or not [they are] referred to as an operating agreement" and "whether oral, implied, in a record, or in any combination thereof."[100] Contrary to what may be trends toward textualism in other spheres,[101] it is important to recognize that in businesses and other complex relationships among private parties—which can be extremely context sensitive and fact intensive, and which can involve a great deal of control by one private party over another party's economic value[102]—there is no reason to assume important business terms are formalized, written down, or even explicitly articulated among the parties.[103] And there is no reason to avoid enforcing such terms even in formal contexts; parties in larger or more formal organizations who draft agreements with the advice of lawyers can always disclaim them if they want.

98. *See infra* notes 99-100 and accompanying text.

99. RUPA (amended 2013) (1997) § 102(12). The statute's definition limits the scope of the agreement to matters concerning "relations among the partners as partners and between the partners and the partnership," *id.* § 105(a)(1), "the business of the partnership and the conduct of that business," *id.* § 105(a)(2), and "the means and conditions for amending the partnership agreement," *id.* § 105(a)(3). As a substantive matter, the definition is only a small change—essentially just a minor clarification of details—from that of the 1997 version of RUPA, which read simply, "'Partnership agreement' means the agreement, whether written, oral, or implied, among the partners concerning the partnership, including amendments to the partnership agreement." RUPA (1997) § 101(7).

100. RULLCA § 102(13).

101. Harvard Law School, *The 2015 Scalia Lecture: A Dialogue with Justice Elena Kagan on the Reading of Statutes*, YOUTUBE (Nov. 25, 2015), https://www.youtube.com/watch?v=dpEtszFT0Tg [https://perma.cc/4L8H-42PV] ("I think we're all textualists now in a way that was just not remotely true when Justice Scalia joined the bench.").

102. *See* Bayern, *supra* note 66, at 47.

103. *See, e.g.*, RUPA (1997) § 101(7); RULLCA § 102(13) (recognizing that the agreements that govern organizations may be oral and implied).

B. Some Possibilities of the Common Law in Addressing Implied Technological Organizations

As discussed briefly at the start of this Part, organizational law is not the only way for the law to respond to cryptocurrencies, blockchains, or decentralized organizations; for example, such technologies might be the source of property rights in new kinds of property.[104] This Section suggests, however, that there are reasons for the common law to address implied technological organizations as such.

Common law, rather than administrative or statutory law, may be ideally suited to provide a response in organizational law for at least three reasons. First, as discussed above, the law of organizations has been shown by experience to be deeply fact and context sensitive.[105] Business relationships are too varied and complex to be easily predicted in advance or easily reduced to formulas; this is why, for example, the courts of equity have had such a significant role to play in organizational law.[106] Second, common law is itself decentralized, especially in the United States with its many jurisdictions,[107] and it may be appropriate for there to be a ground-up, case-by-case approach that tentatively applies different principles in response to new factual problems in decentralized organizations—rather than attempts at comprehensive, top-down, centralized legislation.[108] Indeed, responses by the common law rather than by elected officials or administrative agencies may well seem more legitimate to certain groups of people, such as the early participants in blockchains, who are suspicious of "government";[109] the courts enforce contracts, including implied contracts, without what some may consider to be the more heavy-handed regulation imposed by statutes.[110] Third, the common law does not require the potentially

104. *See* Bayern, *supra* note 76, at 31.

105. *See* Bayern, *supra* note 66, at 42, 47.

106. *See generally* Thomas O. Main, *Traditional Equity and Contemporary Procedure*, 78 WASH. L. REV. 429, 441-43 (2003).

107. *See* Frank B. Cross, *Identifying the Virtues of the Common Law*, 15 SUP. CT. ECON. REV. 21, 39 (2007).

108. *See id.* at 25.

109. *See* Reyes, *supra* note 61, at 1878, 1892.

110. *See, e.g.*, RESTATEMENT (SECOND) OF CONTS. § 4 cmt. a (AM. L. INST. 1981) ("Contracts are often spoken of as express or implied. The distinction involves, however, no difference in

slow, coordinated process of legislation to respond in advance to technological innovations.[111]

The rest of this Section lays out a series of tools, grounded in existing common law, that courts may use in response to the needs of decentralized implied technological organizations.

1. Legal Personhood for Implicit Organizations

Legal personhood—typically called *legal personality* by lawyers outside the United States—is, for the purposes of my discussion here, the ability for some factual system or process to have *any* legal rights or obligations in the private law.[112] In other words, a legal person can interface with the law in some way in its own right—being a subject or object of it—rather than simply affecting the legal rights of other persons.[113] A criminal conspiracy is not a legal person, even though the law takes notice of it. A general partnership is a legal person because it can make contracts, serve as a principal under agency law, open a bank account, and so on.[114] As I have put it previously, "[a] more formal definition that conveys a similar meaning is that a legal person ... is anything to which the law can ascribe any Hohfeldian jural relation, such as a right, duty, or power."[115] And as I added, "not all subjects of personhood need to have the same collection of rights, powers, etc."[116]

Because debates about American constitutional law in recent years have politicized the notion of legal personhood in a variety of

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legal effect, but lies merely in the mode of manifesting assent."); Gociman v. Loyola Univ. of Chi., 41 F.4th 873, 883 (7th Cir. 2022) (demonstrating the court's power to enforce contracts "either express or implied-in-fact" in Illinois), *reh'g denied*, No. 21-1304, 2022 WL 16954353 (7th Cir. Nov. 15, 2022).

111. *See generally* Lawrence J. Trautman, *Bitcoin, Virtual Currencies, and the Struggle of Law and Regulation to Keep Pace*, 102 MARQ. L. REV. 447 (2018) (discussing the struggle of lawmakers to adjust to innovation and respond quickly to "keep pace with rapid technological developments"); Edward H. Cooper, *Aggregation and Settlement of Mass Torts*, 148 U. PA. L. REV. 1943, 1944 (2000).

112. *See generally Legal Person*, LEGAL INFO. INST., https://www.law.cornell.edu/wex/legal_person [https://perma.cc/N3GQ-285R].

113. *See id.*

114. *See* RUPA (1997) § 201.

115. BAYERN, *supra* note 56, at 2 n.2 (citing Wesley N. Hohfeld, *Fundamental Legal Conceptions as Applied in Judicial Reasoning*, 26 YALE L.J. 710 (1917)).

116. *Id.*

related but distinct contexts (for example, the ability for corporations to give political donations), it is important to emphasize that my argument here is not about such political rights but instead the basic rights of the private law. Again, as I have described previously:

> My use of the notion of legal personhood matches its understanding in the private law. Importantly, in this context it is a neutral term with respect to many broader political rights. Recently, at least within American political discussion, a broader concept of legal personhood has become politically and rhetorically contentious; for example, the term arises in debates over whether corporate entities have constitutional rights to freedom of speech or to participation in the electoral process. This [discussion] avoids that particular political debate; private-law personhood is not logically tied to constitutional protections—any more than it is tied, for example, to the right of two natural persons to marry—and this book takes no position concerning the scope of American or other countries' constitutional rights.[117]

My principal argument in this Section is that the common law should recognize many implied technological organizations, including many DAOs or other decentralized organizations, and possibly including many blockchains, in their own right, as legal persons for at least some purposes.

This recognition likely is already the legal status quo, purely as a descriptive matter, by statute for any informal organization that would fall under the ambit of RUPA[118] or the modern version of the UUNAA.[119] RUPA bestows implicit for-profit organizations with legal personality,[120] as does the modern version of the UUNAA for implied not-for-profit organizations, although the latter's formulation is a bit odd in overstating the matter: "An unincorporated nonprofit association has the same powers as an individual to do all things necessary or convenient to carry on its purposes."[121] Surely

117. *Id.* at 47 (footnotes omitted).
118. *See* RUPA (1997) § 202(a).
119. *See* UUNAA § 2(8).
120. RUPA (1997) § 201.
121. UUNAA § 5(c); *see also id.* § 5(a) ("An unincorporated nonprofit association is a legal

nobody would think that an unincorporated nonprofit association can vote in state or federal elections, get married, and so on, even if "convenient" for the organization's purposes.[122] Thus, "same powers as an individual" is an unfortunately general phrasing.[123] It has been improved upon in more recent uniform statutes; for example, the Revised Uniform Limited Liability Company Act (RULLCA) confers on LLCs "the capacity to sue and be sued in its own name and the power to do all things necessary or convenient to carry on its activities."[124] That too is a notably broad and general formulation. It would probably have been more acceptable to formalists for organizational statutes to outline a narrow list of the specific powers or classes of powers that organizations have. Identifying the power to "sue and be sued in its own name" is an example of one such power, but the statutes' evident reluctance to provide a list—and the difficulty of doing so—suggests that here, informal lists and concepts have served private parties, the business community, and courts well enough.[125] It also suggests the role the open-ended common law retains in making sense of relationships within and involving organizations.

In any event, the informal "association of two or more persons to carry on as co-owners a business for profit forms a partnership, whether or not the persons intend to form a partnership";[126] this partnership is a legal person. The creation of an informal association that is *not* for profit has a similar effect under the UUNAA.[127] RUPA is statutory law in the vast majority of U.S. jurisdictions[128] whereas the UUNAA is the statutory law in several.[129]

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entity distinct from its members and managers.").

122. *Id.* § 5(c).

123. *See id.*

124. RULLCA § 105.

125. *Id.*

126. RUPA § 202(a).

127. *See* UUNAA §§ 2(8), 5.

128. *See Partnership Act*, UNIF. L. COMM'N (1997), https://www.uniformlaws.org/committees/community-home?CommunityKey=52456941-7883-47a5-91b6-d2f086d0bb44[https://perma.cc/4HEH-8RNK] (reporting forty-five enactments as of September 2022).

129. *See Unincorporated Nonprofit Association Act*, UNIF. L. COMM'N (2008), https://www.uniformlaws.org/committees/community-home?CommunityKey=40227d3a-8b5d-47c2-8cd0-b0ec12da97f9 [https://perma.cc/6P3D-LN2M] (reporting six enactments as of September 2022).

The statutory conferral of legal personhood on implied organizations does not preclude courts from making a similar conferral themselves, and it is hard to think of any reason in doctrine or policy why courts should not be able to do so. Recognizing, for example, a DAO or some other blockchain-based community as a legal person for the purposes of making a contract or filing a lawsuit—even if it is not the sort of organization covered by RUPA or the UUNAA—requires no significant policy shift or unusual exercise of powers for courts; courts would simply recognize that a DAO can make a contract, serve as a principal or an agent for making contracts, own property, and so on. Courts have been institutionally competent to make similar types of determinations under organizational statutes such as RUPA and the UUNAA,[130] and they have also done so in entirely unrelated contexts.[131] It is also possible to imagine a court enforcing a contract in favor of a DAO without making any grand determination about the personhood of the DAO and thus recognizing its personhood incidentally or implicitly.

Why is legal personhood through common law important? For one thing, it is a predicate—or at least a convenient basis—for some of the other rights and obligations that I suggest in later Subsections that courts recognize.[132] It also may be a necessary—or at least a convenient—concept to aid the common law in serving as an interstitial "glue," connecting novel organizations to existing legal structures, such as lawsuits or contracts or property law. Much of the need for this glue is not "regulatory" in the ordinary sense: it is not to limit the activity of the DAOs. For example, perhaps the law needs to imply a right *to* or *in favor of* a blockchain-based community so that the organization, or one of its members, may use the law to recover damages against a third-party wrongdoer, as I discuss in more detail below.[133]

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130. *See, e.g.*, MT Falkin Invs., L.L.C. v. Chisholm Trail Elks Lodge No. 2659, 400 S.W.3d 658, 661 (Tex. Ct. App. 2013) (determining whether an association is an unincorporated nonprofit association subject to the Texas Uniform Unincorporated Nonprofit Association Act).

131. *E.g.*, Wye Oak Tech., Inc. v. Republic of Iraq, 666 F.3d 205, 213 (4th Cir. 2011) (determining, using a substantive and context-rich analysis, whether a foreign nation and its ministry of defense were "legally separate persons" for various statutory purposes).

132. *See infra* Parts II.B.2-4.

133. *See infra* Part II.B.4.

In any event, the potential need for common law recognition arises because RUPA and the UUNAA do not have blockchain-based organizations in mind; not all decentralized organizations involve two or more people acting as co-owners or co-operators because the arrangements among the parties may be more passive, more loosely coupled, harder for the law to determine than those that arise under conventional operating agreements or contracts, and more distributed (and involving parties in more distinct jurisdictions).[134] It would be unfortunate to need to wait for a new statute to be adopted everywhere before recognizing any legal relationships involving entities that fall outside the existing statutes.

2. Common Law Derivative Claims

Before discussing specific possible substantive legal claims in more detail, one possible procedural innovation in common law may be useful to consider applying to DAOs. In organizational law, a *derivative claim* is one brought by a participant in an organization who otherwise individually does not have the power to represent the organization but believes the organization is not pursuing a claim that would benefit the organization—and therefore, usually, the participant indirectly.[135] Most derivative claims are authorized (and, today, governed in quite specific detail) by statute,[136] but at least in some common law jurisdictions they have also developed through common law processes.[137]

Common law judges should consider the potential advantages of nonstatutory derivative lawsuits in the context of DAOs or other implied decentralized technological organizations. The motivations

134. *See* WORLD ECON. F., *supra* note 67, at 5-6.

135. *See* John W. Welch, *Shareholder Individual and Derivative Actions: Underlying Rationales and the Closely Held Corporation,* 9 J. CORP. L. 147, 154-55, 161 (1984); *see also Shareholder Derivative Suit*, LEGAL INFO. INST., https://www.law.cornell.edu/wex/shareholder_derivative_suit [https://perma.cc/C32A-LRLA].

136. *E.g.*, RULLCA §§ 902-05 (providing for derivative lawsuits in an LLC by "a member" as long as particular procedural preconditions are met, and also letting an LLC adopt a "special litigation committee" in response to a derivative lawsuit as a sort of ex post agreement for binding arbitration subject to court oversight).

137. *E.g.*, Universal Project Mgmt. Servs. Ltd. v. Fort Gilkicker Ltd., [2013] EWHC (Ch) 348 (Eng.) ("Prior to the coming into force of the Companies Act 2006, derivative actions relating to companies were creatures of the common law.").

for such lawsuits may be different from those of traditional derivative lawsuits. In a public corporation or conventional LLC, for example, a derivative lawsuit might be brought by a shareholder or member in an organization in which the managers, because of a conflict of interest, refuse to file a claim against themselves for the breach of their own fiduciary duties.[138] In a DAO, the motivation for a derivative lawsuit may instead be that there is no other plausible way for the DAO to vindicate a particular legal right because of a collective-action problem or the inability for the DAO to adapt, by its own formal terms, to an unforeseen wrong that was committed against it by a third party. It would be appropriate for common law judges to entertain the possibility that a participant in a DAO file a claim asking the court for relief in favor of the DAO as against a third party. And it would be shortsighted and inappropriately formalistic for courts to reject such claims out of hand on rationales such as the absence of an existing conventional cause of action for the DAO, lack of standing, or the like, particularly if there is no other plausible avenue of relief for a decentralized community that has been wronged in some way. That sort of formalistic rejection imposes an unrealistic burden on every informal organization to conceive of the possibility of legal wrongs against it in advance and provide for a way to file legally organized claims. Just because an implied technological organization does not foresee a claim does not mean that the claim should not go forward—perhaps years after the organization's founding.

The next two Subsections give examples of substantive rights that may help demonstrate the potential application of this kind of derivative litigation.

3. Contract Claims by Implied Organizations

Suppose a DAO is set up to collect contributions to purchase a piece of memorabilia and then transfer it to a museum.[139] The DAO

138. *See* Dorff, *supra* note 30, at 100.

139. *Cf.* Olga Kharif, *Crypto Crowdfunding Goes Mainstream with ConstitutionDAO Bid*, BLOOMBERG (Nov. 20, 2021, 9:00 AM), https://www.bloomberg.com/news/articles/2021-11-20/crypto-crowdfunding-goes-mainstream-with-constitutiondao-bid [https://perma.cc/4Q2N-MZ2R] (explaining a DAO formed to "[mount] a crowdfunding-like campaign to buy a rare copy of the U.S. Constitution").

is set up for that purpose alone (some have started calling such an organization a *single-purpose* DAO, highlighting perhaps a somewhat new phenomenon in organizational law).[140] It succeeds, acquires the memorabilia, and transfers it to a museum under a contract that was envisioned when the DAO began. The museum, under the contract, has the obligation to maintain the memorabilia according to particular standards, but some original participants in the DAO later come to believe that the museum is violating the terms of the agreement. If there is any concern at this stage in the construction of this example that contracting itself is problematic because the DAO may not be a legal person ex ante, it may help to imagine the contract as unilateral: the museum posts terms under which it is willing to accept the memorabilia, and then the DAO happens to be the group that meets those terms.[141]

For the DAO to sue the museum in its own right, the DAO must be a legal person (purely as a definitional matter).[142] For one of the participants to sue on behalf of the DAO, that person must have either been a party to the contract, a third-party beneficiary of the contract, an authorized agent of the DAO (which would ordinarily still require that the DAO be a legal person), or something new, such as a common law derivative claimant on behalf of the DAO (as discussed in the previous Subsection).[143]

If the law permits the DAO to sue the museum only if it has properly set up the right sort of legal entity to "contain" the operation of the DAO—for example, a limited partnership or LLC whose operating agreement gives effects to the terms of the DAO, much in the way I have outlined in prior work[144]—then the law may be imposing a significant trap for the unwary. That is, the law

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140. *See* WORLD ECON. F., *supra* note 67, at 7. Conventional partnerships can exist for a "particular undertaking," RUPA (1997) § 101(8), but in the conventional business world the undertaking of a general partnership was not ordinarily a quick single economic transaction but rather something such as the construction of property on land; still, the difference may not be that great between a partnership for an undertaking and a single-purpose DAO.

141. *Cf.* RESTATEMENT (SECOND) OF CONTS. § 30 (AM. L. INST. 1981) (discussing offers that can be accepted by an act). As an analogy, imagine a decentralized organization that uses its funds to investigate crimes and then successfully responds to the posting of a reward for information about a criminal.

142. *See supra* Part II.B.1.

143. *See supra* Part II.B.1.

144. BAYERN, *supra* note 56, at 46-75.

would be privileging well-advised DAOs that have made purely formal legal arrangements over those that have not. Perhaps there is some reason to do that—maybe offering formal registration serves as a tradeoff in which an organization alerts the legal system of its presence and operations in exchange for some legal benefits—but it can lead to harsh consequences, such as forfeitures, that the common law ordinarily tries to avoid.[145] Put differently, it would be both morally and instrumentally unsatisfactory to say that the contract the museum made is unenforceable on purely formal grounds because of what amounts to a technicality.

Instead, the law can permit the DAO to sue. If the DAO retains any formal decision-making structure, the law can honor decisions made through that structure. If there is any ambiguity about the DAO's decision-making structures, the law faces an evaluative or interpretive question that may be complex or may be a close question, but common law courts are well suited for, and have significant experience with, that type of evaluative or interpretive question;[146] it is essentially the same kind of question they ask every time they determine whether two parties have accidentally formed a general partnership, which is probably the single most litigated question in all of business law in the United States.[147] In other words, a court can decide after the fact whether the DAO has properly chosen to sue the museum.

If that process fails or is unavailable—maybe the DAO has functionally dissolved, or maybe courts cannot plausibly recognize any formal decision-making structures implemented through technology because too much time has passed or the technological structures do not suit the unpredictable factual situation that has developed—courts can then use the derivative-litigation mechanism discussed above to prevent a forfeiture.[148] In doing so, the law faces

145. *See, e.g.*, O'Morrow v. Borad, 167 P.2d 483, 487 (Cal. 1946) ("Forfeitures, however, are not favored; hence a contract, and conditions in a contract, will if possible be construed to avoid forfeiture.").

146. *See, e.g.*, Vulcan Golf, LLC v. Google Inc., 552 F. Supp. 2d 752, 784 (N.D. Ill. 2008) (determining liability for an "enterprise" under 18 U.S.C. § 1961(4) requires "some type of organizational structure" (quoting Stachon v. United Consumers Club, Inc., 229 F.3d 673, 675 (7th Cir. 2000))).

147. *See* Shawn Bayern, *Three Problems (and Two Solutions) in the Law of Partnership Formation*, 49 U. MICH. J.L. REFORM 605, 605 n.1 (2016).

148. *See O'Morrow*, 167 P.2d at 487.

what are again quite familiar choices: for example, a court could ask whether on balance it is in the public interest for the suit to proceed, whether the costs of error outweigh the costs of forfeiture, and so on. These are traditional questions for a court of equity.[149] Note that under state law, which would (in the U.S. legal system) govern nearly all private-law claims involving DAOs, there are usually no formalistic problems of "standing" under the specific, convoluted structure of the federal courts' notion of Article III standing.[150]

4. Tortious Interference with Blockchain

A similar type of argument as in the previous Subsection applies even without a prior contractual context. For example, consider a case in which a malicious third party hacks a node in, or the general mechanism of, a blockchain-based organization.[151] Maybe the goal is simply disruption of service through a *denial-of-service* attack.[152] For example, maybe an attacker uses illicit means to temporarily prevent blocks from being added to a blockchain, introduces malicious code into software that many participants are likely to download, or takes advantage of a network-accessible vulnerability in the client software that participants in a blockchain frequently use.[153]

In financial settings, a denial-of-service attack can have significant consequences apart from the direct loss of value from temporary disruption. For example, in a market environment, disabling a technological system at a crucial moment can cause prices of

149. *See, e.g.*, Walgreen Co. v. Sara Creek Prop. Co., 966 F.2d 273, 276 (7th Cir. 1992) (weighing the costs of an injunction against its benefits); *see also* Gene R. Shreve, *Federal Injunctions and the Public Interest*, 51 GEO. WASH. L. REV. 382, 384-86 (1983).

150. *See, e.g.*, N.Y. State Club Ass'n v. City of New York, 487 U.S. 1, 8 n.2 (1988) ("the special limitations that Article III of the Constitution imposes on the jurisdiction of the federal courts are not binding on the state courts" even in cases in which they address federal questions (citing Pennell v. City of San Jose, 485 U.S. 1, 8 (1988))).

151. *See, e.g.*, Mike Orcutt, *Once Hailed as Unhackable, Blockchains Are Now Getting Hacked*, MIT TECH. REV. (Feb. 19, 2019), https://www.technologyreview.com/2019/02/19/239592/once-hailed-as-unhackable-blockchains-are-now-getting-hacked/ [https://perma.cc/4LAJ-2KFP] ("Blockchains are particularly attractive to thieves because fraudulent transactions can't be reversed as they often can be in the traditional financial system.").

152. *Understanding Denial-of-Service Attacks*, CYBERSEC. & INFRASTRUCTURE SEC. AGENCY (Oct. 28, 2022), https://www.cisa.gov/uscert/ncas/tips/ST04-015 [https://perma.cc/ A354-TJN9].

153. *See id.*

assets associated with the technological system to fall, and the attack may well have bet on that specific economic outcome. Attacks could also operate directly against the value of a blockchain—to divert assets in ways that the technological system allows but which the organizers or participants did not expect.[154] Similarly, attacks could be against the governance structure of a DAO or any similar organization—for example, to seize more votes than were envisioned for a particular kind of participant.[155]

Many of these types of attacks raise difficult substantive questions. Particularly when an attack uses the existing technological means of a blockchain in order to achieve the attacker's goal, there may be vigorous and ill-defined disputes as to whether an attack has even taken place or whether, instead, the use of the technological means was legitimate and simply unexpected because of its creativity.[156]

There is no one-size-fits-all solution to this kind of problem. One possible view, which was commonplace in the early days of blockchains but has faded among all but the most formalistic parties, is a sort of extreme technological analogue of laissez-faire. On this approach, all participants in a system of technological governance necessarily adopt the rules and limits of the technological system. To those who think this way, there is no such thing as a "wrong" by means of technological implementation alone; if I win a vote because I am more sophisticated in the technological operating of the voting procedure than my opponents, I have won the vote through legitimate means. If I convince a software network to transmit a digital asset (and have not done so by extracting value at gunpoint or something similar), the transmission of that asset is legitimate merely because of the fact of its transmission.

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154. *See, e.g.*, Mike Dalton, *Build Finance DAO Suffers Governance Takeover Attack*, CRYPTO BRIEFING (Feb. 15, 2022), https://cryptobriefing.com/build-finance-dao-suffers-governance-takeover-attack/ [https://perma.cc/4CLB-2NEP].

155. *See id.*

156. *See, e.g.*, Christopher Beam, *The Math Prodigy Whose Hack Upended DeFi Won't Give Back His Millions*, BLOOMBERG BUSINESSWEEK (May 19, 2022, 12:01 AM), https://www.bloomberg.com/news/features/2022-05-19/crypto-platform-hack-rocks-blockchain-community [https://perma.cc/NWB8-2VU3] (discussing such a dispute where the attacker claimed that "[n]othing he did 'involves getting access to a system [he] was not allowed access into'").

This view is not internally inconsistent or impossible to accept, although it interacts in complicated ways with extratechnological rights and duties. For example, it was impossible to describe the situation above without at least adverting to the possibility of duress, and there are similar possibilities that would require a remedy, such as fraud or invasions of privacy. But this view is unlikely to match most modern participants' expectations, particularly if those participants are not technological specialists, promotors, or ideologues but simply consumers. And it is likely to have very significant costs that most people do not want to incur.

In any event, even on such a view—and certainly on a view that is more open to conventional moral and legal responsibilities that are not expressed in technological rules—there are many potential "wrongs" that a blockchain or an organization based on one might suffer that may deserve legal recognition. Maybe someone literally explodes a bomb in several important data centers; in a genuinely and widely decentralized system, this would probably not matter to the operation of the technological system, but full and wide decentralization is, in fact, elusive.[157] The assets on a blockchain or the governance process of a blockchain-based organization could be disrupted as the result of such an attack.[158] Giving the implied technological organization the ability to sue in its own right, or someone who was affected by the attack to sue as a derivative claimant, are legally plausible responses.[159] The details will, of course, need to wait to be filled in by the form that particular wrongs might take. They are very difficult to specify in advance; as the discussion above suggested, the social norms and reasonable expectations even just among participants in blockchains has probably changed significantly since the early days of Bitcoin.

This brief outline of possible substantive legal responses to new modes of governance is not, of course, meant to be exhaustive, and the law could entertain many other substantive rights and obligations. For example, the common law could grant rights to the books

157. *See* WORLD ECON. F., *supra* note 67, at 8 ("Even when engaging in decentralized governance, DAOs have experienced plutocracy, vote buying, manipulation and co-optation, as well as issues of low voter turnout and voter fatigue.").

158. *See* Orcutt, *supra* note 151.

159. *See supra* Part II.B.2.

and records of a blockchain or DAO if those records happened not to be widely available and a party maliciously attempted to conceal them.[160]

III. GOVERNING GOVERNANCE: THE ELUSIVENESS OF DECENTRALIZATION AND WHAT (POSSIBLY) TO DO ABOUT IT

Some of the hardest problems in the long-term legal governance of blockchains and other purportedly decentralized organizations is what to do when the organization's decentralized technological rules fail. This might happen through attacks ("hacking"), as discussed above;[161] through drift over the long term from the factual state of affairs the organizers envisioned when they set up the technological rules originally;[162] or from any other limits in the underlying technological system.[163] As anyone familiar with software or its development knows, software does not always function as expected or intended, just as no legal instrument or contract envisions all possible future states of affairs.[164]

The recognition of these limitations has led to the rise of what in some circles is known as *off-chain governance*.[165] For example, the Vermont statutes require the operating agreement of a blockchain-based LLC to "adopt protocols to respond to system security breaches or other unauthorized actions that affect the integrity of the blockchain technology utilized by the" organization,[166] even as they purport to recognize that a blockchain-based LLC may be governed "in whole ... through blockchain technology."[167]

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160. *Cf.* RUPA (1997) §§ 103(b)(2), 403(b) (providing partners access to "books and records" in a general partnership).

161. *See supra* Part II.B.4.

162. *See* WORLD ECON. F., *supra* note 67, at 8.

163. *See id.*

164. *See* BAYERN, *supra* note 56, at 21-26 (discussing commonalities between algorithms and legal instruments).

165. *See What Is Blockchain Governance: Setting Platform Rules*, PHEMEX (Oct. 13, 2021), https://phemex.com/academy/what-is-blockchain-governance [https://perma.cc/K39R-J6NX] ("Off-chain governance involves all the governance-related processes, formal as well as, very often, informal, that happen outside of the platform. Examples of off-chain governance processes on public blockchains are discussions on social media, online forums, conferences, and other events.").

166. VT. STAT. ANN. tit. 11, § 4173(2)(D) (2022).

167. *Id.* § 4173(1).

To the extent off-chain governance is explicit—again, it is easy to set up a conventional legal entity such as an LLC that gives effect to the verifiable state of a blockchain[168]—it results in few new problems for the common law. But the notion of off-chain governance poses new problems for the common law when it is informal and its authority or legitimacy is only implied. The law faces a new sort of organization: one that is primarily governed by very specific technological rules but also has people in charge who can divert the course of those rules when they are inadequate.[169] Even in Bitcoin, which was the first example of a blockchain and which in its early days was associated very closely with a laissez-faire ethos among the participants, centralized organizers have, multiple times, adjusted the blockchain in ways that even the Bitcoin's original developer once thought impossible.[170]

Because of the factual power of centralized groups over purportedly decentralized organizations, one model that some commentators have proposed is a fiduciary one.[171] This model may have some advantages in contexts where there remain interpersonal norms—say, a prominent organizer with a lot of power who makes clear promises and retains significant ongoing control of a DAO—but it is unlikely to be an appropriate universal response to implied technological organizations.[172] Instead, we can again look to the experience of the common law for other lessons to draw.

One significant doctrine from the common law that may help judges address implied technological organizations is the doctrine of enforcing the reasonable expectations of participants.[173] This

168. *See, e.g.*, *id.* "Verifiable" is a term of art here.

169. *See What Is Blockchain Governance*, *supra* note 165.

170. Satoshi Nakamoto, *Re: Transactions and Scripts: DUP HASH160 ... EQUALVERIFY CHECKSIG*, BITCOINTALK: BITCOIN F. (June 17, 2010, 6:46 PM), https://bitcointalk.org/index.php?topic=195.msg1611 [https://perma.cc/7WW2-7ZVZ] ("The nature of Bitcoin is such that once version 0.1 was released, the core design was set in stone for the rest of its lifetime.").

171. *See* Walch, *supra* note 95.

172. That said, my sense is that modern legal analysts of organizational law, particularly those who write from a legal-economic perspective, have become too averse to considering the role of fiduciary duties. Fiduciary duties could well be useful defaults in a broader situation than in current positive law. In any event, whether fiduciary duties may serve as productive default rules and can be disclaimed or limited by well-informed parties is a familiar question in organizational law.

173. *See, e.g.*, Colt v. Mt. Princeton Trout Club, Inc., 78 P.3d 1115, 1119 (Colo. App. 2003)

doctrine is flexible and adaptive and may seem almost gossamer, but particularly when it is clear that consumer-level participants have particular reasonable expectations for an implied technological organization, courts may properly be guided by taking those expectations into account in considering the legal relationships among the parties. Courts have done so in settings where even explicit organizations were involved and the "reasonable expectations" that they recognized violated the express structures of those organizations.[174] The most familiar example to students of organizational law is *Meiselman v. Meiselman*.[175] As the North Carolina Supreme Court explained in that case:

> [W]e hold that a complaining shareholder's "rights or interests" in a close corporation include the "reasonable expectations" the complaining shareholder has in the corporation. These "reasonable expectations" are to be ascertained by examining the entire history of the participants' relationship. That history will include the "reasonable expectations" created at the inception of the participants' relationship; those "reasonable expectations" as altered over time; and the "reasonable expectations" which develop as the participants engage in a course of dealing in conducting the affairs of the corporation. The interests and views of the other participants must be considered in determining "reasonable expectations." The key is "*reasonable*." In order for plaintiff's expectations to be reasonable, they must be known to or assumed by the other shareholders and concurred in by them. Privately held expectations which are not made known to the other participants are not "reasonable." Only expectations embodied in understandings, express or implied, among the participants should be recognized by the court. Also, only substantial expectations should be considered and this must be determined on a case-by-case basis. These requirements provide needed protection to potential defendants in this type [of] case.[176]

("Assessing whether shareholder oppression exists requires consideration of the reasonable expectations of minority shareholders.").

174. *See, e.g.*, Meiselman v. Meiselman, 307 S.E.2d 551 (N.C. 1983).

175. *Id.*

176. *Id.* at 563 (citations omitted).

In other words, it is well within the traditional powers of common law courts to give effect to implied agreements in implied organizations.[177] Reasonable expectations of the involved parties are, to many, the touchstone in morality and policy for evaluating organizations and the law governing them.[178]

The common law may have other tools to offer, such as the *cy pres* doctrine in evaluating conveyances[179] or the protection of noncontrolling members of an organization from "oppression."[180] The point is that tracking what is reasonable over time is within the courts' power, particularly to protect individual consumers or noncontrolling members of an organization, and it is likely to be superior to doing nothing and ignoring all potential claims out of hand on formalistic grounds.

Other doctrinal tools are available. For example, courts can apply the contractual duty to act in good faith in an organizational context.[181] That duty may be relevant in considering the actions of an organizer who maintains a hidden or otherwise illegitimate control over the technological mechanisms of a digital contract or organization.

To be clear, I have not described how these remedies might be enforced. Personal orders against DAO participants subject to a particular jurisdiction are one possibility; others may be harder or

177. *See id.*

178. *See, e.g.*, Henning, *supra* note 87, at 48 (suggesting the United Kingdom's Partnership Act of 1890 is "rightly perceived as failing to keep up with the reasonable expectations of those running and dealing with the almost seven hundred thousand business partnerships in the United Kingdom").

179. *See, e.g.*, RESTATEMENT (THIRD) OF TRS. § 67 (AM. L. INST. 2003) ("[W]here property is placed in trust to be applied to a designated charitable purpose and it is or becomes unlawful, impossible, or impracticable to carry out that purpose, or to the extent it is or becomes wasteful to apply all of the property to the designated purpose, the charitable trust will not fail but the court will direct application of the property or appropriate portion thereof to a charitable purpose that reasonably approximates the designated purpose.").

180. *See* Donahue v. Rodd Electrotype Co. of New Eng., Inc., 328 N.E.2d 505, 513 (Mass. 1975).

181. *See* RUPA (1997) § 404(d); *see also id.* § 404 cmt. 4 ("The obligation of good faith and fair dealing is a contract concept, imposed on the partners because of the consensual nature of a partnership. It is not characterized, in RUPA, as a fiduciary duty arising out of the partners' special relationship." (citation omitted)).

easier based on the technological constraints of particular software systems. For example, cryptographically protected assets may themselves be beyond the reach of courts, even if the court can find as a matter of fact who owns or controls them. Enforcement problems may arise, but they arise even in familiar nontechnological contexts, and they should not be overstated.[182]

CONCLUSION

We are at what seems to be a moment in which unfortunately little is expected of the common law. It would be especially unfortunate if common law, one of the most adaptive legal mechanisms—nimbler than legislatures, potentially more in tune with distributed social norms than centralized authorities—fails to rise to an occasion to which it is especially suited: rapid technological and social change involving novel decentralized communities. This Article has taken a small step in beginning to lay out several ways the common law can realistically (in view of doctrine, institutional competence, and history) protect the interests of those who have organized themselves into informal online economic communities. It has also endeavored to show that common law is about more than "regulation," that courts can provide productive tools to implied technological organizations, and by implication that the legal rules of organizational law need not be in conflict even with anti-regulatory ideologies. If the common law could adapt to recognize general partnerships and develop productive default rules for them, and if it could recognize the reasonable expectations of shareholders in closely held corporations, it is up to the challenge of beginning to recognize rights and duties in novel types of technological organizations.

182. *Cf.* Bayern, *supra* note 76, at 28 (discussing, among other mechanisms, "turnover orders" in the context of cryptocurrencies).