

Bankrupt Crypto Organizations

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Abstract

This Article provides the first comprehensive analysis of the intersection between decentralized autonomous organizations (DAOs) and American bankruptcy law. DAOs are blockchain-based entities that enable individuals to pursue common goals using decentralized decision-making and automated governance. Since their recent emergence, DAOs have proliferated dramatically—with over 20,000 organizations managing over \$20 billion in assets and engaging in activities ranging from investment management to real estate and even attempting to purchase historic copies of the U.S. Constitution. Yet like any other organization, DAOs can fail, creating an urgent need to understand what happens when unstoppable code meets immovable bankruptcy law.

Our investigation unfolds along three interconnected lines of inquiry. First, we observe DAOs through a novel analytical prism, moving beyond conventional technological and organizational taxonomies to uncover their insolvency-relevant attributes. Second, drawing on these findings and the 2024 bankruptcy filing of HectorDAO, we posit that the core ideals of DAOs—decentralization, automation, rejection of intermediaries, and resistance to state law—fundamentally conflict with court-supervised insolvency proceedings, forcing these organizations to either compromise their ethos or forgo voluntary

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bankruptcy protection. Third, recognizing this tension, we theorize a “decentralized autonomous bankruptcy” framework for DAOs. This thought experiment, which we call *BrokeDAO*, reveals the potential for blockchain technology to create innovative solutions for debt resolution. Yet, it also exposes the inherent limitations of attempting to replicate the comprehensive protections of bankruptcy purely through private ordering.

Studying the interface between DAOs and bankruptcy law yields substantial contributions to both fields. While the literature on digital assets remains overwhelmingly focused on regulatory questions, our research offers essential private law insights that will prove crucial during inevitable future market downturns. Moreover, viewing bankruptcy law through the lens of DAOs underscores the singularity of bankruptcy’s centralized and compulsory framework and its inescapable relevance in the crypto ecosystem.

Table of Contents

Introduction	3
I. The Rise and Structure of DAOs.....	8
<i>A. Intellectual Foundations of DAOs</i>	9
<i>B. Current Landscape and Definition</i>	13
<i>C. Key Organizational Factors</i>	15
1. <i>Corporate Form</i>	15
2. <i>Managers</i>	20
3. <i>Assets</i>	24
4. <i>Creditors</i>	27
II. Bankruptcy and Distressed DAOs	32
<i>A. Entry and Structure</i>	35
1. <i>Eligibility for Bankruptcy</i>	36
2. <i>Centralization and Procedural Rigor</i>	38
<i>B. Theory and Practice</i>	42
1. <i>Case Study: The HectorDAO Bankruptcy</i>	42
2. <i>Analysis: A Reorientation of Values</i>	44
<i>C. The Threat of Involuntary Bankruptcy</i>	46
1. <i>Involuntary Bankruptcy Through External Pressure</i>	47
2. <i>Involuntary Bankruptcy Through Internal Pressure</i>	48
III. Decentralized Autonomous Bankruptcy.....	50
<i>A. The Intellectual Origins of Decentralized Autonomous Bankruptcy</i>	50
<i>B. Thought Experiment: BrokeDAO & Decentralized Autonomous Bankruptcy</i>	52
<i>C. The Limitations Inherent in Decentralized Autonomous Bankruptcy</i>	57

INTRODUCTION

In the world of crypto, code is supposed to be king. Yet, when faced with financial ruin, even the most ardent crypto enthusiasts discover that traditional legal systems offer a vital safety net. From the collapse of FTX to the downfall of other crypto-giants like Celsius and Voyager Digital, the blockchain landscape is dotted with examples of once-highflying enterprises seeking refuge in bankruptcy courts.¹ Against that backdrop, this Article explores the uncharted legal territory where decentralized autonomous organizations (DAOs) meet bankruptcy law.

Descriptively, DAOs are a new type of online entity that bring together communities of individuals in pursuit of shared goals, whether profit-making, social, or charitable.² These organizations are founded on distributed ledger technology (DLT), leveraging blockchain networks, smart contracts, and digital assets to create new forms of collective action and resource management. As the literature explains, DAOs consist of “elaborate smart contracts or systems of smart contracts,”³ that encode “standard corporate arrangements of equity, debt, and corporate governance.”⁴

The intellectual foundations of DAOs draw heavily on the cypherpunk ethos of individual autonomy and the crypto-anarchist ideal of resistance to

¹ For a discussion of the FTX and other crypto bankruptcies, see Andrea Tosato, Diane Lourdes Dick & Christopher K. Odinet, *Debt Tokens*, 174 U. PA. L. REV. (forthcoming 2025); Diane Lourdes Dick & Christopher K. Odinet, *The Questionable Virtues of Chapter 11 in the FTX Bankruptcy*, CLS BLUE SKY BLOG (Dec. 7, 2022), <https://clsbluesky.law.columbia.edu/author/diane-lourdes-dick-and-christopher-k-odinet> [<https://perma.cc/3NQ3-B6NG>]; Diane Lourdes Dick & Christopher K. Odinet, *The Public and the Private of the FTX Bankruptcy*, HARV. BANKR. ROUNDTABLE (Jan. 31, 2023), <https://bankruptcyroundtable.law.harvard.edu/2023/01/31/crypto-bankruptcy-series-the-public-and-the-private-of-the-ftx-bankruptcy/>.

² See, e.g., David Cain, *DAOs: A New Paradigm for Collaboration and Governance*, LINKEDIN (Aug. 26, 2023), www.linkedin.com/pulse/deciphering-dao-paradigm-navigating-new-frontier-structures-cain/ [<https://perma.cc/9ZRF-EGU2>]; KAF, *DAOs Will Change Everything: Web3, NFTs, Social Tokens, and The Metaverse*, MEDIUM (Jan. 5, 2022), <https://medium.com/bankless-dao/daos-will-change-everything-b955588eedc> [<https://perma.cc/6AES-KNR6>]; Polygon Labs, *Why DAOs Will Change Social Media as We Know It*, POLYGON (Apr. 18, 2022), <https://polygon.technology/blog/why-daos-will-change-social-media-as-we-know-it> [<https://perma.cc/4RNW-XRGL>].

³ Carla L. Reyes, *If Rockefeller Were A Coder*, 87 GEO. WASH. L. REV. 373, 387 (2019) [hereinafter Reyes, *Rockefeller*].

⁴ Werbach, *supra* note 4, at 507.

centralized authority.⁵ Building on these principles through technological innovation, DAO proponents herald a future free from traditional corporate hierarchies and bureaucratic control. They envision these organizations as revolutionary, decentralized, and community-driven vehicles for economic activity and capital deployment, emphasizing their capacity for direct democracy,⁶ trustless coordination,⁷ and disintermediation.⁸

DAOs have attracted hundreds of thousands of participants and amassed billions in assets, despite—or perhaps because of—their unconventional and often opaque governance models. The organization known as TheDAO launched in 2016 as an investor-directed venture capital fund and became one of the largest “crowdfunding” campaigns in history,⁹ raising \$150 million worth of the crypto asset Ether.¹⁰ In 2021, PleasrDAO raised \$5.4 million to purchase an NFT associated with the whistleblower Edward Snowden and another \$4 million to buy the album “Once Upon a Time in Shaolin” by the Wu-Tang Clan.¹¹ In November 2021, ConstitutionDAO raised \$47 million to

⁵ See *infra* Part I.A and accompanying discussion.

⁶ Rob Nelson, *Decentralized Power: How DAOs Reshape the Future of Democracy*, THE STREET (Aug. 24, 2023), www.thestreet.com/crypto/investing/decentralized-power-how-daos-reshape-the-future-of-democracy [<https://perma.cc/87BS-J6PT>].

⁷ Unocoin Growth, *Exploring the Potential of DAOs (Decentralised Autonomous Organizations) in Crypto: A Comprehensive Guide*, UNOCOIN (June 4, 2024), <https://blog.unocoin.com/2023/05/15/exploring-the-potential-of-daos-decentralized-autonomous-organizations-in-crypto-a-comprehensive-guide/> [<https://perma.cc/KU5M-TRGD>].

⁸ World Econ. F., *DAOs for Impact 5* (June 2023), <https://www.weforum.org/publications/daos-for-impact/> [<https://perma.cc/JN69-CZZY>] (quoting “Impact DAOs aim to harness the power of decentralized”).

⁹ DAO Paykiken Geo, *Biggest Crowdfund Ever — The Forgotten Story of the DAO and Its Successor Today*, MEDIUM (May 8, 2024), <https://medium.com/@paykiken/biggest-crowdfund-ever-the-forgotten-story-of-the-dao-and-its-successor-today-b39d5b42b1a7> [<https://perma.cc/6KB5-3LDQ>].

¹⁰ See Cryptopedia Staff, *What Was The DAO*, CRYPTOPEDIA (Oct. 5, 2023), <https://www.gemini.com/cryptopedia/the-dao-hack-makerdao>; David Z. Morris, *CoinDesk Turns 10: 2016 - How The DAO Hack Changed Ethereum and Crypto*, COINDESK (May 9, 2023), <https://www.coindesk.com/consensus-magazine/2023/05/09/coindesk-turns-10-how-the-dao-hack-changed-ethereum-and-crypto/> [<https://perma.cc/8ULV-RARR>].

¹¹ See Kevin Roose, *What Are DAOs*, N.Y. TIMES, www.nytimes.com/interactive/2022/03/18/technology/what-are-daos.html [<https://perma.cc/U86V-282L>]; Ben Sisario, *Meet the New Owners of the Wu-Tang Clan's One-of-a-Kind Album*, N.Y. TIMES (Oct. 20, 2021), <https://www.nytimes.com/2021/10/20/arts/music/wu-tang-clan-once-upon-a-time-in-shaolin.html> [<https://perma.cc/F67Q-WFYM>]; Ekin Genc, *Why This DAO Bought Snowden's NFT for \$5.4 Million*, DECRYPT (Apr. 18, 2021), <https://decrypt.co/66933/why-this-dao-bought-snowden-nft> [<https://perma.cc/8KHP-QRWU>].

purchase an original copy of the United States Constitution.¹² DAOs have also expanded into social networking, with Friends With Benefits raising \$10 million from investors to create an exclusive “online country club” that offers members access to private chat rooms and exclusive events at crypto conferences.¹³ Other DAOs are making tentative steps into the brick-and-mortar world by attempting decentralized ownership of fast-food enterprises and football teams.¹⁴

As the DAO ecosystem expands, the rhetoric surrounding them has grown increasingly bold. Enthusiasts proclaim that DAOs “have the potential to fundamentally change the way we coordinate as a species,”¹⁵ emphasizing how the underlying smart contracts make this “the first time in all of human history where you can enforce an agreement nonviolently.”¹⁶ Their predicted impact extends from “high school chess clubs up to international governments and everything in between.”¹⁷ Even prominent business figures like Mark Cuban have joined the chorus, declaring DAOs to be “the ultimate combination of capitalism and progressivism.”¹⁸

Even lawmakers have been seduced by the enthusiasm surrounding DAOs. Several states have enacted specialized statutes that allow one to create

¹² See Karen Matthews, *Rare First Printing of US Constitution Sells for Record \$43M*, AP (Nov. 19, 2021), <https://apnews.com/article/cryptocurrency-technology-lifestyle-business-arts-and-entertainment-b0ab721a52cf20f2dc1a923f2dae3347> [<https://perma.cc/N6SB-PPZ5>]; Isabella Lee, *ConstitutionDAO Disbands After Losing Its Bid to Buy a Copy of the Constitution*, MARKETS INSIDER (Nov. 24, 2021), <https://markets.businessinsider.com/news/currencies/constitution-dao-disbands-refund-how-us-constitution-discord-website-twitter-2021-11> [<https://perma.cc/Q2UY-GSEY>].

¹³ *What Are DAOs; Friends With Benefits*, FWB.HELP (June 4, 2024), <https://www.fwb.help> [<https://perma.cc/TNA8-JC86>].

¹⁴ *Let's build a burger franchise!*, BURGERDAO, <https://mirror.xyz/0xd43E931e79FCFfa25481a1a592cbE84f40f012e4/6PjkYR1siuS0ZbUSN0Am90abPwp7GxGjlmO2htxdKY> [<https://perma.cc/4KPZ-RFY4>]; Sam Reynolds, *Crypto Enthusiasts Forming DAO to Buy Denver Broncos NFL Team*, COINDESK (Feb. 21, 2022), <https://www.coindesk.com/business/2022/02/21/crypto-enthusiasts-forming-dao-to-buy-denver-broncos-nfl-team/>.

¹⁵ Bankless, *How DAOs Will Change Everything*, YOUTUBE (Sept. 2, 2024), <https://www.youtube.com/watch?v=dZ4o6wma4js>.

¹⁶ Open Dollar, *Just DAO It! DAO News & Interview with Joseph Schiari*, SPOTIFY, at 8:25 (Aug. 30, 2024), <https://open.spotify.com/episode/6HS8R1fLXSIpW3cQUKkoxt?si=a82a8de2dbc344db>.

¹⁷ Making Sense of Crypto, *Decentralized Autonomous Organizations: What Makes DAOs New?*, APPLE PODCASTS, at 11:08 (May 4, 2022), <https://podcasts.apple.com/us/podcast/making-sense-of-crypto/id1595623618?i=1000559559597>.

¹⁸ CoinMarketCap, *Is a DAO Better Than a Corporation? [LLC or DAO]*, YOUTUBE, at 11:08 (Aug. 30, 2024), <https://www.youtube.com/watch?v=ZvINo1dqUew>.

a formally recognized DAO business entity.¹⁹ For example, Vermont law allows for the creation of a business entity “that utilizes blockchain technology for a material portion of its business activities.”²⁰ This legislative interest for DAOs extends beyond U.S. borders, with jurisdictions like the Marshall Islands²¹ and Malta²² enacting special legislation to accommodate these novel entities, while others like the Cayman Islands²³ and Switzerland²⁴ have similarly amended their business organizations laws.

Yet, as DAOs diversify their activities and amass ever larger treasuries, we think a legal reckoning looms large on the horizon. DAOs largely fail to anticipate or plan for financial distress, and it is unclear what will happen if their financial stability is threatened. Would a DAO turn to bankruptcy law? Does this comprehensive body of substantive and procedural rules for court-supervised debtor-creditor interactions offer a viable mechanism to address a DAO’s financial distress? And, critically, can DAOs opt for this solution without sacrificing their foundational aversion to centralization and delegation of powers?

Lest one be skeptical, these questions are not merely theoretical. As we describe more fully in this paper, in mid-June 2024, HectorDAO filed for Chapter 15 bankruptcy in New Jersey.³⁴ HectorDAO’s case, together with *FTX* and several other digital-asset bankruptcies in recent past,²⁵ shows that these entities have not hesitated to choose bankruptcy to manage the aftermath of sharp market downturns, poor strategic decisions, and even fraud. Bankruptcy

¹⁹ See *infra* Part I.C.1.

²⁰ See VT. STAT. ANN. tit. 11, §§ 4171-76 (enacted May 30, 2018, effective Jul. 1, 2018).

²¹ Non-Profit Entities (Amendment) Act 2021, 18 MIRC Ch. 2 (Marsh. Is.)

²² Innovative Technology Arrangements and Services Act, 2020 (Act No. 33/2018) (Malta).

²³ Foundation Companies Act 2017 (Law 29 of 2017) (Cayman Is.).

²⁴ Benedikt Schuppli & Golnaz A. Jafari, *Piercing the Digital Veil: A Case Study for a DAO Legal Framework Under Swiss Law*, 12 J. INTEL. PROP., INFO. TECH. & E-COM. L. 331, 344 (2021), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3951804.

²⁵ For a discussion of the FTX and other crypto bankruptcies, see Dick, Odet, & Tosato, *Debt Tokens*, *supra* note 1; see also Diane Lourdes Dick & Christopher K. Odet, *The Questionable Virtues of Chapter 11 in the FTX Bankruptcy*, CLS BLUE SKY BLOG (Dec. 7, 2022), <https://clsbluesky.law.columbia.edu/author/diane-lourdes-dick-and-christopher-k-odinet> [<https://perma.cc/3NQ3-B6NG>]; see also Diane Lourdes Dick & Christopher K. Odet, *The Public and the Private of the FTX Bankruptcy*, HARV. BANKR. ROUNDTABLE (Jan. 31, 2023), <https://bankruptcyroundtable.law.harvard.edu/2023/01/31/crypto-bankruptcy-series-the-public-and-the-private-of-the-ftx-bankruptcy/>.

law offers highly attractive rehabilitation pathways.²⁶ It can halt destructive collection activity, allow distressed companies to shed the financial burdens of their past operations, and even unwind transactions that occurred before bankruptcy to recover value for the benefit of stakeholders.²⁷ More broadly, bankruptcy can bind all of a debtor’s creditors to a payment plan, even when doing so is against the will of some.²⁸ Even when a company does not wish to continue on, bankruptcy provides a controlled and orderly process for winding up its operations.²⁹ Given the documented history of DAO failures—from TheDAO’s catastrophic collapse in 2016 to bZx DAO’s loss of \$55 million in 2021—there is a compelling basis to expect these entities to also seek bankruptcy protection when faced with financial distress.

Beyond market turmoil and internal failures, bankruptcy has been a notorious refuge for companies facing sprawling litigation or mass-tort judgments. Indeed, the only DAO that has filed for bankruptcy at the time of this writing did so to shield itself from such threats.³⁰ As we detail more comprehensively in the pages that follow, *HectorDAO* sought bankruptcy protection after severe market swings and several devastating hacks, followed shortly thereafter by stakeholders suing the DAO’s managers for breach of contract, breach of fiduciary duty, and conversion.³¹

Finally, and critically, a DAO may find itself in bankruptcy proceedings involuntarily. As we discuss in these pages, creditors may force a DAO into bankruptcy unwillingly through an involuntary petition to impose court oversight and ensure an orderly distribution of assets. This possibility means that even the most passionate champions of decentralized governance must

²⁶ For a general discussion of bankruptcy’s benefits under Chapter 11 when it comes to large-scale litigation, see Pamela Foohey & Christopher K. Odinet, *Silencing Litigation Through Bankruptcy*, 109 VA. L. REV. 1261, 1284 (2023).

²⁷ See 11 U.S.C. § 365, 547.

²⁸ 11 U.S.C.A. § 1129(b), 1225(a)(5), 1225(b), 1325(a)(5), 1325(b).

²⁹ Chapter 11 – Bankruptcy Basics, U.S. Courts (last visited Jun. 4, 2023), [https://www.uscourts.gov/services-forms/bankruptcy/bankruptcy-basics/chapter-11-bankruptcy-](https://www.uscourts.gov/services-forms/bankruptcy/bankruptcy-basics/chapter-11-bankruptcy-basics#:~:text=In%20a%20chapter%2011%20case,than%20a%20chapter%207%20liquidation)

[basics#:~:text=In%20a%20chapter%2011%20case,than%20a%20chapter%207%20liquidation \[https://perma.cc/9RUF-8PSL\]](https://perma.cc/9RUF-8PSL) (“In a chapter 11 case, a liquidating plan is permissible. Such a plan often allows the debtor in possession to liquidate the business under more economically advantageous circumstances than a chapter 7 liquidation.”).

³⁰ Becky Yerak, *Crypto Collective Hector Files U.S. Bankruptcy to Stave Off Lawsuit*, WALL ST. J. (June 18, 2024), <https://www.wsj.com/articles/crypto-collective-hector-files-u-s-bankruptcy-to-stave-off-lawsuit-ce0f212f>.

³¹ See *id.* See also *Newton AC/DC Fund, L.P. v. Hector DAO*, No. 3:24-cv-00722 (D.N.J. 2024).

understand how their organizations would fare when confronted with bankruptcy’s centralized decision-making framework.

This Article provides the first comprehensive analysis of the intersection between DAOs and American bankruptcy law. Combining an original taxonomy of the insolvency-relevant attributes of DAOs with an examination of the 2024 HectorDAO bankruptcy, we reveal a fundamental tension between the theoretical underpinnings of DAOs and the centralized requirements of court-supervised insolvency proceedings. We demonstrate that while DAOs may need the protective framework of bankruptcy when facing financial distress, accessing these protections requires significant compromises to their foundational tenets of decentralized governance, automation, and resistance to state authority.

Thereafter, we begin to theorize a *decentralized autonomous bankruptcy* framework. We imagine BrokeDAO—a blockchain-based platform leveraging smart contracts and tokens to facilitate orderly liquidation or restructuring of distressed DAOs. While intriguing, this thought experiment reveals an important insight: there are inherent and insurmountable limitations in trying to opt out of bankruptcy’s protections through crypto private ordering. As a result, we posit that BrokeDAO’s utility would be confined to small, homogeneous organizations operating exclusively within DLT networks.

Our enquiry proceeds in three parts. Part I examines the intellectual foundations and current landscape of DAOs, tracing their evolution from imaginary constructs to operational entities managing billions in assets. We make an original contribution by observing these novel entities through an insolvency-focused lens, examining their corporate forms, management structures, asset compositions, and creditor relationships. In Part II, we investigate whether DAOs can satisfy the positive law requirements of bankruptcy as they exist today, concluding that effective engagement with this framework requires a stark departure from their decentralized governance model. Part III ventures beyond positive law and into the theoretical, using BrokeDAO as a conceptual exercise to demonstrate both the possibilities and unescapable constraints of any hypothetical insolvency solution based on blockchain technology. Ultimately, whether DAOs embrace bankruptcy law, resist it, or create alternatives, understanding the relationship between crypto organizations and insolvency rules is crucial for developing a coherent framework for the evolving digital asset landscape.

I. THE RISE AND STRUCTURE OF DAOs

This Part provides the framing for our subsequent analysis of the interface between DAOs and bankruptcy law. We begin by examining the

intellectual foundations of these novel organizations, tracing how they have shaped DAO development and continue to influence their community today. We then survey the current DAO landscape, exploring their diverse economic activities, corporate structures, ownership arrangements, governance models, assets, and creditor relationships. This exploration reveals significant differences between DAOs and traditional organizations, with implications that resonate deeply in insolvency.

A. Intellectual Foundations of DAOs

The intellectual foundations of DAOs are deep and diverse. These novel organizations are built on ideas stemming from several distinct schools of thought. This section highlights key concepts from organization theory, corporate law, the cypherpunk movement, crypto anarchy, and cryptoeconomics. Understanding these formative influences is crucial, as they continue to shape both the theoretical and practical framework of DAOs today.

Organization theory has laid essential cornerstones for DAOs. Since the 1960s, scholars in this field have explored the potential of decentralized entities and crafting models for their development. Martin Shubik's simulations of industry and firm operations offered insights into modeling decentralized organizational behavior.³² Richard Beckhard hypothesized how change and development might occur in dynamic, decentralized environments.³³ Karl E. Weick's "sensemaking" theory advanced the view that individuals in decentralized systems create shared understanding.³⁴ By the 2010s, Göran Ahrne and Nils Brunsson were discussing how organizations can function effectively without centralized authority or full-time employees, emphasizing participatory governance and minimal formal hierarchy.³⁵

³² See Martin Shubik, *Simulation of the Industry and the Firm*, 50 AM. ECON. REV. 908 (1960) (offering early insights into modeling decentralized organizational behavior); see also James D. Thompson, ORGANIZATIONS IN ACTION: SOCIAL SCIENCE BASES OF ADMINISTRATIVE THEORY 54-65 (1967) (exploring coordination mechanisms in complex organizations, laying the groundwork for managing interdependent units within DAOs).

³³ See generally Richard Beckhard, ORGANIZATION DEVELOPMENT: STRATEGIES AND MODELS (1969) (developing frameworks for managing organizational change in decentralized environments).

³⁴ Karl E. Weick, THE SOCIAL PSYCHOLOGY OF ORGANIZING 43-45, 78-98 (1969) (introducing sensemaking theory and its application to decentralized organizational structures).

³⁵ Göran Ahrne & Nils Brunsson, *Organization Outside Organizations: The Significance of Partial Organization*, ORG. 83, 83-104 (2011) <https://doi.org/10.1177/1350508410376256>. For contemporary organization theory literature focusing on DAOs see Jean-Philippe Vergne, *Decentralized vs. Distributed Organization: Blockchain, Machine Learning and the Future of the Digital Platform*, 1 ORG. THEORY 1 (2020) <https://doi.org/10.1177/2631787720977052>.

Corporate law theory has also contributed important building blocks to the rise and growth of DAOs. Corporate personhood, corporate form, limited liability, and partnership are indispensable concepts to theorize the operation of autonomous organizations. In addition, since the 1980s, corporate law literature has grappled with ideas that anticipated DAOs. For example, ownerless corporations controlled by algorithms have long been used as an analytical tool to examine the nature of corporate personhood,³⁶ and reconsider traditional models of decision-making and accountability.³⁷ Similar efforts to theorize various automated and contract-based alternatives to bankruptcy developed during this period, foreshadowing the BrokeDAO thought exercise that we discuss later in the paper.³⁸ At present, contemporary scholars contribute vigorously to the discourse surrounding DAOs, exploring meticulously the legal facets of these novel entities and their overall impact on corporate law.³⁹

While organizational and corporate law theories provided the structural and legal groundwork, the *cyberpunk movement* and the concept of *Crypto Anarchy*

³⁶ See Meir Dan-Cohen, RIGHTS, PERSONS AND ORGANIZATIONS: A LEGAL THEORY FOR BUREAUCRATIC SOCIETY 46–51 (1986) (theorizing the “Personless Corporation” as “not only an ownerless corporation, but also a fully automated corporation” and describing it as the “intelligent machine”). For a more recent discussion, see Elizabeth Pollman, *Reconceiving Corporate Personhood*, 2011 UTAH L. REV. 1629, 1670–71. For a complete overview of this literature see Carla L. Reyes, *Autonomous Corporate Personhood*, 96 WASH. L. REV. 1453 (2021) [hereinafter Reyes, *Personhood*].

³⁷ For an overview of this literature see Reyes, *Personhood*, *supra* note 3, at 1453; Anne Lafarre & Christoph Van der Elst, *The Viability of Blockchain in Corporate Governance* (Eur. Corp. Governance Inst., Law Working Paper No. 712, 2023), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4483621.

³⁸ See, e.g., Lucian Arye Bebchuk, *A New Approach to Corporate Reorganizations*, 101 HARV. L. REV. 775, 776–77 (1988); Barry E. Adler, *Financial and Political Theories of American Corporate Bankruptcy*, 45 STAN L. REV. 311, 319–24 (1993); Robert K. Rasmussen, *Debtor’s Choice, A Menu Approach to Corporate Bankruptcy*, 71 TEX. L. REV. 51, 117 (1992); Alan Schwartz, *A Contract Theory Approach to Business Bankruptcy*, 109 YALE L. J. 1807, 1850–51 (1998).

³⁹ See, e.g., J.G. Allen, *Bodies Without Organs: Law, Economics, and Decentralised Governance*, J. G. Allen, *Bodies without Organs: Law, Economics, and Decentralised Governance*, 4 STAN. J. BLOCKCHAIN L. & POL’Y 53 (2020); Reyes, *Rockefeller*, *supra* note 3; Carla L. Reyes, *Autonomous Business Reality*, 21 NEV. L.J. 437 (2021); Reyes, *Personhood*, *supra* note 36; Shawn Bayern, *Are Autonomous Entities Possible?*, 114 NW. U. L. REV. 23 (2019); Lynn M. LoPucki, *Algorithmic Entities*, 95 WASH. U. L. REV. 887 (2018). See also Matt Laszczyk, *Decentralized Autonomous Organizations and Regulatory Competition: A Race Without a Cause*, 99 N.D. L. REV. 107 (2024); Borgogno, Oscar & Edoardo D Martino, *Decentralised Autonomous Organizations: Targeting the Potential Beyond the Hype* (January 12, 2024) <https://ssrn.com/abstract=4692754>; Oscar Borgogno, *Making Decentralized Autonomous Organizations (DAOs) Fit for Legal Life: Mind the Gap* (Bank of It., Occasional Paper No. 718, 2022); Samer Hassan & Primavera De Filippi, *Decentralized Autonomous Organization*, 10 INTERNET POL’Y REV. 1 (2021); Aaron Wright, *The Rise of Decentralized Autonomous Organizations: Opportunities and Challenges*, 4 STAN. J. BLOCKCHAIN L. & POL’Y 1 (2020).

imbued DAOs with their distinctive ethos. Emerging in the late 1980s, cypherpunks—a diverse group of cryptographers, computer programmers, and privacy advocates—united around an uncompromising belief in individual liberty and the vision of encryption technology as a shield against state interference.⁴⁰ True to their mantra, “cypherpunks write code,”⁴¹ they moved beyond mere advocacy and collaborated to forge tools for privacy and self-governance, including cryptographic protocols, anonymous transaction systems, and decentralized communication networks.⁴²

From this milieu arose the more radical concept of Crypto Anarchy.⁴³ Proponents of this ideology envisioned a future where cryptography and digital communications would fundamentally alter the nature of governmental regulation, economic activity, private interactions, and even the concepts of trust and reputation.⁴⁴ Importantly, crypto-anarchists saw their work not just as technological innovation, but as a form of socio-political activism to create a society free from the state and unconstrained by traditional laws.⁴⁵

The emergence of distributed ledger technology (DLT) and blockchain protocols sparked the conceptualization of DAOs as presently understood. Shortly after the genesis of the Bitcoin network, enthusiasts began thinking about its broader potential, including the possibility of autonomous entities that

⁴⁰ Kelsie Nabben, *Cryptoeconomics as governance: an intellectual history from “Crypto Anarchy” to “Cryptoeconomics,”* (2023) INTERNET HISTORIES 7(3), 254-276; André Ramiro & Ruy de Queiroz, *Cyberpunk*, INTERNET POLICY REVIEW, 1–10; Craig Jarvis, *Cyberpunk ideology: objectives, profiles, and influences (1992–1998)*, 6 INTERNET HISTORIES 3, 315-342 (2022); Eric Hughes, *A cypherpunk’s manifesto* (Mar. 9, 1993) <https://www.activism.net/cyberpunk/manifesto.html>; Thomas Rid, *RISE OF THE MACHINES: A CYBERNETIC HISTORY* (2016); Enrico Beltrami, *Against Technocratic Authoritarianism: A short intellectual history of the cyberpunk movemen*, INTERNET HISTORIES (2021)

⁴¹ Eric Hughes, *A cypherpunk’s manifesto* (1993) <http://www.activism.net/cyberpunk/manifesto.html> [<https://perma.cc/886T-TP7R>];

⁴² *Id.*

⁴³ The concept of crypto anarchy was first articulated by Timothy C. May in his “Crypto Anarchist Manifesto,” which he distributed at the Crypto ‘88 conference and later circulated on the Cypherpunks mailing list. See Timothy C. May, *The Crypto Anarchist Manifesto* (1988) <https://groups.csail.mit.edu/mac/classes/6.805/articles/crypto/cyberpunks/may-crypto-manifesto.html> [<https://perma.cc/6MB6-KW8H>]. May later expanded these ideas in his comprehensive work *The Cyphernomicon* (1994), which became a foundational text for the crypto-anarchist movement. See generally Timothy C. May, *CRYPTO ANARCHY AND VIRTUAL COMMUNITIES* (1994) <https://groups.csail.mit.edu/mac/classes/6.805/articles/crypto/cyberpunks/may-virtual-comm.html> [<https://perma.cc/57F8-Z5PD>].

⁴⁴ *Id.*

⁴⁵ L. Swartz, *What was Bitcoin, what will it be? The techno-economic imaginaries of a new money technology* 32 CULTURAL STUDIES 4, 623–650 (2018).

could manage resources and make decisions based on predefined rules—what some called “decentralized autonomous corporations” (DACs).⁴⁶ They envisioned organizations “without any human involvement,” that would be “incorruptible,” with “publicly auditable” bylaws encoded in “open-source software distributed across the computers of their stakeholders,” relying on digital tokens to allocate both profits and governance rights.⁴⁷

The advent of Ethereum supplied the tools to transform these theoretical constructs into algorithmic reality. This new computing platform enabled the implementation of on-chain governance mechanisms, token-based voting systems, and programmable treasury management, paving the way for decentralized and automated organizational structures.⁴⁸ Ethereum’s co-founders and early contributors expanded earlier Bitcoin-era ideas, imagining DAOs as entities that could autonomously hire employees, accumulate capital, and render services.⁴⁹ The platform also catalyzed the emergence of *cryptoeconomics*, a discipline combining cryptography, game theory, and mechanism design to engineer trustless systems that incentivize collaboration and compliance with organizational rules absent centralized oversight. Cryptoeconomics would equip DAOs with powerful tools to align individual interests with collective goals through carefully calibrated incentives and penalties.

This surge of technological and theoretical innovation culminated in the birth of the first operational DAO, known simply as “The DAO.”⁵⁰ Although this initiative famously ended in catastrophe due to a software vulnerability, it greatly expanded thinking around the possibilities of these nascent entities.⁵¹ The failure of The DAO revealed crucial lessons about smart contract security and governance design, while prompting more methodical approaches to developing decentralized organizations.⁵² Paradoxically, far from chilling innovation and development, this event boosted excitement around DAOs, spurring a new wave of projects and initiatives.

⁴⁶ S. Larimer, 2013; D. Larimer, 2013; Buterin 2013.

⁴⁷ *Id.*

⁴⁸ See Juliet M. Moringiello & Christopher K. Odetin, *Blockchain Real Estate and NFTs*, 64 WM. & MARY L. REV. 1131, 1150-54 (2023).

⁴⁹ *See id.*

⁵⁰ Christoph Jentzsch, *Decentralized Autonomous Organization to Automate Governance*, WHITE PAPER, (2016) https://archive.org/stream/DecentralizedAutonomousOrganizations/WhitePaper_djvu.txt.

⁵¹ Quinn DuPont, BITCOIN AND BEYOND 157-177 (2017).

⁵² Muhammad Mehar et. al., *Understanding a Revolutionary and Flawed Grand Experiment in Blockchain: The DAO Attack*. *Journal of Cases on Information Technology* 21 J. OF CASES ON INFO. TECH. 19-32 (2019).

Thus, the intellectual foundations of DAOs comprise a unique amalgamation of organizational theory and corporate law notions, blended with the ideas of cypherpunks, crypto-anarchists, and cryptoeconomics. This synthesis has spawned entities that share certain traits with traditional organizations, yet are distinctively shaped by decentralized decision-making, software automation, and an underlying philosophy that seeks alternatives to traditional hierarchies, positive law, and state authority. The result is a degree of novelty in form, function, and operation that sets DAOs apart and, as we explain more fully in Part III, creates unique challenges in the context of bankruptcy.

B. Current Landscape and Definition

It is estimated that there are currently 20,000 DAOs in operation, with 3.2 million participants and total treasury assets over \$20 billion.⁵³ DAOs pursue diverse economic activities, including decentralized finance (e.g., Uniswap for trading, Compound for lending), investment and asset management (e.g., Mantle, Olympus DAO), infrastructure development (e.g., ENS, Polkadot), digital art and entertainment (e.g., Decentraland, Axie Infinity), community initiatives (e.g., Friends With Benefits, VitaDAO), and media and education (e.g., Bankless DAO).⁵⁴

The range of economic activities undertaken by DAOs is paralleled by their diverse governance frameworks, spanning from direct democracy and delegated voting to multi-tiered decision-making processes. Organizational approaches vary significantly, with some DAOs creating autonomous working groups or sub-DAOs, while others employ steward-led teams or elected councils.⁵⁵ These organizations also implement different voting mechanisms, including token-weighted voting, quadratic voting, conviction voting, and

⁵³ DeepDAO, *Organizations*, DEEPDAO (AUG. 15, 2023) <https://deepdao.io/organizations> [<https://perma.cc/FRU2-HB9G>].

⁵⁴ See, e.g., UNISWAP, <https://uniswap.org> (last visited Aug. 31, 2024); COMPOUND, <https://compound.finance> (last visited Aug. 31, 2024); MANTLE, <https://www.mantle.xyz> (last visited Aug. 31, 2024); ENS, <https://ens.domains> (last visited Aug. 31, 2024); DECENTRALAND, <https://decentraland.org> (last visited Aug. 31, 2024); FRIENDS WITH BENEFITS, <https://www.fwb.help> (last visited Aug. 31, 2024); BANKLESS DAO, <https://www.bankless.community> (last visited Aug. 31, 2024).

⁵⁵ For an example of working groups or sub-DAOs for specific functions, see ETHEREUM NAME SERVICE (ENS), <https://ens.domains> (last visited Aug. 15, 2024). For a DAO with steward-led teams see GITCOIN DAO, <https://www.gitcoin.co> (last visited Aug. 15, 2024).

holographic consensus.⁵⁶ Some DAOs further incorporate unique features like allowing dissenting members to exit with their assets or implementing time-locked escrow periods for tokens.⁵⁷

Tokens play a fundamental role in almost every DAOs. These digital assets serve various functions, including governance (enabling voting and proposal power), utility (granting access to goods or services), financial participation (allowing pro-rata participation in profits or other benefits), or a hybrid combination thereof.⁵⁸ The programmability of these tokens enables DAOs to implement incentives and penalties that would be difficult or impossible to replicate using traditional organizational tools. It also results in the blurring of traditional distinctions between owners, managers, financiers, customers, and employees.

The remarkable heterogeneity of DAOs stems from their unique character as organizations shaped by code. The fusion of DLT networks, smart contracts, and digital assets offers an unprecedented level of flexibility in organizational design. This technological mix enables each DAO to craft distinctive structures and processes tailored to its specific goals, fostering an ecosystem of continuous innovation. Yet beneath this heterogeneity lie the common intellectual foundations described above: the cryptoanarchic commitment to individual autonomy and decentralized collective governance through technology, alongside the cryptoeconomic principles of incentive design. These shared theoretical underpinnings provide a vital lens through which to analyze and understand this varied landscape.

Thus, it is unsurprising that no universally accepted definition of DAOs has emerged. Perspectives vary, each highlighting different aspects. Some definitions concentrate on technology, emphasizing the underlying blockchain and smart contracts. For instance, Usman Chohan describes DAOs as “organizations run through rules encoded as computer programs called ‘smart

⁵⁶ See GITCOIN DAO, <https://www.gitcoin.co> (last visited Aug. 15, 2024); CRYPTO UNICORN DAO, <https://unicorndao.com/> (last visited Aug. 15, 2024); ARAGON, <https://www.aragon.org/> (last visited Aug. 15, 2024); HIVE, <https://1hive.org/> (last visited Aug. 15, 2024); DAOSTACK, <https://www.alchemy.com/dapps/daostack>, (last visited Aug. 15, 2024).

⁵⁷ MolochDAO is an example of the former, while Curve DAO of the latter.

⁵⁸ Carla L Reyes, *Emerging Technology's Language Wars: Cryptocurrency*, 64 WM. & MARY L. REV. 1193, 1218 (2023); Juliet M Moringiello and Christopher K Odinet, *The Property Law of Tokens*, 74 FLA. L. REV. 607 (2022).

contracts.”⁵⁹ Others focus on governance, highlighting the decentralized decision-making aspects of these entities. Samer Hassan and Primavera De Filippi, for example, describe DAOs as systems that “enable people to coordinate and govern themselves mediated by a set of self-executing rules deployed on a public blockchain, and whose governance is decentralised.”⁶⁰ Others still place the accent on the collaborative and goal-driven nature of DAOs. Youssef El Faqir, Javier Arroyo, and Samer Hassan define them as “people with common goals that join under a blockchain infrastructure that enforces a set of shared rules,”⁶¹ and the Law Commission of England & Wales similarly describes them as “a new type of online organisation using rules set out in computer code ... [that] generally bring[s] together a community of (human) participants with a shared goal – whether profit-making, social or charitable.”⁶²

Although these definitions are valuable in highlighting the multifaceted nature of DAOs, they offer limited insights for our inquiry into how they might navigate the straits of traditional bankruptcy law. The following section therefore delves into five key organizational aspects of DAOs that, in our view, are instrumental for this assessment.

C. Key Organizational Factors

Previous scholarship has examined DAOs by observing them through an analytical prism that separates them into their technological, organizational, and economic components. This section makes an original contribution by introducing a different prism altogether—one that separates DAOs into the elements most relevant to insolvency: their corporate form, management structure, asset holdings, and creditor relationships. This novel perspective illuminates critical implications for bankruptcy cases, which we explore in Parts II and III.

1. Corporate Form

⁵⁹ Usman W. Chohan, *Decentralized Autonomous Organizations (DAOs): Their Present & Future* (2017); similarly, Primavera De Filippi & Aaron Wright, *BLOCKCHAIN AND THE LAW: THE RULE OF CODE 146* (2018) (defining DAOs as entities “run not by humans or group consensus, but rather entirely by smart contracts, algorithms, and deterministic code.”).

⁶⁰ Samer Hassan & Primavera De Filippi, *Decentralized Autonomous Organization*, 10 *INTERNET POL’Y REV.* 2 (2021).

⁶¹ Youssef El Faqir, Javier Arroyo, & Samer Hassan, *An Overview of Decentralized Autonomous Organizations on the Blockchain*, ASS’N FOR COMPUTING MACH., (2020) <https://doi.org/10.1145/3412569.3412579>.

⁶² Law Commission of England & Wales, *Decentralised Autonomous Organisations (DAOs): A scoping paper* (2024) <https://lawcom.gov.uk/project/decentralised-autonomous-organisations-daos/> [<https://perma.cc/JTR2-FYCQ>].

We begin by examining the corporate form of DAOs. This organizational feature may affect whether a DAO is eligible to file for bankruptcy relief.⁶³ It also has bearing on whether and to what extent stakeholders share liability for the organization's obligations, an issue that materially affects the utility of a bankruptcy filing. Corporate form also determines the allocation of decision-making authority in bankruptcy, affecting the decision to file a bankruptcy petition and permeating through every large and small decision that follows.⁶⁴

Initially, which corporate form could be assumed by DAOs was viewed as an unprecedented legal conundrum that opened an entirely new legal frontier.⁶⁵ Over time, however, a scholarly consensus has emerged that these entities can, in principle, adopt most existing corporate forms—ranging from partnerships to limited liability companies, corporations, or common law business trusts.⁶⁶ In practice, the specific corporate form of a DAO will depend on its purpose (i.e., whether for profit or not) and, above all, the extent to which its founders choose to engage with the applicable legal framework.

While empirical research remains limited, anecdotal evidence suggests that DAO founders frequently disregard legal considerations, focusing solely on code deployment. These organizations often claim to exist outside traditional legal frameworks, but such claims are illusory—in the absence of a chosen corporate form, the law automatically categorizes them according to default rules for unincorporated organizations.⁶⁷ For profit-seeking DAOs, this typically results in classification as a general partnership, carrying two significant

⁶³ See *supra* Part II(A)(1).

⁶⁴ See *supra* Part II(A)(2).

⁶⁵ See Christoph Jentzsch, *Decentralized Autonomous Organization to Automate Governance*, WHITE PAPER, (2016) https://archive.org/stream/DecentralizedAutonomousOrganizations/WhitePaper_djvu.txt; Seth Bannon, *The Tao of "The DAO" or: How the Autonomous Corporation Is Already Here*, TECHCRUNCH (May 16, 2016), <https://techcrunch.com/2016/05/16/the-tao-of-the-dao-or-how-the-autonomous-corporation-is-already-here/> [<https://perma.cc/CU5X-4VCB>]

⁶⁶ See Reyes, *Rockefeller*, *supra* note 3; Lynn M. LoPucki, *Algorithmic Entities*, 95 WASH. U. L. REV. 887 (2018); Stephen D. Palley, *How to Sue a Decentralized Autonomous Organization*, COINDESK (updated Mar. 21, 2016), <http://www.coindesk.com/how-to-sue-a-decentralized-autonomous-organization/> [<https://perma.cc/XNT6-XGC4>]; Shawn Bayern, *The Implications of Modern Business Entity Law for the Regulation of Autonomous Systems*, 19 STAN. TECH. L. REV. 93, 104 n.43 (2015); Shawn Bayern, *Of Bitcoins, Independently Wealthy Software, and the Zero-Member LLC*, 108 NW. U. L. REV. 1485, 1496–97 (2014).

⁶⁷ Robert D. Snook, *The Liability of Dissolved Corporations Under CERCLA: The Importance of Being "Dead and Buried,"* 66 CONN B.J. 397, 418 (1992) (referencing the applicability of default business entity law in the absence of a formal corporate selection).

consequences: authority for each partner to bind the entity in ordinary business matters, and, critical to insolvency, unlimited personal liability for the partners.⁶⁸

The *bZx* case illustrates this dynamic.⁶⁹ The founders of bZx DAO largely ignored corporate law considerations when establishing their protocol. After a hack resulted in approximately \$55 million in losses, users filed a class action against the DAO, its founders, and all governance token holders (BZRX, later OOKI, tokens). Confronted with the issues of what was the corporate form of bZx DAO, the United States District Court for the Southern District of California applied the default rule for unincorporated for-profit organizations under California law, finding that the mere association of persons carrying on a business for profit creates a partnership—regardless of the participants’ intent or knowledge of forming one.⁷⁰ This classification exposed all defendants, including token holders to joint and several liability for the losses.

It is worth emphasizing that there are no legal preclusions preventing DAO founders from adopting traditional corporate forms—including corporations and LLCs—affording them limited liability and clear legal standing. To the contrary, Shawn Bayern has shown how autonomous algorithms can acquire legal personhood through limited liability companies, enabling DAOs to exercise property rights, enter contracts, and receive constitutional protections.⁷¹ Building on this work, Lynn LoPucki has posited

⁶⁸ Commentators have considered the possibility that this default position should be amended for DAOs. *See* Reyes, *Rockefeller*, *supra* note 3.

⁶⁹ *Sarcuni v. bZx DAO*, 664 F. Supp. 3d 1100 (S.D. Cal. 2023)

⁷⁰ *Id.* 12 (“Under the Corporations Code, unless persons associated to do business together establish a formal entity like a corporation, the association is deemed to be a partnership regardless of the parties’ intent.” *Jones v. Goodman*, 57 Cal. App. 5th 521, 538 n.19 (2020); *see also* § 16202(b) (“[A]n association formed under a statute other than this chapter, a predecessor statute, or a comparable statute of another jurisdiction is not a partnership under this chapter.”). “[P]ersons may unintentionally create a partnership where their actions and behavior demonstrate an intent to engage in business together.” *In re Marriage of Geraci*, 144 Cal. App. 4th 1278, 1292 (2006) (noting that courts consider the surrounding circumstances to determine the parties’ intent). “It is well-settled that the existence of a partnership is a question of fact.” *Persson v. Smart Inventions, Inc.*, 125 Cal. App. 4th 1141, 1157 (2005) (citing *Holmes v. Lerner*, 74 Cal. App. 4th 442, 445 (1999)).” *See also* *Commodity Futures Trading Comm’n v. Ooki DAO*, No. 3:22-CV-05416-WHO, 2023 WL 5321527 (N.D. Cal. June 8, 2023); *See also* REV. UNIF. P’SHP ACT § 202(a) (UNIF. L. COMM’N, Draft 2013) (under which a partnership exists if there is “association of two or more persons to carry on as co-owners of a business for profit . . . , whether or not the persons intend to form a partnership.”). On the notion of accidental partnerships *see also* Shawn Bayern, *Three Problems (and Two Solutions) in the Law of Partnership Formation*, 49 MICH. J.L. REFORM 605, 608 (2016).

⁷¹ Shawn Bayern, *The Implications of Modern Business Entity Law for the Regulation of*

that “algorithmic entities” can be established as corporations through a “corporate dyad” structure under Delaware law.⁷² Carla Reyes has proposed the business trust as particularly suitable for DAOs, with computer code serving as the trust agreement and different token classes representing ownership and trustee roles.⁷³

Moreover, state legislatures have created bespoke pathways, introducing corporate forms specifically designed for DAOs.⁷⁴ Vermont pioneered this trend in 2018 with its “Blockchain-Based Limited Liability Company” law, followed by Wyoming’s “Decentralized Autonomous Organization Supplement” in 2021, Tennessee’s “Decentralized Organization Act” in 2022, and Utah’s “Decentralized Autonomous Organizations Act” that same year.⁷⁵ These frameworks share common features: they grant limited liability protection, recognize smart contracts as legally binding, enable tokenized voting systems, and provide flexibility to accommodate decentralized governance.

Yet, despite this ample array of options, DAO founders typically decline to engage with legal frameworks. While the precise reasons are difficult to pinpoint with certainty, this reluctance appears rooted in the intellectual foundations discussed above in Part I.A.

This friction manifests in two key areas. First, corporate forms—especially those granting limited liability—impose structural and governance requirements that clash with DAO principles. The law typically requires owners to delegate powers to qualified individuals or committees, who then owe specific obligations to stakeholders. For example, Delaware law has a default rule requiring a corporation to have a board of directors,⁷⁶ with defined powers and

Autonomous Systems, 19 STAN. TECH. L. REV. 93, 104 n.43 (2015); Shawn Bayern, *Of Bitcoins, Independently Wealthy Software, and the Zero-Member LLC*, 108 NW. U.

L. REV. 1485, 1496–97 (2014).

⁷² Lynn M. LoPucki, *Algorithmic Entities*, 95 WASH. U. L. REV. 887, 907-910 (2018).

⁷³ Reyes, *Rockefeller*, *supra* note 3, at 406-415.

⁷⁴ See generally Ben Hitchens & Oliver Roberts, *Decentralised Autonomous Organisations (DAOs): What Are They? And Can They Be Parties To A Claim?*, 5 INT’L J. BLOCKCHAIN L. 30, 30 (2023); Aaron Wright, *The Rise of Decentralized Autonomous Organizations: Opportunities and Challenges*, 42 STAN. J. BLOCKCHAIN L. & POL’Y 152 (2021).

⁷⁵ VT. STAT. ANN. tit. 11, §§ 4171–4176 (2023) (enacted May 30, 2018, effective Jul. 1, 2018); COLO. REV. STAT. §§ 11-51-308.7, 11-51-308.8 (2019); WYO. STAT. ANN. §§ 17-31-101–116 (2023) (enacted Apr. 2021, effective Jul. 1, 2021); TENN. CODE ANN. §§ 48-250-101–116 (2023) (effective Apr. 20, 2022).

⁷⁶ DEL. CODE ANN. tit. 8, § 141(a) (2023) (“The business and affairs of every corporation organized under this chapter shall be managed by or under the direction of a board of directors,

fiduciary duties.⁷⁷ The law often mandates additional oversight mechanisms, such as independent auditors under the Sarbanes-Oxley Act.⁷⁸ These requirements sit uncomfortably with the ethos of decentralization and opposition to delegation of powers embraced by many DAOs.

Second, corporate forms generally demand periodic disclosures about operations, activities, and assets. Delaware corporations must maintain accurate books⁷⁹ and publish annual financial statements.⁸⁰ Moreover, the law requires transparency regarding individual identities in both ownership and management roles—corporations must maintain stock ledgers⁸¹ and disclose directors’ and officers’ names and addresses in annual reports.⁸² While DAOs often emphasize transparency through public code and blockchain-trackable treasuries, these disclosures differ markedly from legal requirements. Most notably, revealing individual identities directly clashes with the cypherpunk commitment to privacy, and the spirit of pseudonymous, borderless collaboration.

Notably, a small number of prominent DAOs have chosen to embrace formal legal structures. For example, American CryptoFed DAO, DFINITY

except as may be otherwise provided in this chapter or in its certificate of incorporation.”). However, it should be noted that scholars have interpreted this provision as “allow[ing] corporations to modify the role of the board of directors, including not having a board.” Stephen M. Bainbridge & M. Todd Henderson, *Boards-R-Us: Reconceptualizing Corporate Boards*, 66 STAN. L. REV. 1051, 1057 n.22 (2014); *see also* Grant M. Hayden & Matthew T. Bodie, *Larry from the Left: An Appreciation*, 8 VA. L. & BUS. REV. 121, 129 (2014) (“Thus the board—the central feature of corporate governance—appears to be merely a default rule.”); Grant M. Hayden & Matthew T. Bodie, *The Uncorporation and the Unraveling of “Nexus of Contracts” Theory*, 109 MICH. L. REV. 1127, 1135 (2011) (“Thus the board—the central feature of corporate governance—appears to be merely a default rule.”); Lynn A. Stout, *The Shareholder As Ulysses: Some Empirical Evidence on Why Investors in Public Corporations Tolerate Board Governance*, 152 U. PA. L. REV. 667, 669 (2003) (“Delaware law . . . treats board governance as a default rule that can be ‘bargained around’ in the corporate charter.”).

⁷⁷ DEL. CODE ANN. tit. 8, § 141(a) (2023) (“The business and affairs of every corporation organized under this chapter shall be managed by or under the direction of a board of directors, except as may be otherwise provided in this chapter or in its certificate of incorporation.”); *id.* § 142(a) (“Every corporation organized under this chapter shall have such officers with such titles and duties as shall be stated in the bylaws or in a resolution of the board of directors which is not inconsistent with the bylaws . . .”). For the fiduciary duties of directors, *see, e.g.*, *Stone v. Ritter*, 911 A.2d 362, 370 (Del. 2006) (affirming that directors owe fiduciary duties of care and loyalty to the corporation and its shareholders).

⁷⁸ Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, § 404, 116 Stat. 745, 789 (codified as amended at 15 U.S.C. § 7262) (requiring management and external auditor assessment of internal controls).

⁷⁹ DEL. CODE ANN. tit. 8, § 224 (2023).

⁸⁰ *Id.* § 219(a).

⁸¹ *Id.* § 219(c).

⁸² *Id.* § 502(a)(3)-(4).

Foundation, and CityDAO have taken advantage of the legal framework offered by Wyoming.⁸³ Moreover, hybrid models are also emerging, as exemplified by Uniswap and Flamingo DAO's combination of a traditional LLC with their on-chain governance mechanisms,⁸⁴ and MakerDAO's formation of a Cayman Islands foundation to manage its intellectual property.⁸⁵ However, these examples represent exceptions rather than the norm. They tend to be larger, more commercially oriented DAOs that in many respects have departed significantly from the principles of decentralization and resistance to traditional legal structures.

2. Managers

Managers have an important role in bankruptcy cases.⁸⁶ As discussed further in Part II, bankruptcy law contemplates that a debtor have agents with authority to make strategic decisions and direct operations.⁸⁷ These persons are responsible for advancing the bankruptcy process—selecting and coordinating with legal counsel, ensuring compliance with legal requirements, overseeing disclosures, and, possibly, implementing the reorganization or liquidation plan.⁸⁸ While these demands are most pronounced in reorganization-style bankruptcy cases, they are also present in liquidation cases.⁸⁹

In traditional organizations, managers are clearly appointed and readily identifiable. In corporations, for example, the board of directors and executive

⁸³ See American CryptoFed DAO, Form 10, SEC (Sept. 16, 2021), https://www.sec.gov/Archives/edgar/data/1881928/000110465921116595/tm2127549-1_f1.htm; DFINITY FOUNDATION, Internet Computer Governance, <https://internetcomputer.org/docs/current/tokenomics/nns/nns-intro>; Helena Rong & Zeslene Mao, Deep-Dive Into CityDAO: An Experiment in Collective Land Ownership and Decentralized Governance 1 (2023), <https://www.belfercenter.org/publication/deep-dive-citydao-experiment-collective-land-ownership-and-decentralized-governance>.

⁸⁴ See OpenLaw, Flamingo: The First LAO, MEDIUM (Oct. 8, 2019), <https://medium.com/@OpenLawOfficial/flamingo-the-first-dao-enabled-hedge-fund-45ed7bc0b2d1>; See Uniswap Labs, About Us, <https://uniswap.org/about>

⁸⁵ See MakerDAO, *The Maker Protocol: MakerDAO's Multi-Collateral Dai (MCD) System*, MAKERDAO <https://makerdao.com/en/whitepaper>.

⁸⁶ For the purposes of this discussion, we use the term “managers” broadly to encompass those individuals who have decision-making authority and responsibility for the operations and strategic direction of an organization, regardless of its corporate form. This includes executives, directors, and others with significant control over the organization’s affairs.

⁸⁷ See *infra* Part II(A)(2).

⁸⁸ *Id.*

⁸⁹ See *infra* text accompanying note 173 (discussing the debtor’s duties to cooperate with a trustee).

officers hold decision-making powers.⁹⁰ In LLCs, managers are often either designated in the operating agreement or chosen by members, while in a general partnership, all partners are generally considered managers unless otherwise specified.⁹¹

DAOs, by contrast, present a more complex scenario. In these entities, the exercise of managerial authority—i.e., how decisions that legally bind the organization are made and executed—varies profoundly depending on the manner in which “decentralization” and “automation” have been implemented. To illustrate this diversity, we can use a 2x2 matrix (*Figure 1*) where the horizontal axis represents the spectrum from “decentralized” to “centralized” governance, while the vertical axis depicts the range from autonomous to non-autonomous operations.

In quadrant A (top-left) lie DAOs in which a concentrated group of individuals, typically founders or early developers, hold managerial authority. These individuals make strategic decisions, oversee operations, and execute plans with limited reliance on software processes. Arguably, these are DAOs in name only, as they feature minimal decentralization and automation. For example, Compound had this type of managerial structure in its early days.⁹²

Quadrant B (top-right) includes DAOs with widely distributed decision-making power, typically among tokenholders, who execute strategies through discretionary actions and limited reliance on code. These entities have decentralized management but limited automation, akin to partnerships, albeit with token-based management powers. BitDAO falls in this category.⁹³

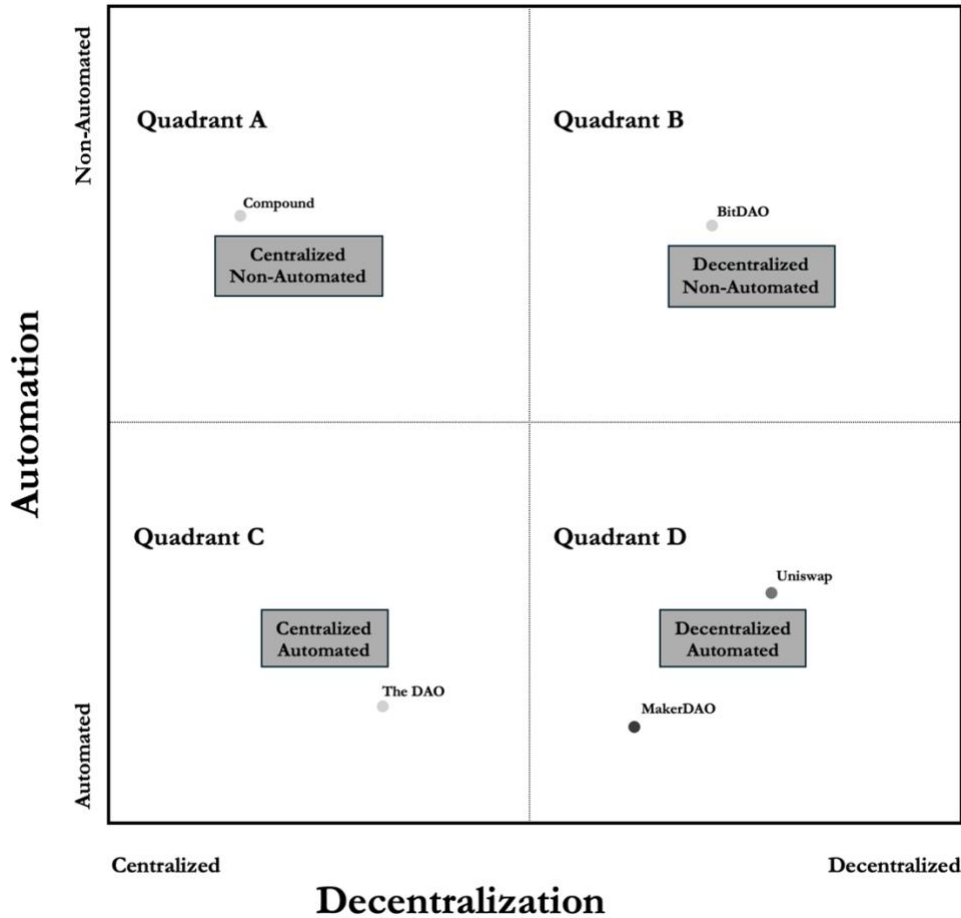
⁹⁰ See, e.g., DEL. CODE ANN. tit. 8 § 141(a) (2021) for Delaware corporations; Unif. P’ship Act § 401 (1997) for general partnerships.

⁹¹ See, e.g., DEL. CODE ANN. tit. 6 § 18-402 (2021) for Delaware LLCs

⁹² COMPOUND, GOVERNANCE, <https://compound.finance> (last visited Sept. 2, 2024) [<https://perma.cc/26GT-NG8L>].

⁹³ BITDAO, GOVERNANCE, <https://docs.bitdao.io/litepaper-1/governance-overview> (last visited Sept. 1, 2024) [<https://perma.cc/ZF62-R7GP>].

Figure 1
DAO Decentralization & Automation Management Matrix



DAOs in Quadrant C (bottom-left) are characterized by highly automated, code-driven operations, but with strategic decisions controlled by a small group or foundation. While these entities are highly automated, they lack decentralization, resulting in a unique management structure without direct parallels in traditional organizations. For example, TheDAO was highly automated, yet decision-making powers rested primarily with the German company Slock.it.⁹⁴

⁹⁴ Jenny Rudd, *The DAO: The Greatest Crypto Tale Ever Told*, INFORMED INVESTOR MAG., Nov. 21, 2022, <https://www.aimsure.co.nz/the-dao-the-greatest-crypto-tale-ever-told/> [<https://perma.cc/A5JZ-36ZM>].

Quadrant D (bottom-right) contains DAOs where decision-making powers are distributed among many participants, and strategies are executed primarily via code. These entities are both highly decentralized and automated, differing significantly from conventional organizations. Arguably, Uniswap exemplifies this category, with its governance token holders voting on protocol changes that are then implemented through smart contracts.⁹⁵

It should be noted that the management structure of a DAO is dynamic, not static. The software-centric nature of these entities allows for evolution over time. DAOs almost invariably begin as non-autonomous and centralized (top-left quadrant), with a small group of founders in control. Over time, in line with the ethos of this community, they seek to progressively become more decentralized and autonomous. This trajectory, however, is neither inexorable nor unidirectional. Rather, it can prove reversible and opaque. Indeed, many organizations that label themselves as DAOs remain perpetually in Quadrants A or C, maintaining significant centralized control while only superficially embracing DAO principles⁹⁶ Others experience periods of decentralization followed by abrupt re-centralization, whether due to the necessity of delegating powers for operational tasks or when an individual consolidates decision-making authority for personal gain.⁹⁷ Still others have evolved toward hybrid structures, pairing traditional corporate entities with highly decentralized DAOs.⁹⁸ Such events invariably spark fierce debates, as participants view any

⁹⁵ UNISWAP, GOVERNANCE, <https://docs.uniswap.org/protocol/concepts/governance/overview> (last visited Sept. 1, 2024) [<https://perma.cc/WMU6-MV3V>]; Alfred Lehar and Christine A. Parlour, *Decentralized Exchange: The Uniswap Automated Market Maker*, J. OF FINANCE (forthcoming) <https://ssrn.com/abstract=3905316> (last visited Sept. 1, 2024). However, Uniswap's hybrid structure—combining the DAO's decentralized protocol governance with Uniswap Labs' traditional corporate form as a Delaware LLC—suggests that its categorization as fully decentralized and automated may merit qualification.

⁹⁶ For instance, Yearn Finance, despite its automated protocols, has maintained significant centralization around its founder, Andre Cronje. See Paige Aarhus, *Andre Cronje: The rise and fall of a DeFi God*, DLNEWS, (Dec. 19, 2022) <https://www.dlnews.com/articles/web3/andre-cronje-the-rise-and-fall-of-a-defi-god>.

⁹⁷ Sushi DAO exemplifies this scenario, where after a period of community governance, concerns arose about centralization due to significant token accumulation by certain individuals; See Yohan Yun, Crypto whales like Humpy are gaming DAO votes — but there are solutions Andrew Thurman, *Concerns around Sushi centralization resurface following key exec's departure*, COINTELEGRAPH, (Sept. 2, 2024) <https://cointelegraph.com/magazine/whales-humpy-gaming-dao-votes-solutions/>.

⁹⁸ See DFINITY FOUNDATION, <https://dfinity.org/> (last visited Jan. 27, 2025). A Swiss non-profit organization which manages intellectual property rights and development activities

retreat from complete decentralization as a betrayal of the core principles that distinguish DAOs from traditional organizations.

For purposes of our analysis, we direct our attention primarily to DAOs that have achieved decentralization and automation (Quadrant D) and those that have achieved decentralization but remain primarily non-autonomous (Quadrant B). This focus reflects both practical and theoretical considerations. Organizations in Quadrants A and C, while possibly relying on DLT networks and tokens, maintain managerial structures that hardly differ from those of traditional organizations and thus present few novel challenges for bankruptcy law. By concentrating on truly decentralized DAOs, we can better examine the unique tensions that arise when these novel entities encounter traditional bankruptcy frameworks.

3. *Assets*

Assets held by a debtor are a central concern in bankruptcy, as they constitute the estate from which creditors' claims will be satisfied.⁹⁹ Insofar as DAOs are attributed legal personhood, they can own any type of property. But currently, most DAO "treasuries" primarily consist of DLT tokens, including cryptocurrencies, stablecoins, NFTs, and often their own governance tokens. This composition introduces legal and technological complexities in insolvency proceedings.

The bankruptcy estate is a creature of federal law, yet the nature and scope of the debtor's property interests is determined by applicable non-bankruptcy law.¹⁰⁰ Assessing the scope of a DAO's estate is a difficult undertaking, beginning with a fundamental question regarding the allocation of rights in the treasury assets between the DAO and its various tokenholders.

For DLT tokens, this legal analysis poses particular challenges. Unlike traditional assets, conflict of laws rules for digital assets are divergent and

for the Internet Computer project while operating alongside a highly decentralized DAO that governs protocol parameters and token economics through the Network Nervous System (NNS). *See*, INTERNET COMPUTER GOVERNANCE, <https://internetcomputer.org/docs/current/tokenomics/nns/nns-intro> (last visited Aug. 15, 2024) [<https://perma.cc/ZA67-XZPB>].

⁹⁹ *See* 11 U.S.C. § 541(a). The scope of the bankruptcy estate determines, among other things, the scope of the bankruptcy court's jurisdiction, what types of activities are stayed by the bankruptcy filing, and what types of property the debtor may use or monetize during the bankruptcy case. Further, the type and value of assets in the estate will affect the ultimate recoveries of creditors in the bankruptcy case.

¹⁰⁰ *Butner v. United States*, 440 U.S. 48, 55 (1979).

underdeveloped across different legal systems, making it difficult to identify the applicable law. Once they overcome this hurdle, courts must grapple with novel questions about the precise rights a DAO holds in these assets vis-à-vis its tokenholders, as well as transferors, and how they may be disposed of during reorganization or liquidation. To illustrate the complexity of this process, we offer a schematic analysis of how this assessment would unfold in the United States, highlighting key pressure points

In the United States, the legal status of cryptocurrencies and NFTs as intangible personal property is well established.¹⁰¹ Moreover, the Uniform Commercial Code (UCC) provides a robust and clear regime governing the transfer of ownership, use as collateral, and good faith purchases of these assets, following the 2022 amendments that introduced Article 12 and revised Article 9.¹⁰² This framework offers relative certainty for DAOs and their creditors regarding the scope of the treasury, although many issues relating to how crypto assets should be classified and valued—issues with major bankruptcy implications—remain unsettled.¹⁰³

¹⁰¹ This issue has been relatively uncontroversial across the USA. *See, e.g.*, *Kimmelman v. Wayne Ins. Grp.*, No. 18 CV 1041, 2018 Ohio Misc. LEXIS 1953 (Ct. Com. Pl. Sep. 25, 2018) (“Accordingly, the Court finds BitCoin, although termed ‘virtual currency,’ is recognized as property by the IRS and shall be recognized as such by this Court.”). The same is not true in England and several civil law jurisdictions. *See* David Fox, *CRYPTOCURRENCIES IN THE COMMON LAW OF PROPERTY* (David Fox & Sarah Green eds., OUP 2019); *see also* Alvin Hoi-Chun Hung, *Evolution of Intangible Property to Crypto Assets: Legal Pragmatism in Anglo-American Common Law and Chinese Civil Law*, 12 *CHINESE J. OF COMPAR. L.* (forthcoming); Burcu Yüksel Ripley & Florian Heindler, *The Law Applicable to Crypto Assets: What Policy Choices Are Ahead of Us?*, *BLOCKCHAIN AND PRIV. INT’L L.* (2023).

¹⁰² 2022 Amendments to the Uniform Commercial Code (Unif. L. Comm’n 2022) <https://www.uniformlaws.org/committees/community-home?communitykey=1457c422-ddb7-40b0-8c76-39a1991651ac> (last visited Sept. 3, 2024).

¹⁰³ For a discussion of classification issues involving cryptoassets, *see, e.g.*, Brad M. Kahn, Rachel Biblo Block, & Joseph E. Szydlo, *The Need for Clarity Regarding the Classification and Valuation of Cryptocurrency in Bankruptcy Case*, 17 *PRATT’S J. BANKR. L.* 228 (2022); Joanne Molinaro & Susan Poll Klaessy, *Bitcoin as a “Commodity” and the Resulting Impact on Bankruptcy Proceedings*, *AM. BAR ASS’N*, (Mar. 5, 2019) <https://www.americanbar.org/groups/litigation/committees/woman-advocate/articles/2019/winter2019-bitcoin-as-a-commodity-and-the-resulting-impact-on-bankruptcy-proceedings/>. For a sense of how valuation issues can have a massive effect on bankruptcy outcomes, *compare* *In re Genesis Glob. Holdco, LLC*, 660 B.R. 439, 457 (Bankr. S.D.N.Y. 2024) and *In re FTX Trading Ltd.*, No. 22-11068, 2024 WL 4562675 (Bankr. D. Del. Oct. 23, 2024). Valuation implications in bankruptcy are neatly summarized in Joseph Cioffi et al., *Valuing Crypto in the Bankruptcy Multiverse*, *REUTERS*, (July 30, 2024). <https://www.reuters.com/legal/litigation/valuing-crypto-bankruptcy-multiverse-2024-07-30/> [<https://perma.cc/XV9Z-NDZV>].

By contrast, ownership and transfer regimes around stablecoins is more nebulous. While the rules governing the ownership, transfer, and use as collateral of the tokens themselves are the same as those for cryptocurrencies and NFTs, other aspects are shrouded in doubt. Of particular concern to DAO bankruptcies is the redemption right—in other words, the ability to convert a stablecoin into fiat currency from its issuer. This right is highly problematic, both in terms of its substantive nature and its transferability,¹⁰⁴ which may affect a DAO’s ability to redeem any stablecoins within its treasury for fiat currency. If the DAO enters bankruptcy, this practical reality could complicate the valuation and disposition of stablecoin assets in the DAO’s estate.

DLT tokens purporting to provide their holders with rights to other assets—a practice commonly referred to as tokenization—present even more complex legal challenges.¹⁰⁵ These tokens may claim to confer ownership of diverse assets such as real estate, intellectual property rights, artwork, or “non-cashflow generating assets.”¹⁰⁶ Once again, as we noted above, while the regime governing the ownership, transfer, and use as collateral of the tokens themselves aligns with that of cryptocurrencies and NFTs, the determination of rights to the linked assets is far more intricate. This complexity stems from the fact that these rights are heavily dependent on the laws governing the underlying asset, which may vary significantly across jurisdictions and asset types.¹⁰⁷ In a bankruptcy scenario involving a DAO holding such tokenized assets, this legal ambiguity could pose novel issues regarding the scope of the debtor’s estate, as well as asset valuation and liquidation, potentially impacting the interests of both the DAO and its creditors.

Beyond private law considerations, regulatory challenges loom large. Various regulatory agencies, including the Financial Crimes Enforcement Network (FinCEN), the Commodity Futures Trading Commission (CFTC), and most notably the Securities Exchange Commission (SEC), have intensified their scrutiny of the creation, distribution, and trading of these digital assets. This heightened oversight can have significant implications in bankruptcy, as

¹⁰⁴ See Kara J Bruce, Christopher K. Odinet, & Andrea Tosato, *The Private Law of Stablecoins*, 54 ARIZ. ST. L. J. 1073 (2022).

¹⁰⁵ See generally Moringiello & Odinet, *Tokens*, *supra* note 58 (exploring the concept in the NFT market).

¹⁰⁶ See Steven L. Schwarcz, *Next-Generation Securitization: NFTs, Tokenization, and the Monetization of “Things,”* 103 B.U. L. REV. 967 (2023); see also Christopher K. Odinet and Andrea Tosato, *The Intersection of NFTs and Structured Finance*, 103 B.U. L. REV. 1005 (2023).

¹⁰⁷ Moringiello & Odinet, *Tokens*, *supra* note 58; R. Wilson Freyermuth, Christopher K. Odinet & Andrea Tosato, *Crypto in Real Estate Finance*, 75 ALA. L. REV. 93 (2023); Christopher K. Odinet and Andrea Tosato, *The Intersection of NFTs and Structured Finance*, 103 B. U. L. REV. 1005 (2023).

demonstrated in recent high-profile cases. For instance, in both the Voyager and FTX bankruptcies, the SEC intervened to challenge proposed reorganization plans that involved repaying creditors with tokens.¹⁰⁸ The SEC argued that such repayments might constitute an unauthorized distribution of securities, thereby complicating the resolution process and, considering shifts in the valuation of these assets, dramatically altering the outcomes for creditors.

DLT tokens also present significant technological challenges in the bankruptcy context. Despite the cryptographic security of DLT, the prevalence of code bugs, errors, and malicious attacks has led to numerous hacks. These vulnerabilities can both precipitate bankruptcy—which, as we explain in Part II below, was the case in the Hector DAO bankruptcy—and disrupt ongoing insolvency processes. Recent bankruptcies of crypto platforms have been marred by hacking attempts aimed at stealing digital assets amidst the procedural chaos, underscoring the persistent technological threats.¹⁰⁹

The risks are further amplified by human error and software bugs, particularly in the context of self-custodied tokens. DAOs face the constant threat of asset loss due to misplaced cryptographic keys, erroneous transfers to incorrect addresses, unauthorized access, or the incapacitation of key personnel. These issues can not only trigger bankruptcies but can also affect reorganization and distribution efforts during insolvency. The highly automated nature of DAOs exacerbates these risks, as there may be fewer human safeguards in place to prevent or mitigate such technological failures.

4. Creditors

We now turn our attention to a DAO’s potential creditors, who would be the key stakeholders in a bankruptcy case. In principle, any person—legal or natural—can be owed an obligation by a DAO for monetary debts or in-kind commitments. Under U.S. bankruptcy law, any such persons will qualify as a “creditor”¹¹⁰ with a “claim”¹¹¹ against a DAO’s bankruptcy estate. The definition of “claim” is designed to confer the “broadest possible definition,”¹¹² and includes both rights to payment and equitable relief, no matter how remote or contingent. One of the most pronounced implications of this broad definition

¹⁰⁸ See Dick, Odinet, & Tosato, *Debt Tokens*, *supra* note 1.

¹⁰⁹ See Kara J. Bruce, *Crypto Failure in the Shadows*, 69 VILL. L. REV. 691, 718 & n.157 (2024) (describing sustained phishing attacks on creditors in the *Celsius* bankruptcy case).

¹¹⁰ See 11 U.S.C. § 101(10).

¹¹¹ See 11 U.S.C. § 101(5).

¹¹² H.R. Rep. No. 95–595, 95th Cong., 1st Sess. 309 (1977); S. Rep. No. 95–989, 95th Cong., 2d Sess. 22 (1978).

is that a DAO's tokenholders, who one might assume have the status of "equity" in bankruptcy, might be classified instead as creditors in bankruptcy. As we explain below, this classification would have profound distributional effects in the bankruptcy case.

Before proceeding further, a caveat is necessary. Our analysis is primarily shaped by how DAOs currently become subject to voluntary and involuntary obligations based on limited anecdotal data, and to a lesser extent, by what we can reliably forecast based on nascent trends. Moreover, our assessment is further rendered difficult by the fact that DAOs do not take a systematic approach to their obligations, let alone develop a structured debt table comparable to that of traditional businesses.¹¹³ Notwithstanding these limitations, we have identified four primary sources of obligations and, consequently, types of creditors for DAOs.

First, as previously discussed, DAOs typically raise capital by minting and offering tokens to the general public in exchange for various digital assets. These tokens are commonly presented as governance tokens, utility tokens, instruments granting pro-rata access to profits, or a combination thereof. While some tokens will unquestionably be classified as equity interests in bankruptcy—as exemplified by the governance tokens in the bZx case—others may qualify as debt instruments or present complex hybrid characteristics requiring more nuanced analysis.

Consider a hypothetical DAO, LucrumDAO, which is loosely linked to California and, having not elected any formal corporate form, would be classified as a general partnership under state law. The DAO issues three types of tokens. Its LucrumAlpha tokens grant holders a fixed 7% annual return on their contribution, with a mandatory redemption after one year at the original contribution amount. These tokens include only minimal voting rights, limited to matters directly affecting payment terms. LucrumBeta tokens provide a 5% annual return and two-year redemption right, but also grant holders substantial voting powers over fund allocation and LucrumDAO governance changes. Finally, LucrumT tokens can be purchased with stablecoins and provide holders with full governance rights over all aspects of the LucrumDAO's operations.

LucrumAlpha tokens would almost certainly be classified as debt in bankruptcy. Their fixed return, mandatory redemption, and limited voting rights focused solely on protecting payment terms closely mirror traditional debt

¹¹³ In conventional corporate structures, a debt table usually provides a comprehensive overview of all outstanding debts, including creditors, principal amounts, interest rates, maturity dates, and any collateral.

instruments. As such, LucrumAlpha holders would have claims against the bankruptcy estate for both accrued returns and unredeemed principal. LucrumBeta tokens would present a more complex classification challenge due to their hybrid nature. While their governance rights suggest a partnership interest, the fixed return and redemption rights are hallmarks of debt obligations. Given bankruptcy law’s broad definition of “claims” and its focus on economic substance over form,¹¹⁴ LucrumBeta holders would likely have claims against the estate for at least the fixed return and redemption components of their tokens, even as they might also be subject to the obligations of general partners. In contrast, LucrumT tokens represent pure equity interests in the DAO. These tokens lack any debt-like features, and they provide no fixed return, redemption rights, or other payment obligations. Instead, they embody the core characteristics of partnership interests through their comprehensive governance rights. Consequently, LucrumT holders would not have claims against the bankruptcy estate but would rather hold equity interests subordinated to all creditor claims.

This scenario illustrates how certain DAO tokenholders could be classified as creditors if the DAO enters bankruptcy. This characterization will have a dramatic effect on tokenholders’ recovery in a typical insolvency case because bankruptcy’s distribution structure pays creditors ahead of equity holders.¹¹⁵ With that in mind, we might expect tokenholders to behave as creditors upon the filing of a bankruptcy case, making this difficult characterization issue a gateway challenge.¹¹⁶

Loans constitute a second source of obligations that could give rise to creditors for DAOs. Currently, there is no evidence of traditional business lenders—such as banks, credit unions, business development companies (BDCs), private equity firms, venture capital funds, or other alternative lenders—extending financing to DAOs. However, nascent lending activities

¹¹⁴ For a discussion of how some courts distinguish debt from equity, *see* *In re AutoStyle Plastics, Inc.*, 269 F.3d 726, 747–48 (6th Cir. 2001) (articulating an eleven-factor test); *In re Live Primary, LLC*, 626 B.R. 171, 178 (Bankr. S.D.N.Y. 2021) (recharacterizing a debt instrument as equity).

¹¹⁵ 11 U.S.C. s. 726(a) (providing for a distribution to unsecured creditors in chapter 7 cases). In reorganization-style bankruptcy cases, distributions are defined in a confirmed plan. Although the plan does not need to mirror chapter 7’s distribution waterfall, any plan that is not accepted by all classes of creditors must satisfy the best interests test, through which each holder of a claim receives the equivalent of what they would have received if the debtor were liquidated in chapter 7, and the absolute-priority rule, in which (with exceptions), no junior class can be paid anything until the dissenting class is paid in full. *See* 11 U.S.C. §§ 1129(a)(7), 1129(b)(2).

¹¹⁶ *See supra* note 114.

have emerged either between DAOs or from blockchain-focused businesses to DAOs. MolochDAO, for instance, has provided grants and investments to various Ethereum-based projects, occasionally employing loan-like structures. In one notable case, MolochDAO provided 20,000 DAI to MetaCartel Ventures DAO in the form of a quasi “convertible loan.”

The default of such loans could present novel challenges in bankruptcy. These transactions often feature unconventional structures, involving tokens and smart contracts, which raise complex questions concerning the underlying obligations. For instance, if the loan is denominated in cryptocurrency, determining the precise value and legal nature of the claim in a bankruptcy proceeding could prove contentious. Moreover, if the loan is extended by another DAO, their behavior as a creditor might diverge significantly from that of traditional financiers due to their decentralized and autonomous decision-making processes. Conventional negotiations and restructuring discussions might be impeded, potentially complicating bankruptcy proceedings and creditor coordination in ways uncommon in traditional financial contexts.

A third source of obligations for DAOs originates from the nature of their ordinary business activities. The diverse economic pursuits of these novel entities result in a correspondingly varied group of potential creditors. At present, we observe several categories of obligations. Most notably, DAOs often offer services to users in exchange for cryptocurrency payments.¹¹⁷ The DAO’s failure to fulfill these commitments could potentially leave the injured party with a claim against a bankrupt DAO’s estate.¹¹⁸ Similarly, DAOs increasingly engage professionals for various services, including software development, accounting, and legal counsel.¹¹⁹ Non-payment for these professional services could result in claims. Moreover, as DAOs extend their reach beyond distributed ledger technology networks into “real world,” brick-and-mortar businesses, they are likely to incur obligations from trade suppliers and other creditors. For example, Constitution DAO, in its attempt to purchase a copy of the U.S. Constitution, engaged with traditional auction houses and would have incurred significant

¹¹⁷ For instance, RaidGuildDAO operates as a decentralized collective of Web3 product builders, offering development services to clients in exchange for cryptocurrency. *See* RaidGuild, *RaidGuild - Hire Web3 Talent*, RAIDGUILD, <https://www.raidguild.org/> (last visited Sept. 2, 2024).

¹¹⁸ For example, both *In re bZx* and *in Newton AC/DC Fund L.P. v. Hector DAO*, Civil Action 24-722 (RK) (JBD) (D.N.J. Feb. 13, 2024) plaintiffs alleged that Bzx and HectorDAO had breached their contractual obligations giving rise to damages claims.

¹¹⁹ *See, e.g.*, <https://www.coindesk.com/policy/2021/10/20/how-to-do-business-as-a-dao/>.

obligations had its bid succeeded.¹²⁰ DAOs have also set their sights on fast food restaurant ownership,¹²¹ which would give rise to a host of traditional legal obligations to restaurant lessors, employees, suppliers, and the like.

DAOs may also incur obligations to governmental entities. As their activities expand, they might become liable for taxes and other regulatory dues. While specific examples of DAO tax liabilities are limited due to the nascent nature of the field, some DAOs, like BitDAO, have incorporated legal entities that may be subject to traditional tax obligations.¹²² Likewise, before its liquidation, CityDAO had property tax obligations relating to its plot of land in Wyoming. Additionally, DAOs with intellectual property assets may incur ongoing obligations. For example, MakerDAO, which has registered trademarks, will likely owe periodic renewal fees to various state and federal agencies to maintain its trademark protections.¹²³

The fourth source comprises litigation-based obligations, which can stem from tortious acts, criminal activity, or regulatory violations, leading to financial or performance-based reparations owed to injured parties or claimants. Evidence of such obligations impacting DAOs has already emerged. The *bZx* case, as previously discussed, originated from a class action lawsuit filed by users against the DAO, alleging negligence following a series of hacks that led to substantial losses. A more recent illustration of how involuntary obligations can precipitate bankruptcy filings appears in our case study of the Hector DAO insolvency that lies ahead in Part II.¹²⁴ Moreover, DAOs have faced enforcement actions from the SEC,¹²⁵ the CFTC,¹²⁶ and other regulatory agencies that can give rise to substantial liabilities, potentially pushing them into insolvency.

¹²⁰ Constitution DAO, *Constitution DAO: Lessons Learned*, <https://juicebox.money/v2/p/constitutiondao> (last visited Sept. 2, 2024).

¹²¹ See, e.g., BurgerDAO, *Let's build a burger franchise!*, MIRROR.XYZ, <https://burgerdao.xyz> (Dec. 23, 2021) [<https://perma.cc/EFJ9-LUAR>].

¹²² BitDAO, *BitDAO Whitepaper*, BITDAO, <https://docs.bitdao.io/> (last visited Sept. 2, 2024) [<https://perma.cc/27FG-7HTA>].

¹²³ See MakerDAO, *The Maker Foundation Transfers Trademarks and Software IP to Independent Dai Foundation*, MAKERDAO, <https://blog.makerdao.com/the-maker-foundation-transfers-trademarks-and-software-ip-to-independent-dai-foundation/> (last visited Sept. 2, 2024).

¹²⁴ See *infra* Part II(B)(1).

¹²⁵ Press Release, SEC, BarnBridge DAO Agrees to Stop Unregistered Offer and Sale of Structured Finance Crypto Product (Dec. 22, 2023), <https://www.sec.gov/newsroom/press-releases/2023-258> (describing settlement of charges brought by the SEC against a DAO called BarnBridge for the sale of securities).

¹²⁶ Statement of CFTC Division of Enforcement Director Ian McGinley on the Ooki DAO Litigation Victory, Commodity Futures Trading Commission (June 9, 2023), <https://www.cftc.gov/PressRoom/PressReleases/8715-23>.

Our analysis has revealed that DAOs that fully embrace decentralization, automation, and the cypherpunk and crypto-anarchist ethos differ markedly from traditional organizations. Through their distributed governance, pseudonymous participation, automated operations, digital asset treasuries, and creditor relationships, these novel entities are an intriguing experiment in reimagining economic coordination. Next in Part II, we examine how these idiosyncratic features affect the interface between DAOs and the bankruptcy system, exploring whether and how these entities can fit within a legal framework designed for organizations built on centralized management, hierarchical decision-making, and clearly defined creditor-debtor relationships. Notably, our analysis in this paper is limited largely to the decision to enter bankruptcy. There are a host of post-bankruptcy interpretive challenges that will undoubtedly arise in the course of the insolvency proceedings. We, however, leave that to other scholars in future work.¹²⁷

II. BANKRUPTCY AND DISTRESSED DAOs

Many DAOs that reach the end of their lifespan will not need bankruptcy relief to wind up their affairs. If a DAO wishes only to distribute its treasury among tokenholders and cease operations, the DAO's existing decision-making structures can likely facilitate that action. In general, the process will begin with a member of the DAO submitting a proposal for liquidation. Tokenholders vote in favor of or against the proposal, and if the requisite number of votes is received, the assets will be distributed in accordance with the protocol or the proposal itself. Such proposals could provide for the satisfaction of any creditors with outstanding claims against the DAO, as well as a variety of other activities—such as selling assets or pursuing claims against third parties—that are necessary to cease operations. The terms of the liquidation proposal might also allocate a portion of the treasury and then designate a representative body to manage the rest of the wind-up process. Notably, however, this type of orderly dissolution assumes a relatively straightforward liquidation without complex creditor claims or disputes.

For example, City DAO, which purchased 40 acres of land in Wyoming with a plan to create a city with a decentralized governance structure,¹²⁸ voted to liquidate in spring 2024 when the group could not find consensus on the DAO's

¹²⁷ Some of these issues are discussed in Ryan Levin, *Bankrupting the Matrix: DAOs and the Code*, 40 EMORY BANKR. DEV. J. 455 (2024).

¹²⁸ Kamila Kudelska, *Blockchain Company CityDAO Buys 40 Acres in Park County, WYO.* PUB. RADIO (Nov. 12, 2021), <https://www.wyomingpublicmedia.org/business/2021-11-12/blockchain-company-citydao-buys-40-acres-in-park-county>.

future.¹²⁹ The initial liquidation proposal provided for a “return of funds” task force that would develop a process for liquidating and distributing the DAO’s treasury.¹³⁰ Subsequently, a follow-up proposal set a budget for potential legal expenses to be incurred in winding up the DAO’s various operations, the balance of which would be returned to the treasury if unspent.¹³¹ The voting concluded in May 2024, and the process of liquidation is ostensibly underway, although at the time of this writing very little information could be found on the disposition of the property.¹³² Nevertheless, this relatively clean dissolution was possible precisely because CityDAO appeared to have very little debt, an abundance of assets, and homogenous tokenholder claims to satisfy.

Bankruptcy, on the other hand, may be attractive to DAOs that have limited assets or face creditor disputes. The U.S. Bankruptcy Code offers a comprehensive process for addressing a debtor’s financial distress either through liquidation¹³³ or reorganization.¹³⁴ A key benefit of bankruptcy is its collective and compulsory nature—it can bind *all* creditors in a single process.¹³⁵ From the moment of filing and until the time relief is granted, those creditors

¹²⁹See Scott Fitsimones, *CityDAO Transition*, CTTDAO (Mar. 21, 2024), <https://forum.citydao.io/t/citydao-transition/2376> [<http://web.archive.org/web/20240428201244/https://forum.citydao.io/t/citydao-transition/2376>]. This statement by founder Scott Fitsimones explained his reasons for stepping back from leadership in the DAO, he wrote, “We came together around buying land in Wyoming and building the blockchain-enabled city of the future, and while we were united by that grand vision, we couldn’t find alignment on any of the smaller steps needed to get there.”

¹³⁰ CityDAO, *CIP 212 - Return Funds to Citizens*, SNAPSHOT (April, 2024), <https://snapshot.org/#/daocity.eth/proposal/0x58dd64dfea0e1112fdef259e3010afbe6af0f22bdb7c98ebd0973496c06f83e>.

¹³¹ CityDAO, *CIP 216 - Return Funds to Citizens II*, SNAPSHOT (May, 2024), <https://snapshot.org/#/daocity.eth/proposal/0x49b6bd1c9056e42b399923b5d059c97751a063375dd31a461b073e2c68572cdc>.

¹³² Curiously, these proposals did not discuss what would happen to the DAO’s Wyoming real property, aside from one indication that the author of the proposal would cease paying taxes on the property. In an earlier statement the founder suggested that the DAO would attempt to transition the property to a new entity created by the DAO council and sell the property if that transition could not be achieved. Scott Fitsimones, *CityDAO Transition, TLDR* (Mar. 21, 2024), <https://forum.citydao.io/t/citydao-transition/2376>, [<http://web.archive.org/web/20240416235417/https://forum.citydao.io/t/citydao-transition/2376>].

¹³³ A business’s liquidation in bankruptcy can be achieved under both chapter 11 or chapter 7 of the Bankruptcy Code, and generally involves the selling of assets to satisfy creditors’ claims. At the conclusion of the bankruptcy case, the debtor no longer exists. Charles Tabb, Kara Bruce, and Laura Coordes, *THE LAW OF BANKRUPTCY* §§ 1.1, 1.2 (West 6th Ed. 2024).

¹³⁴ A business can use chapter 11 of the Bankruptcy Code to reorganize, which can involve a standalone restructuring, sale of the company as a going concern, or a variety of other paths through distress. *Id.*

¹³⁵ *Id.*

are prevented from acting in their individual self-interest. Most litigation is halted, and all must interface with the bankruptcy process.¹³⁶ This serves several goals: it facilitates equality in treatment between creditors, preserves the entity's value against a destructive race to the assets that might occur if all creditors are left to their own devices, and offers debtors the opportunity to attempt a reorganization that allows the company, in some respect, to continue as a going concern.

U.S. bankruptcy law also offers a variety of tools for businesses to shed the financial burdens of their past operations and enhance the value of the bankruptcy estate.¹³⁷ An entity can use bankruptcy's debtor-friendly tools to adjust its obligations on outstanding contracts, assuming or assigning profitable contracts and rejecting unprofitable ones.¹³⁸ Debtors can also unwind certain pre-bankruptcy transfers and recover their value for the benefit of all creditors,¹³⁹ and can sell property of the estate free and clear of all liens.¹⁴⁰ As noted, bankruptcy has become an attractive venue for companies facing mass tort liabilities, as it allows even a solvent company to comprehensively address the claims of tort victims. Many of these features might be attractive to a DAO that seeks reorganization. But even where the DAO does not wish to reorganize, the bankruptcy process can achieve a liquidation that is more controlled than available outside of bankruptcy.

While the novelty and heterogeneity of DAOs makes it difficult to conclusively predict how they will enter bankruptcy, we think several scenarios are plausible. First, as we have seen, decentralized finance is a volatile form of finance in which one entity's collapse can have a contagion effect on others.¹⁴¹ DAOs that engage in DeFi transactions may find themselves facing "bank-runs" similar to those faced by Celsius, Voyager, and FTX, to name a few.¹⁴² Each of those entities chose U.S. bankruptcy as the forum to gain control of the crisis and formulate a comprehensive response. It is plausible that DAOs in similar positions will follow suit.

¹³⁶ See generally 11 U.S.C. § 362 (providing that the filing of a petition in bankruptcy operates as a stay of an expansive variety of collection activities).

¹³⁷ The filing of a bankruptcy case creates an estate that includes all of the debtor's property. 11 U.S.C. § 541 (describing the scope of property of the estate).

¹³⁸ 11 U.S.C. § 365 (governing the debtor's rights and obligations respecting executory contracts).

¹³⁹ See 11 U.S.C. §§ 544, 547, 548 (describing bankruptcy's avoidance powers).

¹⁴⁰ 11 U.S.C. 11 § 363(f).

¹⁴¹ See Bruce, Odinet, & Tosato, *Stablecoins*, *supra* note 104; Bruce, *Crypto Failure*, *supra* note 159.

¹⁴² Bruce, *Crypto Failure*, *supra* note 159.

Second, the bankruptcy filing of Hector DAO demonstrates that litigation threats can be a driving force of DAO bankruptcy.¹⁴³ We can expect that DAOs that receive a large judgment or commit an act that exposes the DAO to a large number of individual lawsuits may join the ranks of companies like Purdue Pharma, Johnson & Johnson, USA Gymnastics, numerous Catholic Dioceses, and other defendants who have sought bankruptcy protection to address litigation or legal liability.¹⁴⁴

Third, and discussed further below, it is conceivable that a DAO's creditors or tokenholders¹⁴⁵ might place or threaten to place the DAO into bankruptcy involuntarily.

As we explain in forthcoming Part II.B, each of these aforementioned scenarios highlights how the very circumstances that make bankruptcy attractive also create pressure to compromise DAO principles. We start in Part I.A with an overview of the entry point and internal structure of bankruptcy, explaining specifically how the benefits of the bankruptcy process carry with them significant procedural rigor, requiring a material level of coordination and disclosure. We then move to Part II.B for an exploration of how DAOs might weigh the pronounced tension points between bankruptcy on the one hand and DAOs' cypherpunk ideals and crypto-anarchic theory and practice on the other. We conclude by observing that the bankruptcy framework can be imposed on a distressed DAO whether they choose it or not. We conclude by observing that the bankruptcy framework can be imposed on a distressed DAO regardless of its participants' wishes. This threat of involuntary bankruptcy becomes even more potent against entities the decentralized ethos of which fundamentally conflicts with centralized, court-supervised proceedings.

A. Entry and Structure

We begin with a structural exploration of the components that define entry into bankruptcy, as well as the procedural requirements that shape a bankruptcy case once it is initiated. These entry and operational elements are critical because they determine not only which entities can access bankruptcy

¹⁴³ See, e.g., *Commodity Futures Trading Comm'n v. Ooki DAO*, 2022 WL 17822445 (N.D. Cal. Dec. 20, 2022) (rejecting arguments that the DAO was not amenable to suit and treating the DAO as an unincorporated association).

¹⁴⁴ See generally Foohey & Odinet, *supra* note 26 (discussing these bankruptcies)

¹⁴⁵ See *infra* Part II.C. See also *supra* Part I and accompanying discussion of tokenholders in various contexts.

protection but also how the bankruptcy process will unfold and what tools are available within this structure.

1. Eligibility for Bankruptcy

Given that many DAOs exist without an agreed and defined corporate form, and still others have a personhood created by non-U.S. jurisdictions, a preliminary issue is whether DAOs are eligible to file for bankruptcy protection in the first place.

In the U.S. Bankruptcy relief is available to “persons” that have either a domicile, place of business, or property in the United States.¹⁴⁶ Examining first the geographical requirements, it is important to highlight that a DAO does not need to have corporate domicile in the U.S. to take advantage of American bankruptcy laws. Rather, a DAO needs only to have some type of property within the U.S. Therefore, if a DAO wishes to access the U.S. bankruptcy system, this requirement can likely be satisfied by simply establishing a bank account within a U.S. jurisdiction. What is more, given that DAOs have been treated by default as general partnerships,¹⁴⁷ the residency or domicile of any one of the partners—in many cases, possibly any one tokenholder—in the U.S. would likewise satisfy the jurisdictional nexus for bankruptcy eligibility for the partnership.¹⁴⁸

Whether a DAO is a “person” for eligibility purposes is a more complicated question. The Bankruptcy Code defines “person” to include individuals, partnerships, and corporations.¹⁴⁹ The term “corporation” is defined to include associations that have “a power or privilege that a private corporation, but not an individual or a partnership, possesses,” as well as a “partnership association organized under a law that makes only the capital subscribed responsible for the debts of such association,” a “joint-stock company,” an “unincorporated company or association” or “business trust,” but does not include a limited partnership.¹⁵⁰

¹⁴⁶ 11 U.S.C. § 109(a). Each chapter of the Bankruptcy Code has its own eligibility requirements. *See* 11 U.S.C. § 109(b)–(g).

¹⁴⁷ *See supra* Part I and accompanying discussion.

¹⁴⁸ As we explain in Part II(C), in our discussion on involuntary bankruptcy, if a DAO wishes to avoid being placed into U.S. bankruptcy involuntarily, lack of a jurisdictional nexus would be a defense to an involuntary bankruptcy petition. *See* 11 U.S.C. § 303(d) (providing that the debtor may answer the involuntary bankruptcy petition contesting the request for relief).

¹⁴⁹ 11 U.S.C. § 101(41).

¹⁵⁰ *See* 11 U.S.C. § 101(9).

As described above, legal frameworks both domestically and internationally have grown to accommodate and attract DAOs, with the result that they can choose to have a corporate personhood that falls clearly within bankruptcy’s eligibility requirements. If a DAO is not organized under a corporate form recognized by the Bankruptcy Code, bankruptcy courts must determine whether it nevertheless qualifies as a “person.” To that end, there is a robust case law that interprets bankruptcy’s eligibility gateways broadly, finding it to be consistent with bankruptcy policy to treat novel entities as “persons” by analogy to existing corporate structures.¹⁵¹

It should also be noted that the Bankruptcy Code specifically excludes certain types of financial entities from eligibility, including banks, insurance companies, and similar institutions.¹⁵² Given that many DAOs facilitate trading, lending, and other financial activities, courts will need to grapple with this statutory bar. In our view, the outcome likely turns on the purpose of these exclusions—Congress carved out these entities because they are already subject to comprehensive regulatory frameworks with specialized insolvency procedures.¹⁵³ Because DAOs exist and operate outside these regulatory frameworks, their eligibility for bankruptcy is unlikely to be compromised.

¹⁵¹ *See, e.g.*, In re ICLNDS Notes Acquisition, L.L.C., 259 B.R. 289, 293 (Bankr. N.D. Ohio 2001) (“As corporations and partnerships are eligible to be debtors, and because an LLC draws its character from both of those forms of doing business, an LLC is similar enough to those entities that it also comes within the definition of ‘person’ and is eligible for protection under the Code.”). *See also* Charles Tabb, Kara Bruce, and Laura Coordes, LAW OF BANKRUPTCY (West 6th Ed. 2024) (collecting examples).

¹⁵² 11 U.S.C. § 109(b)(2), (d) (noting that a person can be eligible for chapter 7 and chapter 11, only if they are not “a domestic insurance company, bank, savings bank, cooperative bank, savings and loan association, building and loan association, homestead association, a New Markets Venture Capital company as defined in section 351 of the Small Business Investment Act of 1958, a small business investment company licensed by the Small Business Administration under section 301 of the Small Business Investment Act of 1958, credit union, or industrial bank or similar institution which is an insured bank as defined in section 3(h) of the Federal Deposit Insurance Act”); *id.* § 109(b)(3) (also excluding foreign insurance companies and banks). *But see id.* § 109(b)(2) (providing that “an uninsured State member bank, or a corporation organized under section 25A of the Federal Reserve Act, which operates, or operates as, a multilateral clearing organization pursuant to section 409 of the Federal Deposit Insurance Corporation Improvement Act of 1991 may be a debtor if a petition is filed at the direction of the Board of Governors of the Federal Reserve System”). Further, stockbrokers, commodity brokers, or clearing banks may file a case under chapter 7 bankruptcy, but not chapter 11, and are subject to special liquidation procedures. *Id.* § 109(a), (d).

¹⁵³ *See* H.R. REP. NO. 95-595, at 318 (1978); S. REP. NO. 95-989, at 31 (1978), *as reprinted in* 1978 U.S.C.C.A.N. 5787, 5817, 6275; *see also* In re Affiliated Food Stores, Inc. Grp. Benefit

Once a DAO establishes eligibility for bankruptcy protection, several procedural paths become available. Most directly, the DAO can file a petition for liquidation or reorganization under the Bankruptcy Code, or a case can be commenced involuntarily by a creditor or group of creditors.¹⁵⁴ For DAOs with international operations, Chapter 15 provides another avenue that helps facilitate foreign insolvency proceedings.¹⁵⁵ Complex DAO structures may access additional procedural tools: a group of affiliated DAOs can file related cases for joint administration, and courts might even permit joint administration of cases between a DAO and its individual tokenholders.¹⁵⁶

2. *Centralization and Procedural Rigor*

The U.S. bankruptcy framework starkly contrasts with the automated, code-driven operations typical of DAOs. At its core, bankruptcy is an inherently centralized, court-supervised process that relies on extensive levels of transparency and disclosure. It is also a human-driven process that demands continuous dialogue, negotiation, and the exercise of judgment by stakeholders. This section identifies these procedural realities in bankruptcy and explores their tensions with DAOs' foundational operating principles.

First, and most fundamentally, bankruptcy is founded on strong principals of centralization.¹⁵⁷ In order to facilitate a collective response to a debtor's distress, bankruptcy sweeps all of the debtor's affairs into a comprehensive, court-supervised, and highly regimented framework. This process is paternalistic by design, imposing a structure that is foundationally at odds with DAOs that seek to exist outside of legal frameworks.

Tr., 134 B.R. 215 222 (Bankr. N.D. Tex. 1991) (“[O]nly those entities which have a comprehensive scheme of liquidation provided for by other statutes or regulations should be excluded from eligibility under the Bankruptcy Code.”). *See also* Matthew Bruckner, Christopher K. Odinet & Todd Phillips, *Social Media's Financial Turn: Privacy and Consumer Protection in X's Payment Platform*, YALE J. ON REG. NOTICE & COMMENT (Jan. 16, 2024), <https://www.yalejreg.com/nc/social-medias-financial-turn-privacy-and-consumer-protection-in-x-payment-platform-by-matthew-bruckner-christopher-k-odinet-todd-phillips> (explaining the applicability of the Federal Deposit Insurance Corporation to insolvent depository institutions).

¹⁵⁴ *See* 11 U.S.C. § 303 (discussing the requirements for filing an involuntary petition).

¹⁵⁵ 11 U.S.C. § 1501.

¹⁵⁶ *See* FED. R. BANKR. P. 1015(b) (providing that a bankruptcy case between a partnership and its general partners can be jointly administered).

¹⁵⁷ *See, e.g.,* *McCartney v. Integra Nat. Bank North*, 106 F.3d 506, 512 (3rd Cir. 1997) (“By centralizing all prebankruptcy civil claims against a debtor in the bankruptcy court, the debtor is granted a ‘breathing spell’ during which he is relieved of the financial pressures that drove him to bankruptcy. . . [This] permits the assets of the debtor’s estate to be marshaled for distribution to creditors in an orderly and equitable fashion.”);

Second, U.S. bankruptcy law is a “fishbowl,” premised on strong notions of information sharing and disclosure.¹⁵⁸ To that end, a debtor who files for bankruptcy protection must submit an extensive amount of information about the organization’s financial health over the course of the bankruptcy case.¹⁵⁹ Disclosure is mandatory and ongoing.¹⁶⁰ Further, bankruptcy’s disclosures are presumptively matters of public record, and exceptions that allow sealing require debtors to satisfy extraordinarily stringent standards.¹⁶¹ Not only that, but creditors or other interest holders can demand greater levels of transparency by seeking examination of the debtor¹⁶² or appointment of a trustee or examiner.¹⁶³

Although DAOs embrace transparency within their protocol, the transparency demanded by the Bankruptcy Code may conflict with the strong principles of pseudonymity that undergird DAOs and other blockchain-based organizations. To provide one salient example, consider that mandatory bankruptcy disclosures require that the names and addresses of a DAO’s members to be publicly listed on the debtor’s schedules.¹⁶⁴ The debtor might be

¹⁵⁸ Alan S. Trust, *Bankruptcy as a Fish Bowl of Disclosure*, 29 AM. BANKR. INST. J. 48 (2010). A major function of bankruptcy is to act as “an information forcing device.”²⁷ David A. Skeel, Jr., *Markets, Courts, and the Brave New World of Bankruptcy Theory*, 1993 WIS. L. REV. 465, 507. Sharing information about the debtor’s operations and descent into bankruptcy “enables the parties to detect misbehavior that otherwise might have gone unnoticed” and “gives every constituency an opportunity to watch the firm during its transition period, and thus to reassess their relationship with the debtor.” *See id.*

¹⁵⁹ *See generally* Kara Bruce, *Crypto Failure in the Shadows*, 69 VILL. L. REV. 691 (2024). (discussing these disclosure requirements in more detail).

¹⁶⁰ *Id.*

¹⁶¹ *Id.* *See also* 11 U.S.C. § 107.

¹⁶² *See* FED. R. BANKR. P. 2004.

¹⁶³ *Id.* In a landmark ruling in the FTX bankruptcy case, the Court of Appeals for the Third Circuit unanimously that appointment of an examiner was *mandatory* in that case under a strict reading of the relevant statute. In re FTX Trading Ltd., 91 F. 4th 148, 150 (3rd Cir. 2024). 11 U.S.C. § 1104(c) provides that the court *shall* appoint an examiner upon request of a party in interest where the debtor’s fixed, liquidated, unsecured debts exceed \$5 million. Other courts, including the bankruptcy court overseeing the FTX case, have held that notwithstanding the use of the term “shall,” the court has the discretion to refuse an examiner if the examiner’s work would be unnecessary or drain value from the estate. The Third Circuit reversed the lower court’s decision, holding that “Congress made plain its intention to mandate the appointment of an examiner by using the word ‘shall.’” This holding strongly suggests that examiners may be more common for large bankruptcy cases filed within the Third Circuit.

¹⁶⁴It is possible that a DAO’s members will be classified as equity security holders, but as noted in Part I(C)(4), it is also possible that some tokenholders will qualify as creditors. Either way, the Bankruptcy Rules contemplate that the names and addresses of tokenholders will be

able to obtain relief that shields some of this information from public view, but this is a controversial practice that relies on a judge agreeing to waive bankruptcy's typical operational rules.¹⁶⁵

Third, bankruptcy's procedural rigor begets a host of governance challenges for the decentralized organization. By way of example, the first step in commencing a bankruptcy case—the filing a voluntary bankruptcy petition—is an act that must be properly authorized by the entity seeking bankruptcy protection.¹⁶⁶ From there, each petition, list, schedule, and statement must be verified and signed by an authorized representative of the debtor under penalty of perjury.¹⁶⁷ And, shortly after filing, “the debtor” is required to appear at a meeting of creditors and submit to examination under oath.¹⁶⁸ The court may designate a representative with control of the entity to appear on behalf of the debtor and might require more than one person to appear.¹⁶⁹ These initial requirements alone present a fundamental challenge to DAOs' distributed governance model—they demand clear lines of authority and human representatives who can bind the organization.

These challenges compound once the bankruptcy case is commenced, largely due to the multiplicity of financial and operational decisions that require

disclosed on the debtor's schedules and statements. *See, e.g.*, FED. R. BANKR. P. 1007(a)(3) (requiring the names and addresses of equity security holders of the debtor to be disclosed within 14 days of the date of filing the petition unless the court orders otherwise); FED. R. BANKR. P. 1007(a)(1) (requiring the names and addresses of all creditors to be filed along with the bankruptcy petition).

¹⁶⁵ *See* Bruce, *Crypto Failure*, *supra* note 159.

¹⁶⁶ Whether a bankruptcy filing was authorized is a question of applicable non-bankruptcy (e.g. state corporate) law. *See, e.g.*, *Franchise Servs. of N. Am. v United States Trs.* (In Re Franchise Servs. of N. Am.) 891 F.3d 198 203 (5th Cir. 2018) (“[T]he issue of corporate authority to file a bankruptcy petition is left to state law.”). If a partnership enters bankruptcy without the consent of all general partners, courts will treat the filing as an involuntary bankruptcy petition. Notice must be sent to the partners who did not consent to the filing. *See, e.g.*, *In re Beltway Law Group LLP*, 514 BR 341, 344 (Bankr. D.D.C. 2014) (“Section 303(b)(3) allows a general partner (as opposed to a limited partner if the debtor is a limited partnership) to file an involuntary petition against the debtor.”).

¹⁶⁷ FED. R. BANKR. P. 1008; 28 U.S.C. § 1746.

¹⁶⁸ 11 U.S.C. §§ 341 343.

¹⁶⁹ Fed R. Bankr. P. 9001(5) (“When any act is required by these rules to be performed by a debtor or when it is necessary to compel attendance of a debtor for examination and the debtor is not a natural person: (A) if the debtor is a corporation, ‘debtor’ includes, if designated by the court, any or all of its officers, members of its board of directors or trustees or of a similar controlling body, a controlling stockholder or member, or any other person in control; (B) if the debtor is a partnership, ‘debtor’ includes any or all of its general partners or, if designated by the court, any other person in control.”).

swift, authoritative action from the debtor.¹⁷⁰ The norm in reorganization cases is for the debtor’s current managers to remain in place and operate the business as a “debtor in possession,” or “DIP.”¹⁷¹ The DIP will make critical decisions about the pathway of the case, including the retention of professionals to represent the estate, the treatment of executory contracts, the pursuit of estate causes of action against third parties, the sale of estate property, and ultimately, the contours of a plan of reorganization. The debtor must also engage in the rigorous and detail-oriented work of assembling the massive amount of operational information required to satisfy bankruptcy’s extensive disclosure requirements. To be sure, a third-party is appointed as “trustee” to manage chapter 7 cases and can even be appointed in chapter 11 in rare circumstances.¹⁷² But even then, the debtor is not completely out of the picture. Rather, it has a variety of statutory duties to perform, many of which relate to disclosure requirements, and the debtor likewise has a statutory obligation to cooperate with any trustee or auditor appointed in the case.¹⁷³ These requirements demand not just designated representatives, but an ongoing management structure capable of making and implementing business decisions throughout the bankruptcy process in an often dynamic manner.

Bankruptcy’s procedural demands become even more challenging under time pressure. Indeed, many entities in decentralized finance have entered the bankruptcy system in “free fall” following major destabilizing events in the crypto world.¹⁷⁴ In such circumstances, the act of preparing a company for bankruptcy and navigating the critical early days of a bankruptcy case might be harried, time-intensive events. A DAO’s voting procedures may prove too cumbersome to keep pace with bankruptcy’s urgent timelines, particularly if the protocol includes mandatory notice periods and special quorum requirements, the complexities of which can be exacerbated by the fact that tokenholders may be geographically spread around the world. Further, the sheer amount of paperwork required to interface with the bankruptcy process, particularly in

¹⁷⁰ Chapter 11 debtors typically hire professionals, obtain financing, make decisions about treatment of executory contracts, and use or sell property outside of the ordinary course of business, all of which requires entity decision making and court approval. To conclude a successful chapter 11 case, the debtor files a plan of reorganization and a detailed disclosure statement. Not only that, but other parties with an interest in the bankruptcy case, such as an employees, creditors, or the bankruptcy watchdog, can file motions seeking relief that the debtor may wish to oppose.

¹⁷¹ 11 U.S.C. §§ 1106(a)(1); 704(a)(22).

¹⁷² This most frequently occurs when a company enters liquidation-style bankruptcy under Chapter 7 but can also occur if the debtor’s creditors file a successful motion to appoint a trustee in a chapter 11 case. *See* 11 U.S.C. § 1104.

¹⁷³ *See generally* 11 U.S.C. § 521 (outlining the debtor’s duties in a bankruptcy case).

¹⁷⁴ *See* Bruce, *Crypto Failure*, *supra* note 159.

reorganization cases, would likely overwhelm even the most dedicated DAO community.

For all of these reasons, it is likely that DAOs seeking bankruptcy protection would need to have or create a centralized management structure, vesting a significant degree of decision-making authority in select individuals. This might entail appointing a chief restructuring officer (“CRO”) to oversee the bankruptcy process who can speak for the debtor in court.¹⁷⁵ It might also require a supporting team to handle small-scale administrative matters, to interface with legal counsel, and to keep tokenholders informed.

Herein lies the fundamental tension: bankruptcy’s centralized governance layers are unpalatable, if not outright anathema, for DAOs built upon decentralized and automated decision-making as a matter of identity. Yet these structures are an unavoidable requisite to access the protections of the federal bankruptcy system. The following section considers how DAOs might confront this tension against the backdrop of financial distress, using the HectorDAO bankruptcy case to identify features that may drive DAOs toward or away from bankruptcy relief.

B. Theory and Practice

The bankruptcy case of HectorDAO, the first and so far only DAO to enter bankruptcy protection, offers a useful lens for exploring how decentralized autonomous organizations navigate the inherent tensions between DAO principles and traditional bankruptcy processes. An examination of HectorDAO’s bankruptcy helps to identify the compromises that DAOs may need to make when interfacing with traditional legal frameworks, as well as the potential benefits that those compromises might yield. It also reveals the unique attributes of HectorDAO that facilitated the decision to file for bankruptcy protection in the first place. This part begins with a case study of HectorDAO, focusing on the dynamics that led to its bankruptcy entry. It continues with an evaluation of the balance of values that DAOs must undertake in response to insolvency, revealing two key takeaways.

1. Case Study: The HectorDAO Bankruptcy

A decentralized autonomous organization known as Hector DAO emerged in 2021, created by cryptocurrency investors to deploy smart contracts

¹⁷⁵ For a thoughtful discussion of chief restructuring officers and their role in the bankruptcy system, see A. Mechele Dickerson, *Privatizing Ethics in Corporate Reorganization*, 93 MINN. L. REV. 875, 917-32 (2009).

for crypto asset management.¹⁷⁶ The organization employed a characteristic DAO governance model, allowing individuals to acquire voting privileges over organizational decisions through the purchase of Hector DAO's proprietary "HEC" tokens in exchange for other cryptocurrency assets.¹⁷⁷ The treasury of Hector DAO retained custody of all crypto assets that were exchanged for these HEC tokens.¹⁷⁸ To manage its operations, the organization established various specialized teams for project execution and oversight, alongside creating Hector Enterprises, Inc., an entity designed to handle transactions occurring outside the blockchain environment.¹⁷⁹

During 2022 and 2023, Hector DAO experienced significant financial setbacks caused by multiple adverse events, including the Terra stablecoin's downfall,¹⁸⁰ cyber-attacks involving ransomware, and security breaches that depleted the DAO's treasury's resources.¹⁸¹ In response to these challenges, combined with poor investment performance and a broader downturn in cryptocurrency values, stakeholders voted in July 2023 to dissolve the DAO. While the DAO ecosystem theoretically supports systematic treasury liquidation and asset distribution to token holders, the actual process proved chaotic. The liquidation attempt was further compromised by a software vulnerability in the redemption system, leading to an additional security breach that further diminished the treasury's value.¹⁸² Documentation indicates that the DAO's assets experienced a dramatic decline over an 18-month period, plummeting from approximately \$100 million to \$9.3 million.¹⁸³

Token holders of Hector DAO raised accusations against the organization's leadership, claiming mismanagement of assets and potential

¹⁷⁶ Nizan Geslevich Packin, *How Hector DAO's Bankruptcy Case Is Shaping the Future of DeFi*, BLOOMBERG LAW (2004), <https://news.bloomberglaw.com/us-law-week/how-hector-daos-bankruptcy-case-is-shaping-the-future-of-defi> [https://perma.cc/PJ6B-P55U]

¹⁷⁷ Tokenholders could also buy and sell HEC tokens on the secondary market. See Declaration of James Drury in Support of (1) Verified Petition for Recognition of Foreign Proceeding & (II) Motion in Support of Verified Petition for Recognition of Foreign Proceeding & Related Relief, In re Hector DAO, No. 24-16067 (Bankr. D.N.J. June 17, 2024) [hereinafter Drury Declaration].

¹⁷⁸ *Id.*

¹⁷⁹ *Id.* at 3-4.

¹⁸⁰ *Id.* at 4. For a discussion of Terra's collapse, see Bruce, Odinet, & Tosato, *Stablecoins*, *supra* note 104, at 1082-83.

¹⁸¹ Drury Declaration, *supra* note 173, at 4.

¹⁸² *Id.* at 6.

¹⁸³ Osato Avan-Nomayo, *How Hector Network Investors Are Clawing Back \$9M After 'Rage Quit'*, DL NEWS (Feb. 23, 2024), <https://www.dlnews.com/articles/defi/hector-network-rage-quit-transitions-into-receivership/> [https://perma.cc/Q935-M9F6].

involvement in the security breaches themselves.¹⁸⁴ A legal challenge emerged on February 7, 2023 when one tokenholder initiated litigation against Hector DAO in a U.S. court.¹⁸⁵ The lawsuit asserted claims of breach of contract, violations of the fiduciary duties, and conversion, while also pursuing an emergency order to secure the treasury's assets.¹⁸⁶ Just nine days later, on February 16, Hector Enterprise, Inc.—working alongside Hector DAO's liquidation committee—sought receivership protection in the British Virgin Islands to facilitate asset preservation and organizational dissolution.¹⁸⁷ Following this action, the British Virgin Island court authorized the appointed receivers to commence chapter 15 bankruptcy in the United States, with Hector DAO designated as the debtor.¹⁸⁸

The initial bankruptcy filings revealed that the proceedings were initiated to shield Hector DAO from ongoing and potential litigation that might disrupt both the organization and the BVI receivership process.¹⁸⁹ The bankruptcy petition sought to halt legal actions not only against the debtor itself, but also to protect members of the liquidation committee, management teams, and any third parties covered by Hector DAO's indemnification agreements.¹⁹⁰ Additionally, and surprisingly, the debtors aimed to leverage bankruptcy's transparent reporting requirements to uncover previously undisclosed information about transactions that occurred before the bankruptcy filing.¹⁹¹

2. *Analysis: A Reorientation of Values*

Building on the case study's illustration of these tensions in practice, we now turn to a deeper theoretical exploration of the values at stake when DAOs contemplate bankruptcy. As noted, bankruptcy exists in stark tension with the foundational principles that animate the DAO movement. Yet the Hector DAO example demonstrates how pragmatic concerns can drive even decentralized organizations toward traditional legal frameworks that offer concrete remedies in times of distress. In the following paragraphs, we identify the attributes of DAOs that may facilitate or prevent a similar pragmatic compromise of values.

¹⁸⁴ See Complaint, Newton AC/DC Fund L.P. v. Hector DAO, No. 24-0722 (D.N.J. filed Feb. 7, 2024)

¹⁸⁵ *Id.*

¹⁸⁶ *Id.*

¹⁸⁷ Drury Declaration, *supra* note 173 at 6.

¹⁸⁸ *Id.*

¹⁸⁹ *Id.* at 18.

¹⁹⁰ Motion in Support of Verified Petition for Recognition of Foreign Proceeding & Related Relief at 31, In re Hector DAO, No. 24-16067 (Bankr. D.N.J. June 17, 2024).

¹⁹¹ *Id.* at 20.

For the staunchest of DAO purists (such as those that inhabit the space in quadrant D of our matrix back in *Figure 1*), the centralization and disclosure requirements that are so inherent to bankruptcy law and its process represent a significant compromise of the DAO core values. Core DAO principles of anonymity and decentralized governance are rooted in diverse intellectual traditions—from organizational theory and corporate law to cypherpunk ideals of digital freedom. While blockchain technology has enabled these principles to be realized in practice, resulting in both purely decentralized organizations and hybrid structures closer to traditional corporations, these DAOs may view any compromise of these foundational values, even in exchange for bankruptcy's protections, as fundamentally unacceptable.

Yet for those DAOs that have taken additional steps toward centralization (such as those that occupy boxes A and C of our matrix in *Figure 1*), bankruptcy's procedural rigors may be in far less tension with operating values. We note that HectorDAO's path to bankruptcy was facilitated by its hierarchical management structure. Indeed, Hector's centralized leadership was able to make swift decisions to commence the receivership to gain control over the DAO's distress. Such a complex strategic decision would be far more challenging, both theoretically and practically, for a DAO operating with dispersed tokenholders as governance leaders. Thus, the probability of future DAO bankruptcy filings may correlate strongly with the degree to which these organizations adopt elements of traditional corporate governance.

This leads to our first insight into the relationship between DAOs and bankruptcy law: perhaps counterintuitively, as DAOs grow more complex, their philosophical tension with bankruptcy processes may actually decrease rather than intensify. This moderation occurs because DAOs' natural evolution toward increased sophistication often requires steps toward centralization and legal recognition—the very features that make bankruptcy processes more workable. The very factors that make DAOs more institutionally mature—namely, their movement toward centralization and formal governance—are precisely what enable them to engage productively with traditional bankruptcy frameworks.

Our study of HectorDAO offers an additional insight regarding how DAOs might face the tension between core DAO principles and bankruptcy relief: it reveals a stark contrast between *ex ante* ideological commitments and *ex post* pragmatic needs. While DAO ideals of decentralization and blockchain immutability may seem compelling during times of solvency, financial distress can prompt a dramatic reorientation of values. Indeed, when faced with litigation threats, Hector DAO's receivers embraced aspects of bankruptcy that directly conflicted with core DAO principles, going so far as to justify the filing, in part, on the extensive disclosure requirements that *ex ante* might have seemed

anathema to DAO operations. Though bankruptcy represents a clear departure from decentralized governance and the immutable nature of blockchain transactions, it offered practical tools to uncover fraud and restore value to token holders.

This shift from ideological purity to pragmatic problem-solving suggests that bankruptcy's centralized, oversight-heavy framework may become increasingly attractive to troubled DAOs—not despite its tension with DAO principles, but precisely because its traditional protections offer concrete paths to recovery when abstract principles fail to pay the bills. The precedent established by Hector DAO indicates that when faced with financial collapse, DAOs may find their philosophical commitments to decentralization less compelling than bankruptcy's proven ability to facilitate orderly resolution and maximize creditor recovery.

C. The Threat of Involuntary Bankruptcy

As DAOs evolve in terms of the scope of their activities and particularly if they begin to interact with traditional business structures in the real economy of goods and services, the appeal of bankruptcy protection may become more compelling. As DAOs mature and their operational complexities develop, these organizations may find themselves grappling with a wider array of creditors than they have in the past. This may include not only the DAO's users who may have interacted with the organization for purposes of trading or lending digital assets as part of DeFi transactions, but also traditional lenders, suppliers, employees, tort victims, and regulatory creditors. In these scenarios, the benefits of bankruptcy—such as debt restructuring, avoidance, and the automatic stay—will more likely outweigh the perceived costs of compromising core DAO principles. We also anticipate that DAOs' evolution may give rise to new and increased litigation pressures, which likewise can drive bankruptcy filings. Yet as we observed above, DAOs that reach this level of development are likely to operate at some distance from the philosophical principles identified in Part I.

Beyond voluntary filings, however, DAOs may find themselves drawn into bankruptcy through external or internal pressures. In other words, there is also the chance that a DAO may find itself in bankruptcy, whether it desires to be or not. As we explain below, creditors who feel their interests are being subordinated to those of tokenholders may force a DAO into involuntary bankruptcy in order to impose bankruptcy's distribution framework. Similarly, disgruntled tokenholders themselves might view involuntary bankruptcy as a powerful governance tool to preserve assets or challenge questionable transfers.

1. Involuntary Bankruptcy Through External Pressure

An involuntary bankruptcy can be initiated under chapter 7 or 11 of the Bankruptcy Code, and can be filed by a group of creditors holding non-contingent, non-disputed claims exceeding statutory amounts.¹⁹²

If the involuntary petition is not controverted in a timely manner, then the court will issue an order of relief that formally commences the bankruptcy case. Representatives of the debtor can, however, contest the involuntary bankruptcy by filing an answer to the involuntary petition.¹⁹³ In that case, the court will enter an order of relief only if the debtor is generally not paying its debts as they become due, unless those debts are subject to a bona fide dispute as to liability or amount; or within 120 days before the petition date, a custodian was appointed.¹⁹⁴

A DAO that has amassed debts from a variety of sources could face insolvency for a variety of reasons, including ongoing mismanagement, market downturns, a cybersecurity event, or a legal judgment. Against the uncertain legal backdrop that governs the DLT ecosystem, such a DAO might choose to prioritize its tokenholders above all or some groups of creditors. In this case, the prejudiced creditors could use bankruptcy law to force the DAO into insolvency proceedings and, in doing so, impose bankruptcy's distribution framework on the DAO.

With this background in mind, we can imagine several more precise scenarios in which a DAO's creditors would likely seek involuntary bankruptcy. First, consider a DAO that is involved in DeFi activities.¹⁹⁵ This DAO allows an individual to engage in margin lending and trading. Through this particular DAO, an individual can deposit their crypto assets in exchange for receiving interest payments in the future. The interest that is earned comes in the form of crypto-related rewards. The DAO then lends out those deposited crypto assets to other users who wish to borrow them. Users of this DAO can also engage in margin trading, whereby individuals can bet against the value of a crypto asset

¹⁹² 11 U.S.C. § 303(b)(1)-(2) contains details on the number of creditors and the aggregate amount of claims necessary to commence an involuntary petition.

¹⁹³ 11 U.S.C. § 303(d).

¹⁹⁴ 11 U.S.C. § 303(h).

¹⁹⁵ This hypothetical DAO is based on Ooki DAO, which was the subject of a 2022 enforcement action by the Commodity Futures Trading Commission (CFTC). *See* Commodity Futures Trading Comm'n v. Ooki DAO, No. 3:22-cv-05416-WHO, 2022 WL 17904930 (N.D. Cal. Dec. 20, 2022), <https://storage.courtlistener.com/recap/gov.uscourts.cand.400807/gov.uscourts.cand.400807.63.0.pdf>.

going up or down (i.e., taking a short or long position). The DAO also has individuals who hold its governance tokens and therefore make operational decisions about the enterprise. One day, due to a hack, a substantial portion of the deposited crypto assets are stolen. The margin trading and lending users want their crypto back. The holders of the governance tokens, who have also engaged in various margin trading and lending activities via the DAO, also want their crypto back. The governance tokenholders, however, form a plan to liquidate and payout that favors them to the prejudice of the non-governance token holding users. In other words, the governance token holders have effectively created a winding down plan that favors themselves to the prejudice of the DAO's creditors. This would set up a perfect scenario whereby the prejudiced creditors could try to force the DAO into bankruptcy to achieve a more favorable treatment of their claims.

Second, imagine instead a DAO whose activities move beyond crypto DeFi and into the real economy. This particular DAO uses the funds that it raises to operate a commercial firm that provides goods and services. In the course of operating its business, such a DAO would incur a multitude of debts.¹⁹⁶ If this entity faces financial distress and its governance tokenholders vote to pay themselves rather than making payments to the DAO's many creditors, an involuntary bankruptcy petition would seem like the most obvious choice for the disadvantaged creditors. While this form of DAO activity has not been completely operationalized as of this writing, there are a few nascent examples in the works.¹⁹⁷

2. Involuntary Bankruptcy Through Internal Pressure

It is also possible that a DAO could find itself with a subset of tokenholders who are unsatisfied with the DAO's direction or are concerned with the entity's continued solvency. As we note above, some DAOs' tokenholders would qualify as creditors and thus may be eligible to file an involuntary bankruptcy petition like the external creditors identified above. Involuntary bankruptcy also can be commenced by fewer than all of the partners of a general partnership.¹⁹⁸ This means that if a DAO is characterized as a general partnership, a subset of disgruntled tokenholders may be able to seek bankruptcy, regardless of whether they qualify as creditors.

¹⁹⁶ For a discussion of the debts such a DAO might incur, *see* discussion *infra* of creditors in Part I.C.4.

¹⁹⁷ *See supra* Part I.

¹⁹⁸ 11 U.S.C. § 303(b)(3).

It is common for DAO members to vote with their feet by “rage quitting”—that is, cashing in their stake in the DAO when the member is dissatisfied with the DAO’s operations or the outcome of a vote.¹⁹⁹ These DAO members might find the threat of involuntary bankruptcy to be a powerful governance lever to drive outcomes, including preserving the DAO’s assets, enjoining collection activities or litigation against the DAO, or even unwinding transfers that the tokenholders believe have negatively affected the entity and are avoidable under applicable bankruptcy law.²⁰⁰ In this respect, bankruptcy is a “nuclear” option that would immediately interrupt the DAO’s activities with the procedural machinery described above. This threat is powerful in all cases,²⁰¹ but rises in correlation to the distance at which the DAO operates from traditional legal frameworks.

But while tokenholders might be drawn to this powerful lever, they must be aware of the significant repercussions for filing an involuntary petition without sufficient basis. If an involuntary petition is filed and answered, the court will permit the case to move forward only if the court finds that the debtor is generally not paying its debts as they become due or a custodian has been appointed.²⁰² If the court dismisses the petition, the petitioners may be responsible for the debtor’s costs and attorneys’ fees.²⁰³ And any petitioner that is found to have filed the involuntary petition in bad faith can be liable for damages proximately caused by the filing, as well as punitive damages.²⁰⁴ These powerful disincentives mean that it is imprudent for DAO members to commence involuntary bankruptcy cases absent a valid economic basis for the filing. So too, tokenholders may be surprised to find that commencing bankruptcy’s machinery could increase collection pressure on them, if those tokenholders are found liable for the debts of the DAO.²⁰⁵

¹⁹⁹ Osato Avan-Nomayo, *Why ‘Rage Quitting’ Is a Growing DeFi Trend That’s Upending DAOs*, DL NEWS (Sept. 13, 2024), <https://www.dlnews.com/articles/defi/what-is-rage-quitting-and-why-has-it-become-so-popular/> [<https://perma.cc/LKD3-H3YS>].

²⁰⁰ See 11 U.S.C. §§ 362 (automatic stay), 544 (avoidance), 548 (fraudulent conveyances).

²⁰¹ Richard Hynes and Steven Walt have suggested, based upon the high rates of dismissals for creditor non-prosecution of involuntary cases, as well as a number of pro-se involuntary filings, that involuntary bankruptcy under modern frameworks may be used by creditors to “get the debtor’s attention.” See Richard M. Hynes & Steven D. Walt, *Revitalizing Involuntary Bankruptcy*, 105 IOWA L. REV. 1127, 1160, 1164 (2020).

²⁰² 11 U.S.C. § 303(h).

²⁰³ *Id.* § 303(i).

²⁰⁴ *Id.* § 303(i)(2).

²⁰⁵ For example, the automatic stay that arises when the DAO enters bankruptcy would not, absent additional relief, prevent partnership creditors from being personally sued for any obligations for which they are liable. In a chapter 7 case, the trustee would have a cause of action to recover debts for which a general partner of the partnership is personally liable. That action would belong to the DAO’s estate in a chapter 11 case.

III. DECENTRALIZED AUTONOMOUS BANKRUPTCY

Having analyzed the interface between DAOs and the U.S. federal bankruptcy system, revealing the inherent tensions between these entities on the one hand and insolvency law on the other, we now reverse the perspective of our analysis. Instead of examining whether DAOs can adapt to traditional bankruptcy requirements, we imagine an alternative framework built upon the philosophical and technological foundations of DAOs themselves—one that leverages DLT networks, smart contracts, and tokens to facilitate an orderly restructuring or liquidation process.

Below we undertake the initial steps of this thought experiment, theorizing how such a decentralized autonomous bankruptcy platform might be structured and operate. Our goal is not to provide a comprehensive blueprint or normative defense of any such system. Instead, we attempt to project a possible development in the DAO ecosystem, while forecasting its practical limitations.

A. The Intellectual Origins of Decentralized Autonomous Bankruptcy

The notion of decentralized autonomous bankruptcy might appear fanciful today. Yet, the track record of DLT enthusiasts in reimagining traditional legal frameworks suggests this development might emerge in the not-so-distant future. Software developers have already created DAOs to provide alternatives to conventional dispute resolution for participants in the DLT landscape ecosystem, as exemplified by Kleros DAO²⁰⁶ and Aragon Court.²⁰⁷ These DAOs provide arbitration-like services on a voluntary, opt-in basis, and have resolved matters arising from smart contract execution, token sales, and decentralized marketplace transactions.²⁰⁸

Just as the emergence of blockchain-based disputes has sparked the creation of decentralized arbitration mechanisms, the enhanced commercial activity of DAOs in the digital economy may reveal a need for creditor-debtor resolutions. As DAOs begin to diversify their operations and take on more debt, or face systemic market stress akin to the “crypto winter” of 2022, there may be

²⁰⁶ The Justice Protocol, KLEROS, <https://kleros.io/> (last visited Jan. 27, 2025) [<https://perma.cc/A4WE-CX54>] (describing Kleros as “a decentralized arbitration service for the disputes of the new economy”).

²⁰⁷ Aragon Court, ARAGON, <https://legacy-docs.aragon.org/products/aragon-court/aragon-court> (last visited Jan. 27, 2025) [<https://perma.cc/MT7P-9EMD>] (describing Aragon Court as a “dispute resolution protocol that handles subjective disputes that cannot be solved by smart contracts”).

²⁰⁸ Clément Lesaege, Federico Ast, & William George, *Kleros: Short Paper v1.0.7* (September 2019), https://kleros.io/static/whitepaper_en-8bd3a0480b45c39899787e17049ded26.pdf [<https://perma.cc/3D7U-H427>].

more instances of financial distress that could foster the development of decentralized autonomous insolvency frameworks. Understanding how DAOs have approached dispute resolution may illuminate the potential structure and operation of a decentralized autonomous insolvency platform.

DAO dispute resolution bears little similarity to court- or arbitrator-based adjudication. These platforms are, as scholars note, “adapted to the particularities of the crypto environment,” making them “likely to be accepted by on-chain actors.”²⁰⁹ Rather than relying on human arbitrators or judges applying procedural and substantive law, these decentralized systems leverage game theory and crypto-economic incentives in an attempt to “develop a justice system that produces true decisions in a secure and inexpensive way.”²¹⁰ The theoretical foundation rests on the premise that properly aligned financial incentives, combined with cryptographic verification, can create trustworthy adjudication even among pseudonymous participants who may be acting in their own self-interest.²¹¹

For example, Kleros DAO provides for dispute resolution by a pool of jurors who are selected to vote on the outcome of the case.²¹² A smart contract binds the parties to the result by executing one of two binary outcomes that are pre-selected by the parties. Kleros’s jury pool includes individuals that have acquired Kleros tokens. A prospective juror can stake tokens on a dispute, essentially bidding on the right to join the jury. Jurors’ financial recovery is tied to whether their decision was in line with a majority of jurors.²¹³ In this way, jurors are incentivized to vote on consensus-based solutions, or at least solutions that they expect will command a majority outcome. Kleros offers unlimited “appeals” of a ruling, but an appeal is more akin to a new trial. The dispute is submitted to a new jury, and the number of jurors doubles (plus one) with each appeal. This doubling mechanism encourages finality by making the process exponentially more expensive and complicated with each round of appeal.²¹⁴

²⁰⁹ Florence Guillaume & Sven Riya, *Blockchain Dispute Resolution for Decentralized Autonomous Organizations: The Rise of Decentralized Autonomous Justice*, BLOCKCHAIN AND PRIV. INTERN’L L. 618 (Bonomi, Andrea, Lehmann, Matthias and Lalani, Shaheez eds., 2023). There are limited examples of individuals opting into DAO dispute resolution for disputes that occurred off-chain. *Id.*

²¹⁰ *Id.* at 3.

²¹¹ Luis Bergolla, Karen Seif & Can Eken, *Kleros: A Socio-Legal Case Study of Decentralized Justice & Blockchain Arbitration*, 37 OHIO ST. J. ON DISP. RESOL. 1 (2021).

²¹² Kara Bruce, Christopher K. Odinet, & Andrea Tosato, *Decentralizing Bankruptcy: Insolvency in Web3*, 44 No. 11 BANKR. L. LTR. NL 1 (2024) [hereafter *Decentralizing Bankruptcy*].

²¹³ *Id.*

²¹⁴ *Id.*

While platforms like Kleros DAO remain in their infancy, their emergence suggests that DLT proponents might one day experiment with decentralized insolvency solutions as well. This development seems particularly likely given the entrepreneurial ethos of this community and its persistent drive to create alternatives to conventional legal frameworks. In this respect, DAOs would not be treading completely new ground but instead creating systems resembling the contractual alternatives to bankruptcy that proliferated in the 1990s.²¹⁵ Yet our review of the intellectual foundation of DAOs leads us to believe that, if a DLT-based insolvency regime were to arise, it would be created out of whole cloth, rather than in recognition of existing frameworks for debtor-creditor law or scholarly analysis of bankruptcy alternatives.²¹⁶ So, too, the normative goals of such a system would be to resolve insolvency on-chain without compromising DAO principles, rather than to improve upon any existing insolvency regime in a more nuanced fashion.

The likely predicates for development of a DAO insolvency system are, first, an increase in the volume and variety of debt within the DAO ecosystem and, second, a greater incidence of DAOs showing inability or unwillingness to repay those debts. These predicates could emerge gradually, as DAOs begin to more closely resemble traditional commercial enterprises, or suddenly, if an event like the crypto winter strains a DAO's ability to satisfy its obligations to tokenholders or other claimants. The following section begins to imagine how a decentralized autonomous bankruptcy platform might be designed and operate.

B. Thought Experiment: BrokeDAO & Decentralized Autonomous Bankruptcy

Imagine that a group of DLT enthusiasts recognize the value of a functioning insolvency process for DAOs. In response, they create a decentralized autonomous bankruptcy solution: a DAO that would oversee either the liquidation or restructuring of other distressed DAOs. In keeping with the spirit of this community, they cheekily name this DAO-based insolvency platform “BrokeDAO.”²¹⁷ BrokeDAO's services would be available for DAOs to access in two ways. First, when facing insolvency, a DAO's participants—generally tokenholders—could vote to cede control of their treasury to BrokeDAO through a smart contract that functions like a trust instrument.²¹⁸

²¹⁵ See discussion, *infra*, at note 38.

²¹⁶ See *supra* Part I.

²¹⁷ We first introduced this hypothetical BrokeDAO in the November 2024 issue of the Bankruptcy Law Letter. See *Decentralizing Bankruptcy*, *supra* note 209. This essay further develops the thought experiment.

²¹⁸ This arrangement bears some similarity to an assignment for the benefit of creditors, or “ABC,” a comparison we discuss further in Part III(C).

These assets would then be administered by BrokeDAO for the benefit of tokenholders and other interested parties. Alternatively, and perhaps preferably, a DAO could proactively include code that would automatically trigger such a transfer of assets to BrokeDAO upon specified conditions.²¹⁹

BrokeDAO could take a variety of forms and serve any number of goals, which we begin to imagine in the paragraphs that follow. But a baseline feature of any insolvency regime is to achieve an equitable division of the debtor's assets among creditors.²²⁰ We imagine that early iterations of BrokeDAO, founded as we suspect on crypto-economic principles, might focus primarily on this core functionality. Thus, BrokeDAO could emerge as a collective creditors' remedy similar to insolvency systems common in early mercantile society.²²¹ Readers should note that this type of framework could emerge without any features that would be attractive to the insolvent DAO itself. This is a departure from modern U.S. bankruptcy law, which is most often debtor-initiated and features complex processes for rehabilitation of distressed entities.²²²

In its most basic iteration, *BrokeDAO 1.0*, BrokeDAO could function primarily as a neutral and secure third-party liquidator. Upon receiving control of a distressed DAO's treasury, it would execute a predetermined allocation scheme through smart contracts. While initially this waterfall might be relatively straightforward—perhaps similar to the basic liquidation processes that DAOs can currently perform—it could evolve to accommodate more sophisticated creditor hierarchies as DAOs develop more complex financial relationships. At first glance, BrokeDAO 1.0 might seem to offer limited advantages over direct liquidation by the distressed DAO itself.²²³ However, neutral oversight can provide crucial value in two respects: First, as the HectorDAO case illustrates, it can restore stakeholder confidence when there are concerns about the distressed DAO's governance or suspicions of mismanagement.²²⁴ Second, transferring or sharing treasury control with BrokeDAO could reduce the risk

²¹⁹ This version of BrokeDAO would have some resemblance to the “menu” style bankruptcy theorized by Robert Rasmussen. *See* Rasmussen, *supra* note 38.

²²⁰ Louis Levinthal, *The Early History of Bankruptcy Law*, 66 U. PA. L. REV. 223 (1918) (describing the primary aims of bankruptcy laws as “first, to secure an equitable division of the insolvent debtor's property among all his creditors, and, in the second place, to prevent on the part of the insolvent debtor conduct detrimental to the interests of his creditors.”).

²²¹ For a discussion of early bankruptcy laws, *see* Charles Jordan Tabb, *The Historical Evolution of the Bankruptcy Discharge*, 65 AM. BANKR. L.J. 325-71 (1991).

²²² For a discussion of how U.S. bankruptcy law formed at times in concert and, over time, in opposition to historical principles, *see* David Skeel, *DEBT'S DOMINION: A HISTORY OF BANKRUPTCY LAW IN AMERICA* (2001).

²²³ *See* the introduction to this Part, *supra*, for a summary of DAOs' existing liquidation capabilities.

²²⁴ *See supra* Part II.B.1.

of hacks, particularly those that might be perpetrated by insiders of the distressed DAO.²²⁵

BrokeDAO 2.0 could build upon this basic liquidation functionality by offering an expanding suite of insolvency-related services. The first could be a decentralized dispute resolution mechanism for bankruptcy-related issues. Like Kleros, *BrokeDAO 2.0* could issue its own “adjudicator” tokens and create an incentive structure for adjudicator tokenholders to participate in resolving common bankruptcy disputes. Consistent with existing dispute-resolution platforms, adjudicator tokenholders could stake their tokens to serve as adjudicators for matters such as existence, priority, or value of outstanding claims or the validity of setoff rights. This game-theoretic approach would create economic incentives for consensus-based evaluation of creditor disputes.

A second service could focus on investigating potential fraud and mismanagement. Given that blockchain networks maintain an immutable record of all transactions, *BrokeDAO 2.0* could deploy sophisticated on-chain analytics to trace token flows, map wallet interactions, and audit smart contract deployments and modifications in the period preceding a DAO’s insolvency. This analysis could identify suspicious patterns such as unusual token concentrations, circular trading patterns, sudden spikes in transaction volume, or anomalous governance voting blocks. *BrokeDAO 2.0* could also search for common attack vectors like flash loan exploits, oracle manipulation, or the deployment of malicious smart contract upgrades. The platform might even track off-chain signals by analyzing cross-chain bridges and centralized exchange deposits that could indicate attempts to obscure asset movements. The resulting report, analogous to work product generated by an examiner in a chapter 11 bankruptcy case,²²⁶ could provide powerful insights to the tokenholders and other creditors of a distressed DAO.

However, this investigative service would face significant practical limitations. Even if *BrokeDAO* successfully identified indicia of fraud or transactions that negatively affected certain creditor constituencies, it would lack both technical and legal power to unwind them. This stands in marked contrast

²²⁵ *See id.*

²²⁶ The Bankruptcy Code gives the United States Trustee the authority to appoint an examiner to investigate and report on potential fraud or wrongdoing, or if the appointment is otherwise in the interest of the estate. *See* 11 U.S.C. § 1104(c). The Code also contemplates that examiners will be appointed as a matter of course in cases where the debtor’s fixed, liquidated, unsecured debts owed to non-insiders exceed \$5,000,000. *Id.* § 1104(c)(2). For a robust discussion of the role of examiners in bankruptcy cases, *see* Jonathan C. Lipson, *Understanding Failure: Examiners and the Bankruptcy Reorganization of Large Public Companies*, 84 AM. BANKR. L.J. 1 (2010).

to both U.S. bankruptcy law and state voidable transactions laws,²²⁷ both of which provide avenues for creditors to claw back the value of transfers that occur with the intent or effect of harming certain creditor interests.²²⁸ Thus, if BrokeDAO's analysis revealed legally actionable misconduct, creditors might ultimately find traditional legal remedies more effective than blockchain-based solutions. In this respect, BrokeDAO's fraud detection capabilities could help creditors make informed decisions about whether to pursue resolution through the traditional legal system or remain within the DLT ecosystem.²²⁹

BrokeDAO's fraud-detection services would also carry more practical risks: the very transparency that makes investigative capabilities possible might deter some DAO creators from integrating BrokeDAO into their protocols. More concerning still, sophisticated actors intending to exploit DAOs might deliberately structure their activities to evade BrokeDAO's detection mechanisms, potentially driving fraudulent conduct further into the shadows. This danger of strategic adaptation, however, is not unique to blockchain-based solutions—it parallels the ongoing cat-and-mouse game between fraudsters and regulators in traditional financial markets.

A third category of services could focus on the interface between DAOs and off-chain assets. If the distressed DAO owns tangible property, BrokeDAO 2.0 could coordinate with professional service providers to market and maximize the value of these assets. While such services would necessarily sacrifice some degree of automation, there is precedent for DAOs successfully providing human-mediated professional services. For instance, MiDAO offers business formation services to DAOs incorporating in the Marshall Islands, demonstrating how decentralized organizations can effectively integrate

²²⁷ All states permit the avoidance of voidable transactions, also called fraudulent transfers or fraudulent conveyances, which include transfers made with actual intent to hinder, delay, or defraud creditors, and transfers made for less than reasonably equivalent value when a debtor meets a statutory insolvency-related test. *See generally* the Uniform Voidable Transactions Act (providing the statutory foundation for voidable transaction suits). For a discussion of Voidable Transactions laws across the states and how they interface with bankruptcy law, *see* Tabb, *supra* note 131, § 6.29.

²²⁸ Some of bankruptcy's most potent powers are its ability to avoid pre-bankruptcy transactions and recover their value to the estate. After a bankruptcy filing, the trustee or debtor-in-possession can avoid preferences, which are transfers made on the eve of bankruptcy that prefer certain creditors in violation of bankruptcy policies, and voidable transactions, described in the prior footnote. *See* 11 U.S.C. §§ 550 (detailing the process of recovery of avoided transactions), 554(b) (incorporating state voidable transactions laws), 547 (detailing the statutory requirements for preference avoidance), 548 (a bankruptcy-specific fraudulent-transfer scheme). For a discussion of these and other avoidance tools, *see* Tabb, *supra* note 131, Chapter 6.

²²⁹ For further discussion of the choice between DLT and legal insolvency regimes, *see infra* Part III.C.

traditional professional services into their operations.²³⁰ BrokeDAO 2.0 could similarly develop a network of verified real estate agents, auctioneers, and other professionals to assist with the disposition of physical assets. These service providers might be compensated through a combination of traditional payment methods and BrokeDAO tokens, creating aligned incentives to maximize recovery value. These types of services would become increasingly valuable if DAOs were to expand their real-world footprint and accumulate more traditional assets. It could establish standardized protocols for valuing, marketing, and selling various categories of tangible assets, while using smart contracts to ensure transparent distribution of sale proceeds among creditors.

While BrokeDAO 1.0 and 2.0 primarily offer creditor-oriented solutions focusing on liquidation and dispute resolution, *BrokeDAO 3.0* could move beyond these foundational models to facilitate ends including the standalone rehabilitation of distressed DAOs. In this third iteration, BrokeDAO would seek to facilitate a collective agreement under which a distressed DAO would satisfy old debts, perhaps with some adjustments of terms, from its future earnings. At present, the need for a rehabilitative approach within a decentralized autonomous insolvency framework might seem limited, as many DAOs function primarily as investment vehicles, where preserving ongoing operations holds less inherent value. However, as DAOs evolve to encompass more traditional business activities, developing products, hiring employees, and engaging service providers, the preservation of going-concern value would hold greater significance. A DAO running a software development platform or managing a chain of retail establishments, for instance, would have a complex web of relationships with employees, suppliers, and lenders—all of whom could benefit more from the DAO's continued operation rather than its dissolution.

If unanimous creditor participation is secured, a delicate contingency we discuss at length in Part III(C), BrokeDAO 3.0 could facilitate a dynamic restructuring process that leverages both automated protocols and human expertise. The platform could employ smart contracts to manage the submission and voting on competing restructuring proposals, while simultaneously maintaining a pool of token-incentivized mediators to resolve intercreditor disputes. BrokeDAO 3.0 might even implement novel voting mechanisms, such as quadratic voting, to better balance the interests of diverse stakeholder groups.

The restructuring process itself could showcase the innovative potential of programmable obligations. Smart contracts could create self-executing payment plans with automated modification triggers tied to the DAO's

²³⁰ Midao, <https://www.midao.org/> (last visited Jan. 27, 2025) [<https://perma.cc/U4HX-5EAN>].

performance metrics. Such contracts might automatically increase creditor distributions when the DAO exceeds specified revenue thresholds or implement pre-negotiated modifications if performance deteriorates, potentially averting subsequent defaults. This automated responsiveness to changing circumstances represents a notable departure from traditional restructuring tools, suggesting how blockchain technology has the potential to enhance, rather than merely replicate, existing insolvency frameworks.

C. The Limitations Inherent in Decentralized Autonomous Bankruptcy

The prior section imagined several possible iterations of a DLT-based insolvency regime, ranging from a neutral liquidation platform to a decentralized rehabilitative process. This section considers whether a project like BrokeDAO could provide a realistic alternative to modern U.S. bankruptcy law. Before we begin that inquiry, one caveat is in order. As mentioned previously, the BrokeDAO iterations we imagine in Part III(B) bear similarities to contractual bankruptcy replacements or alternatives theorized by scholars, including Barry Adler;²³¹ Michael Bradley and Michael Rosenwig;²³² Robert Rasmussen;²³³ Alan Schwartz;²³⁴ and Steven Schwarcz.²³⁵ These models prompted vigorous debate on many grounds, including the foundational question of the purposes that a bankruptcy system should serve.²³⁶ Our thought exercise has a far more limited purpose. Rather than envisioning BrokeDAO as a normative improvement upon bankruptcy, we envision it simply as a progression of commercial life

²³¹ See, e.g., Adler, *supra* note 38 (arguing that federal bankruptcy law's ends could be achieved more efficiently through contractual alternatives that replace existing debt with preferred equity, and advocating for a variety of legal changes to accomplish those ends); Barry E. Adler, Finance's Theoretical Divide and the Proper Rule of Insolvency Rules, 67 S. CAL. L. REV. 1107 (1994) (developing these points and responding to criticism); Barry E. Adler, *A World Without Debt*, 72 WASH. U. L. Q. 811 (1994) (same).

²³² *The Untenable Case for Chapter 11*, 101 YALE L. J. 1043, 1078-79 (1992) (arguing for the repeal of chapter 11 in favor of automatic cancellation of residual claims if a debtor defaults).

²³³ See, e.g., Rasmussen, *supra* note 38, at 100-11 (allowing an entity to choose *ex ante* from a menu of potential solutions that would be available if the entity encountered legal difficulty, ranging from no bankruptcy to a fully bespoke bankruptcy regime).

²³⁴ Schwartz, *supra* note 38, at 1820-50 (developing a model where creditors could negotiate successively with the debtor for consensual insolvency outcomes, with each successive agreement binding the prior contracting parties).

²³⁵ Schwarcz, *supra* note 38, at 584-86 (advocating for greater departure from bankruptcy's default rules by enforcing pre-bankruptcy waivers for which the debtor receives reasonably equivalent value).

²³⁶ See, e.g., Elizabeth Warren & Jay Lawrence Westbrook, *Contracting Out Of Bankruptcy: An Empirical Intervention*, 118 HARV. L. REV. 1197 (2005); Susan Block-Lieb, *The Logic and Limits of Contract Bankruptcy*, 2001 U. ILL. L. REV. 503, 519-22 (2001) (characterizing the values underlying the debate and offering critique); Lynn M. LoPucki, *The Case for Cooperative Territoriality in International Bankruptcy*, 98 MICH. L. REV. 2216, 2246-47 (2000); Lynn M. LoPucki, *Contract Bankruptcy: A Reply to Alan Schwartz*, 109 YALE L. J. 317 (1999).

within the DLT ecosystem. From that vantage point, we do not claim that it would be more efficient or otherwise superior to U.S. bankruptcy law or any other traditional insolvency regime.²³⁷ We ask only whether it can succeed, or whether it is destined for failure. On that question, we project that BrokeDAO's ultimate utility is limited but may have some efficacy as long as the insolvent DAO exists and operates within a closed DLT ecosystem.

To understand the limitations inherent in BrokeDAO, it is helpful to compare it to existing, rather than theoretical, bankruptcy alternatives. BrokeDAO 1.0 functions much like an assignment “for the benefit of creditors” (ABC), whereas BrokeDAO 3.0 is analogous to a private restructuring or “workout” arrangement. In an ABC, a debtor in distress assigns all of its interests in property to an assignee, who holds the assets in trust for the benefit of creditors.²³⁸ The assignee then liquidates the assets and distributes the proceeds to creditors. In a workout, the debtor reaches agreement with all of its creditors to modify the terms of a credit relationship. Workout arrangements can involve both composition agreements, in which creditors agree to accept less than full payment, and extension agreements, in which the debtor and creditors agree to extend the time for repayment.²³⁹ These collective arrangements occur with some frequency in the brick-and-mortar world.²⁴⁰

The key weakness of such non-bankruptcy alternatives, and by extension BrokeDAO, is that they lack the coercive power of bankruptcy law. ABCs operate in many jurisdictions by statute and can prevent most unilateral creditor activity because the assets of the debtor are *in custodia legis* during the scope of the assignment.²⁴¹ But creditors can upset the ABC by filing involuntary bankruptcy case. Meanwhile, workout arrangements of the nature of BrokeDAO 3.0 are entirely voluntary and depend on creditor collaboration. Such cooperation is difficult to achieve in insolvency's zero-sum game, as

²³⁷ Considering the normative benefits of a BrokeDAO-style regime is an undertaking we leave for future development. Many of the debates summarized in the preceding footnotes do not map easily onto the DAO ecosystem because the types and motivations of creditors are so different. Further, any discussion of utility must take into account the strategic behavior of tokenholders, which might not always generate outcomes that are optimal for the distressed DAO. For these and other reasons, our focus remains on feasibility alone.

²³⁸ For a thoughtful discussion of ABCs, see Melanie R. Cohen & Joanna L. Chalcombe, *Assignment for Benefit of Creditors—A Contemporary Alternative for Corporations*, 2 DEPAUL BUS. L.J. 269 (1990); Charles Tabb, Kara Bruce, & Laura Coordes, *THE LAW OF BANKRUPTCY* § 1.5.

²³⁹ Melanie R. Cohen & Joanna L. Chalcombe, *Assignment for Benefit of Creditors—A Contemporary Alternative for Corporations*, 2 DEPAUL BUS. L.J. 269 (1990); Charles Tabb, Kara Bruce, & Laura Coordes, *THE LAW OF BANKRUPTCY* § 1.5.

²⁴⁰ Stuart C. Gilson, John Kose, & Larry H.P. Lang, *Troubled Debt Restructurings: An Empirical Study of Private Reorganization of Firms in Default*, 27 J. FIN. ECON. 315, 345 (1990).

²⁴¹ *Id.*

creditors have the powerful incentive to pursue their individual interests even where a collective resolution would benefit the creditor body as a whole.²⁴² As such, any collective, out-of-court restructuring rests on fragile dynamics, and bargaining must account for the reality that an individual creditor might be better off by pursuing individual collection activity.²⁴³ Any individual creditor's defection may result in actions that deplete the assets available for the whole. It thus can trigger a destructive race to the assets that only a bankruptcy filing can halt. As noted earlier, bankruptcy has powerful tools to prevent this race by enjoining individual collection efforts and enforcing a settlement even over dissenting creditors.

For BrokeDAO to best achieve a collective creditor response to a debtor's distress, it would need to replicate bankruptcy's powerful tools through private ordering, crafting a web of incentives and penalties to discourage individual enforcement while encouraging collective action. This complex undertaking would require innovative approaches to curtail both on-chain and off-chain collection activities, using crypto-economic structures to incentivize parties to forego recourse to state authority, including bankruptcy.

BrokeDAO's power to encourage such collective resolution would be highest over the tokenholders of the DAO in distress. BrokeDAO's coercive authority in this context would stem from whatever interest the tokenholders have in preserving or enhancing the value of their tokens. BrokeDAO would have control over the DAO's native tokens and could build incentives into its framework to encourage collective results. For instance, upon initiation of the rehabilitation process, BrokeDAO could automatically stop tokenholders from exiting the DAO and, possibly, freeze other transfers of the distressed DAO's native tokens, preventing actions that could further destabilize the organization. Simultaneously, it could cause the insolvent DAO to issue new "rehabilitation tokens" that represent claims in the restructuring and carry enhanced governance rights, such as weighted voting power in key decisions or priority in future distributions. Furthermore, BrokeDAO could implement a "collective action bonus" whereby tokenholders that formally agree to participate, perhaps by locking their tokens in a dedicated smart contract, receive additional rights or priority in distributions. Finally, to deter uncooperative behavior, BrokeDAO could also establish penalties—for instance, tokenholders who attempt to

²⁴² Non-bankruptcy creditor-debtor law, both in the U.S. and abroad, tends to rely on a first-in-time principle. Creditors who collect faster are more likely to receive a recovery than those who wait. Each individual creditor's enforcement effort has the effect of reducing the debtor's ability to pay others.

²⁴³ Gilson, *supra* note 231, at 318 ("Attempts to settle privately are more likely to fail when individual creditors have stronger incentives to hold out for more favorable treatment.").

circumvent the collective process, such as by resorting to legal action, could face dilution of their claims or lose voting rights in the rehabilitation proceedings. None of these incentives would eliminate the tokenholder's options under traditional legal frameworks. They would simply make it less advantageous for the tokenholder to exercise them.

BrokeDAO's coercive power over third-party creditors—those who hold claims against the distressed DAO but not its tokens—is far less potent. Because these parties do not have tokens locked up in BrokeDAO's insolvency process, they will not be affected by the levers BrokeDAO can adjust over those assets. These creditors, then, will weigh whatever enticements BrokeDAO promises against traditional legal alternatives, such as suing the distressed DAO to collect the debt in court or commencing an involuntary bankruptcy case. But given that these creditors have done business with the DAO in the past, they are likely to be motivated to some extent by crypto-economic incentives. As such, one option might be to entice these creditors to accept rehabilitation tokens to monetize their claims against the distressed DAO. These enhanced inducements might include superior governance rights, elevated payment priorities, or contingent benefits tied to the DAO's future performance. But BrokeDAO's effectiveness would depend entirely on these creditors' voluntary participation, and the platform would need to offer compelling incentives to secure such cooperation and to operate in a manner that preserves trust in the DAO.

For off-chain creditors, which might include employees, vendors, landlords, tort claimants, and regulatory bodies like the SEC, BrokeDAO's coercive limitations are the most acute. While BrokeDAO could attempt to induce their cooperation by offering rehabilitation tokens, this proposition would likely face resistance as these creditors may be skeptical of satisfying their conventional claims with digital assets. The challenge becomes particularly pronounced for involuntary creditors, such as tort and regulatory claimants, who have little incentive to participate in the distressed DAO's rehabilitation at all.

Studies have shown that workout arrangements tend to be effective in cases in which the types of debt are limited and the creditors are sophisticated, repeat players.²⁴⁴ Conversely, the more creditors there are and the more diverse their holdings and interests, the less likely it is that parties will be able to find

²⁴⁴ Gilson, *supra* note 231, at 334 (observing that firms in their sample that achieve workouts have, among other things, relatively more bank debt than firms who enter bankruptcy, and noting that “[f]irms with more bank debt outstanding can more easily renegotiate their debt because banks are more sophisticated and less numerous than other kinds of creditors, resulting in fewer holdouts.”).

sufficient common ground to agree to a collective restructuring.²⁴⁵ We theorize that a similar dynamic is likely to affect BrokeDAO, namely that, so long as blockchain remains a closed community with a unity of interest between participants, the tokenized carrots and sticks provided by BrokeDAO might be enough to support a decentralized insolvency alternative.²⁴⁶ Indeed, BrokeDAO's coercive power over the distressed DAO's tokens could be more potent than the cost-saving dynamics that bind parties to out-of-court workouts in the brick-and-mortar world.²⁴⁷ In that respect, BrokeDAO might outperform traditional non-bankruptcy solutions, at least so long as the DLT community remains closed.

But it bears repeating that BrokeDAO would not have the force of law, nor would it supplant traditional legal remedies. It therefore would be effective only so long as legal remedies are deemed by stakeholders to be inferior. As DAOs grow in complexity, they will soon acquire a diversity of creditors who are less motivated by the tokenized carrots and sticks built into BrokeDAO. Likewise, if DAO participants lose faith in the value of the tokens, a DAO insolvency regime may not offer a meaningful alternative to traditional legal remedies. Even if BrokeDAO is functional, it does not necessarily follow that the resolutions it offers are superior to traditional legal results. Still, it has the potential to develop into a framework that helps DLT participants make an informed decision between legal and blockchain-based enforcement options. And in that respect, it could hold continuing value in the DLT ecosystem.

CONCLUSION

As DAOs continue to grow in number, size, and complexity, the potential for financial distress and insolvency becomes an increasingly pressing concern. This Article has explored the tensions between the decentralized ethos

²⁴⁵ *Id.*

²⁴⁶ Kevin Werbach observes a similar developmental arc regarding the need to regulate internet activity. He writes, "Many things that 'just worked' in the early days [of the Internet] turned out to be consequences of a small, close-knit, homogenous online community. As the Internet began to look more like society, it faced the same political and economic challenges as offline communities [. . . and] Internet advocates began to call for government intervention." Werbach, *supra* note 4, at 522. Likewise, in a forthcoming work, Stephen Ware undertakes a similar thought experiment. He explores whether businesses could opt out of bankruptcy through use of a pre-dispute arbitration clause. He concludes that arbitrating bankruptcy would only be possible in the rare case in which all creditors agree to arbitration, a fact pattern that would "be extremely rare for all but the simplest firms." Stephen Ware, *Arbitrating Bankruptcies* (forthcoming). Available at SSRN: <https://ssrn.com/abstract=4531986> or <http://dx.doi.org/10.2139/ssrn.4531986>.

²⁴⁷ For a discussion of factors that influence parties' assent to an out-of-court workout, see Gilson, *supra* note 231.

of DAOs and the centralized, court-supervised processes of traditional bankruptcy law. Our analysis reveals that while fully decentralized DAOs may struggle to align with existing bankruptcy frameworks, hybrid models that incorporate elements of both decentralized and traditional corporate structures could potentially benefit from bankruptcy protection. Conversely, blockchain-based restructuring regimes could offer a workable alternative to bankruptcy, at least while DAOs remain in their infancy.²⁴⁸ As the digital asset economy evolves, so too must those who create and champion DAOs, as the future of insolvency resolution for these organizations may require innovative solutions that bridge the gap between blockchain-based governance and traditional legal structures.

²⁴⁸ See *Decentralizing Bankruptcy*, *supra* note 209.