Université Paris-Panthéon-Assas

école doctorale de George Vedel (ED7)

Thèse de doctorat en science politique
soutenue le 27 Juin 2025

Exit to Community: drivers, practices and pitfalls of user ownership transitions in the digital platform economy

Tara Merk

Sous la direction de Primavera De Filippi

Membres du jury :
Prof. Florence Guillaume, Rapporteur, Président du jury
Prof. Balázs Bodó, Rapporteur
Prof. Ellie Rennie
Prof. Andrea Leiter
Prof. Nathan Schneider
Dr. Morshed Mannan

Avertissement

La Faculté n'entend donner aucune approbation ni improbation aux opinions émises dans cette thèse ; ces opinions doivent être considérées comme propres à leur auteur.

Acknowledgements

I am grateful to the many people and projects who supported me throughout this research journey, and without whom this thesis would not have been possible. Firstly, I would like to thank my supervisors, Primavera De Filippi and Ellie Rennie, for their guidance, support, and encouragement throughout this thesis both in an institutional and extitutional capacity. I am grateful for their generosity in providing feedback and for connecting me with their various research communities, thereby introducing me to a new world of collaborators, friends, and inspiration. I am also grateful for their patience with me whenever inspiration threatened to distract me from my core research, and for their help in keeping me on track. Furthermore, I am thankful to the CNRS for awarding me a position as a PhD researcher and to the ERC BlockchainGov for generously funding my work.

I would also like to thank the BlockchainGov core team, comprising Morshed Mannan, Kelsie Nabben, Sofia Cossar, and Jamilya Kamalova, for their support and friendship throughout this project. The ongoing work and PhD projects of Morshed and Kelsie served as key inspirations for this thesis. Collaborating closely with both of them has been a true pleasure and a privilege. I am grateful for having Sofia and Jamilya as co-PhD students and friends. I really appreciated navigating the complexities of administration and being a junior researcher collectively rather than in isolation. I would also like to thank Philemon Poux, who completed his PhD with BlockchainGov during my first year and became my first Parisian friend, an invaluable source of advice on all PhD-related matters, and helped me maintain Paris as a home away from home.

During the course of this PhD, I had the opportunity to collaborate with many different research organizations, the results of which are reflected throughout this thesis. Researching labor conditions in Web3 with Laura Lotti and Nick Houde through the Other Internet Research Institute was a true joy. I would most definitely drop everything to begin unionizing the blockchain industry with them, had our research indicated that this would have been useful. Furthermore, through a research fellowship, I was able to collaborate with the working group "Digitalization, Sustainability, and Participation" at the Weizenbaum Institute in Berlin. I am immensely grateful for the feedback and support from André Ullrich throughout my research with Open Collective, as well as for the many lovely Wednesdays spent at the office together with Rainer Rehak, Nicolas Zehner, Julian Pütz, and Bonny Brandenburger. Finally, the Metagovernance Project became an invaluable research community and network for me, through which I was able to participate in dWeb Camp, a formative experience in Northern California, and was introduced to DADA. As a research fellow at Metagov, I was also afforded the opportunity to collaborate on various projects adjacent to this thesis, for which I am very grateful.

As a thesis on change in organizations and communities, this project would not have been possible without the openness and generosity of the many pioneering communities I was able to work with during the course of my research. Specifically, I would like to thank the members of DADA, Open

Collective, Proof of Humanity, and the various DAO contributors from whom and with whom I have learned about Exit to Community over the past few years.

My PhD time would not have been the same without my friends. Firstly, to Paul Dylan-Ennis, whose encouragement, guidance, and friendship have been invaluable, and without whom I would never have considered the blockchain industry or this PhD as an option for myself. Secondly, I would like to thank my chosen Berlin family: to Lukas Zielinski and Hannah Welsh for tolerating my needs and schedule, and keeping me well fed; to Rahel Ruether for welcoming me in Paris and supporting me with her French; to Hendrik Zschoch for keeping my banter witty and love for the internet fresh; to Johanna Fröhlich for helping me in making the decision to embark on this project; and to Becca Tenbusch and Peter Sinyan for the many good conversations and silly times. Also, I would like to thank Donatella for being the best emotional support dog, and Henry Clausen for keeping me happy across the finish line.

Finally, I would like to express my love and gratitude to my family, who have always supported me in my decisions and pursuit of unconventional interests. To my mother, Usche Merk, for her unwavering support, practical guidance, and humor. To my father, Hans Ramharak, for instilling in me an intellectual interest in the economy. To my uncles Andreas Merk and Bernd Wilken for always showing up to celebrate my academic achievements. And most importantly, to my grandparents, Christa (Dida) and Walter Merk (Dadi), from whom I learned about the joys of research and the importance of responsible entrepreneurship. I dedicate this thesis to Dida and the memory of Dadi, who passed away before I was done.

Résumé:

Exit to Community (E2C) est une stratégie émergent qui décrit et guide la transition d'entreprises ou de projets dirigés par des entrepreneurs (et des investisseurs) vers la propriété et la gouvernance communautaires. Cette approche vise à réaligner l'économie des plateformes numériques sur les besoins des utilisateurs et de la société. Cette thèse présente une exploration empirique et une critique approfondies de l'E2C, en s'appuyant sur une recherche ethnographique numérique menée avec des organisations et des parties prenantes impliquées dans l'E2C, principalement dans le secteur de la blockchain. L'objectif principal de cette entreprise est (1) de mieux comprendre le phénomène dans le contexte des discours académiques existants, (2) d'ajouter des idées pratiques renforçant l'utilisabilité des approches pour les organisations dans l'économie des plateformes numériques et (3) de mettre en évidence les pièges potentiels et les conséquences négatives qui peuvent survenir pour les individus et la société, si l'E2C devient plus largement adoptée.

Cette thèse par publication est structurée en cinq sections. La section 1 conceptualise l'E2C comme un processus proche des conversions coopératives mais avec des résultats distincts, tels que les coopératives de plateformes ou les organisations autonomes décentralisées (DAO), et présente mes méthodes. La section 2 analyse pourquoi les organisations E2C à travers une ethnographie narrative des organisations dans l'industrie de la blockchain. La section 3 présente deux études de cas ethnographiques, identifiant la gouvernance par et de la technologie comme des défis clés pendant l'E2C. La section 4 analyse les défis post-E2C à travers une étude de cas d'une DAO en crise et évalue les conditions de travail dans les DAO, en les contrastant avec les résultats des conversions coopératives. La section 5 conclut la thèse.

Mes conclusions montrent que l'E2C dans l'économie des plateformes numériques diffère considérablement des conversions de coopératives traditionnelles. Elle est façonnée par les environnements institutionnels et les nouvelles pratiques sociotechniques offertes par les technologies gouvernées et les médiateurs de la gouvernance. Plus précisément, mes conclusions mettent en évidence la manière dont les communautés s'engagent dans ‘institutioning’ et ‘infrastructuring’ tout au long de l'E2C, en soulignant leur rôle dans la structuration du processus et de ses résultats.

Descripteurs *: Exit to Community, Gouvernance, Blockchain, DAOs, Coopérative, Ethnographie numérique*

Abstract:

Exit to Community (E2C) is an emerging strategy that describes and guides the transition of founder (and investor) led companies or projects towards community ownership and governance. The approach aims to realign the digital platform economy with the needs of users and society. This thesis presents an in-depth empirical exploration and critique of E2C, drawing on digital ethnographic research conducted with organizations and stakeholders involved in E2C, and predominantly situated in the blockchain industry. The overarching goal of this endeavor is, (1) to better make sense of the phenomenon in the context of existing academic discourses, (2) to add practical insights strengthening the approaches' usability for organizations in the digital platform economy and (3) to surface potential pitfalls and negative consequences that may arise for individuals and society, from E2C becoming more widely adopted.

This thesis by publication is structured into five sections. Section 1 conceptualizes E2C as a process akin to cooperative conversions but with distinct outcomes, such as platform cooperatives or Decentralized Autonomous Organizations (DAOs), and outlines my methods. Section 2 analyzes why organizations E2C through a narrative ethnography of organizations in the blockchain industry. Section 3 presents two ethnographic case studies, identifying governance by and of technology as key challenges during E2C. Section 4 analyzes post-E2C challenges through a case study of a DAO in crisis and evaluates labor conditions in DAOs, contrasting them with outcomes of cooperative conversions. Section 5 concludes.

My findings show that E2C in the digital platform economy differs significantly from traditional cooperative conversions. It is shaped by institutional environments and novel socio-technical practices afforded by the technologies being governed, and those mediating governance. Specifically, my findings highlight how communities engage in institutioning and infrastructuring throughout E2C, emphasizing their agency in structuring the E2C process and its outcomes.

Keywords*: Exit to Community, Governance, Blockchain, DAOs, Cooperative, Digital Ethnography*

Previously published work

This thesis contains both published work in whole or in part, as well as unpublished, original work. Some chapters reproduce parts of solo-authored, previously published work. Other chapters build on findings and arguments reported in previously published co-authored work, but does not reproduce this work verbatim. The following chapters are based on and/or build on previously published works:

Chapter 2 partially reproduces:

Merk, T. (2024, July 19). *Why to DAO: a narrative analysis of the drivers of tokenized Exit to Community*. European DAO Workshop 24, Winterthur. https://doi.org/10.48550/arXiv.2407.14327 [double blind peer review]

Chapter 3.2 partially reproduces:

Merk, T. (2024). The unusual DAO: An ethnography of building trust in "trustless" spaces. *Internet Policy Review*, 13(3). https://doi.org/10.14763/2024.3.1795 [double peer review]

Chapter 3.2 builds on arguments developed in:

Filippi, P. D., & Merk, T. (2024). How to DAO: The Role of Trust and Confidence in Institutional Design. In *Decentralized Autonomous Organizations.* Routledge. [review by book editors]

Chapter 4.1 builds on findings reported in:

Cossar, S., Merk, T., Kamalova, J., & De Filippi, P. (2024). *Proof of Humanity : ethnographic research of a "democratic" DAO* [Technical Report]. European University Institute. https://doi.org/10.2870/107946

Principales abréviations

A

AI: Artificial Intelligence

API: Application Programming Interface

D

DAO: Decentralized Autonomous Organizations

DEF: Democracy Earth Foundation

DeFi: Decentralized Finance

E

E2C: Exit to Community

E2CC: Exit to Community Collective

G

GDPR: General Data Protection Regulation

H

HIP: Humanity Improvement Proposal

O

OC: Open Collective

OECD: Organization for Economic Cooperation and Development

P

PoH: Proof of Humanity

R

RQ: Research Question

U

UBI: Universal Basic Income

Table of Contents

Chapter 1.1
Introduction

1.1.1. Background

Unilateral decision-making and geopolitical concerns have repoliticized questions surrounding digital platform ownership and governance. In 2022, Elon Musk acquired Twitter, now X, took the company private, and promptly moved to conduct mass layoffs, suspend journalist accounts, and revoke free API access. As the new majority owner, these changes were at his discretion, and thousands of users, who disagreed with his new policies, were left with no recourse but to engage in a mass exodus to other social media platforms (Cava et al., 2023). Similarly, in early 2025, Mark Zuckerberg, who still controls the majority of preferred stock in Meta, announced that Meta's social media platforms would suspend fact-checking and relax restrictions regarding how users can discuss issues such as gender and immigration (Isaac et al., 2025). Once again, almost 5 billion users across Instagram and Facebook were left without effective means to challenge this decision, apart from leaving the platforms altogether. Both cases foreground the power associated with prevalent ownership structures in the digital platform economy. Also, in both cases, single individuals were able to unilaterally decide on sweeping changes, affecting workers and millions of users worldwide, who have few options to challenge the decisions apart from voting with their feet and leaving the platforms. Relatedly, geopolitical concerns have also drawn attention to the ownership of digital platforms. For example, on 19th January 2025, TikTok briefly went offline for 117 million American users, following a US law banning the app over national security concerns associated with the company's Chinese ownership (Montgomery, 2025). The law stipulates that the only way for TikTok to remain active for US citizens is if Bytedance, the TikTok parent company, sells its American operations to a US buyer. Overall, what these examples indicate is that the current status quo of digital platform ownership and governance is highly contentious.

Although it is unclear how the TikTok case will continue, the possibility of TikTok being sold has sparked interest from various potential buyers, including a consortium that calls itself 'The People's Bid for TikTok' and views the acquisition as an opportunity to give users governance rights over their data and the platform itself (*People's Bid For TikTok*, n.d.). While the idea of transitioning governance rights over digital platforms to users or their representatives is growing more tangible and concrete amidst these recent debates, it is not new. Instead, it can be seen as part of a wider strategy called 'Exit to Community' (E2C), which is the core subject of this thesis and emerged from the experience of a group of Twitter lovers nearly a decade ago.

In 2016, the Twitter company was struggling with a low valuation. A group of Twitter users rallied to deal with this situation in a new way. They argued that instead of being acquired by a yet larger tech corporation, Twitter should be owned and governed by its users, akin to a cooperative (Schneider, 2016). Underlying this proposal was the insight that users and shareholders had a very different assessment of Twitter's performance. At the time, shareholders of the company generally felt the company was not achieving its goals due to stagnant stock prices and insufficient advertising revenue. In contrast, users perceived the platform to be serving its purpose well within their respective communities and seemed more interested in addressing issues such as data protection, hate speech, and content moderation policies. The campaign proceeded to submit a motion asking Twitter shareholders to commission a feasibility study of options to transition Twitter into a cooperative. While the motion garnered a lot of excitement and media attention (Kuchler, 2017; Mayo, 2017), shareholders ultimately voted against it. Nevertheless, the campaign highlighted the tension that while shareholder structures appeal to the financial interests of shareholders, they do not necessarily take into account non-financial interests such as content moderation or privacy. Consequently, the #BuyTwitter campaign aimed to go beyond shareholder governance and transition Twitter, the company, into an organizational set-up that served the interests of its users above (or at least equally alongside) those of its shareholders.

The campaign is best understood in the context of the mounting realization within politics, civil society, and academia that there is a growing need for innovative approaches to regulate the digital platform economy. After decades of hope and hype, from the mid-2010s onwards the world witnessed an increasing number of scandals and negative effects from digital platforms; including Facebook's infringement of user privacy during the Cambridge Analytica scandal (Isaak & Hanna, 2018), deteriorating working conditions in the gig economy (Scholz, 2017) and the obvious sophistication of tax avoidance schemes deployed by the companies that operate large digital platforms (Browne, 2021; Neate, 2021). In short, these developments and events illustrate that digital platforms often do not act in alignment with public or user interests. As a result, there is a growing need for mechanisms and policies to realign the way digital platforms work to realize public and user interests alongside their own business goals.

One dominant response to this end has been regulation. For example, the European Union and the state of California have implemented sophisticated user privacy protection schemes such as GDPR and the California Consumer Privacy Act (Pardau, 2018; Voigt & Von Dem Bussche, 2017) to increase users' agency in how their data is treated on platforms. To protect workers, local businesses, and affected environments, regulators have also begun incorporating gig workers into labor regulation (Rogers, 2016) or limiting the perceived negative impact of short-term rental platforms such as Airbnb in urban environments (Nieuwland & Van Melik, 2020). Furthermore, supra-national organizations such as the OECD have successfully led cooperation amongst 140 states to implement a minimum tax rate for large multinational companies, many of which operate in the digital platform economy. While these are all significant advances, some have criticized that regulation can only try to contain and limit the damage; it does not address the root cause of

misalignment. In other words, regulation is effective in treating the negative symptoms created by the way that digital platforms behave today. Yet, it does not address the misalignment between the interests of users, policy makers, and shareholders in digital platforms. However, addressing this root issue has repeatedly been identified as a core need to mitigate negative externalities from the digital platform economy today (Griffin, 2023).

The idea of user-ownership and governance, as advocated by the People's Bid for TikTok and the #BuyTwitter campaign, promotes an alternative, complementary path to realign digital platforms with user interests and needs, alongside regulation. The concept of 'user-ownership' recognizes ownership structures as a root cause of misalignment between the interests of platforms and those of their users and society. User-ownership challenges the idea of 'users' as external customers to a platform. Instead, it acknowledges users' role in contributing labor, peer-producing resources, and creating value through content and interactions on the platform. Given this central role of users, the user-ownership movement argues that users should be able to weigh in on the governance of the platforms. User-ownership advances the idea of using various legal or technical ownership structures, such as cooperatives, foundations, trusts, or even blockchain-based tokens, that anchor and protect users' right to participate in the governance of digital platforms (Schneider, 2018). Overall, the 'user-ownership' approach aims to align the behavior of platforms with the values, needs, and interests of users.

User-ownership is not a unified concept or strategy. However, in the context of this thesis, user-ownership serves as an umbrella term or connecting concept that ties together various more specific movements. For example, platform cooperativism (Scholz, 2016) initially aimed to improve working conditions in the gig economy by operating gig economy platforms through worker cooperatives and has since expanded to other parts of the platform economy (*Platform Cooperativism Consortium*, 2024). Open cooperativism (Pazaitis et al., 2017) adds to this idea by advocating for combining elements of traditional cooperative organization with those of commons-based peer-production (Benkler, 2006) for more fluid user-ownership in the platform economy. Yet others, such as decentralized social media (Abbing, Diehm, and Warreth 2023), Web3, and Decentralized Autonomous Organizations (Hassan & De Filippi, 2021), promote open protocols and cryptographic tokens as an alternative means for users to own and govern the algorithms and content moderation policies underlying their digital platforms. Overall, what these approaches call for is giving users a more active voice in how the technologies they rely on and are affected by function in both their strategic and practical operations. Throughout these approaches, transferring ownership to users through tokens or legal rights primarily acts as a means to ensure that the user's perspective is centrally taken into account. In other words, user-ownership is not only a mechanism to allow more people to capture economic value in the digital platform economy, but also to give more people a stake in decision-making processes.

The #BuyTwitter campaign, which aimed to achieve (partial) user-ownership for Twitter, is consequently best understood in the context of user-ownership more broadly. Although the

movement ultimately did not manage to buy Twitter or meaningfully participate in Twitter's governance as a shareholder while the company remained public, the campaign raised several interesting questions: how would the process of buying Twitter be structured? What would be required for users to have a meaningful voice? Would Twitter, the company, be incorporated as a cooperative? The experiment and accompanying questions prompted the emergence of Exit to Community (E2C), first proposed by Nathan Schneider (Schneider, 2019b), a co-instigator of the #BuyTwitter campaign and advocate of platform cooperativism.

This thesis constitutes a first empirical exploration and critique of E2C in the digital platform economy. This introduction is structured as follows. In the next section, I develop a more nuanced definition of E2C as both a strategy (section 2) and a pioneer community (section 3). Section 4 draws on this definition and the current state of experimentation to derive the research questions structuring the remainder of this thesis. Section 5 elaborates on the scope of this thesis and its limitations. Next, I turn to briefly outline the main methods used throughout this thesis (section 6) and present the structure of the manuscript (section 7). Section 8 summarizes the main findings and contributions of this thesis, and section 9 concludes.

1.1.2. Exit to Community as a strategy

Conceptually, E2C is a strategy inspired by various intellectual and historical traditions, and concretized through writing and predominantly associated with Nathan Schneider. Schneider first introduced E2C through a blog post published in September 2019, where he highlights the strategy's potential appeal for entrepreneurs, users, employees, and investors (Schneider, 2019). Here, E2C is positioned as an alternative exit strategy for investor-backed startups that usually aspire to eventually be bought up by a larger company or become a publicly traded company listed on a stock exchange. He writes that "In E2C, the company would transition from investor ownership to ownership by the people who rely on it most. Those people might be users, workers, customers, participant organizations, or a combination of such stakeholder groups. The mechanism for co-ownership might be a cooperative, a trust, or even crypto-tokens. The community might own the whole company when the process is over, or just a substantial-enough part of it to make a difference." This early characterization highlights the breadth of the E2C concept: it can encompass different degrees of ownership transfers and may lead to the inclusion of a variety of community stakeholders and organizational outcomes, depending on the context. Understanding the terms 'exit' and 'community' can help to somewhat concretize the idea.

'Exit' is related to the discourse on entrepreneurial exit, which itself is somewhat ambiguous and has used the term in various ways. For one, Wennberg and DeTienne (2014) show that within the academic literature, where exit is used to describe either a founder leaving entrepreneurship, a founder leaving a firm, or a firm leaving a market, the concept has traditionally held a negative connotation, being associated with failure and even death. This stands in stark contrast to the practitioner's discourse, where exit is discussed as a normal part within a startup's lifecycle and

something that entrepreneurs actively plan for and, if executed successfully, take great personal pride in. In a sense, E2C is more closely aligned with the practitioners' discourse, as "*to community"* emphasizes the new beginning and continuation of something in a different form rather than its end. Furthermore, although E2C focuses on firm-level exits, i.e., a company transitioning into a different type of entity, it does so with the clear goal of transitioning the primary ownership and governance to community. Hereby, E2C aligns with entrepreneurial exit defined as 'the process by which the founders of privately held firms leave the firm they helped to create; thereby removing themselves, in varying degree, from the primary ownership and decision-making structure of the firm' (DeTienne, 2010, p.203). Importantly, E2C also assumes the end (entirely or in part) of investor ownership and control after the exit. It is important to emphasize that this does not necessarily imply that founders and investors completely leave the organization, but that they are no longer the *primary* stakeholders holding power.

Similarly, the term **'community'** has been notoriously difficult to define both in an offline context (Hillery Jr., 1955) and even more so when members co-locate virtually (Ellis et al., 2004). While the concept remains fuzzy on the edges, in the context of this thesis, 'community' is defined in alignment with Mannann & Schneider's (2021) conceptualization in their academic articulation of E2C. Here, a company's community consists both of stakeholders contributing labor to the platform (think Uber drivers) as well as its users, i.e., people who interact with the platform's products and services, and are sometimes referred to as prosumers (Ritzer & Jurgenson, 2010). This definition of community fundamentally differentiates E2C from taking a company public. While selling company stock to a public market is similar to an E2C in that it implies an exit of ownership and (often) governance away from previous owners and towards a larger group of stakeholders, shareholders in a public company are different to a community in that they are solely characterized by their financial stake and interest, without necessarily using the company's products or being affiliated with the organization in any other way. Importantly, a community member is not primarily or exclusively associated with the organization financially. While these are important preliminary characteristics of communities, the precise definition, makeup, and bounds of any given community depend on the specific context in question. Finally, E2C advocates for broad-based community ownership, meaning that the majority of those included in the company's community have the right to participate in the company's governance processes.

As a strategy, E2C is described in more detail in an academic paper co-authored by Schneider and the cooperative legal scholar Morshed Mannan (Mannan & Schneider, 2021). The paper outlines three pathways for a hypothetical company in the digital platform economy (called 'Co-Social') to exit to community via a stockholding trust, a federation, or by means of tokenization. Throughout the paper, Mannan and Schneider show how each E2C pathway draws on distinct intellectual and historical roots and will require specific policy changes to become effective and widely available. A brief review of the historic and intellectual roots of E2C helps to delineate the strategy even more clearly.

The first proposed pathway, transitioning ownership and governance via a trust, is heavily inspired by the work of Luis O. Kelso and his collaborators, specifically his wife Patricia Hetter Kelso (Kelso & Kelso, 1986). For Kelso, the key issue to be tackled was the growing inequality between those who solely relied on labor for their income and those who relied on capital (Kelso & Adler, 1958). To reduce this inequality, Kelso came up with a number of proposals to make capital ownership (and income) a more widely available option. All his proposals had in common that they relied on a trust to manage capital ownership on behalf of people and that this trust would have access to external financing mechanisms to acquire capital. Kelso and Kelso proposed a series of plans, which all followed this blueprint and aimed to give consumers, residents, employees, and other eligible stakeholders capital ownership in the companies they buy from or work for, as well as other public or private assets or infrastructures that they relate to. Most famous amongst the proposals advanced by Kelso was the Employee Stock Ownership Plan (ESOP), which has since become widely adopted across different companies as an employee retirement savings instrument, following a policy change that gave ESOPs tax advantages in the US. Mannan and Schneider's (2021) seem to anticipate that E2C is similarly **dependent on policy**, prompting them to describe what kind of changes may be required to make their pathways more readily available.

Other plans put forward by Kelso and Kelso have not benefitted from such advantageous policy change and remain somewhat forgotten. Yet, the trust-centered E2C strategy outlined by Mannan and Schneider (2021) explicitly aims to go beyond ESOPs (p.26) to include community members in the ownership of Co-Social who are not employees. Thus, the strategy of E2C via a stockholding trust is directly inspired by experiences from the ESOP, Kelso and Kelso's proposals beyond the ESOP. This connection can also be seen in Schneider's other work on enabling more broad-based ownership in the digital platform economy (Schneider, 2020a; 2020b). This complementary stream of work emphasizes the impact that user ownership would have on the governance of the digital platform economy as a key benefit (Schneider, 2020a). Beyond the use of trusts, E2C also echoes Kelso's emphasis on leveraging **external financing for ownership transitions**. Although Schneider (2019) wrote that "In some cases, the community might be in a position to buy the company with cash on hand", each hypothetical E2C strategy proposed for Co-Social (Mannan & Schneider, 2021) is accompanied by suggestions on how it could be financed without requiring everyday users to pay out of pocket.

The second pathway outlined by Mannan and Schneider (2021) is that of CoSocial turning its platform into a federated network, where nodes are operated by independent organizations. The model resembles that of the social media network Mastodon (La Cava et al., 2021). To coordinate the federation, Mannan and Schneider propose a cooperative entity whose members are the nodes (which themselves may be cooperatives or other types of entities). This pathway draws on the cooperative tradition, which is also cited as a key inspiration for E2C in the paper's introductory section (Mannan & Schneider, 2021, pp. 10-12). Specifically, E2C aims to achieve outcomes that are aligned with **cooperative** principles in general and platform cooperativism in particular. Cooperatives are 'jointly owned and democratically governed enterprises' (International

Cooperative Alliance, n.d.) which have operated for centuries across different sectors of the economy. In turn, platform cooperativism started as a burgeoning movement aiming to create more equitable labor conditions for gig workers in the platform economy. Trebor Scholz (2014) introduced the idea of platform cooperativism as a response to the growing problems faced by the sharing economy, which he argues simply uses phrases such as "sharing" and "access not ownership" to gloss over the precarious, exploitative practices it deploys towards platform workers. Scholz (2016) expands on these initial thoughts by providing a practical overview of what platform cooperativism is: a way of cloning existing platform technologies while operating them under a different, solidarity-based ownership structure. According to Scholz, platform cooperatives do not necessarily need to be incorporated as cooperative entities. Instead, what matters is that their operation is guided by the co-operative principles set out by the International Co-Operative Alliance (International Co-Operative Alliance, n.d.), particularly the notion of democratic member control. As such, platform cooperatives can be governed by users, workers, or exist as protocols. What unites them is a commitment to cooperative values and principles, as well as a concern for workers in the digital platform economy.

While E2C strives for similar outcomes as the platform cooperativism movement, it differentiates itself through its pragmatism. E2C is a **pragmatic** strategy in two ways. Firstly, E2C is pragmatic in the sense that, in contrast to platform cooperativism, it does not postulate that user-ownership be established at the outset of an organization. Instead, E2C recognizes the need for startups and projects to make fast decisions and potentially attract external capital to find product-market fit and bootstrap their business model at an early stage. Here, relatively lean and centralized governance structures help keep decision-making efficient, and traditional for-profit legal structures have proven to be more effective in attracting external capital vis-à-vis cooperative structures (Talaulicar et al., 2005). In short, E2C is pragmatic in that it aims to combine the best of both worlds: organizations utilize the nimble structures and resources available to founder-led startups in their early stages and leverage community buyout strategies to exit the organization into a cooperative structure at a later stage. Secondly, E2C is pragmatic in that it acknowledges the role of founders and early investors in a project and their need to eventually liquidate their positions. This means that E2C does not exclusively rely on the goodwill of founders and investors to forgo or act against their own profit motive, instead postulating various buyout strategies which still enable previous owners of a company to make some return on their investment, albeit potentially a more modest one.

Finally, tokenization, i.e., the issuance of a type of virtual share on a blockchain, is described as the third pathway through which CoSocial could exit to community. This pathway is less rooted in a historical experience or a particular legal tradition. Instead, it draws attention to the enabling and mediating role that digital technologies play for E2C as an ideal strategy.

Overall, then, E2C is a relatively broad, ideal strategy encompassing different pathways and degrees of ownership transfer. As E2C is predominantly concerned with startup exit, it is most immediately

associated with the entrepreneurship literature. Yet in its formulation, it draws mostly on the intellectual and historical traditions of Kelsoism and cooperativism. Furthermore, E2C aims to be a pragmatic approach for startups and ultimately intends to create outcomes aligned with cooperative values and principles. Finally, the success of different E2C pathways and the approach as a whole depend on advantageous policy, access to external financing mechanisms, and the affordances of digital technologies.

1.1.3 Exit to Community as pioneer communities

As explained above, the E2C phenomenon emerged from, and therefore must also be understood as an activist endeavour. In the decade since the #BuyTwitter campaign and the years since E2C's initial conception, the idea of transitioning existing organizations into community ownership and governance has received growing attention. Out in the field, various groups have both explicitly and implicitly begun trialing different routes towards more community ownership and control. Andreas Hepp's (2016; 2025) concept of media-related pioneer communities helps to elucidate the way in which these groups define E2C. Media-related pioneer communities are informal, deterritorial (i.e., not location-bound) networks of people that share a common 'we'. The identity of these networks is often shaped by the will to bring about some sort of change and the self-perception of being pioneers in doing so. They are media-related because they heavily rely on digital media to maintain the network and its communications, but also because some aspect of digital media and technology is often core to the community's purpose and identity. Without the existence of digital media and technology, there would be neither reason nor means for such communities to exist. Although they share characteristics with social movements, pioneer communities do not have a clearly identified opponent and are not engaged in comparable political conflict to bring about their desired change. Instead, through extensive media coverage, pioneer communities, such as the Maker and Quantified-Self movements studied by Hepp, shape the public's perception of what the digital future can and should be. As such, Hepp terms them 'curators of possible digital futures' (Hepp, 2025, p.3). With regard to E2C, at least two types of pioneer communities seem to be at work: the Exit to Community Collective and parts of the blockchain industry - both of which I have been involved with throughout my PhD research. While it is unclear how these communities impact the public's perception of possible digital futures, both seem to fulfill other criteria of media related pioneer communities, namely: they aspire to pioneer change, understand digital technologies as an intricate part of this change, predominantly maintain their networks through the use of digital media, and do not engage in the type of political conflict with a clearly defined opponent one might expect from full fledged social movements.

The Exit to Community Collective is a loose online network of researchers, activists, cooperators, and entrepreneurs collectively experimenting with, learning about, and advocating for E2C (Yates, 2022). Familiar figures such as Nathan Schneider and other collaborators from the #BuyTwitter campaign are part of the collective. Many of them have a background in cooperative organizing, thus bringing a very particular set of experiences and values to the collective. However, new

stakeholders such as the Zebras Unite movement have joined too. Zebras Unite is a founder-led, owned, and operated cooperative movement aiming to redefine the mission and practice for startups. The term "Zebra organization" is used as an alternative to the term Unicorn, which describes privately held organizations that are valued at $1bn or more (Brandel et al., 2017). Unicorns are what traditional venture capital firms look for when investing, as they promise extremely high financial returns. Zebras, in contrast, are organizations prioritizing both purpose and profits, often operating outside classic social enterprise categories such as climate tech or microfinance, which have attracted the lion's share of impact investment (Brandel et al., 2017; Hand et al., 2020). Although organizations such as Zebras Unite have begun gathering support from a number of value-aligned investors and are actively exploring financing options beyond venture capital, for many, the question of how to exit remains. Going public requires prioritizing economic value and being bought up by a bigger company, which is not completely mission aligned, would also jeopardize Zebra's value proposition. As such, Zebra companies have started to explore E2C in collaboration with the Exit to Community Collective. Together, they invited around 25 startups interested in exploring an E2C to come together as a co-learning cohort and to document their experiences[1]. The Exit to Community Collective has since also begun sharing more detailed case studies[2] and making other practical resources, such as the Exit to Community Primer (a type of "how to" booklet), templates, and tools publicly available for others to follow (Yates, 2022).

While the stream of pioneering knowledge and practice emanating from the Exit to Community Collective is core to the E2C narrative today, an aligned yet distinct ground for E2C experimentation has appeared in a different, albeit not too distant, corner of the internet. In the blockchain industry, transitioning towards Decentralized Autonomous Organizations (DAOs) has recently manifested itself as a growing trend (*What Is Web3 and Why Is It Important?*, n.d.). Although the definition of DAOs is still evolving, core characteristics can be identified across academic uses of the term (Hassan & De Filippi, 2021); DAOs enable people to self-govern online (ideally without centralized control) by using smart contracts deployed on a (public) blockchain, which autonomously enforce rules for interaction among themselves (ibid). While many projects in the blockchain industry today start out as a DAO, some prominent DAOs are also established to govern projects founded and previously run by founder and investor-led companies. In the context of this thesis, I focus on the latter type of DAO, which I take to represent the result or outcome of an E2C process. Indeed, various parts of the blockchain industry have begun using the language of 'exit to community' to describe their transitions or strategies, as can be seen on social media, in blog posts, and in conference talks. The overlap is also recognized by the Exit to Community Collective, which has included various case studies of transitions to DAO in its online repository of E2C case studies[3]. Although very early discussions of DAOs sometimes conceptualized them as

[1] See: https://www.colorado.edu/lab/medlab/2020/12/08/meet-exit-community-cohort
[2] See: https://e2c.how/
[3] See: https://e2c.how/

cooperatives[4] the blockchain and DAO communities have very different intellectual and historical roots than the Exit to Community Collective. Traditionally, they are more closely associated with the history of cypherpunks (Nabben, 2021) and cybernetics (Zargham & Nabben, 2022) than cooperativism. Consequently, although the emergence of DAOs seems to overlap with E2C, as a pioneering community, the blockchain industry is very different than the Exit to Community Collective. Specifically, by relying exclusively on the mechanism of tokenization, the blockchain industry is likely to create very different types of possible futures as opposed to other organizations associated with the Exit to Community Collective, which are experimenting with other pathways. Nonetheless, in terms of sheer numbers, the blockchain industry appears to be a particularly salient ground to investigate the phenomenon. Following early experiments with DAOs in 2016 (DuPont, 2017), the phenomenon exploded in 2020, growing by as much as 660% within one year (Haig, 2020), with more than 4000 DAOs existing at the time of writing (DeepDAO, 2024).

With these developments in mind, this thesis takes an empirical approach to understand, extend, and critique E2C. Specifically, I ask: *how do organizations in the digital platform economy exit to community?*

By taking into account what we know and what we do not know, the following section delineates the sub-questions, goals, and structure of my inquiry more clearly.

1.1.4 Research questions and Goals

While the above discussion and review of E2C help to delineate the phenomenon on a conceptual level, more work is required to understand how E2C practically unfolds. As such, the main research question (RQ0) guiding this thesis is: *how do organizations in the digital platform economy exit to community?* This thesis is a first step towards answering this question in lieu of three goals: (1) to better make sense of the phenomenon in the context of existing academic discourses, (2) to add practical insights supporting the approaches' usability for organizations in the digital platform economy and (3) to surface potential pitfalls and negative consequences that may arise for individuals, organizations and society, from E2C becoming more widely adopted. The individual papers constituting this thesis and presented as standalone research projects are organized to mirror the processual nature of E2C itself, as illustrated in Figure 1.

[4] For example, before the term DAO substituted for the previously used term decentralized autonomous corporation (DAC), Dan Larimer, an early cryptocurrency adopter and founder of multiple startups in the blockchain industry, argued that: "A DAC is not well defined based upon the types of questions we receive. Many people do not like corporations. Everyone thinks a DAC is just a way of IPOing your centralized company. The C in DAC is best understood as a co-op, ie: it is a more accurate description of what a DAC actually is..... while all co-ops are companies, not all companies are co-ops. Understanding that a DAC can only serve its members and is this more like a co-op than a traditional company which services people outside its company" (bytemaster, 2014).

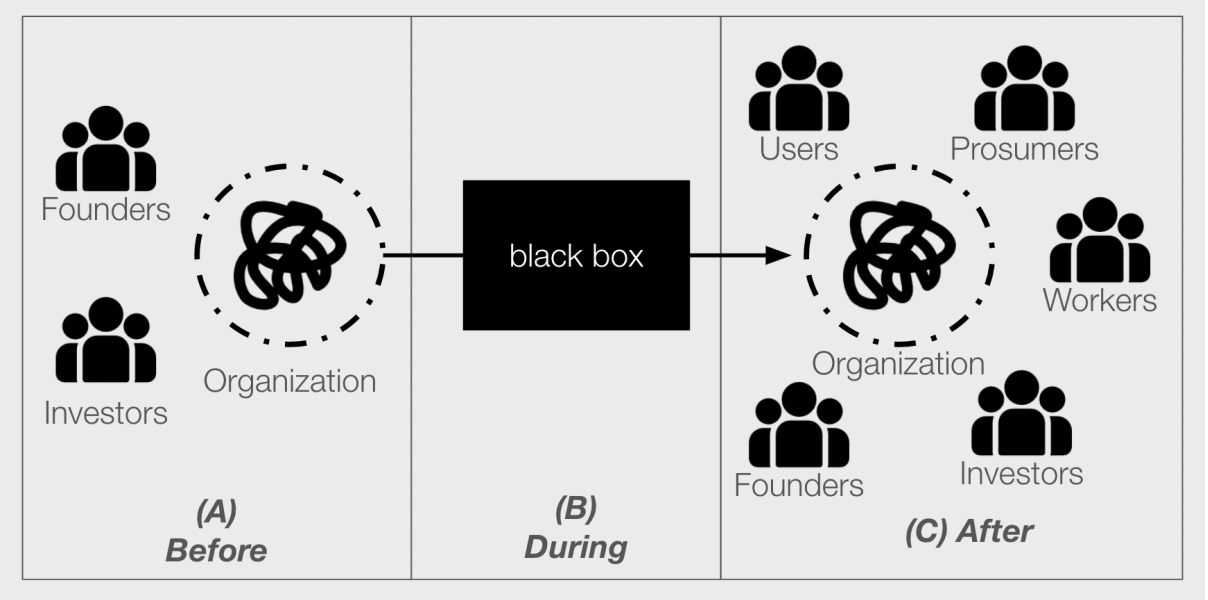


Figure 1: Schematic representation of research framing

(A) Before

In this section, I try to understand the initial conditions faced by organizations *before* they E2C. As with other types of organizational change and exit strategies, external conditions (e.g., market conditions or regulatory requirements) and internal conditions (e.g., a founder's need to retire) or capacities (e.g., financial reserves of the organization) affect the trajectory and outcomes of an E2C. I specifically focus on conditions facing organizations in the blockchain industry, where the transition to DAOs occurs relatively frequently. As such, I ask:

RQ1: Why do organizations in the blockchain industry E2C via DAOs?

I explore this question in chapter 2 of my thesis, where I conduct a narrative ethnography to investigate the motifs driving the high frequency of a specific type of E2C, which I term 'exit to DAO' in the blockchain industry.

(B) During

This section describes the practical process of transition within a particular organization. While Mannan and Schneider (2021) have hypothetically outlined (predominantly legal) steps that organizations might take throughout their transition, their outline remains hypothetical. Apart from the obvious need to legally restructure ownership and governance rights, other issues, challenges, and questions facing organizations in the process of E2C remain unexplored. The goal of this section is to begin opening the black box that constitutes the process of transition itself. As such, I ask:

RQ2: What challenges do organizations face during the process of an E2C?

Given the fact that this process is relatively unexplored, I draw on two ethnographic case studies to explore RQ2, first of Open Collective, a blockchain adjacent, open-source platform for unincorporated communities to raise and manage funds, and secondly of DADA, a blockchain-based digital art community.

(C) After

This section reflects on the outcome of E2C for organizations and community stakeholders in the blockchain industry. Generally, this outcome will involve an organization that is now owned and governed by more stakeholders than when it went into the process. While there are many potential questions that arise in this new scenario, I ask:

RQ3.1: What unintended negative consequences or challenges emerge for organizations in the blockchain industry after E2C? How do communities deal with or mitigate these consequences?

RQ3.2: How do blockchain communities experience the outcome of an E2C? Which benefits and challenges emerge after E2C?

I explore RQ3.1 through the ethnographic case of Proof of Humanity, a blockchain-based identity project which was 'spun out' to community through a DAO and which I began observing during a time of crisis. I explore RQ3.2 by analyzing the working conditions for people contributing to DAOs. Drawing on data collected through ethnographic research inspired by workers' inquiry, I describe the experience of people working for and engaging with DAOs. Although not all research participants were involved in DAOs that emerged from an E2C, the findings are nonetheless indicative of the consequences workers might face should exit to DAO become more widespread. By using these insights as a basis for three expert workshops, I also describe policies that can help to address some of the major challenges that emerge for workers from this new organizational state.

1.1.5 Defining and limiting the scope of this thesis

I situate my research questions in the context of the digital platform economy. Thus, a more detailed definition of digital platforms is in order. Here, I draw on the definition provided by Hein et al (2020), who combine definitions emphasizing the economic, technical, business, and social aspects in digital platforms to provide a more integrated definition of 'digital platform ecosystems':

"A digital platform ecosystem comprises a platform owner that implements governance mechanisms to facilitate value creating mechanisms on a digital platform between the platform owner and an ecosystem of autonomous complementors and consumers." (p.90)

Their definition takes platforms as technologies that enable the creation of multi-sided markets or value creation between 'autonomous complementors' (think Uber drivers) and consumers (think me, ordering an Uber to get home after my thesis defense), a characteristic frequently emphasized throughout the business literature on digital platforms (Acs et al., 2021). Furthermore, value creation between parties on the platform is facilitated through governance mechanisms on the platform, which are determined by the platform owner (think the algorithm matching me with a driver). These governance mechanisms also determine how value creation works on the platform, which generally takes the form of facilitating transactions or affording innovation, and what part of this value is created for the platform owner (in our example, value is created by Uber facilitating the transaction between me and the driver, and for Uber by taking a transaction fee). Hein et al's (2020) definition is particularly useful in the context of this thesis for two reasons. Firstly, it is important to note that their definition understands digital platforms as *ecosystems,* thus foregrounding the ensemble of different stakeholders involved in making digital platforms valuable, and who are part of a platform's community in the context of this thesis. Secondly, the definition emphasizes the centrality of governance mechanisms in digital platforms and their connection to platform ownership. According to Hein et al (2020), ownership can be centralized in a single company, handled by a consortium, or decentralized in the case of blockchain protocols. The emphasis on ownership as a means is important because, as I do not have the background or skillset to conduct any legal analysis in this thesis, I primarily focus on platform ownership as a means to anchor governance rights over a digital platform, rather than an end to be analyzed in itself. Throughout this thesis, I take any organization with the right to implement governance mechanisms over a platform to be part of the digital platform economy. It is important to note that such organizations may be legally incorporated or operate as unincorporated associations. This is particularly pertinent as the majority of research projects conducted for this thesis analyzed tokenized E2C, i.e., exit to DAOs (further defined in chapter 2). DAOs frequently exist without legal incorporation (Ghavi et al., 2022), yet they can still function as a de facto owner in digital platform ecosystems. I predominantly focussed on cases in the blockchain industry because (1) the rapid rise of organizations transitioning to DAOs was an outstanding phenomenon with regard to E2C and coincided with my PhD research, (2) my thesis was embedded in a wider ERC research project which focussed on blockchain governance, thus making cases in this industry more accessible and desirable from the ERC's perspective, and (3) my professional background in the blockchain industry prior to starting the PhD facilitated me navigating organizations in this space.

Of course, my choice of cases analyzed throughout this thesis clearly limits the scope of this thesis to predominantly understand E2Cs of organizations in the blockchain industry that operate digital platform ecosystems. However, because I chose to include Open Collective, a blockchain adjacent organization, platform, and ecosystem, that does not rely on blockchain technology in its immediate operations or E2C, as a case in chapter 3.1, I have decided to keep my main research question broader.

Finally, the scope of this thesis is also limited by the methods used to conduct research, which I briefly explain in the next section and in more detail in chapter 1.3. As I exclusively relied on qualitative research methods focused on individual case studies or non-representative stakeholder groups, my findings cannot be generalized beyond their contexts. Yet, given that E2C is a relatively new concept and that the type of transitions studied throughout this thesis has not previously been the subject of empirical research, the function of this thesis is to act as a kind of field mapping guide. Ideally, the themes and challenges surfaced throughout this thesis can guide future qualitative and quantitative research to develop a more comprehensive and generalizable blueprint of the E2C process and its consequences.

1.1.6 Methods

Fundamentally, this thesis project responds to a call by Mannan and Schneider (2021) to follow cases that practically experiment with E2C or approximations thereof, in order to understand the feasibility, practicability, and desirability of such approaches. I do so by relying on digital ethnography as a methodological approach underpinning all research projects conducted as part of this thesis. Ethnography is an approach in which the researcher spends extended periods of time in the field, i.e., the context being researched, in order to collect rich, contextually sensitive qualitative data (Varis, 2015). In turn, digital ethnography adapts and extends existing ethnographic research methods to spaces that are deeply shaped by digital technologies, such as the digital platform economy and virtual communities I study throughout this thesis. As such, digital ethnography is a useful method to develop an understanding of social phenomena as they unfold in real settings and helps to surface issues of importance concerning these social phenomena from the perspective of local communities (O'Reilly, 2012; Pink et al., 2015).

Empirical research on E2C within the digital platform economy remains largely unexplored, leaving it something of a 'black box.' I take an ethnographic approach, embedding myself in organizations where E2C occurs or in environments impacted by these transitions to begin building an understanding of what happens within this metaphorical black box. Most importantly, relying on the approach of digital ethnography allows me to provide detailed, context-sensitive accounts of the E2C processes, revealing elements that might otherwise go unnoticed. Consequently, taking an ethnographic approach throughout this research project is useful in surfacing salient issues and questions with regard to the process of E2C and from the perspective of the people involved in it. Furthermore, ethnography, with its focus on how individuals construct meaning within E2C, is particularly suited to capturing the implicit norms, values, and routines that shape the process. Moreover, by examining E2C as a lived, enacted experience rather than through controlled experiments or abstract quantitative datasets, I avoid isolating individual aspects of the process from their broader context. Instead, this approach compels me to engage with the complex, socio-technical systems and everyday sociomaterial practices through which E2C unfolds, thereby mitigating the risk of oversimplification. Chapter 1.3 explains and discusses my methodological approach in more detail.

1.1.7 Structure of this thesis

Table 1 presents an overview of the structure of this thesis.

Section	Chapter	Description
1 General	1.1. Introduction	Presents the background of this thesis, its research questions, structure, and scope of findings.
1 General	1.2. Literature Review	Presents relevant literature to establish the novelty of this thesis's inquiry and anchor its approach in existing fields of scholarship, specifically literature on cooperative conversions, platform cooperativism, and DAOs.
1 General	1.3. Methods	Presents the rationale for the choices of methods used throughout this thesis.
2 Before	2 Drivers for E2C	Presents a narrative analysis of the drivers of exit to DAO, a phenomenon with outstanding growth occurring specifically in the blockchain industry.
3 During	3.1. Community governance *of* technology	Presents the ethnographic case study conducted of Open Collective, a startup building an open-source platform that enables fiscal hosting for smaller collectives, during their E2C. The case explores the changing roles of different ecosystem stakeholders of Open Collective with regard to the platform design and development process.
3 During	3.2. Community governance *by* technology	Presents the ethnographic case study conducted of DADA, a blockchain art collective, during their E2C. The case illustrates how the governance structure of DADA changes during its E2C and how DADA uses governance as a means to nourish trust in its community.
4 After	4.1. Challenges after E2C	Presents the ethnographic case study of Proof of Humanity, a blockchain-based digital identity project that exited to DAO. The case indicates that unclear purpose, a lack of legitimate leadership, and maintaining cohesive virtual deliberation spaces are key challenges facing organizations after E2C and may lead to unintended negative consequences, as the crisis in PoH illustrates.
4 After	4.2. Labor conditions after E2C	Presents a worker's inquiry of DAO contributors to explore the day-to-day experiences of people working for community-owned digital organizations. The chapter combines insights from a worker's inquiry and expert workshops to issue various policy recommendations to improve labor conditions in DAOs.

5 Conclusion	5 Conclusion	Presents a summary of the main findings of this thesis, their limitations, and concrete avenues for future research.

Table 1: Thesis overview

1.1.8 FINDINGS

Overall, I find that the process of E2C in the digital platform economy is very different from traditional cooperative conversions and deeply shaped by the institutional environment in which digital platform ecosystems are embedded, by the novel socio-technical practices afforded by the technologies being governed and those who mediate governance in virtual communities. Specifically, my findings point towards several ways in which communities engage in institutioning (i.e., the practice of affecting their institutional environment by creating new institutions or modifying existing ones) and infrastructuring (i.e., the practice of establishing new socio-material practices or modifying existing ones based on the use of digital technologies) before, during, and after E2C. Overall, these insights foreground the agency that people have in structuring the way their organizations E2C in the digital platform economy. Below, I briefly summarize the main findings of each section.

(A) Before E2C

In this chapter, I ask: *Why do organizations in the blockchain industry E2C via DAOs?* Based on a narrative analysis of three case studies (Uniswap DAO, Optimism DAO, and investment firm a16z), I identify three potential drivers of exit to DAO. First, exit to DAO is pursued as a strategy that aims to achieve both financial and stewardship objectives simultaneously through token issuance. Second, exit to DAO introduces an additional layer of ownership and governance rights via tokens without requiring existing stakeholders to forfeit their rights, making it an attractive option. Third, the broader context—including market conditions, legal frameworks, and prevailing social norms—appears to significantly influence the decision to exit to DAO. Overall, the first two findings foreground token-based socio-material practices. The latter emphasizes the ways in which the existing institutional environment shapes the motives and timing of exit to DAO. My findings emphasize the way that E2C in the digital platform economy is different from traditional cooperative conversions, which are usually conducted due to financial difficulties or as a succession strategy for retiring owners. This paper contributes to the academic discourse by positioning exit to DAO as a hybrid (and potentially incomplete) entrepreneurial exit strategy while highlighting key drivers of the phenomenon that merit further research.

(B) During E2C

In this section, I ask: *What challenges do organizations face during the process of an E2C?* Through ethnographic research (participant observation and interviews) in two organizations in the process of E2C (Open Collective and DADA), I found that establishing community governance *of* technology and community governance *by* technology emerged as key challenges that organizations grapple with during E2C. In foregrounding these themes, E2C in the digital platform economy distinguishes itself from traditional cooperative conversions, which have not placed a particular emphasis on the role of technology governance thus far.

In the case of Open Collective, the primary challenge was ensuring effective user participation in platform design. While the existing participatory design literature provides various approaches to foster effective user participation, these methods have not been applied for large, globally distributed digital platforms, and may thus be inadequate. Specifically, I show that in the case of Open Collective, enhancing effective user participation in the design and development process involves not just changing the ownership and governance of OCI (the central platform operator), but more importantly, reconfiguring OCI's role within a broader stakeholder ecosystem. This underscores the significance of institutioning for enabling more meaningful user participation. Additionally, my findings highlight the mutually constitutive relationship between agency and technology—i.e., infrastructuring—by showing how early design decisions shape participation mechanisms, and how existing technological and ecosystem configurations influence other participatory processes. This chapter contributes to the existing participatory design literature by exploring user governance in the technology design and development process in a large, internationally active digital platform ecosystem.

In contrast, the case of DADA focused on designing community governance *by* technology, specifically the design of DAOs, and the role of trust within them. I show that while blockchain communities often prioritize trust minimization—encapsulated in the ethos of "don't trust, verify"—this approach does not always align with the needs of virtual communities and the specific use case of a DAO. The research highlights the need for DAOs to intentionally design governance mechanisms that either nurture or limit the need for trust in specific areas, depending on the goals of the organization. The findings suggest that organizations undergoing E2C must carefully consider how they design community governance *by* technology, going beyond the social norms prevalent in their institutional environment and instead exploring the full range of affordances offered by the technologies at their disposal. The case of DADA illustrates how an organization may go about establishing governance as a set of socio-material practices best suited to its purpose. This chapter contributes to the existing literature on the role of trust in blockchains by expanding it to the layer of DAOs.

(C) After E2C

In this section, I inquire into the outcomes that E2C produces for organizations and community stakeholders. Specifically, in chapter 3.1, I ask: *What unintended negative consequences or challenges emerge for organizations after E2C? How do communities deal with or mitigate these consequences?* I answered my question by conducting an ethnographic case study of Proof of Humanity (PoH) DAO, at a time when the community was facing an internal crisis after being 'spun-out' to community. Three key challenges, associated with the project's transition, emerged as drivers of the crisis: (1) the difficulty of establishing shared purpose and values in a diverse, globally dispersed virtual community, (2) the fragmentation of the deliberation space due to the ease of exiting and forming competing discussion channels in virtual communities, and (3) the failure to establish legitimate and accountable leadership to implement and interpret DAO decisions that did not rely on technical enforcement mechanisms. These findings underscore the importance of infrastructuring purpose and governance design as well as the need to institutionalize legitimate leadership roles during E2C. As such, they underscore various insights gained from the case of Open Collective. They also emphasize the coordination challenges associated with virtual community governance more generally. This chapter contributes to the growing literature on challenges in DAO governance by providing the first in-depth case study of a 1-person-1-vote DAO.

The second chapter in this section explores how the result of tokenized E2C impacts workers, a specific group of affected stakeholders. Specifically, I ask: *How do communities experience the outcome of an E2C? Which benefits and challenges emerge after E2C?* To answer my questions, I conducted ethnographic research based on the approach of workers' inquiry, with people who work for DAOs and are called DAO contributors. I found that from the contributors' perspective, the concept of 'DAO' and 'DAO contributor' operate under multiple, often conflicting institutional logics, drawing elements from freelancing, the gig economy, cooperatives, startups, and even online fandoms. While many DAO contributors aspire to cooperative-like working conditions, the reality of DAO labor more closely resembles precarious gig work, characterized by instability and regulatory uncertainty. As such, DAOs starkly differ from the outcomes of traditional cooperative conversions or even the reported benefits of platform cooperatives, which all emphasize the creation of decent jobs as a key benefit. To improve working conditions, the research identifies three core needs that need to be addressed: psychosocial security, financial stability, and regulatory clarity. Research participants highlighted that tackling these issues requires a combination of technical mechanisms, integration with existing regulatory frameworks, and policy changes to provide greater protections for DAO workers. Once again, these suggestions illustrate the way in which stakeholders in the blockchain industry emphasize their own agency to structure the institutional environment in ways that support their goals. As the first in-depth study of DAO working conditions from the perspective of contributors, this research contributes to the nascent literature on DAOs and labor.

1.1.9 Conclusion

In this chapter, I have set out the context in which this thesis takes place. As current ownership and governance configurations in the digital platform economy grow more contentious, it is important to explore the feasibility and desirability of strategies that ostensibly promise to change the status quo in the digital platform economy. Responding to this need, this thesis sets out to explore how organizations in the digital platform economy, E2C, a strategy that emerged from an activist movement, with the aim of giving users more governance rights over the digital platforms they engage with and are affected by. After defining E2C in more detail, both conceptually and as it materializes in two distinct pioneer communities, I have outlined my main research questions, the scope of this thesis, its structure, methods, and findings. Overall, this thesis contributes to a better understanding of the differences between E2C in digital platform ecosystems and traditional cooperative conversions. Furthermore, it emphasizes the agency that stakeholders have, partially enabled by digital technologies, to infrastructure and institution the context in which organizational transitions take place, in a way that supports their goals. In the next section, I turn to situating my research in previous academic literature and describing my ontological stance throughout this project in more detail.

Chapter 1.2
Research context

1.2.1 Introduction

Exit to Community is a relatively new concept. Since being introduced to the academic community in the 2021 article "Exit to Community: Strategies for Multi-Stakeholder Ownership in the Platform Economy" by Morshed Mannan and Nathan Schneider, it has received attention from various fields of scholarship, albeit mostly as a side note and never in the form of rigorous empirical analysis. To date, E2C has featured in work concerning alternative organizational models for the digital economy, such as platform cooperatives (Dalal et al., 2023; Ghirlanda & Kirov, 2024; Ghirlanda & Sacconi, 2024; Y. Liu et al., 2023; Pek, 2024), data cooperatives (Bühler et al., 2023; Calzada, 2021), alternative social media (Jamieson et al., 2022), purpose trusts (Gary, 2023) and, in the blockchain industry (Calzada, 2024; Crampton, 2024), most notably in work on Decentralized Autonomous Organizations (DuPont, 2024; Hartley & Rennie, 2022; Ziegler & DuPont, 2023). Mannan and Schneider themselves have also continuously referred to E2C in their subsequent writing, albeit never as a central topic (Mannan, 2023; Mannan et al., 2023; Schneider, 2022, 2023, 2024a, 2024b). Gonza and Ellerman's (2022) work stands out from this list as it is the only article wholly focused on a potential E2C-type strategy, specifically an employee buyout via an Employee Stock Ownership Plan (ESOP). Yet, they do not reference E2C directly and only cite Mannan and Schneider (2021) in the bibliography. Furthermore, the works directly referencing E2C are scattered across different publications from the fields of law, new media, cooperative economics, internet policy, and organizational sociology. What this brief review leaves us with is the insight that, although there seems to be somewhat sizable interest in the topic, this interest does not constitute a consolidated stream of research and is also not grounded in any particular discipline or conceptual framework.

Of course, this makes choosing a conceptual lens through which to analyse my empirical insights throughout this thesis rather difficult. Without a clear consensus on the perspective from which to analyze empirical instances of E2C, choosing any one specific perspective would be entirely arbitrary. Beyond being random, choosing a single conceptual lens might also significantly limit and skew the insights and knowledge that can be generated from studying the phenomenon empirically. Put differently, contextualizing E2C in the digital economy in a specific area of research leads to the blind men and the elephant type of problem (see figure 2).

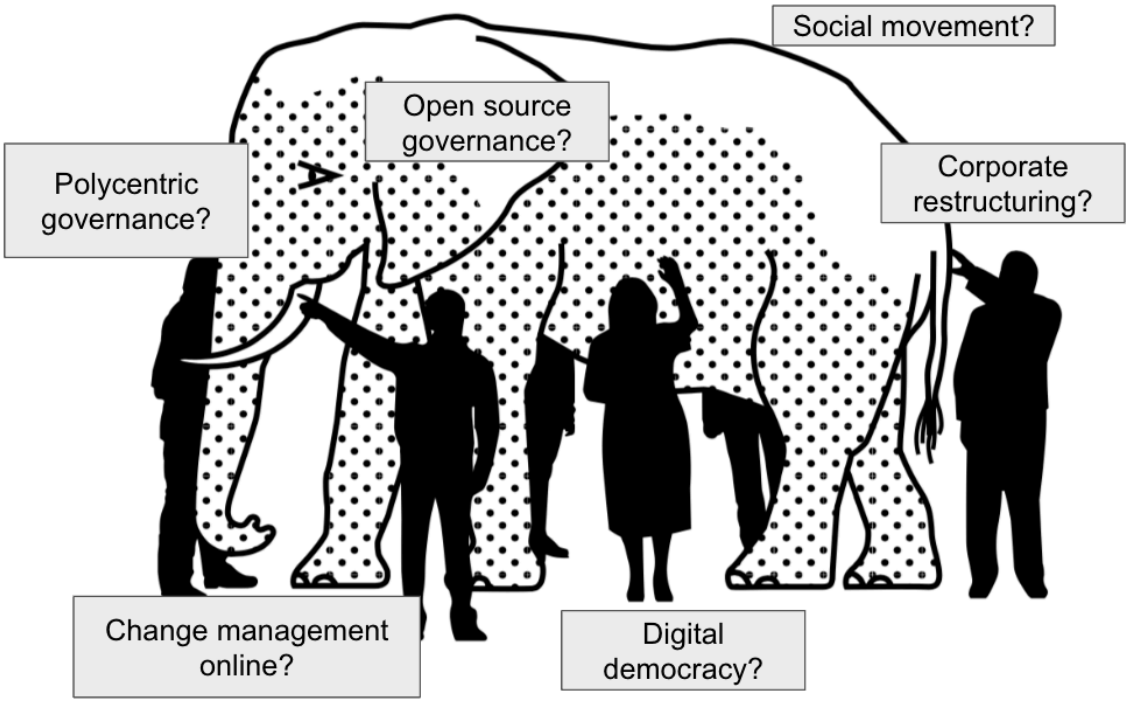


Figure 2: Own adaptation of the blind men and the elephant problem in the context of E2C

A legal scholar may try to make sense of it from a corporate restructuring perspective, while a political scientist may be more interested in why and how E2C fits into the larger context of digital democracy. From the perspective of new institutional economics, someone may perceive E2C as only one part of a larger ongoing process of institutionalization that defines the polycentric nature of internet governance. Yet again, a sociologist might situate E2C among other types of online social movements, and a management scholar may be most interested in the phenomenon from a strategic planning perspective.

Consequently, focusing too heavily on any one perspective in my contextualization limits what I can observe about E2C throughout my empirical research in the field. However, it is also essential to acknowledge that although the term 'E2C' is new, transitions from centralized, hierarchical organizing towards more community-governed structures have existed long before and have been studied across a number of disciplines. Reviewing this body of work can help to develop an academically and historically grounded understanding of E2C. In turn, adopting a relatively broad conceptual stance in my empirical analysis of E2C may help to generate new interdisciplinary insights or expand individual streams of knowledge.

Thus, the aim of this chapter is not to develop a single theoretical framework that I will use to make sense of my findings throughout the thesis. Instead, I use this chapter to first (section 1.2.2) develop an ontological stance towards E2C by defining various analytical categories that are useful to build

a comprehensive understanding of the E2C process. Specifically, I define institutions, organizations, agency, and technology, as well as the interactions between them, as important analytical categories that I apply throughout this thesis project. Secondly (section 1.2.3), I apply these analytical categories throughout a review of literature on the process of cooperative conversions to understand how institutions, agency, and technology feature throughout this discourse. Finally (section 1.2.4), I review literature on platform cooperatives and DAOs, the two most widely discussed outcomes of E2C in the digital platform economy and during this thesis project. Through this review, I show specifically how empirical research on E2C can contribute to the literature on both organizational forms.

1.2.2 Theorizing my ontological stance towards E2C

While I do not prescribe to any specific theoretical lens throughout this project, I do assume a particular ontological stance towards E2C as a process, which is embedded in a broader institutional context and involves a change in the individual agents as well as the organization that agents own and through which they govern a piece of technology. Furthermore, because E2C in the digital platform economy aims to also include virtual user communities in the ownership and governance of technologies, I assume that technology mediates interactions between agents as well as the ownership and governance of the technologies that are being governed. In this section, I define what I mean by institutional context, agent, organization, and technology in more detail and elaborate on how I conceptualize their interactions. My argument is structured around the interactions illustrated in Figure 3.

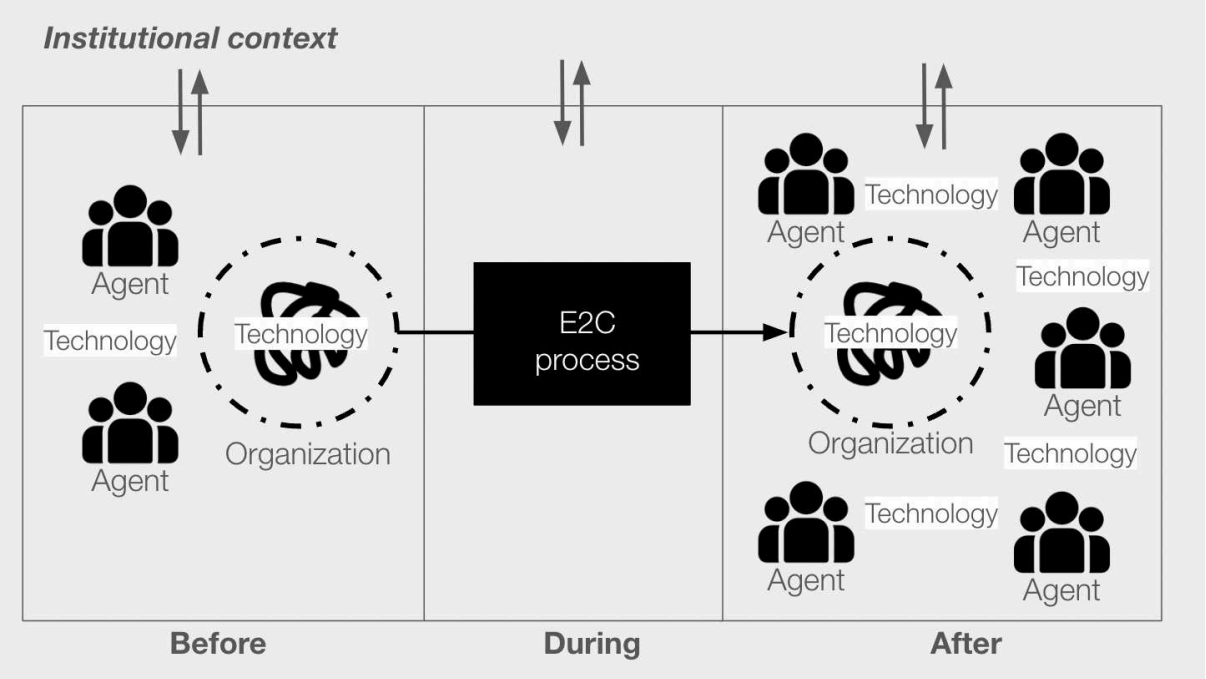


Figure 3: Schematic representation of analytical categories in the E2C process

Institutional context: The institutional context is the broader social and political environment within which E2C takes place. Drawing on institutional theory, I define institutions broadly as "systems of established and embedded social rules that structure social interactions" (Hodgson, 1988, p.18). Put differently, institutions are relatively persistent social patterns that enable, constrain, and coordinate individual action. Institutions are human creations, i.e., social constructs, that can be either explicit, such as laws or written codes of conduct, or tacit, such as values, social norms, or traditions (North, 1990). Institutions are normative structures that enable and constrain individual action by defining what is expectable, permissible, or desirable in a given situation, but also what is illegal, improper, or undesirable. For example, Eesley et al. (2018) show how explicit institutions such as laws can help to create better conditions for entrepreneurial activities. However, they also show how tacit institutions, such as prevalent social norms and values, e.g., the prestige associated with being securely employed by a large company, may reduce the number of new startups, even when the explicit institutional environment is conducive. In fact, especially research in new institutional theory has shown that tacit institutions frequently influence outcomes in ways that more explicit institutions would not anticipate (e.g., corruption). Thus, the role and value of research in situations where institutional structures shape outcomes often lies in making the role of implicit, taken-for-granted practices, values, and norms visible.

Taking both the explicit and tacit institutional environment into account is crucial to understand why and how organizations exit to community. By including the institutional environment in my theoretical stance towards E2C, I aim to ensure that, when analyzing my data throughout this project and answering my overall research question, I deliberately take into account and make visible the institutional structures at play.

Organization: Of course, the focal unit of analysis captured in my central research question is not institutions but *organizations*. Throughout this thesis, I conceptualize organizations as defined by institutional economist Geoffry M. Hodgson (2006):

> Organizations are special institutions that involve (a) criteria to establish their boundaries and to distinguish their members from nonmembers, (b) principles of sovereignty concerning who is in charge, and (c) chains of command delineating responsibilities within the organization. (Hodgson, 2006, p.6)

Thus, I treat organizations as institutions in their own right; their rules and norms shape and are shaped by their members, who are the relevant agents in this context. Interestingly, E2C can then be conceptualized as a type of process that changes the three structures which set organizations apart from other institutions: (a) E2C changes the boundaries of the organization to formally include users and other affected stakeholder groups directly or through representation, (b) E2C changes where sovereignty, i.e. power, ultimately resides, by making users co-owners, thus for example affecting the composition of board members in an organization, and (c) E2C affects the 'chain of

command', i.e. the governance of an organization, to include the participation of new stakeholders, with the aim of establishing democratic member control.

Although I treat organizations as institutions in their own right, it is important to note that organizations depend on and are embedded in a wider institutional context, as shown in Figure 3 and argued above. The fact that organizations try to conform to their broader institutional environment is often conceptualized in terms of an organization's need for *legitimacy.* Legitimacy here denotes "a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions" (Suchman, 1995, p. 574). Organizations strive to be perceived as legitimate endogenously, i.e, by their members, and exogenously, i.e., by other actors in the wider institutional environment. Having their own institutional structures being perceived as legitimate internally and externally is important to ensure the viability of organizations (Meyer & Rowan, 1977). As such, legitimacy is another useful concept to keep in mind when evaluating if and how organizations E2C, as well as the outcomes of an E2C, within a specific institutional context.

Agents: Agents are the people who own and govern an organization before, during, and after E2C, as well as those who are affected by it. I conceptualize agents as having 'agency', i.e., the capacity to act in a self-determined way (Battilana, 2006). As argued above, agency is both enabled and constrained by the institutional environment in which it takes place. When agency is exercised in alignment with institutional structures, for example, by engaging in a religious ritual or in polite dinner etiquette, agency intentionally or unintentionally reproduces those same institutional structures. Thus, agency is not only shaped by institutions but vice versa; institutions are also shaped and stabilized through agency. The co-constitutive nature of institutions and agency is described by Anthony Giddens' theory of **structuration** (Giddens, 1986, 1991) and is central to institutional theory. While institutional structures shape agency, they do not determine it. People are complex beings who (consciously or unconsciously) interpret many different simultaneously active institutional structures in any given situation and who decide how to extend existing institutional frames to new situations. Research in institutional theory has been concerned both with understanding how institutions reproduce and remain stable over time (e.g., through mechanisms of institutional isomorphism (DiMaggio & Powell, 1983)) and with how they change. While it has long been acknowledged that external pressures or shocks can destabilize institutions and provoke change (Dacin et al., 2002; Oliver, 1997), researchers have struggled to understand how agents, whose values, thoughts, and habits are deeply shaped by their institutional environment, can intentionally work to change those same institutions. This problem is termed the 'paradox of embedded agency' (Garud et al., 2007) and has been the subject of substantial research. Research in the field of institutional entrepreneurship, defined as "actors who have an interest in particular institutional arrangements and who mobilize resources to create new institutions or transform existing ones" (Battilana, 2006, p.654), has been instrumental in showing how agents overcome this paradox. This strand of literature has, for example, shown that agents occupying a particular social position on the margins of an institution or at the intersection of competing institutions interpret

rules differently (Dorado, 2005). It has also emphasized individual's capacity for reflexivity, (i.e. the capacity to hold an inner monologue to reflect if and how existing structures can or cannot be leveraged to achieve personal projects) (Archer, 2003; Mutch, 2007), and individual characteristics such as their social skills (Fligstein, 1997) as enabling agents to envision and pursue arrangements that go beyond the status quo of their institutional environment.

Overall, understanding the people involved in an E2C is crucial to analyzing why, how, and with what goals E2C processes unfold. Specifically, by meeting, understanding, and learning from the people variously involved in or affected by E2C throughout this project, I aim to identify how prevalent institutional frames are invoked, upheld, challenged, and changed, as well as the micro-politics involved in such processes.

Technology: Thus far, my theoretical stance towards E2C has assumed a strong social constructivist ontology: institutions, organizations, and agency are all conceptualized as social constructs within this project. Yet, this thesis focuses on E2C in the digital economy. Digital technologies are both the focal object being owned and governed, as well as a mediating factor in *how* ownership and governance (as well as change thereof) are exercised. Furthermore, digital technologies are the 'glue' that binds virtual user communities together and structures the 'space' that these communities virtually occupy. Thus, digital technologies deserve some dedicated attention here.

Digital technologies possess what researchers have termed 'materiality' (Orlikowski, 2000; Volkoff et al., 2007). Leonardi defines materiality as: "The arrangement of an artifact's physical and/or digital materials into particular forms that endure across differences in place and time and are important to users." (Leonardi, 2012, p.10). Put differently, a digital technology's materiality encompasses a set of features (which are usually made up of bits of software code rendered in a specific user interface) that are available to all users, regardless of the context in which the technology is being used, and which remain available for a relatively long period of time. While it is important to recognize the materiality of digital technologies, it is also important to note that this materiality itself emerged from and is embedded in a social context. This matters in three ways. Firstly, digital technologies are built by people, and their features (i.e., materiality) are negotiated and re-negotiated in the social processes that accompany software release cycles. Secondly, digital technologies are interpreted and used in social contexts. Thus, while there are potentially endless aspects of materiality one could describe in any digital platform, only some of those aspects are meaningful to a certain actor in a specific context. For example, the Facebook platform's materiality encompasses a feature for users to create 'groups', which is available to any user of the platform. However, the Facebook group feature carries very different meanings (or materializes differently) in different contexts. For example, one person might use it to organize protests against an authoritarian regime, versus another person who uses it to plan a surprise birthday party, versus yet another person who really just uses the Facebook platform to message friends directly and does not care about the group feature at all. In the first two examples, the 'group' feature materializes very differently, whereas in the last one, it does not materialize at all. Consequently, materiality does not

determine social practices but is rendered meaningful when it is embedded in them. Third, it is important to recognize that most social practices in general, and those analyzed in this thesis in particular, are enabled by a technology's materiality. Although organizing a protest through a Facebook group may predominantly be viewed as a social practice or exercise of agency, it is inextricably linked to the fact that Facebook and its materiality, such as the 'group' feature, exist. In fact, as prominent STS scholars (Latour, 2007) and others (Orlikowski & Scott, 2008) argue, there is no social agency that is not also materially grounded in some way. Recognizing this, I adopt the lens of '**sociomaterial practices**' to conceptualize the role of technology throughout this project. I hope that the concept of 'sociomaterial practices' helps to remind myself and the reader that although technology possesses materiality, this materiality is created by social process (themselves sociomaterial practices), rendered meaningful and observable in social contexts (through sociomaterial practices) and that vice versa, any practices observed throughout this project are also dependent on the materiality of the technologies that enable and shape them.

Finally, while sociomaterial practices describe local interactions with and through technology, I use the term **'socio-technical system'** to describe the organization both before and after E2C. The use of the term socio-technical system draws attention to the way that both social constructs, i.e., the wider institutional context, and technical structures, which materialize through routinized sociomaterial practices, come together to shape the organization and enable and constrain agency within it.

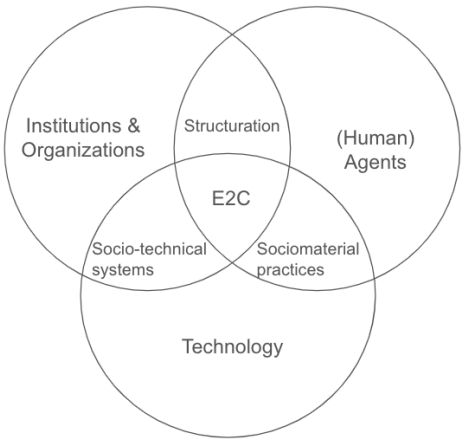


Figure 4: Representation of E2C analytical categories and their interactions

Overall, then, the important analytical categories to distinguish when answering how organizations in the digital platform economy E2C are institutions and organizations, human agents, and technology, which are all in constant interaction with each other. Figure 4 illustrates this ontological stance.

With these preliminary conceptual considerations in mind, I now turn to reviewing existing academic literature analyzing organizational change processes towards more community ownership.

The next section analyses the process of conversion, while the sections thereafter discuss two specific outcomes of E2C in the digital platform economy. I use the ontological stance developed here to show, for each, where existing research falls short, in order to delineate the research gaps this thesis project aims to address.

1.2.3 Before and During E2C: Lessons from cooperative conversions

In this section, I review literature that has analyzed E2C-like transitions. E2C-like transitions are business conversions that transition ownership and governance rights away from their founders and investors and towards democratic member control. Specifically, I look at previous research analyzing the conversion of founder and investor-owned and managed firms into cooperatives. The International Cooperative Alliance defines cooperatives as: "an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise." (International Cooperative Alliance, n.d.) Cooperatives exist in most jurisdictions and across many different sectors of the economy. Their membership can range from customers, employees, and other companies to a mix of stakeholders or tenants of a housing estate. While it is difficult to pin down a single authoritative definition of what a cooperative is or looks like, all cooperatives commit to following seven core principles set forth by the International Cooperative Alliance[5], which acts as their custodian:

1. Voluntary and open membership
2. Democratic member control
3. Member economic control
4. Autonomy and independence
5. Education, training, and information
6. Cooperation among cooperatives
7. Concern for community

Understanding insights into the process of cooperative conversions is a useful starting point to begin thinking about E2C in the digital platform economy because (1) cooperative conversions describe the transition of conventional enterprises into member owned organizations (2) they describe the transition of organizations towards a cooperative identity, emphasizing economic democracy, and (3) they acknowledge the need for members to change their role: from customers or employees to co-owners and decision makers. For now, I exclude research into Employe Stock Ownership Plans (ESOPs) from my review, because although they have been analyzed in the context of ownership transitions towards member (mostly employee) ownership, ESOPs do not require more participatory or democratic member governance practices in the organization (Kroncke, 2017) (despite their inventors' initial intention (Schneider, 2020c). Yet, because user-ownership in the digital platform economy is primarily a tool to secure more user governance,

[5] See: https://ica.coop/en/cooperatives/cooperative-identity

analyzing the governance transition is central to this research project. Moreover, while ESOPs were a key inspiration for Schneider in his original conception of E2C, they have featured less strongly in the discourses that E2C pioneering communities draw on. Through my own involvement I have found that the Exit to Community Collective seems to historically and discursively align itself more with the cooperative movement and general and platform cooperativism in particular. In a similar vain, those pioneering exit to DAO in the blockchain industry do not seem to heavily draw on the historical legacy of ESOPs and Kelsoism. Furthermore, I also exclude more recent research into steward ownership (Lehrer & Segal, 2020; Lu, 2023; Sanders, 2022) transitions. Although they emphasize the need to transition governance rights away from investor control, the goal of steward ownership is primarily to cement purpose beyond profit in a business. Again, this stream of research, while related, does not necessarily emphasize governance transitions towards more member control.

Regarding cooperative conversions, I draw specifically on articles reviewed by Di Stefano et al's recent literature review on worker buyout cooperatives (Di Stefano et al., 2024), on case studies compiled under the section 'mutualization' in an edited collection by Sousa and Herman (2012) and a recent PhD thesis focussing on companies 'going collective' in Italy (Lomuscio, 2024). Taken together, these sources provide over 50 documents that I use to make sense of my guiding research questions in light of previous research on cooperative conversions.

Where and why do cooperative conversions happen?

Cooperative conversions have been studied across various sectors of the economy from tourism (Girard & Langlois, 2012), to housing (Sousa, 2012), manufacturing industries (Brown & Quarter, 1994; Gunderson et al., 1995; Quijoux, 2020), financial services (Fairbairn & Dobrohoczki, 2012), connectivity service providers (CSPs) (Davis & Patrie, 2012) and the agricultural sector (Wadsworth & Brockhouse, 2012). Cooperative conversions of digital platforms have not previously been analyzed. Furthermore, the bulk of case studies is concerned with SMEs and family businesses (Di Stefano et al., 2024), where relevant stakeholders are part of a relatively small local community. Where the outcome of the conversion is a worker cooperative, workers are the protagonists of the transition. In cases where the outcome is a multi-stakeholder cooperative, other stakeholders include customers and supporting local businesses (e.g., in the cooperative conversion of a skiing facility analyzed by Girard & Langlois, 2012) or tenants and local government (e.g., in the cooperative conversion of a housing estate in Canada analyzed by Sousa, 2012). These latter cases illustrate the added difficulty that comes with managing diverse interests of different stakeholders participating in the conversion, and also the challenges of bringing together people with very diverse ethnic backgrounds who do not speak the same language (in the case of Sousa, 2012). Nevertheless, in these cases, stakeholders are co-located and thus able to physically meet and try to solve their differences. This, of course, cannot be assumed in the case of virtual user communities taking over the ownership and governance of digital platforms. The scarce previous work that has examined cooperative conversions in large international company contexts where members are not all based in close geographic proximity (Bretos & Errasti, 2017; Gunderson et al.,

1995) show that narratives of prevailing in international competitive markets and the distance between workers, makes cooperative conversions more difficult, reduces broad member participation in designing new governance structures and increases the risk of creating relatively shallow participation mechanisms which do not meaningfully empower cooperative members (Bretos & Errasti, 2017).

Two reasons stand out as the main drivers of cooperative conversions via worker buyouts: financial pressure and succession. The experience of companies undergoing cooperative conversions in times of severe financial distress has been observed over time and across industries and jurisdictions (for example, in the case of workers recuperating factories in South America (Ruggeri & Vieta, 2015) or the increase of worker buyout cooperatives in Italy following the 2008 financial crisis (Monni et al., 2017)). Cooperative conversions driven by financial distress are best conceptualized as business *rescues* (Di Stefano et al., 2024). Their main purpose is to save businesses for the value that they bring to a particular region (Gunderson et al., 1995; Monni et al., 2017) and the jobs they provide (Artz & Kim, 2011). The timing of cooperative conversions as business rescue, therefore, crucially depends on the financial situation of the firm and the availability of support structures (financing, legal, and knowledge about the option of cooperative conversion). In the case of succession, cooperative conversions usually emerge because the current business owner wants to retire and does not have a suitable successor (for example, in family businesses where owners do not have children willing or capable of taking over the organization). In these cases, cooperative conversions are business *transfers* (Di Stefano et al., 2024; Monni et al., 2017). Rather than avoiding the closure of the firm altogether, in the case of cooperative conversions as a succession strategy, workers are motivated to protect the company from external acquisition, which may simply be interested in certain parts of the company and likely to let go of some or all of the workforce (Thévenard-Puthod & Favre, 2020). Consequently, protecting jobs is also a key reason for worker buyout cooperative conversions in the case of business transfer. However, different from business rescues, these types of transitions are typically initiated by the previous owner of the firm. This often leads to a less rushed process during which old and new members negotiate the terms of the transfer and prepare for the transition, for example, by enabling new member-owners to participate in education and training activities, preparing them for their future role in the organization (Artz & Kim, 2011).

Furthermore, there are also cases where the conversion is prompted by an existing cooperative organization acquiring a non-cooperative company. For example, in the case presented by Fairbairn and Dobrohoczki (2012), Sunova, an existing credit union, began buying out local branches of a chartered bank that wanted to downsize in small, rural communities in order to focus on their more profitable national and international business activities. Here, the reason for cooperative conversion came down to a match of opposite interests between Sunova and the chartered bank:

> “Given this orientation, the desire of the credit union to expand matched the desire of major banks to downsize. This is a case where two ambitious organizations have opposite interests: a large, profit-seeking enterprise sought to leave local communities; a competitive,

> community-based local business wanted to serve more of them." (Fairbairn & Dobrohoczki, 2012, p. 204)

Here, the conversion can be thought of as a strategic business decision both for the credit union and for the chartered bank. Moreover, it also served employees by successfully retaining jobs and enabled customers to continue personally visiting their local financial institution. Finally, it also increased the market share of the Sunova credit union. Somewhat similarly, Bretos and Errasti (2017) analyze the efforts of the Mondragon Corporation to cooperativize a non-cooperative subsidiary. The Mondragon Corporation is a prolific federation of worker cooperatives headquartered in the Basque Country and active internationally. Bretos and Errasti (2017) analyzed efforts of Fagor Ederlan, a leading cooperative in Mondragon, to cooperativize a manufacturing plant it had acquired in the Navarre region of Spain. The plant itself was facing financial difficulties, and Fagor Ederlan was unwilling to invest the required capital into an organization that was not aligned with its own cooperative identity. Consequently, Fagor Ederlan decided to restructure its subsidiary into a mixed cooperative where it held ownership rights of the subsidiary alongside its workers. Although the motivation of Fagor Ederlan can thus be understood as expanding its cooperative identity to subsidiary parts of the organization, Bretos and Errasti (2017) found that: "almost 80% of those who became members stated that their reason for doing so was the increased job security offered by the new cooperative model. Furthermore, 1 year after the cooperativization, only 7% of the members claimed to know what exactly the cooperative principles of Mondragon comprise" (p. 161). As such, job security seems to remain a core motivator driving cooperative conversions across existing literature. Also, financial distress appears to be a crucial factor influencing when such conversions take place.

In the context of E2C in the digital platform economy, it is unclear if job security is an equally important factor in driving conversions, simply because the 'community' to which organizations exit is likely composed of many stakeholders that are not employees of the original organization. This insight underlines the importance of understanding the needs and motivations driving the decisions of diverse stakeholders involved in E2C in the digital platform economy.

What factors enable cooperative conversions?

Di Stefano et al (2024) identify various enablers of cooperative conversions through their literature review. External factors include government institutions and cooperative federations or support systems. Government institutions enable cooperative conversions in various ways, for example, by issuing legislation that facilitates member ownership (e.g., ESOPs offer particular tax advantages) or by directly seeding financial tools that enable worker buyouts (Lomuscio, 2024). Specifically, regulations such as the Marcora Act in Italy have been found to be particularly conducive to enabling cooperative conversions via employee buyouts (Lomuscio, 2024). In their outline of E2C for a hypothetical company operating a digital platform, Mannan and Schneider (2021) describe various regulatory steps governments may take to enable E2Cs in the digital platform economy. As such, government institutions in general and legal frameworks in particular have always been

envisioned as a key enabler and necessary support structure for E2C, thus emphasizing the importance of the institutional context in which E2Cs take place. However, previous research suggests that legislation enabling more cooperative organizations in the digital platform economy is likely very different from legislation supporting physical cooperatives in a given jurisdiction (Mannan, 2022, pp. 289-301).

Existing cooperative federations support cooperative conversions by making people aware of the option of cooperatives, sharing knowledge, and simply serving as a guiding example to others. Cooperative federations are usually either region or industry-specific organizations. For example, platform cooperatives, which I discuss in more detail below, have their own supporting body: the Platform Cooperativism Consortium[6], which defines itself as: "a hub for research, community building, and advocacy for co-ops that make the digital transition. The PCC supports the growth and conversion of hundreds of platform co-op businesses with tens of thousands of worker-owners around the world." Such support has been identified as an important enabler in conversions in other industries, especially as a provider of intangible resources such as knowledge and experience to the stakeholders involved in a conversion (Barbot-Grizzo, 2020; Charmettant & Renou, 2021).

The most important internal enabling factor identified by Di Stefano et al (2024) is shared values around cooperation and solidarity amongst the future stakeholders of the cooperative. In fact, fostering cooperative values and identity has consistently been found to be a crucial factor in establishing new cooperatives, cooperative conversions, and maintaining existing cooperatives (Charmettant & Renou, 2021; Cheney et al., 2014; Sousa & Herman, 2012). Furthermore, when the current and future owners share goals and expectations, this can act as another enabling factor. Also, thorough knowledge of an organization's operations and financial statements, and a well-planned transition process, are also featured as enabling factors. Finally, especially when future stakeholders are not involved in the transition process, a leadership team composed of future stakeholders can facilitate the transition period.

Despite these enabling factors identified across the literature, it is important to note that researchers have also acknowledged that some cooperative conversions also bear an element of serendipity. For example, the case study of the Dakota Carrier Network (DCN) is telling. In the mid-1990s, DNC was bought out for over $136 million by fifteen organizations, most of them existing telephone cooperatives. The cooperative conversion of DNC was widely regarded as a full success. However, concerning the enabling factors, Davis and Patrie (2012) write:

> "Few have ever seen a project with such complexity and such successful outcomes. The process and the outcomes benefited from a nearly miraculous coming together of leadership and technical skills, the combination of which is most likely not replicable. Smaller-scale versions of co-op acquisitions of investor-owned properties are certainly possible and will

[6] https://platform.coop/

> benefit from the lessons learned in this case. But the actual accomplishments of this association of local telephone co-operatives and independent companies are so startling and so remarkable that simply telling this story factually sounds like fiction." (p.177)

As such, it is important to keep in mind that especially large and complex conversions usually also benefit from a bit of luck in succeeding. Overall, this discussion points to the enabling role of the explicit institutional environment (regulation, supportive cooperative federations) and the tacit institutional environment (shared cooperative identity and values). It also highlights the fact that some randomness or luck is involved.

What challenges frequently come up during cooperative conversions?

A challenge that is frequently cited throughout literature analysing cooperative conversions is access to adequate financing. However, interestingly, Di Stefano et al (2024) conclude that access to capital seems to be more of a necessary condition than a sufficient one, as it does not feature strongly as an enabler. Once capital is secured, the main challenges facing cooperative conversions seem more psychological and cultural in nature. Firstly, the unpreparedness of workers and other stakeholders to assume their new role as owners, stewards, and entrepreneurs of the organization during and after conversion has surfaced as a key challenge throughout different case studies (Barbot-Grizzo, 2020; Bretos & Errasti, 2017; Brown & Quarter, 1994; Sousa, 2012). Another challenge that goes hand in hand with members settling into their new role is the time and practice required for members to settle into a new routine of internal democratic decision-making (Murphy et al., 2018; Quijoux, 2020) and grappling with the complexity of the transition process itself (McCollom & Gillette, 1993; Monni et al., 2017). Especially in sectors where a cooperative conversion is the first of its kind, as in the case of the Atkinson housing cooperative (Sousa, 2012), such conversions lack a blueprint and need to overcome uncertainty at every step. Finally, in business transfers where cooperative conversions occur due to the previous owner wanting to retire, the reluctance of owners to actually cede control, as it constitutes a "loss of socioemotional wealth" (Murphy et al., 2018, p.35), was identified as an additional challenge. Again, while capital is a necessary condition, the key challenges identified across previous research seem to predominantly relate to the tacit institutional context in which conversions take place as well as the way in which individuals adopt and adapt values, norms, and routinized practices.

What wider consequences do cooperative (conversions) have?

As argued above, the main outcomes of cooperative conversions are mainly discussed in positive terms and predominantly as preserving jobs (Di Stefano et al., 2024; Sousa & Herman, 2012). However, cooperative conversions have also been discussed as having beneficial effects for local communities and their economies, for example, as described in the case of the cooperative skiing resort by Girard and Langlois (2012). In this case, the cooperative conversion was essential to sustain the community's main tourist attraction and thus other businesses that depended on tourism brought in by the ski resort. Another benefit associated with cooperatives is their ability to serve markets that are not financially attractive for other businesses. A typical example cited here is the

electric cooperatives in the United States, which make up nearly 40% of the US electricity sector and emerged as a community response when large corporations did not consider it to be financially lucrative to invest in energy infrastructure in rural communities in the 1930s (Gilcrease et al., 2022). The benefit of serving local communities, which may not be part of a usual corporate business strategy, also emerged in the case of the cooperative conversion of the Dakota carrier network (Davis & Patrie, 2012) and the bank branch buyout by the Sunova credit union (Fairbairn & Dobrohoczki, 2012). In the context of E2Cs in the digital platform economy, it will consequently be important to observe how they affect labor, local (virtual) communities, and ecosystems, as well as their ability to serve markets in which other corporate firms are not interested or divesting.

1.2.4 After E2C

As argued in the previous section, the process of E2C in general or cooperative conversions in particular has not been empirically analyzed in the context of the digital platform economy. However, the possible outcomes of E2C, i.e., community-owned and governed organizations in the digital platform economy, are accompanied by a growing stream of research. In this section, I review two potential outcomes of E2C in the digital platform economy: platform cooperatives and DAOs. For each, I explain what this outcome is, its unique characteristics, as well as associated benefits and challenges that have been surfaced through research to date. I focus on these two outcomes as they were most discussed throughout my PhD research and are relevant for making sense of the findings throughout this thesis. Furthermore, and as highlighted above, some background on platform cooperatives and DAOs is useful in understanding the traditions that E2C pioneer communities seem to draw on. Notwithstanding this focus, it is important to acknowledge that there are many other organizational forms that may be the outcome of an E2C: from user or stakeholder-controlled trusts, to existing cooperatives building out their presence in the digital platform economy, and new corporate forms of steward ownership.

Platform cooperatives

The concept of platform cooperatives, formally introduced in 2014 (Schneider, 2014; Scholz, 2014), originated as a response to the growing problems associated with platform capitalism in general (Srnicek, 2017) and the gig economy in particular; to counter precarious labor, growing surveillance, and extractive data practices (Graham et al., 2017). Rather than following a specific blueprint, platform cooperatives are loosely defined as organizations that enable democratic member ownership and governance of digital applications, platforms, or protocols (Scholz & Schneider, 2017). Platform cooperatives can be incorporated and structured in various ways and operate across many different sectors of the digital economy. Currently, the Platform Co-op Consortium, which hosts the platform coop directory[7] lists 638 projects in 53 countries. In many cases, the members of platform cooperatives are their workers; however, some also include other stakeholders such as users or corporate partners and customers (Mannan et al., 2023). Despite this

[7] Directory of platform cooperatives: https://directory.platform.coop/#0.22/4.8/-40.4

diversity, and as stated in the introduction, the distinguishing characteristic is that platform cooperatives are united in their shared commitment to cooperative values and principles. Beyond simply replicating existing platform technologies and operating them as member-owned and governed organizations, platform cooperatives have also begun rethinking how digital platforms should be designed and operated to pursue social goals alongside financial ones. For example, Fairbnb is an internationally active platform coop, offering short-term holiday rentals similar to Airbnb. However, each booking on Fairbnb includes a donation towards a project that supports local communities and an eye to keeping rental markets accessible (Chaudhary, 2023). Another example is CosyAI, an AI-focused platform coop, which relies on cooperative governance mechanisms to advance safer, equitable, and accountable AI development (Hadfield, 2023).

Previous research into platform cooperatives has highlighted the positive impact these organizations have for platform workers (think Uber drivers, Mechanical Turk workers, etc.) and other stakeholders such as users and the local communities within which platform cooperatives operate (Mannan et al., 2023). Platform cooperative workers generally benefit from higher wages (Platform Cooperatives and Employment, 2023), the opportunity to participate in decision-making processes within the organization and regarding the platform (Mannan & Pek, 2024), as well as an increased sense of fairness and community (Grayer, 2020). By engaging in local initiatives, such as Fairbnb donating to community projects, platform cooperatives also become better integrated with their local contexts - a move which Mannan terms ‘scaling deep’ (Mannan, 2022a). Furthermore, for other stakeholders such as users, platform cooperatives can provide more privacy and granular control over personal data, as shown in the case of MIDATA, a health data platform coop (Mòdol, 2019).

Despite these promising insights, platform cooperatives continue to face various challenges. Firstly, platform cooperatives still occupy a relatively small share of the total platform economy. One factor that contributes to this challenge and is frequently cited throughout research is the lack of access to funding for platform cooperatives (Borkin, 2019; Mannan et al., 2023; Zhu & Marjanovic, 2021). Because platform co-ops are less attractive to capital providers such as venture capital firms, they often cannot run elaborate marketing campaigns, hire top technical talent, or subsidize users on the platform. Thus, competing with incumbent platform capitalist firms on many metrics remains challenging (Zhu & Marjanovic, 2021). Another challenge facing platform cooperatives is the fact that they operate at the intersection of various models that are in tension with each other: worker cooperativism and the platform logic (Mannan & Pek, 2024), as well as platform activism and entrepreneurship in a capitalist market economy (Sandoval, 2020). More generally, this can be interpreted as platform cooperatives operating at the intersection of different institutional contexts, both tacit and explicit. These tensions can lead to conflicts between members (new and old, or members with elected positions and without, etc) and even within members themselves who occupy a multiplicity of roles within a given platform cooperative (Mannan, 2022b). Overcoming these tensions requires robust governance practices within the cooperative but also more transparent and

conducive institutional frameworks for members to work with, which could somewhat be achieved through various policy reforms (Scholz et al., 2021).

Platform cooperatives present an ideal outcome of E2C in the digital platform economy as they emphasize democratic platform governance as well as user and worker ownership. However, today, platform cooperatives are usually founded as such, rather than being the outcome of conversion processes. Thus, current research discussing and promoting conversions to platform cooperatives remains conceptual in nature (e.g., Gonza & Ellerman, 2022), which, of course, includes the foundational article outlining E2C (Mannan & Schneider, 2021).

Decentralized Autonomous Organizations

The type of user-owned and governed organization that most frequently came up as the result of an E2C-like governance and ownership transition throughout this thesis project was DAOs. While there is no single agreed-upon definition of what a DAO is (for an overview of different definitions, see Santana & Albareda, 2022; Valiente & Rozas, 2022), in this thesis, I rely on a widely used definition put forward by Hassan and De Filippi (Hassan & De Filippi, 2021) and already mentioned in the introduction. At their core, DAOs enable online communities to govern themselves, facilitated in part by the use of blockchain-based smart contracts and ideally without centralized control (Hassan & De Filippi, 2021). Blockchains are append-only ledgers held across a distributed network of nodes. The ledger records transactions in the network and is updated by the nodes using decentralized consensus algorithms, i.e., a set of rules that ensures that there is consensus over the current state of the ledger and that makes it prohibitively expensive to change entries unilaterally and in hindsight. Furthermore, blockchain protocols are published as open-source software, enabling anybody with sufficient technical skills to verify that nodes are in fact reaching consensus in the way they say they do. Smart contracts are pieces of computer code (usually also under an open-source license) deployed on top of a blockchain that execute functions according to a set of predefined rules. In many cases, smart contracts are used to generate a set of tokens, whose distribution is tracked within the smart contract and which can be spent to trigger certain functions. Practically, a token can be viewed as a representation of many different things: digital assets, digital art, a share in a company, or the right to vote in a forum. Using wallets (accounts on the blockchain), tokens can be owned without intermediary custodians, giving the wallet owner the right to perform various actions on a token or set thereof. In the context of DAOs, tokens can be used to represent ownership rights, akin to shares in a company, which have the added benefit of being highly liquid and thus enabling new users to come into the system by simply purchasing a share or fraction thereof via a peer-to-peer transaction (Mannan & Schneider, 2021). Tokens can further be used as voting rights in a project's decision-making processes and be integrated into more complex governance systems that, for example, include reputation metrics (Barbereau et al., 2023). As such, tokens and the use of blockchain-based smart contracts are the primary distinguishing characteristics of DAOs. When communities leverage smart contracts and tokens directly for decision making, this is referred to as 'on-chain governance' (Reijers et al.,

2021). On-chain governance offers novel affordances such as immutably and transparently registering voter counts or automating the enforcement of certain types of decisions (Hassan & De Filippi, 2021). However, growing empirical research shows that on its own, on-chain governance is insufficient in enabling DAOs to respond to crises or build consensus and community across widely distributed online spaces (DuPont, 2017; Feichtinger et al., 2024). Consequently, DAOs usually supplement on-chain governance with various off-chain mechanisms (Reijers et al., 2021), such as online discussion forums, community calls, elected delegates and councils, etc.

DAOs can be designed in a way that creates user ownership and democratic governance mechanisms akin to cooperative governance (Hubbard et al., 2023; Mannan, 2018, 2023; Peña Calvin, 2024). Beyond designing their governance to resemble cooperative structures, DAOs can also strengthen their cooperative identity by voluntarily adopting a set of bylaws to safeguard their chosen structure (Mannan, 2018) or incorporate as a cooperative legal entity, for example, a Colorado-based Limited Cooperative Association, which has been suggested as complementary to the DAO model (Radebaugh & Muchnik, 2021). However, this is only one of many possible design choices. In fact, previous research has consistently shown that most DAOs are governed according to a 1-token-1-vote logic, which leads to plutocratic tendencies and undermines democratic aspirations (Barbereau et al., 2023; El Faqir et al., 2020; Peña-Calvin et al., 2024). Consequently, DAOs *can* represent an ideal outcome of an E2C. However, this depends on the specific DAO in question and requires analysing its governance design. The different configurations available to DAO designers, and the way that design choices are influenced by their underlying technical infrastructure, broader institutional environment, and specific goals of the DAO itself, is a growing field of research (Cabello & Mikalef, 2024; Chohan, 2017; Rikken et al., 2019; van Vulpen et al., 2024).

Focusing on smart contracts and tokens, it is relatively easy to initiate a DAO. Anybody can set up a type of shared bank account on the blockchain (referred to as a ‘multisignature wallet’, which is technically a smart contract that controls funds and only releases them when a certain quorum of pre-defined administrators technically sign-off on moving funds), launch and distribute governance tokens, and specify how these tokens are used to, for example to vote on spending funds from the shared account. Through these mechanisms, DAOs enable large, globally distributed, pseudonymous, virtual communities to participate in the governance of platforms or protocols. Although this may sound complex to readers unfamiliar with DAOs, it is possible to do all this with relatively limited technical skills by relying on various DAO platforms that abstract away many technical intricacies (El Faqir et al., 2020). In a way, setting up a simple DAO today is similar to setting up a website using a service such as WordPress. Consequently, on some metrics, DAOs far outpace the time and money it takes to incorporate a traditional organization, including cooperatives, which may require filing official documents, hiring lawyers to help draft bylaws, and potentially issuing financial securities representing ownership rights simply to open a shared bank account.

However, on other metrics, DAOs face significant challenges, even when designed to support democratic member control. As organizations natively incorporated on the blockchain, DAOs face various legal challenges. Firstly, the legal personhood of DAOs is unclear (Ghavi et al., 2022; Sims, 2021; J. Tan et al., 2024). This leads to issues including uncertain liability protection for members and the organization (Farmer et al., 2022; Jennings & Kerr, 2022), difficulty contracting with other traditional organizations (Ruane & McAfee, 2022) or hiring employees (Ilyushina & Macdonald, 2022). Secondly, and importantly to understanding DAOs as the outcome of an E2C, the legal status of tokens (are they property? See: Tosato & Odinet, 2025), including the status of governance tokens used in DAOs, remains unclear (Goforth, 2019). DAOs use tokens as a way to represent ownership, as a means to govern their project, and as a financial asset that fluctuates in value. The question here is whether tokens are simply a means to 'do something' online, a type of investment contract that users enter in expectation of financial returns created by a third party, or if tokens can be regarded as conferring ownership akin to equity in a company. Many DAO projects try to avoid the latter two associations as they would lead to a classification of their governance tokens as financial securities, and thus require the project to be registered with a national securities commission, such as the Securities and Exchange Commission (SEC) in the United States, and stringent regulatory oversight (Bersani, 2021). Often, DAOs argue that their tokens cannot be regarded as financial securities because they hold innate utility, i.e., they are a means for their holder to participate in governance by voting or otherwise. Furthermore, by meaningfully involving token holders in decision-making, the success of the project, and thus the anticipated value of the token, ideally does not depend on the original founding team or people issuing the token anymore. This, too, would lead to governance tokens not being classified as securities. While a more detailed analysis of the legal status of governance tokens exceeds my personal capabilities and is beyond the scope of this thesis, for now, it is simply important to note that the legal status of governance tokens remains somewhat unclear and that the SEC has indicated that token status needs to be determined on a case by case basis (Hinman, 2018; Peirce, 2020). As such, from a legal point of view, a case-specific analysis is necessary to evaluate if and how a particular DAO confers legal ownership and meaningful governance as a result of an E2C. Overall, then, given the fact that DAOs are highly versatile socio-technical systems that seem to defy specific legal categories, a current challenge is for projects to understand the legal implications of their design, but also for regulators to reappraise current laws and evaluate how they may be adapted to better incorporate DAOs (De Filippi, Mannan, & Reijers, 2022).

Finally, although DAOs frequently come up in association with the hashtag #exittocommunity on social media platforms such as X, and have seen tremendous uptake in the blockchain industry, especially around projects previously built and maintained by small startup teams, there is currently no explicit empirical research on DAOs as the outcome of an E2C. The most closely related work on DAOs as the outcome of an ownership and governance transition is nascent research into 'airdrops', a particular mechanism through which companies operating in the blockchain industry distribute tokens (usually to accounts that have previously interacted with their protocols). For example, in their analysis of 12 airdrops Allen et al (2022) argue that the main factor motivating

organizations to give away tokens (some of which are valued in the hundreds of millions of dollars) is to increase the decentralization of their projects by (1) incentivizing community governance and participation, (2) increasing the technical robustness of their protocols by distributing ownership and control rights more widely and (3) as a strategy for regulatory compliance. Other reasons to issue airdrops are tax implications, the fact that they function as a marketing tool, creating a 'buzz' around projects, and because they help to increase the size and liquidity of the markets around a particular blockchain project. Fan et al (2023) confirm the important role of using airdrops for decentralization. However, through an in-depth case study of ParaSwap, a particular airdrop, they show how different community stakeholders benefit and respond differently to being conveyed ownership and governance rights in the project. Specifically, they show that receiving larger amounts of tokens seems to be correlated with more constructive behaviour in the project's governance thereafter. Yet, they also identify a group of 'airdrop hunters' who are primarily interested in personal financial gains and less in using tokens for meaningful community participation. Observing similar dynamics, Putra et al (2024) call for a more sophisticated technical design of airdrops to limit distributing tokens to actors who set up many accounts through which they interact with the project, with the sole purpose of maximizing the number of tokens received during an airdrop and without real intention to constructively participate in the project's stewardship. Without this, they argue, distributing ownership and governance rights via airdrops may actually harm a project's security and community, rather than strengthen it. Finally, drawing on an evolutionary perspective, Allen (2024) shows how airdrop strategies have become more sophisticated over time to address these concerns.

These insights provide an interesting starting point to understanding why organizations in the blockchain industry may decide to transfer ownership and governance rights to their community via token airdrops. However, they are insufficient in developing a more comprehensive understanding of why and how organizations in the blockchain industry are exiting to community. First, the articles focus on DAOs with all sorts of governance structures, not necessarily those aligned with cooperative principles and values. Secondly, while they analyze the high-level and quantitative dynamics in projects during and immediately after an airdrop, they do not directly engage with the stakeholders designing and driving the airdrop. As such, the considerations and micro-politics involved in *how* organizations transfer ownership and governance rights to their communities are not analysed. Finally, none of the articles assesses the medium- to long-term outcomes these airdrops create for communities as well as for the platforms and protocols they govern.

1.2.5 Conclusion

In this chapter, I have situated this thesis in the wider research context. In doing so, I aim to have made several core points. Firstly, I have shown that there is no existing research explicitly analyzing the dynamics of E2C empirically. Secondly, I have argued that E2C is strongly aligned with the phenomenon of cooperative conversions. However, previous literature does not analyze cooperative conversions in the context of the digital platform economy. Because the digital platform economy is

a distinct institutional context, I hope that analysing E2Cs here can add insights to the body of work focusing on cooperative conversions. Third, I have argued that the role of technology, both as the object being governed as well as a mediating factor in a community governing an organization, has not been specifically researched in the cooperative conversion literature so far. Again, I aim to begin filling this gap by studying E2Cs in the digital platform economy. Fourth, by introducing and reviewing literature around platform cooperatives and DAOs, I have attempted to show the broad variety of outcomes and implications E2Cs in the digital platform economy may have. In empirically observing how organizations E2C in the digital platform economy by drawing on aspects of both platform cooperativism and DAOs, I aim to contribute to the growing literature on both organizational forms.

Chapter 1.3
Methods

Ethnography should be informed by a theory of practice that: understands social life as the outcome of the interaction of structure and agency through the practice of everyday life; that examines social life as it unfolds, including looking at how people feel, in the context of their communities, and with some analysis of wider structures, over time; that also examines, reflexively, one's own role in the construction of social life as ethnography unfolds; and that determines the methods to draw on and how to apply them as part of the ongoing, reflexive practice of ethnography. - (O'Reilly, 2012, p.12)

1.3.1 Introduction

On a basic level, this thesis responds to the call of Mannan and Schneider (2021) to follow more practical experimentation with the E2C strategies they propose or approaches that approximate their strategies and evaluate whether they can be regarded as truly feasible, practical, and even desirable (p.71). As such, the methods used throughout this project predominantly aim to surface insights about E2C by analyzing cases in the field. Furthermore, my methods were generally qualitative in nature, with the goal of offering a rich, empirically grounded understanding of how E2C unfolds and its consequences. In this chapter, I detail and reflect on the methods used throughout my thesis project.

First, I introduce digital ethnography as the general approach underpinning my choice of methods (section 2). Second, I reflect on the ethical considerations (section 3) that framed my methods, and reflect on how my own positionality influenced my research design and conduct as a researcher in the field (section 3.2). Next, I turn to the main practical challenges my choice of methods posed and how I navigated these (section 4). In section 5, I discuss my choice of methods used throughout this thesis. Section 6 concludes.

1.3.2 Research approach

Throughout this project, my methodological approach was strongly informed by digital ethnography. Ethnography is a qualitative research method useful for investigating social phenomena in their context (O'Reilly, 2012; Pink et al., 2015). Ethnography is originally rooted in the field of anthropology and predominantly used to study the lived experiences, reality, and cultures of people as they manifest in everyday practices (Delamont & Atkinson, 2010). When

conducting ethnographic research, the researcher usually spends extended periods of time in the social context they are researching, both observing and participating in the day-to-day activities taking place in their field site (Varis, 2015). A key advantage of ethnographic research is that it leads to the collection of rich, contextually sensitive data in real settings. Rather than enabling researchers to prove correlation or causation, ethnographic data helps to construct meaning and gain an understanding of complex social phenomena from the perspective of the (various) people involved in the phenomenon itself (O'Reilly, 2015). As such, ethnography does not assume a particular theory or model from the outset; instead, ethnographic research provides rich, or 'thick' descriptions (Geertz, 2000) of people's life worlds, focusing on the way meaning is constructed by the people inhabiting a particular space. In doing so, ethnographic research can surface issues that would remain invisible from the outside, challenge existing explanatory models, or help to ground and inform new theories.

Digital ethnography expands and adds to the approach of traditional ethnography in three key ways. Firstly, it expands the field sites studied by researchers to include virtual sites, i.e., virtual 'places' like digital platforms, online groups, or virtual worlds (Pink et al., 2015). In doing so, digital ethnography includes types of data that are not available in offline spaces, like posts in a public online forum or technical documentation on how a certain platform might work. Secondly, digital ethnography takes into account and emphasizes the fact that most contemporary communities and social phenomena take place in ways that span both online and offline practices, i.e., they are multi-sited (Paoli & D'Auria, 2021). As such, digital ethnography emphasizes sociomateriality, acknowledging that the social and material, especially in the virtual realm, are necessarily co-constitutive (Pink et al., 2015) and focuses on how, where, and why digital materiality matters (Coleman, 2010). Finally, digital ethnography also includes and develops new methods of conducting ethnographic research (Rennie et al., 2022), such as conducting online interviews and focus groups (Pink et al., 2015), or the researcher entering a particular virtual 'place' as a digital avatar (Boellstorff, 2015).

Digital ethnography is a useful approach underpinning this thesis project for two main reasons. Firstly, and as explained in chapter 1.2, the process of E2C in the digital platform economy has not been researched empirically and remains a sort of 'black box'. As also argued previously, trying to make sense of this black box through the lens of any particular theory or model risks creating a problem of the blind men and the elephant, who each only perceive part of the animal and thus do not know it is an elephant. In adopting an ethnographic approach, my aim was to overcome this issue by immersing myself in organizations where E2C is taking place or in contexts that are affected by the outcome of such transitions. In doing so, my aim was to give specific, contextually rich accounts of what happens in the metaphorical black box of an E2C process, and thereby surface various aspects that may be overlooked otherwise. By focusing on how meaning is constructed by people immersed in E2C, ethnographic research also particularly lends itself to describing the more tacit values, norms, and routines at play throughout the process. While this process does not necessarily lend itself to giving generalizable answers to my research questions, it is useful in

surfacing relevant challenges and questions, and in turn mapping the field for future research to describe the process more fully. Finally, by observing E2C as a real, lived, and enacted process rather than through an experiment or de-contextualized quantitative data set, I could not focus on institutions, organizations, agents, or technology in isolation. Instead, an ethnographic approach forced me to confront the messy reality of E2C, which takes place in socio-technical systems and through everyday sociomaterial practices, thus preempting the risk of oversimplification. Again, I see this as an advantage of adopting an ethnographic approach.

The way I practiced digital ethnography throughout this project was also informed by a second approach: participatory action research (PAR). Rather than being limited to a specific field or methodology, PAR is an approach that emphasizes (1) generating scientific knowledge *through* action and (2) using scientific and practical knowledge to inform actions that drive emancipatory and democratic change in communities (Greenwood & Levin, 2006). While I do not report on any research results generated through PAR, the approach influenced me because it was one of the methods adopted by the ERC project in which my research took place. Specifically, it prompted me to conduct myself more as an observant participant than strictly a participant observer (Seim, 2024) in various contexts, such as in PoH (chapter 4.1) and in DADA (chapter 3.2). In these contexts, I actively participated in community debates instead of simply observing them as a 'lurker'. Here, I was constantly discovering things *with* the communities I was immersed in, not about them. Usually, the path of discovery involved my becoming part of communities trying to decide how a particular change should be implemented (like governance design in DADAO described in chapter 4.1). When proposed changes led to lengthy discussions and arguments, we learned about the values underpinning our specific context or identified difficult tradeoffs that needed to be navigated. Our insights always came from 'doing' E2C in some way, i.e., from changing parts of the system previously determining the ownership and governance in a particular community. Throughout all this, I was most definitely not 'the expert' in the room. Instead, I aimed to become a community member who learns the same things about E2C as everyone else involved, with the addition that I reflected on these learnings in the context of existing academic literature and tied my learnings together in this thesis. Throughout my participation, I always aimed to feed back my specific type of reflections to the community alongside the reflections from other members who were perhaps more technically or legally attuned to what our actions implied and how learnings should inform actions going forward. Nevertheless, my engagement was strictly focused on participation in the form of asking questions, sharing my reflections, or taking on specific tasks in the community, such as becoming a scribe in DADA. Consequently, the main findings of this project are not generated through actions or interventions in E2C, which would be a characteristic of more PAR-oriented work. Instead, my findings are based on the observation of the actions communities took on their own behalf, narrative analyses, interviews, and focus groups; as well as my interpretation of the data, which was shaped by my experience of spending time in the respective communities, and actively participating, in the case of DADA and PoH. In the next section, I discuss the various ethical and practical challenges of doing digital ethnography and how I navigated these throughout the project.

1.3.3 Ethical considerations

Doing digital ethnography requires navigating a variety of ethical challenges. As an approach that emphasizes observing people in their day to day activities, but which can be relatively unobtrusive (e.g. simply lurking in an online forum or channel), it is crucial to take measures that ensure people are aware of the research activities being carried out and their goal in order to actively manage informed consent from participants (Markham & Buchanan, 2017). One issue here is that the distinction between public and private spaces often becomes blurred online. For example, throughout my research, I joined various Discord servers hosted by communities with which I was conducting research. Although anybody can join these servers, making them publicly available, some of the conversations taking place in such channels are between specific members of a group and of a more private nature than, for example, a blog post hosted online. These types of situations require ethnographers to be sensitive to the specific contexts in which data is gathered and be transparent about the thinking that informed their judgment in a given field site (Markham & Buchanan, 2017). Overall, ethical digital ethnography requires a high degree of transparency, both about the project being conducted and about the researcher conducting it. To maintain transparency around my research project, I always introduced myself in official channels as a researcher and with an outline of the research project and its goals for a particular community, as well as highlighting my institutional affiliations, funding, and my intention to report my research findings through this PhD thesis and associated academic publications. Before conducting interviews or focus groups, I made sure to repeat these facts or send project information sheets in advance to ensure that participants were able to give informed consent.

While transparency around the project and my immediate person were important to ensure ethical conduct towards research participants, transparency around my positionality as a researcher (Darwin Holmes, 2020) is crucial to the entire research process and to render any findings from it meaningful. In fact, researcher positionality, i.e., how the researcher understands themselves in the context of their research, influences the entire research project, from research design to which data is collected and how the researcher makes sense of the data. To determine my researcher positionality, I began by asking questions like: am I an insider in this group? An outsider? Do I share ethnic or gender identities with the group? How does my own history and identity affect what I pay attention to in this context? How does it affect how I make sense of the data? I outline my own positionality in more detail in the next section. Finally, given the fact that positionality influences the findings generated by ethnographic research, it is important to practice reflexivity (Pink et al., 2015). Reflexivity involves reflecting with research participants on how I came to understand and interpret their point of view and adjusting my stance in accordance with such ongoing discussions throughout the research process (Lichterman, 2017). Reflexivity also requires regularly reflecting on how my positionality influenced my findings and attempting to take alternative perspectives into account to see a different side and be explicit and transparent about interpretive bias (Foley, 2002).

Positionality statement

Prior to my PhD, I spent several years working in the blockchain industry and being part of its broader online community. I had always been particularly interested in the idea of blockchain as an 'institutional technology' (Davidson et al., 2018), i.e., as a means for people to devise new ways to coordinate information, value, and communities online (Dávila, 2023). Given this interest and my involvement in the blockchain industry, which initially emerged in opposition to large, centralized public and private institutions (Nabben, 2021, 2023a; Swartz, 2018), I have always been curious about alternative governance models, especially models that decentralize power and give people a more proactive say in how an organization works. The idea of blockchains as institutional technology or a way to coordinate people became more tangible with the proliferation of DAOs during the Covid-19 pandemic - suddenly, DAOs were everywhere, how exciting! Witnessing this proliferation as a lurker and participant in real time from behind my screen was a key development that prompted me to apply to the PhD position at BlockchainGov. BlockchainGov[8] is a 5-year ERC project focusing on the governance *of* and *by* blockchain technology, within which I completed my PhD research, and which allowed me to spend more time studying and understanding the governance experiments in the blockchain industry using ethnographic and participatory research methods. Both my personal history and my affiliation with BlockchainGov meant that field sites within the blockchain industry were often more readily accessible to me than those in other areas. Furthermore, my affiliation with the industry also helped me to navigate social norms, values, memes, and lore, and to interpret findings more easily from the perspective of an 'insider'. In fact, throughout these interactions, it became increasingly important for me to balance this insiderness with measures to maintain a critical distance as a researcher. Maintaining critical distance for me meant different things in different cases. I discuss how I navigated 'insider'- and 'outsiderness' in more detail for each case in the next section. However, given my bias to observe cases in the blockchain industry and to somehow balance my understanding of E2C as a broader phenomenon, I decided to also include a blockchain adjacent case, Open Collective, as an ethnographic field site in this project.

Nevertheless, regarding the interpretation of findings from cases in the blockchain industry, it is important to note that despite the many ups and downs the space has seen in the past 4+ years, I remain cautiously optimistic about the potential of DAOs to become a meaningful way to empower users in the ownership and governance of online platforms. However, as I identify more with left-leaning political values, I am highly critical of many of the more extreme libertarian ideas that permeate blockchain culture and am particularly wary of the plutocratic, speculative, and at times outright scammy dynamics some DAOs have encouraged. This weariness may have led me to interpret findings around speculation and financialization more critically than other researchers in the field of blockchain technology.

[8] https://blockchaingov.eu/

Finally, it is important to acknowledge that for the bulk of the research conducted for this thesis, I collaborated with other researchers at BlockchainGov, the Weizenbaum Institute, the Metagovernance Project, and the Other Internet Research Institute. My colleagues were researchers with many different backgrounds, ranging from law to mathematics, business informatics, and economics. Invariably, who I collaborated with shaped the way we decided to collect various pieces of data and thus also the findings I was able to distill in this thesis. Furthermore, who I collaborated with also shaped the way I present my insights throughout this project. Although usually, digital ethnographies convey their findings via 'thick description' (Geertz, 2000) and a more storied way of writing than other research approaches, not all chapters throughout this thesis adopt this specific form of conveying insights. While all chapters are underpinned by empirical work, confronting messy realities, with a sensitivity to context, and understanding the perspective of people operating within them, some chapters (e.g., chapter 3.1) are written up in a more standard qualitative research format. This diversity again stems from the diversity of the researchers and communities I worked with and the realization that: different formats make insights legible for different types of people. While some where open and enthusiastic to read storied accounts of my findings, others preferred more 'official', report-like outputs. Overall, the experience of conducting research collaboratively, not only with communities but also with other researchers, tangibly demonstrated to me how influential researcher positionality is in shaping the research itself and thus the importance of writing positionality statements such as this one.

1.3.4 Practical challenges of doing ethnographic research with online communities

Digital ethnography can be a rather messy endeavour and requires navigating various practical challenges (Abidin & de Seta, 2020). For one, digital ethnography does not prescribe any specific technique to gather data (Pink et al., 2015; Reason & Bradbury, 2013). Instead, each project requires the researcher to determine which specific techniques, including but not limited to participant observation, interviews, surveys, workshops, focus groups, situational mapping, etc, are most suited to collect the data required to fully answer a particular question in a specific context, while keeping in mind ethical and practical challenges. Section four of this chapter describes the specific techniques chosen for the different parts of this thesis. Furthermore, while traditional ethnographic research usually takes place in geographically bounded field sites, in digital ethnography, such boundaries are less obviously given. Instead, the researcher is required to actively construct their field site (Pink et al., 2015). A field site is "the stage on which the social processes under study take place" (Burrell, 2009, p.182), i.e., the physical, digital, or imagined spaces in which researchers locate themselves as participant observers. Constructing the field site of the various cases studied throughout this project required actively asking questions such as: where is the online community? Is it always there or only sometimes? (How) Does it manifest offline? What (technical) architecture structures the space this group occupies? Are there parts of the field site that are hidden away, like private group chats? Do I have access to all relevant sites?

Locating the field

My primary interest lies in what I and others term ‘the digital platform economy’ (Kenney & Zysman, 2016; Mannan, 2022a). In the conceptualizations that I draw on, the digital platform economy is predominantly rooted in a Western cultural context and frequently evokes a specific type of business model (Rahman & Thelen, 2019). However, the platform economy is hardly a unified ‘thing’ or ‘place’. Instead, the digital platform economy encompasses a wide variety of different types of platforms operated by diverse actors and serving a vast number of different purposes and stakeholders (Staub et al., 2021). Thus, while the digital platform economy is conceptually useful, it cannot be taken to be a field site in itself but is better understood as a kind of discursive frame underpinning and encompassing a multitude of distinct yet overlapping field sites. Recognizing this, I focused on organizations and more specific online communities that each make up a particular ‘slice’ of the digital platform economy.

However, as I entered these seemingly more straightforward field sites in the digital platform economy, including three different organizations (Open Collective, DADA, and Proof of Humanity) and the broad community of DAO contributors, it quickly became clear that these sites are less obviously bounded than initially anticipated. Specifically, DADA and Proof of Humanity are both organizations in the blockchain industry that operate natively online and embrace the value of ‘permissionlessness’, enabling pseudonymous members to come and go as they please. As such, I could not rely on fixed and clearly discernible membership as a way to bound the field site I was looking at. Furthermore, the technical sites where members gathered were also diverse and plentiful. In the case of DADA, members gathered across various channels on two different Discord servers, in multiple Telegram chat groups, through weekly video calls, on X, in person, and on the DADA platform itself. The existence of DADA, the organization, was evident in traces across Miro boards, blog posts, social media accounts, news articles, and in physical and virtual art exhibitions. When entering this field site, I repeatedly asked myself: Where is DADA? And when is it there? To overcome this difficulty, I turned to existing insights from fellow ethnographers in the blockchain industry. Specifically, I drew on Nabben and Zargham's (2022) observation that DAOs can be characterized as ‘shared attention over time’. Specifically, they write:

> “As digital denizens, DAO members are geographically dispersed but co-located through shared attention in online chat applications, forums, votes, and pursuit of collective goals. The experience of ‘togetherness’ manifests through co-location over time by repeatedly contributing to the attention space alongside your distributed others and caring about interests that relate to the DAO.” (Nabben & Zargham, 2022, p.76)

Consequently, while being aware of the many different possible spaces the DADA community seemed to simultaneously gather in, I located myself in the specific spaces where I recognized that members were repeatedly sharing attention on topics relevant to my research. In the case of DADA, this especially became the weekly governance call.

Proof of Humanity presented a similarly messy site. Here, the community comprised 17,000 members who had obtained a digital identity through the Proof of Humanity system and were thus not acting pseudonymously in digital spaces that connected to Proof of Humanity's identity system. Although this may have facilitated bounding the field site through membership, this was not possible as the primary sites on which the Proof of Humanity community gathered were not connected to the Proof of Humanity ID. Instead, participants were gathered across a Discord server, on X, in an online governance forum, on Reddit forums, and most prominently across a number of different Telegram groups. Across all these forums, users could come and go without permission and while maintaining their pseudonymity. Furthermore, new spaces themselves could also be added at will. In fact, more than 10 different Telegram groups, each with hundreds (and some with thousands) of members, and some in different languages, began competing over the status of being the 'official' meeting ground for the community throughout my research. In a way, the struggle of which groups were 'official' versus which weren't signalled that defining the field in Proof of Humanity was a contentious and, from the community's perspective, political act. Taking this into account, my research collaborators and I decided to map the many different spaces of conversation, join groups with the most members, without claiming these to be the only sites of gathering. This mapping directly fed into our tracing of the crisis we were witnessing within Proof of Humanity, which became the main focus of our inquiry.

In the case of Open Collective, I was confronted with a network of organizations, which introduced another set of difficulties in fully locating the field site. Open Collective is a platform that enables a network of organizations (fiscal hosts) to lend their legal status to other organizations (collectives), who in turn use the platform and administrative capacity of the fiscal hosts to raise and manage funds. Another organization, Open Collective Inc., is tasked with developing and maintaining the Open Collective platform. As such, locating the field required taking into account this vast network of thousands of organizations and trying to understand: where do these organizations become salient as a community? Where are their shared spaces? How can I access them? Invariably, I had to compromise and decided to focus mostly on the sub-community of fiscal hosts who are more directly connected to Open Collective Inc. and the platform development process. Nonetheless, I aimed to also connect with various collective admins, understand their experience of using Open Collective, and include them in the interviews, which supplemented the data gathered through participant observation.

Finally, I also included non-organizational field sites in my research project, which were often hard to clearly define or operationally delineate. For example, in chapter 2, I take the blockchain industry and specifically organizations that decide to 'exit to DAO' as a site and ask what drives them to act this way. In chapter 5.2, I again take the blockchain industry and specifically the sub-group of DAO contributors as a site and community that I try to understand better. In both cases, I draw on textual material to understand 'the blockchain industry' as a discursive field site. In chapter 2, I construct stories from textual traces that stakeholders involved in exit to DAO have left online, to understand

the institutional logics these stories invoke and the motives animating this part of the blockchain industry. In chapter 5.2, I draw on a review of the academic and industry literature available around the phenomenon of DAO contributors and web3 work to map the different concepts and institutional logics that others have invoked to characterize this field. Using interviews and focus groups, we then asked DAO contributors to locate themselves in this heterogeneous field with multiple overlapping and at times conflicting institutional logics. Through this practice, the more relevant contours of the field emerged from the perspective of the actors within the field.

Overall, the process and practice of E2C, which was core to my inquiry, manifested across multiple field sites, including virtual organizations, online communities, virtual organizational networks, and discursive spaces. While I do not claim that the sites are an exhaustive representation of places which shape and are shaped by E2C, or where we may observe the process unfold, they point to the fact that understanding E2C requires a multi-sited approach (Marcus, 1995). Specifically, understanding *how organizations in the digital platform economy E2C* requires taking into account globalized institutional frames, such as those operating across the blockchain industry, but also local norms and capabilities, the combination of which becomes more discernible by following the process across different contexts (Falzon, 2009).

1.3.5 Methods

As argued above, my methods changed depending on the sub-research question. In this section, I outline the different methods employed throughout this thesis. An overview of the methods in the context of this thesis is presented in Figure 5.

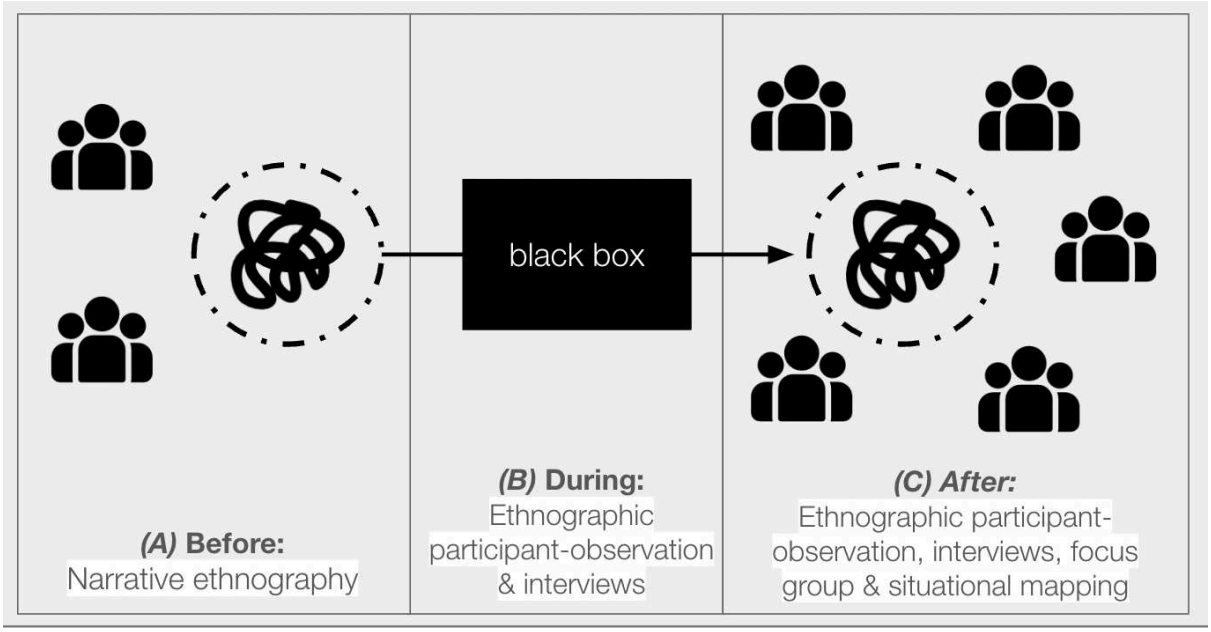


Figure 5: Illustration of methods used at different steps of the research project

1.3.5.1 Situational mapping

Situational mapping is a method that was introduced by Adele Clarke (Clarke, 2003; Clarke et al., 2016) to help researchers conducting grounded theory research grapple with complexities introduced by the postmodern turn. Grounded theory aims to develop theory from empirical data, rather than testing preconceived theories with empirical data (Charmaz & Henwood, 2008). The postmodern turn challenged the traditional approach to grounded theory by raising issues such as the researcher's positionality, the contextual specificity of data, or the representation of different stakeholders in the data collected and from which theory is generated. In short, the postmodern turn has made grounded theory approaches more complex by challenging the neutrality, generalizability, and impartiality of the data from which the theory emerges. Situational mapping is an approach that helps to grapple with this complexity, instead of being overwhelmed by it. Specifically, situational mapping entails quite literally mapping "the major human, nonhuman, discursive, and other elements in the research situation of concern and provoking analyses of relations among them" (Clarke, 2003, p. 554). The practice of situational mapping takes place throughout the research project, forcing researchers to map and remap different elements that make up the situation being researched, as well as the relationships between them. Through the ongoing practice of situational mapping, researchers become attuned to the various concepts at play, important context-specific factors, or stakeholder groups who seem to be missing from the situation. Thus, instead of resulting in grand theories of 'basic social processes' as grounded theory in the social sciences previously produced, situational mapping helps to shift the research focus from actions to situations and towards concepts that emerge as important and may provisionally inform future work. Although situational mapping is primarily introduced as a method in postmodern grounded theory research, it is also helpful in generating a comprehensive overview of a given research context, while acknowledging its complexity. Consequently, it is a particularly useful orientation method when conducting ethnographic research in contexts that are relatively new or where little comprehensive research exists to guide researchers. I used situational mapping for this latter reason in chapter 4.2, to make sense of DAOs as a work environment and DAO contributors as a type of work.

1.3.5.2 Ethnographic case studies

While not every case study is an ethnography and not every ethnography produces a case study, the two approaches can be combined (Armstrong et al., 2019; Schwandt & Gates, 2018; Suryani, 2013; White et al., 2009). Ethnographic case studies employ "ethnographic methods and focus on building arguments about cultural, group, or community formation or examining other sociocultural phenomena" (Schwandt & Gates, 2018, p.344). Where other case studies can purely rely on qualitative data or surveys, ethnographic case studies require the researcher to spend a prolonged period of time in the context being studied, to engage in direct observation and reflexivity (Armstrong et al., 2019). What sets ethnographic case studies apart from other ethnographies is their focus on constructing a specific case in a more expansive field setting. A case can be "an instance, incident, or unit of something and can be anything–a person, an organization, an event, a decision, an action, a location" (Schwandt & Gates, 2018, p.341) and is constructed by the

researcher throughout their research. Thus, ethnographic case studies are useful to generate in-depth, contextually sensitive data and insights in a particular, bounded setting. Ethnographic case studies are limited in terms of the generalizability of their findings, but nonetheless offer the opportunity to explore novel phenomena, understand intrinsically interesting contexts, or generate hypotheses.

In the context of this thesis, I conducted three ethnographic case studies of organizations in the digital platform economy that were in the process of E2C or had already transitioned to community ownership and governance. I conducted these case studies as *instrumental* case studies (Stake, 2005), i.e., to learn more about the process of E2C and how it unfolds in organizations. Thus, I selected my case studies by identifying and approaching organizations in the digital platform economy who were conducting an E2C or grappling with the outcome thereof. My specific choice of case studies was significantly influenced by my own positionality as a researcher in the ERC BlockchainGov and a research fellow at the Weizenbaum Institute in Berlin. Firstly, through BlockchainGov, I was introduced to DADA and Proof of Humanity, which are both pilot communities in the ERC project. I selected DADA as a case study because the community was explicitly in the process of E2C when I was introduced to them. I selected Proof of Humanity as a case study because the community had transitioned to community ownership and governance before approaching BlockchainGov to conduct research into the community's ongoing crisis within the project. My third case study was facilitated by my completing a research fellowship at the Weizenbaum Institute. Prior to being accepted to the fellowship, I had been in touch with the PI of the research group I would join, who had previously been in contact with members of Open Collective, an organization explicitly in the process of E2C, and who were interested in collaborating with researchers on their process. Through discussion, we agreed that the research project I would conduct during my fellowship would be an ethnographic case study of Open Collective. Thus, my affiliation with both BlockchainGov and the Weizenbaum Institute greatly helped me to identify the case studies for this thesis and gain access to them.

1.3.5.3 Online participant observation

Participant observation is a core method in ethnographic research (O'Reilly, 2012; Pink et al., 2015). Participant observation requires the researcher to spend extended periods of time 'in the field' in order to immerse themselves in the context being researched and gain an insider perspective on a given social world (Atkinson & Hammersley, 1994). Yet, in the ethnographic case studies described above, it is not always clear where exactly the field is located. As fully remote organizations, encompassing thousands of pseudonymous members respectively, my field sites were significantly different from traditional field sites, which are primarily physical locations and geographically bounded. Entering these field sites required identifying the relevant spaces in which these organizations and communities manifested online and navigating access to each of them. Across all case studies, organizations predominantly relied on semi-public channels of communication such as chat servers on Discord or Slack, which I could join over a public invite

link or public Telegram group chats. Communities also came together in more public online spaces, such as on social media or a web-based governance forum in the case of PoH. However, in all cases, I also identified less publicly available channels of community communication, which all proved crucial to fully understanding the particular context. For example, in the case of Open Collective, I was invited to a number of private team Slack channels and regular standup calls in which the product and engineering teams planned and discussed important technical updates to the platform. Similarly, in DADA, I was invited to join several invite-only Telegram chat groups that community members had usually established for practical reasons, such as coordinating at a physical event, but which later evolved into lively discussion channels for a smaller part of the community. Consequently, conducting participant observation often required me to distinguish between public and private spaces and navigate consent accordingly. While I continuously noted down my own observations and reflections in field notes (a standard practice in ethnographic research, Clifford, 1990), I aimed to ensure that if and when I wanted to record or include in writing the statements or actions of others, this was only from semi-public or public contexts and always with explicit written consent.

Furthermore, participant-observation is somewhat of an oxymoron. It requires the researcher to be both an insider in order to gain an emic perspective, but at the same time to maintain a critical distance in order to reflect on the broader meaning and idiosyncrasies in a given field. As my engagement and immersion in the various cases progressed, I was required to navigate my own insider- and outsiderness more explicitly. For example, although the vastness of Open Collective (a network of diverse organizations, each of which constitutes their own social world) confronted me with practical challenges such as fully locating the field as explained above, it also allowed me to maintain a critical distance and ‘outsiderness’ at all times, as I tried to immerse myself in the breadth of stakeholders in the ecosystem instead of becoming too much of an ‘insider’ in any one of them. This was different in the case of DADA. Although thousands of people draw on the DADA platform, there is a relatively small, discernible core group, the ‘Dadakin’, who were in charge of operating the technology and ecosystem. At first, I entered with the clear objective of conducting ethnographic research into the E2C of DADA. However, after spending extended periods of time with the Dadakin on calls and informally on various occasions in Berlin and Italy, I gradually started to become more and more part of the core group myself, who began affectionately introducing me as ‘their ethnographer’ to newcomers. Consequently, in DADA, it became increasingly important to take measures that would help me maintain a critical distance. I did this internally, by taking care not to directly influence the outcome of any situation or decision-making process and repeatedly emphasizing my role as an observer with academic reflections. Secondly, I do not hold any assets associated with the DADA project. Finally, I turned to research collaborators, both in BlockchainGov and in Metagov, to discuss my insights and get critical feedback at various points throughout the project. This practice explicitly challenged me to be more reflexive regarding my own interpretations. Nevertheless, my engagement in DADA can perhaps better be characterized as observant participation, rather than participant observation (Seim, 2024), as the former emphasizes the more active role I took throughout my research. In PoH, my involvement lay

somewhere in the middle. As I joined the project together with two other researchers from BlockchainGov who had previously already been involved in the project, the active involvement of our team can best be characterized as that of an observant participant. However, as I personally joined as a relative outsider and did not develop strong ties to any particular part of the community throughout our engagement, my own role within the team was more that of a participant observer.

1.3.5.4 Semi-structured interviews

Interviews are a common method used in ethnographic research to complement and enrich data collected through participant observation in the field (Kaur‑Gill & Dutta, 2017; Pink et al., 2015). Interviews enabled me to probe research questions more directly, and allowed research participants to explain their way of making sense of particular phenomena or draw attention to important contextual factors and themes. Thus, while I devised interview guides for all interviews conducted throughout this thesis, I allowed the structure of each interview to evolve differently, depending on the information that interviewees were sharing. For example, in the case of PoH, the data collected through interviews allowed me to understand the importance of various historical factors in influencing the community's crisis, which I could not have anticipated in an interview guide and may not have been aware of through participant observation alone. However, while interviews are valuable in guiding the researcher towards important themes from the emic perspective, they are limited in that they solely focus on what participants *say,* thus providing a one-dimensional perspective on a participant's social world (Kaur‑Gill & Dutta, 2017). People may not always be aware or fully able to articulate important beliefs or practices (Varis, 2015) or underestimate the different nuances of a given phenomenon. As such, I never relied on data gathered from interviews alone, but always triangulated my insights with other data sources.

I conducted semi-structured interviews for three research projects within this thesis. I took different approaches in selecting participants depending on the context. For example, in Open Collective I tried to speak to representatives from each stakeholder group, whereas in Proof of Humanity I aimed to interview people who stood on 'different sides' of the conflict, and in the case of my DAO labor research, I tried to maximize the diversity of participants with regard to their type of employment relationship in DAOs, their geographic location and function in the DAO. All interviews were based on informed, written consent and conducted online, via a video call, which I recorded and later anonymized and transcribed. As the participants of my research were all accustomed to online, remote work, the medium of video calls was very familiar to them all and often fitted into their usual daily schedule.

1.3.5.5 Focus groups

Focus groups are similar to interviews in that they enable the researcher to probe specific questions more directly. However, as the name says, focus groups include groups of participants rather than just individuals. This makes them a useful tool to understand *collective* perspectives, values, and

beliefs, as well as highlighting contentions or differences between the perspectives held within the group (Agar & MacDonald, 1995). Different from interviews, focus groups allow for lively discussions to emerge within a group, thus also illuminating more tacit dynamics such as the culture of discussion, implicit hierarchies, or shared frames of reference. Within this thesis, an in-person focus group complemented data collected through online interviews and situational mapping in my research on working conditions in DAOs, presented in chapter 4.2. I conducted the focus group together with two other colleagues at a DAO contributor retreat. As such, our participant selection was contingent on the contributors who had signed up for the retreat. While we did not record and transcribe the discussion in the focus group verbatim, as a team, we were able to designate a scribe at all times to keep notes of the ongoing conversation. The other two researchers acted as moderators, loosely structuring the focus group around the main questions also probed during our interviews in this research project, yet allowing the group to linger on topics and themes that emerged as important. Similar to interviews, focus group data is limited by the composition of the group and by the fact that the data focuses on what people *say* rather than what may actually be important. Consequently, it was important to triangulate the data collected from our focus group with other data sources in order to generate insights from it.

1.3.5.6 Narrative ethnography

Although much has been written about ethnography *as* narrative (e.g., Bruner, 1997), I adopt narrative ethnography as a method to expand on traditional narrative analysis methods. Traditionally, narrative analysis focuses on the content and internal organization of stories, identifying similarities and differences across a corpus of narratives. Narratives are constructed for many different reasons, for example, to make sense of experiences, construct identities, affirm or challenge social norms, or to achieve interactional goals (like getting the bank to extend the credit line for a business (Bamberg, 2012). Narrative ethnography is an approach that combines traditional narrative analysis with specific sensibility and additional data about the context in which a particular narrative is told or unfolds (Gubrium & Holstein, 2008) in order to foreground narrative *practice* as situated social action and by making visible the socially constructed and organised contours of social processes. As such, the goal here is not research *on* narratives but research *with* narratives, where narratives are used to explore another issue (Bamberg, 2012). In the context of this thesis, I drew on narrative ethnography to explore the motives that drive organizations in the digital platform economy to E2C (chapter 2). This approach allowed me to make sense of how actors justify and make sense of their strategy in the institutional context of the digital platform economy, and more specifically, the blockchain industry. While this method was useful to analyse motivations espoused by different actors, it does not go beyond what they communicated publicly, a limitation of my particular approach. Nevertheless, I chose this method as it highlights factors that are narrated as being important from the perspective of organizations involved in E2C themselves, which is a useful starting point for future research exploring more implicit or hidden factors.

Table 2 gives an overview of the various methods discussed above and their application in each chapter.

Section	Chapter	Methods
2 Before E2C	2 Motives for E2C	Narrative ethnography
3 During E2C	3.1. Community governance *of* technology	Ethnographic case study, participant observation, interviews
3 During E2C	3.1. Community governance *by* technology	Ethnographic case study, observant participation
4 After E2C	4.1. Challenges after E2C	Ethnographic case study, participant-observer, interviews
4 After E2C	4.2. Labor conditions in DAOs	Situational mapping, interviews, focus groups

Table 2

1.3.6 Conclusion

In this chapter, I have outlined the high-level methodological approach and specific methods adopted throughout this thesis. My aim is to justify why the chosen methods are suitable to investigate my research questions and to describe the measures I undertook to mitigate inevitable weaknesses. By providing transparency over my own positionality as well as the various ethical and practical challenges I encountered along my research, I hope to have also imparted on the reader an honest grounding and point of view from which I wrote the subsequent chapters of this thesis.

Chapter 2
Before E2C: a narrative ethnography of the motives driving exit to DAO

This chapter is based on: Merk, T. (2024, July 19). *Why to DAO: a narrative analysis of the drivers of tokenized Exit to Community*. European DAO Workshop 24, Winterthur. https://doi.org/10.48550/arXiv.2407.14327 [double blind peer review]

2.1 Introduction

The startup story has a problem. It usually begins with a group of friends who have a brilliant idea to change the world and make some money while they're at it. They set about finding influential investors to finance their ideas, quickly start to grow, turning into market-leading enterprises disrupting entire industries in their wake. The mythology of the entrepreneur and her startup is omnipresent in our thinking about business, technology, and success today. It manifests itself in Netflix series like "Silicon Valley" and "StartUp", in biographical movies like "The Social Network" and "Steve Jobs", and countless founder biographies sitting on best-seller book shelves. It permeates academic thought in the form of articles defining measurement metrics for startup success (e.g., Reid & Smith, 2000)**,** advocating best practices (e.g., Blank, 2013; Sutton, 2000)**,** and exploring the various conditions that affect the formation and success of a startup (e.g., gender: Verheul & Thurik, 2001; knowledge: Clercq & Arenius, 2006)**.** Across all accounts, especially large technology companies, serve as role models for the startup economy and its goals: to be the next Uber, Facebook, Google, or Airbnb. Undeniably, these companies have changed the way we access information, travel, work, and communicate today. Curiously, however, these are precisely the same companies that have attracted some of the harshest criticism in recent years and spurred the growth of the user-ownership movement. In a way, then, E2C can be understood as an attempt to change the startup story and avoid our favorite tech startups from turning into big, bad monopolies once they grow up. In this chapter, I turn to the stories that organizations involved in transitioning from founder and investor-led startups to DAOs tell about themselves. I focus on the transition to DAOs because the phenomenon has been growing tremendously since 2020 (see chapter 1.2 for details), encompassing millions of members who are today collectively managing billions of dollars in assets (Gogel et al., 2023), making them an outstanding phenomenon in the wider digital economy. Specifically, I analyze stories told by organizations that transitioned to DAO to understand *why* these organizations chose to transition ownership and governance rights to their communities. As argued in chapter 1.2, an exit to DAO does not necessarily fulfill all requirements for an E2C.

Nevertheless, understanding the motives driving these organizations to diverge from the dominant tech startup narrative and transitioning ownership and governance rights to their communities (democratic or otherwise) is important in its own right. Ideally, identifying the motives driving organizations to embark on this unfamiliar path can help illuminate which factors need to be nurtured, which tensions need to be navigated, and which incentives need to be re-designed by industry and policy to see a more widespread re-writing of the startup story.

The chapter is structured as follows. First (section 2), I briefly trace the history of DAOs and situate them in the wider institutional context of the blockchain industry. I show that, although most DAOs are founded as such, some of the most prominent and valuable DAOs at the time of writing emerged as the result of an 'exit to DAO'. In section 3, I situate 'exit to DAO' amongst other types of exit strategies and their motives, typically discussed in the entrepreneurship literature. After detailing my methods for this research project (section 4), I construct the exit stories of Uniswap DAO, Optimism DAO, and a16z, which invested in both projects just before the transition (section 5). Structuring the stories around Kenneth Burke's dramatic pendant reveals three main motives driving exit to DAO, which I elaborate on in section 6. Section 7 concludes by relating these insights back to the overarching inquiry of this thesis project.

2.2 The institutional context of DAOs

To fully understand DAOs, it is necessary to briefly transgress into some core considerations underpinning the blockchain industry, from which DAOs emerged and which form their institutional backdrop. While an argument could be made that the values and ideas structuring DAOs emerged before the advent of blockchain technology (Zargham & Nabben, 2022), most participants, researchers, and commentators today innately connect DAOs with the emergence of Bitcoin in 2008 and the growth of the blockchain industry thereafter. The concept of decentralization has, ironically, always been central to the blockchain industry (Bodo & Giannopoulou, 2019). Decentralization constitutes a core value proposition of the largest blockchain ecosystems active today: Bitcoin functions as the first example of a fully decentralized digital currency, and Ethereum as the first instance of a distributed virtual machine that executes computer code in a decentralized manner. Decentralization in this context implies the absence of a single coordinating or governing entity. According to Vitalik Buterin, a co-founder of Ethereum, decentralization in blockchain systems occurs on three different levels: the architectural level (how many computers is the system made up of and how many can it tolerate breaking down?), the political level (who controls the computers making up the system?) and the logical level (what sort of data structures does the system present?) (Buterin, 2017). The most important reasons for decentralization, according to Buterin, are fault tolerance as well as attack and collusion resistance; in short, decentralization contributes towards the overall security and robustness of a system. The advances in architectural decentralization greatly spurred the imagination of the early blockchain community, who traditionally have been very skeptical of established institutions, such as large banks or the state, about decentralizing other parts of society, such as organizations and even

national states (Atzori, 2015; Srinivasan, 2022). While this type of imagination remains highly speculative and driven by a variety of motivations and imaginaries (Dodd, 2018; Maurer et al., 2013; Swartz, 2018), the idea of political decentralization has since manifested itself in the form of DAOs.

While early musings about DAOs tended to emphasize strong degrees of automation, incorruptibility, and the absence of human involvement in decision making (Hassan & De Filippi, 2021), the first implementation of a DAO, the DAO, failed spectacularly (DuPont, 2018), highlighting the sustained need for human involvement and off-chain governance. After a few years of relatively low activity, DAOs saw a rapid uptake following the emergence of Decentralized Finance (DeFi) during the COVID-19 pandemic. DeFi replaces centralized intermediaries in many traditional financial products, such as currency exchanges, (leveraged) trading, lending, and borrowing, with smart contract-enabled protocols. In many cases, DAOs were chosen as a way to govern these protocols, with governance tokens distributed widely among the protocol users and contributors. Beyond this, DAOs have also been applied in a host of other use cases (Gogel et al., 2022) including as a means for communities to raise and deploy capital for investments (e.g. ConstitutionDAO or PleasrDAO), grants (e.g. GitcoinDAO) or activist causes (e.g. AssangeDAO or UkraineDAO), to govern hobbyist online communities (e.g. Friends with Benefits DAO), as a corporate governance framework for service providers (e.g. dOrg) or to govern other special purpose protocols such as Layer 2s which help to scale throughput on a blockchain. While the purpose and structure of DAOs today show a high degree of diversity, all DAOs share the value and goal of eliminating centralized parties in decision-making and distributing control over assets held by the DAO amongst its members.

At the time of writing, three of the top four (and the majority of the top 10) DAOs in terms of assets under management (AUM), according to DeepDAO, a discovery and analytics website for DAOs (DeepDAO, 2024), were previously owned and governed as privately held startups before transitioning towards becoming a DAO (OptimismDAO, ArbitrumDAO, and UniswapDAO). Here, founders, investors, and other decision-makers in privately held organizations decided to operate their venture or project through a DAO, thus anticipating that this organizational form best serves their personal and organizational goals and needs. In the next section, I situate the transition in the wider academic entrepreneurial exit literature.

2.3 Theorizing Exit to DAO

In this chapter, I conceptualize the process of transitioning from a private organization to a DAO as a type of entrepreneurial exit strategy, alongside selling a company to the public market via an initial public offering (IPO) (Latham & Braun, 2010), selling to another company (Brueller et al., 2018), or employee or management buyouts (Chaplinsky et al., 1998; Scholes et al., 2008). Liquidation and bankruptcy also feature heavily in the academic discourse on entrepreneurial exit (Balcaen et al., 2012). Overall, entrepreneurial exit is characterized as ‘the process by which the

founders of privately held firms leave the firm they helped to create; thereby removing themselves, in varying degrees, from the primary ownership and decision-making structure of the firm' (DeTienne, 2010).

DeTienne et al cluster these various types of exit into three main categories: financial harvest strategies, stewardship strategies, and voluntary cessation strategies (DeTienne et al., 2015). The choice of exit strategy is driven by different goals. As indicated by the name, the main objective in financial harvest strategies is to maximize the entrepreneur's financial harvest, i.e., the financial return on resources and capital invested. IPOs and acquisitions by other companies often fall under this category. Stewardship strategies prioritize pro-social and pro-organizational goals when planning the exit strategy. Family succession, employee buyouts, and certain third-party sales are associated with this category. The goal of cessation-focused strategies is ultimately to disband the venture through liquidation or discontinuance and is thus less relevant in the context of this paper.

However, what this typology and other prominent analyses of exit strategies miss is the investor's perspective, which is often theorized independently (e.g., Mason & Stark, 2004; Parhankangas & Landström, 2006). For investors, exit is a crucial part of the investment process and is considered a liquidation event where the investor relinquishes financial ownership over the firm, ideally in exchange for substantial financial return. As such, the investor's preference for financial harvesting strategies can be assumed and has been shown to remain a substantial goal even among more socially oriented investment companies, sometimes called impact investors (Geczy et al., 2018). Recognizing this shortcoming in the literature around exit strategy, Collewaert (Collewaert, 2012) extends DeTienne's definition to "the process whereby founders [/entrepreneurs] of [or investors in] privately-held firms...remove themselves from the primary ownership and decision-making structures of the firm" (p.755). In a survey of 56 angel-backed startups, she shows that goal conflicts (i.e., misalignment in high-level goals) between investors and entrepreneurs are particularly detrimental to fostering successful cooperation and exit (Collewaert, 2012). Consequently, when analyzing the exit strategy chosen by a particular startup, it is important to understand both the entrepreneurs' and investors' goals as well as the relationship between both stakeholders in a given context. Through the subsequent analysis, I show that exit to DAO is best conceptualized as a novel exit strategy situated between other financial harvest and stewardship strategies.

2.4 Methodology

In this research, I draw on stories and narratives to make sense of the drives that prompt organizations in the blockchain industry to adopt the strategy to exit to a DAO. Specifically, I conduct a narrative ethnography (Gubrium & Holstein, 2008). Narrative ethnography goes beyond traditional narrative analyses, which focus on analyzing the structure and content of narratives themselves, by including the social context in which stories are told in the analysis (ibid.). As such, a narrative ethnography helps to foreground the interplay between narratives and their institutional

context. To conduct my narrative ethnography, I gathered public communications surrounding the decision to transition from two leading DAOs: Uniswap DAO and Optimism DAO, and one prominent investment firm that has led rounds in both organizations: Andreessen Horowitz (a16z). Uniswap was chosen as an exemplary case of a DeFi DAO, launched in September 2020 and spearheading the wave of DAOs that followed. Optimism DAO is outside the DeFi space, governing a blockchain scaling solution that explicitly positions itself as a 'public goods' project and was launched in May 2022. I selected Optimism as a contrasting perspective to Uniswap, while both projects are leaders in terms of AUM. Finally, a16z was chosen to exemplify the investor perspective. a16z has led investment rounds in both Uniswap and Optimism, thus standing in relation to both projects and enabling me to understand the story of what motivated the transition in each project from both sides. Furthermore, a16z has been particularly open and vocal about its interest in transitioning more centralized organizations to DAOs. Data was collected from official company communications on websites, blogs, technical documentation, newsletters, social media accounts (specifically LinkedIn and X), as well as from official posts on Discord servers, a semi-public chat platform used by both Uniswap and Optimism before and after their transition. Finally, I collected relevant news articles from the blockchain news outlet CoinDesk to contextualize the various pieces of data. I organized the material into timelines, thereby constructing chronologically narrated accounts for the transition of both Uniswap and Optimism. The data collected from a16z spanned both timelines and also included various pieces not directly connected to either of the projects, which were clustered thematically.

Mirroring an approach previously applied in the field of social entrepreneurship (Berglund & Wigren, 2012), I analyzed the data by drawing on Kenneth Burke's dramatic pendant introduced in 'A Grammar of Motives' (Burke, 1969). Burke proposed the pendant as a simple tool to analyze theater (understood as the theater of life/ anything, rather than theater in a stricter sense) and uncover the various motives driving a particular action or outcome. The pendant proposes five questions which foreground five distinct elements in any drama: 1. What is done? (act); 2. Who does it? (agent); 3. With what means is it done? (agency); 4. Why is it done? (purpose); 5. Where is it done? (scene). According to Burke, the driving force, or motive, of a given action or outcome can be found in any one of the five elements, but most often emerges as they are put in relation to each other.

2.5 Findings

Below, I describe the main findings for each case analyzed, structured around Burke's dramatic pendant. While the brevity of this article does not permit a detailed thick description of the constructed narratives, the most important sources of data are indicated for each. A summary of the findings is presented in Table 1 (see appendix).

2.5.1 Uniswap DAO

The main **agent** narrating the act of Uniswap's transition is Uniswap Labs. Uniswap Labs is a US-based, privately held, investor-backed company led by Haydn Adams, the founder of Uniswap. Founded in 2019, Uniswap Labs was primarily responsible for developing and governing the Uniswap protocol. The company raised venture capital in a seed round in 2019 and a $11M series A funding round led by a16z, which was announced only one month prior to the launch of the DAO (*Series A*, 2020). On 17 September 2020, governance rights over parts of the Uniswap protocol and a newly established community treasury were transitioned to the wider community via the issuance and distribution of the UNI token (*Introducing UNI*, 2020)**.** The token launch constituted the central **act** in the Uniswap transition narrative. **Agency** in the Uniswap narrative focused on the economic and technical mechanisms and digital interfaces through which the token was distributed to 'the community'. The community was defined as a set of Ethereum wallets that had interacted with the Uniswap protocol in various predefined capacities[9] before September 2020, thus argued to have contributed to the proliferation of the project pre-DAO. Additionally, a liquidity mining program was introduced, which distributes UNI as a reward for allocating capital to the Uniswap protocol, thus acting as both an incentive to contribute to the protocol and as a means to further distribute governance rights to new contributors beyond the initial launch. Moreover, although 40% of UNI tokens generated at launch were allocated to the Uniswap Labs team, investors, and advisors, this act barely featured throughout the narrative, and no details on how (agency) the distribution to these stakeholders took place were detailed. The **purpose** of the transition was espoused as fostering 'community-led growth' (i.e. increase the scope, user adoption and further integration with other projects in the ecosystem) of Uniswap on the one hand, and to secure core functions of the Uniswap protocol from being changed unilaterally (*Introducing UNI*, 2020; *Uniswap's Year in Review*, 2020), thus mirroring key properties of Ethereum, a project goal advocated for by its founder (*A Short History of Uniswap*, 2019). Practically, UNI token holders are enabled to decide directly on how to spend the community treasury and various protocol-related aspects[10] on a one-token-one-vote basis. The **scene** within which the Uniswap transition took place was marked by two widely discussed events. Firstly, the transition came at a time when the DeFi industry was experiencing remarkable growth (Voell, 2020) and decentralized exchanges such as Uniswap seemed set to unseat their centralized competitors in terms of daily volume traded (Godbole, 2020). Secondly, the launch occurred seemingly as a direct response (De, 2020) to the rise of Uniswap competitor SushiSwap, a project which replicated Uniswap's protocol structure via a software fork, yet adding its own token SUSHI as an incentive for liquidity providers. This stint, termed a 'vampire attack' in the industry, caused many users to reallocate their capital from Uniswap to Sushiswap, leading to vast capital outflows from the exchange some weeks before the launch of UNI (Dale, 2020a).

[9] This included ~49.000 wallets that had provided liquidity to the Uniswap protocol (an important contribution which enables the protocol to automate swaps between different tokens), ~251.000 wallets that had interacted with the protocol to swap tokens and 220 wallets which held another affiliated token called SOCKS.

[10] This includes the protocols fee switch (which decides if and how much fees the protocol collects for executing trades), Uniswap's Ethereum based domain name (ENS), the Uniswap Default Token List which determines which tokens can be traded without warnCitizens'devolvinging and the SOCKS liquidity pool.

2.5.2 Optimism DAO

The main **agent** narrating the Optimism transition was Optimism PBC, a US public benefits corporation primarily tasked with the development and governance of the Optimism protocol, an Ethereum scaling solution. Optimism PBC raised capital in a series A ($25m) led by a16z in 2021 and a series B ($150m) in which a16z participated, and which closed one month before the Optimism transition. Optimism PBC's exit was announced on 26 April 2022 with the launch of the Optimism Collective, "a band of communities, companies, and citizens united by a mutually beneficial pact to adhere to the axiom of impact=profit" (*Introducing the Optimism Collective*, n.d.) and thereafter tasked with governing the Optimism project and ecosystem. The main **act** narrated throughout Optimism's transition was the introduction of the Optimism Collective (*Introducing the Optimism Collective*, n.d.), a multi-stakeholder governance ecosystem and a set of structuring mechanisms that mediate decision-making power between them. New stakeholders introduced included the Optimism Foundation, a newly established Cayman Island Foundation Company tasked with stewarding the Collective and to devolve power from Optimism PBC, which was previously the only official legal entity associated with the project (*What Is the Optimism Foundation?*, n.d.). As part of the transition, Optimism PBC also formally renamed itself to Optimism Labs PBC, and various employees transitioned into new roles in the Foundation. Furthermore, a bicameral system of governing bodies, comprising a Token House and a Citizens House, was introduced as two further stakeholders of the Collective (*Introducing the Optimism Collective*, n.d.). The Citizens House is comprised of individuals holding 'Citizen Badges'[11] who decide on a one-person-one-vote basis over how a specific pot of money is allocated to public goods in the ecosystem. The Token House comprises the holders of the newly launched OP token and is tasked with governing a community treasury, protocol upgrades, and OP inflation dynamics on a one-token-one-vote basis. Furthermore, the Token House can remove the director of the Optimism Foundation as well as members of the Collective Council and Advisory Board, thus creating accountability within the ecosystem. Finally, it has the right to govern over various conduct-related areas (*OPerating-Manual/Manual.Md at Main · Ethereum-Optimism/OPerating-Manual*, n.d.). Given this rather complex and layered set-up, it was difficult to discern one central **agency** throughout the constructed narrative. Nonetheless, two aspects stood out: the OP distribution schedule and Optimism's Working Constitution (*Working Constitution of the Optimism Collective*, 2022). Firstly, beyond users of the Optimism protocol, OP tokens were also allocated to Ethereum wallet addresses that had engaged in other on-chain activities deemed to be aligned with Optimism's values. Furthermore, the project announced that it would conduct subsequent 'seasons' of airdrops to reward desired behavior over time. Secondly, to claim tokens, users were forced to consent to Optimism's Working Constitution, a document detailing the rights and responsibilities of stakeholders of the Collective towards each other as well as a commitment to continue iterating on the project's governance design (*Working Constitution of the Optimism Collective*, 2022). The

[11] a non-transferable token which was initially distributed to 24 individuals (8 employees of Optimism PBC and 16 aligned Ethereum community members), but is intended to become distributed more widely as Optimism's governance matures (*Citizenship*, n.d.).

purpose most prominently narrated throughout the Optimism transition was twofold: to grow in order to fund and promote public goods across the ecosystem better and to increase the robustness of the Optimism protocol. Support of public goods (used more to denote projects that support the public good rather than in the stricter economic definition of the term) on Optimism occurs predominantly through the retroactive allocation of sequencer revenue (a fee that accrues through protocol usage) to projects across the blockchain industry who are deemed to have contributed to the ecosystem in a meaningful way (*Introducing the Optimism Collective*, n.d.). Growth is important in this context: the more the Optimism protocol is used, the higher the sequencer revenue and thus the support for public goods. The **scene** in which Optimism's transition took place was defined by an acute need for the Ethereum blockchain to scale in order to reduce its fees, which had been rising steadily since the advent of DeFi and began outpricing many users and use cases. As such, scaling solutions, in particular roll-ups such as Optimism, commanded high attention within the industry at the time (Kaloudis, 2022) and were cited as the key value proposition invested in by a16z (Dixon & Simpson, n.d.). Furthermore, the transition had been rumored to happen for some time and was highly anticipated (Kessler, 2022), having previously attracted significant 'airdrop farming', a practice in which people deliberately use a protocol in anticipation of financial rewards in the form of governance tokens (Wang, 2022).

2.5.3 a16z

a16z, the **agent** in this narrative, is one of the largest US-based venture capital firms in terms of AUM, founded in 2009, headquartered in Silicon Valley, and with a focus on investing in technology start-ups, as well as a department dedicated to investments in the blockchain industry. The a16z narrative did not revolve around any particular event but instead focused on the concept of 'progressive decentralization' (Esber & Kominers, 2023; Walden, 2020) as the central **act.** Progressive decentralization is a strategy advanced by a16z, which encourages blockchain start-ups to decentralize their products and protocols over time, both architecturally and politically. To do so, a16z encourages startups to retain political power over their projects until they have found product-market fit and can consequently attract a community of users and people who feel a sense of connection to the project (Walden & Leshner, 2023). As this community expands, the start-up is encouraged to identify the various areas (technology stack, treasury, protocol parameters, etc.) that can be transitioned away from centralized control and towards community management (Esber & Kominers, 2023). The goal here is not to achieve absolute decentralization, but to strive towards 'sufficient' decentralization, operationalized as the absence of a single actor with outsized control over a specific aspect of the project. Overall, this model process emerged as the key **agency** throughout the a16z narrative. a16z advances three main considerations as the key **purpose** of progressive decentralization. Firstly, a16z has long advanced the thesis that centrally controlled online platforms and digital products create value at early stages while predominantly limiting and extracting value over time (Dixon, 2018). Advancing decentralized protocols is posited as a way to increase the total value created on the web. Consequently, the purpose of progressive decentralization is intended to serve the creation of (economic) value. Secondly, a16z cites

regulatory advantages derived from progressive decentralization as a core consideration. This relates to the fact that tokens, whose value depends on a project controlled by a specific actor other than the token holder, are at risk of being classified as securities (thus subject to various regulatory requirements such as registering with a national securities commission) under the Howey test frequently invoked by the US Securities and Exchange Commission (SEC). Sufficient decentralization in this context means that the project is decentralized to the extent that no individual third-party actor can be discerned to be solely responsible for the success of the project (Walden, 2020). Finally, a16z also cites progressive decentralization as a means towards achieving a higher level of robustness and entrenchment of protocols, thus enabling better technical security and predictability. The **scene** underlying the a16z narrative was more difficult to discern, as the narrative focused on a concept rather than a particular, time-bound event. Nevertheless, it was interesting to note that the concept itself was proposed in the fall of the proliferation of DeFi (called DeFi summer) (Dale, 2020b) and on the eve of the largest blockchain bull market to date, which ended with the widely reported collapse of the FTX exchange (Ledesma, 2022). Furthermore, the strategy was proposed amidst high uncertainty regarding the regulation of DeFi tokens and the fear of them being subjected to similarly stringent securities regulation as was applied to ICO tokens, which took off in 2017(Andoni, 2020), as well as in anticipation of new token regulation frameworks being adopted in leading markets such as the EU (Allison, 2020).

2.6 Discussion

The goal in analyzing three separate stories is inspired by Boje's seminal work on the Disney company as 'Tamara-land' (Boje, 1995), which illustrates the plurivocality of organizations and how different accounts can lead to different interpretations of organizations and the narratives that construct them. In my discussion, and drawing on the analysis of the three separate stories of exit to DAO, I focus on foregrounding plurivocality at the ecosystem level rather than within a particular organization. The discussion that follows is not intended to yield a generalizable answer regarding the motives of any exit to DAO, or even to claim to reveal the most important reasons to transition. Instead, it aims to surface consistent or conflicting factors that emerged from and between the three narratives and which warrant further research.

2.6.1 Purpose - agency ratio: DAOs as an entrepreneurial exit strategy between stewardship and financial harvest

All three narratives emphasize normative, stewardship-related goals in their purpose. One goal shared by all three is that of increasing the robustness of their various technical protocols. By exiting to a DAO and giving the DAO governance rights over certain protocol features, it becomes harder for a single party to unilaterally change aspects of the protocol, rendering it more entrenched. This espoused purpose closely mirrors the normative aspirations of decentralization, outlined by Buterin (Buterin, 2017) and underpinning the wider blockchain industry (Bodo & Giannopoulou, 2019). The Optimism narrative further emphasized fostering public goods as a key reason for its decision to exit to DAO, a goal clearly motivated by wanting to bring about more responsible stewardship. This goal mirrors more widely held values within the Ethereum ecosystem, termed the 'public goods' imaginary of Ethereum by Dylan-Ennis et al. (Dylan-Ennis et al., 2022).

The espoused purpose is achieved through a central agency, which features across all three narratives: tokens. Tokens were consistently narrated in three interesting ways. Firstly, they serve as a medium to distribute governance rights to the community and thus a means to achieve the robustness-related stewardship goals of the project. Secondly, as a means to incentivize growth in the project (for Uniswap, this meant incentivizing liquidity provision directly through the token; for Optimism, it was about signaling several seasons of airdrops, which would encourage more users to interact with the protocol, thus increasing sequencer revenue and thereby public goods funding). Finally, both projects allocated sizable amounts of tokens to their teams and investors. While this allocation was not narrated prominently in any of the cases, it nonetheless indicates that the exit to DAO can also be seen as a (lucrative) liquidity event for both entrepreneurs and investors, thus also demarcating it as a possible financial harvest strategy (DeTienne et al., 2015). Particularly, the token allocation to investors can also help to explain why, for example, a16z, which made sizable investments into both Uniswap and Optimism shortly before the exit to DAO, did not see the strategy at odds with the financial goals it invariably holds. Overall, then, one possible driver for the rise of exit to DAOs may be the fact that the way that DAOs are launched (via tokens) is considered a suitable vehicle to realize both the normative, stewardship-related goals as well as financial and growth aspirations of entrepreneurs and investors. This insight, and its focus on tokens, is consistent with previous work on airdrops, which looks at the act of issuing tokens to users in isolation (Allen, 2024; Fan et al., 2023; Putra et al., 2024). I add to these findings by showing how they can be understood in the context of entrepreneurial exit strategies.

2.6.2 Act - agency ratio: DAOs as an incomplete exit that dilutes rights without relinquishing rights

Throughout the Uniswap and Optimism narratives, a strong emphasis was placed on signaling how widely governance rights (tokens) had been distributed in the various communities (as indicated by

the high number of wallet addresses included in each airdrop). What is interesting to note here is that both narratives foregrounded the fact that something (tokens, a collective, governance rights) was being *added* by exiting to DAO. None of the narratives discussed ownership or governance rights being *subtracted* from founders or investors, which usually occurs, at least partially, in other exit strategies, which are often characterized by various buyout events, and is linked to the idea of relinquishing control, which constitutes part of the definition of an entrepreneurial exit (Wennberg & DeTienne, 2014a). The constructed narratives echo the colloquial metaphor of increasing the size of the pie instead of reducing one's own slice to accommodate others. In a sense, then, exit to DAO does not constitute an exit in the sense of transitioning existing ownership and governance. It is more an exit in the sense of extending ownership (by adding another layer via tokens) without diluting equity (none of the accounts mentioned changes in the equity distribution within the founding organization and apart from renaming Optimism PBC, no prominent changes seem to have occurred to them throughout the exit process), and expanding governance rights over a protocol to its ecosystem without necessarily changing governance rights in the original organization. Further research is required to make sense of this phenomenon and contrast it more comprehensively with other entrepreneurial exit strategies (for example, the IPO, which also dilutes ownership rather than simply transitioning it. Yet, IPOs require converting traditional equity to publicly tradable shares and thus also subtracting the ownership of a specific type of asset). In particular, future research is required to understand if and when a transition to DAO in fact qualifies as an exit. Two approaches may be useful to this end. Firstly, future research may take as its starting point the definition of entrepreneurial exit given by DeTienne: 'the process by which the founders of privately held firms leave the firm they helped to create; thereby removing themselves, in varying degree, from the primary ownership and decision-making structure of the firm' (DeTienne, 2010). The inquiry may try to understand and define *how much* ownership and governance rights need to be transitioned to a DAO to qualify as an exit. To develop and operationalize a conceptualization that can help researchers and practitioners understand whether a transition to DAO in fact constitutes an exit, it may be helpful to draw on previous literature on decentralization in the blockchain industry (Bodo & Giannopoulou, 2019; Hassan & De Filippi, 2021; Schneider, 2019a). The idea here would be that if a transition towards a DAO results in 'decentralization' (however defined), then sufficient ownership and control were devolved throughout the transition, qualifying it to be considered an exit. An alternative approach may be to not look at what founders and investors relinquished but at what communities have gained through the transition to a DAO. A useful starting point here may be the concept of 'effective voice' in online communities proposed by Frey and Schneider (Frey & Schneider, 2021). They characterize 'effective voice' as the mechanisms at the disposal of users to meaningfully effect change over their online environments, for example, by letting users participate in a binding vote that determines a platform's approach to tackling fake news. Effective voice is contrasted with affective voice, which, although affording some form of user participation, does not result in any binding action. Thus, to determine whether a transition to DAO in fact qualify as an exit in general and an exit to community in particular, future research might examine if and how the transition resulted in more effective voice for users or if it

predominantly results in a 'a remarkably high amount of pointless governance activity' as (Feichtinger et al., 2023) write in a high level quantitative empirical study of DAOs.

2.6.3 Scene - act and scene-purpose ratio: Markets, laws, and social norms as drivers of an exit to DAO strategy

Across all three narratives, the scene seemed to be a critical driver motivating the act. The overall blockchain market, the anticipation of economic growth, and competitive dynamics in the case of Uniswap, seemed to motivate the decision to act, i.e., exit to DAO or propose the progressive decentralization strategy. Another interesting scene-related aspect that emerged predominantly from the a16z narrative was that of regulation. Here, the need to avoid tokens (especially in DeFi) being classified as securities may have motivated both entrepreneurs and investors in the decision to exit to DAO, as both parties could potentially be held liable in the case that a project was found to be stewarding unregistered securities. The insight that securities regulation drives projects to exit to DAO warrants further research, which might consider conducting a comparative study of companies exiting to DAO in jurisdictions with differing securities regulations on tokens. Finally, the social norms held in the wider blockchain ecosystem, particularly that of decentralization as a normative goal on various levels, seem to contribute directly towards the purpose and ultimate decision to act across all three accounts. Overall, the scene seems to mirror most of the four forces (markets, laws, social norms, and architecture) of Lessig's pathetic dot theory (Lessig, 1999). Future research could draw on this framework to evaluate the role of each force in driving exits to DAO in more depth.

2.7 Conclusion

Overall, this chapter has drawn on Burke's dramatic pendant to conduct a narrative ethnography of three narratives constructed about the decision to exit to DAO. In doing so, I aimed to begin answering the question of why startups in the blockchain industry are exiting to DAO, an outstanding phenomenon in the wider digital economy, which has tended to retain centralized ownership and governance rights of many platforms, products, and protocols in recent years. The discussion indicates three possible motives that explain why organizations exit to DAO, or at least how they narrate their choice publicly. First, exit to DAO is motivated by both financial and stewardship goals, which it simultaneously promises to realize via the issuance of tokens. This insight confirms previous findings from research dedicated to studying airdrops (Allen et al., 2022; Fan et al., 2023; Putra et al., 2024) and contextualizes these insights in the literature around entrepreneurial exit. Secondly, exit to DAO adds an additional layer of ownership and governance rights via tokens without requiring existing rights to be relinquished, thus making it a lucrative but incomplete exit strategy. In a way, this indicates that one possible explanation for the question of why organizations choose to exit to DAO is that it does not actually require them to exit in a more traditional sense. This raises the question of what point organizations transitioning to a DAO, or adding a DAO to their existing ecosystem of organizational ownership and governance structures,

can be classified as an exit at all. Any answer to this question will need to begin by developing a thorough understanding of what it means for users to have meaningful control over protocols and platforms via DAOs, possibly characterized as 'effective voice' (Frey & Schneider, 2021). If an exit to DAO confers effective voice, then it can be characterized as a type of exit, albeit possibly an incomplete one. Another approach to this question may ask what it means for a protocol or platform to be decentralized (Bodo & Giannopoulou, 2019; Hassan & De Filippi, 2021; Schneider, 2019a) and how to measure the degree of decentralization. If an exit to DAO leads to a platform or protocol becoming decentralized to the extent that founders and investors no longer hold outsized control, and consequently have diluted their ownership and governance rights to a meaningful degree, it may also constitute an exit. Finally, I found that markets, laws, and social norms underpinning the broader environment in which exits to DAO occur seem to play an important role in driving the decision. This insight speaks to my ontological stance on E2C, as it shows the role that broader institutional contexts have for explaining and motivating E2C or E2C-like departures from the status quo narrative of tech startups.

Chapter 3.1
During E2C: designing community governance *of* technology

3.1.1 Introduction

I entered Open Collective as a participant observer in November 2023 with the aim of understanding more about how the ecosystem was grappling with its E2C. Open Collective Inc (OCI) is a start-up maintaining the open-source Open Collective platform and a network of fiscal hosts which together help over 15.000 collectives (i.e., groups of people working together without legal incorporation) raise and manage their funds transparently. Open Collective publicly announced its intention to E2C in October 2021 (Mancini, 2021a). Over the next year, OCI participated in an E2C peer learning cohort, concretized its plans by setting more specific goals for what it was trying to achieve through the E2C, and explored various possible pathways to achieve these (Hewit, 2022; Mancini, 2021b). Although the founders of Open Collective have been (and in some cases continue to be) active in the blockchain industry, and the Open Collective platform processed cryptocurrency transactions for various years, Open Collective is only blockchain adjacent. Firstly, the project does not rely on blockchain technology in its normal operations. Secondly, and most relevant for this thesis, OCI quickly identified that it would not E2C via DAO and explored various legal mechanisms instead, as they seemed more likely to support the goals OCI wanted to achieve via its E2C. Specifically, OCI wanted to (1) increase multi-stakeholder governance, taking into account diverse stakeholder needs while retaining efficiency, (2) protect Open Collective's purpose, (3) allow investors, founders and employees to exit confidently by allocating capital returns and (4) ensure that Open Collective serves the needs of its community, society and the planet (Mancini, 2021b).

However, after the initial announcement and enthusiastic subsequent exploration, Open Collective's E2C conversation became less pronounced. Upon joining Open Collective I found that the internal #exit-to-community Slack channel had been silent for several months and was informed that the conversation had shifted away from 'E2C' and towards a conversation about the 'structure of the constellation', focussing not on OCI's exit but more on how the organization related to others in the ecosystem and how they could become more akin to 'one team'. Clearly, something had changed.

A new strategy published shortly after I joined helped to make sense of my observations (Woolard & Mancini, 2022). The focus of the new strategy was to get Open Collective ready to scale, rather than exit, by growing and professionalizing OCI as an organization, strengthening the Open Collective community through ecosystem initiatives, and more actively involving community members in the platform design and development process. While E2C remained a long-term

strategic goal, it had receded somewhat into the background. Given this change in priorities, I began looking for related issues that I might nonetheless learn about. After the first few months of participating in various calls and online chats as well as learning more about the ecosystem and organization, I devised a list of eight challenges related to shifting the structure of the constellation and E2C, which I shared and discussed with members of OCI. Throughout these discussions, the last part of the new Open Collective strategy, i.e., how to ensure the platform was catering to its diverse ecosystem needs and involving community members in the platform design and development process, emerged as particularly salient. While the ecosystem already had processes in place where users could voice their needs (such as dedicated Slack channels, an open GitHub repository, and various community calls), more needed to happen to enable members to actively participate in making decisions about which features would be added to the platform. For Open Collective, this shift was intricately linked to the goals of its eventual E2C: ensuring that the platform served the needs of its community by opening up its design to more multi-stakeholder governance. Consequently, designing community governance *of* technology, in this case, the Open Collective platform, emerged as the core theme guiding my research throughout this project.

Specifically, it prompted me to develop a better understanding of the changes ecosystem stakeholders envisioned regarding the platform development process and ask: how do platform stakeholders envision effective user participation in the design and development process of Open Collective, an operational, internationally active digital platform?

This chapter proceeds as follows: First, I distinguish *affective* and *effective* voice in the design and development process as a way to conceptually make sense of the envisioned shift and situate both concepts in the field of participatory design research (sections 2.1-2.2). The case of Open Collective adds to the existing participatory design literature, which has not yet accounted for effective user participation in operational, internationally active digital platforms. I then present the Actual Role Analysis in Design (ARAD) framework (section 2.3) situated in the participatory design literature to conceptually distinguish four main roles in which users can become effective participants in the technology design and development process, and which I use to frame the subsequent analysis of Open Collective. Section 3 introduces the case of Open Collective and its development process. Thereafter, I discuss my methodology in more detail (section 4) before turning to a discussion of my main findings (section 5). Specifically, I show that, in the case of Open Collective, increasing effective user participation in the design and development process is about reconfiguring the role of OCI within the wider ecosystem of stakeholders (5.1), rather than simply changing OCI's ownership and governance. This highlights the role of *institutioning* for enabling more effective user participation. Furthermore, my findings foreground the mutually constitutive relationship between agency and technology, i.e., *infrastructuring*, by emphasizing the importance of certain upfront decisions for designing participation mechanisms (5.2), as well as the way that existing technological and ecosystem configurations shape other participatory processes. Finally, my data surfaced three limitations (5.3) of effective user participation that seem to persist regardless of the

institutional or infrastructural configurations that are in place. Section 6 concludes with reflections on the implications of my findings and avenues for future research.

3.1.2 Conceptual framework: effective voice and participatory technology design

3.1.2.1 Effective voice as participatory design

The distinction between *affective* voice and *effective* voice proposed by Frey and Schneider (2021) is a useful dyad to conceptualize the changes in the platform design and development process, envisioned by Open Collective. 'Voice' here denotes a form of participation within a particular context with the goal of bringing about change, and is adopted from Hirschman's seminal exit, voice, and loyalty framework (Hirschman, 1970). As such, I use the terms voice and participation interchangeably throughout. Frey and Scheider (2021) characterize *affective* voice as expression and participation that aims to move, mobilize, or motivate others for a particular goal. In contrast, *effective* voice is defined as a form of participation that results in a binding effect. They write: "If affective voice is the debate, effective voice is the vote; if affective voice expresses and persuades, effective voice determines" (Frey & Schneider, 2021, p.2). Consequently, although users have ample opportunities to express their concerns and voice feedback on the technical design of digital platforms (through the use of dedicated Slack channels, the option to open issues on Github or voice feedback on calls in the case of Open Collective), they lack means of *effective participation* in the design and development process and thus the ability to exercise control over how digital platforms function. Frey and Schneider (2021) set out nine potential mechanisms for increasing effective voice in online communities organized as mechanisms for authority and accountability, mechanisms for collective action, and mechanisms for community change. Their mechanisms are useful in that they take into account the specificities of globally dispersed online communities. However, their mechanisms are proposed in a very broad, high-level manner and explicitly posited as an invitation for further research and experimentation.

While not cited explicitly in their article, the participatory design literature has long explored mechanisms for effective user voice in technology design and development processes, albeit without a focus on digital platforms. Participatory design is an approach and set of methodologies that aim to include users and other affected stakeholder groups in the design and development process, stemming from Scandinavia in the 1970s (Bødker et al., 2022). The goal of participatory design has traditionally been twofold: firstly, to build technologies that better cater to the needs of their users (Ehn, 1988, 1993). Therefore, participatory design actively involves users in the design process, providing them with real decision-making power and influence over how a product should be designed and developed. This practice is more than a means to an end, but constitutes participatory design's second goal: to grant those affected by a technology democratic decision-making power over the design of the product itself (Greenbaum & Kyng, 2020). As such,

the goal of participatory design goes beyond granting users *affective* voice but empowers them to effectively determine how technologies are designed. In this sense, the goals of participatory design are also highly aligned with those of the user ownership movement: users and other affected stakeholders gain effective voice and participation rights, enabling them to become key stewards of the technology over time (e.g., Abbing et al., 2023; Pazaitis et al., 2017; Scholz, 2016).

The participatory design literature has yielded a host of insights regarding methods for users to participate in the design and development of technical artifacts when physically co-located (for example, see urban planning (Moore & Elliott, 2016), smart city development (Lodato & DiSalvo, 2018), and health care (Bowen et al., 2013)). However, dedicated work on how virtual user communities can participate in the technology design process only began during the COVID-19 pandemic (Hall et al., 2021) and has been limited to relatively small interventions in homogenous groups (e.g., children in Ireland, see Slingerland et al., 2022). Thus, there are no clear best practices to simply deduce from the participatory design literature in general for the question of how virtual communities gain effective voice in the technology design process of internationally active digital platforms.

3.1.2.2 Effective voice in digital platform design and development

The closest case, when it comes to understanding participatory design to develop transnational digital platforms, is the case of Commonfare, which has been extensively studied and documented (Bassetti et al., 2018, 2019; Lyle et al., 2018). Commonfare is an EU-funded platform aiming to redefine how people organize welfare amongst themselves, instead of solely procuring it from the state. Commonfare was iteratively built over the course of two years through a series of on-site workshops and interactive mock-up sessions, which informed the release of five platform software releases, which were each subjected to user evaluation that would determine the contents of the next release. This process simultaneously took place across Italy, Croatia, and the Netherlands, which posed the three pilots for Commonfare. The design and development process of Commonfare was stewarded by four civil society organizations and four university research centers, who were all party to the EU-funded project[12]. Overall, the project reports having engaged over 1000 people in total, including marginalized communities who would most be affected by having access to a platform such as Commonfare.

One interesting insight that emerged from Commonfare was the importance of existing infrastructures and ‘infrastructuring’ as well as the institutional settings and ‘institutioning’ in shaping user participation (Lyle et al., 2018; Teli et al., 2018, 2020). In participatory design, infrastructuring refers to the ongoing entanglement and re-entanglement of information infrastructures, which are bits of data carrying information, assembled into semantic structures that people interact with (Karasti, 2014a; Neumann & Star, 1996). Information infrastructures constrain and enable people in participatory design projects (even those who did not create them) to do

[12] https://commonfare.net/en/pages/about#who-n which we-are

things, and by using them, people simultaneously change the information infrastructure itself. Consequently, infrastructuring is best understood as a type of organized sociomaterial practice (Orlikowski & Scott, 2008) in the context of information infrastructures and digital technologies. Infrastructuring draws attention to the way in which digital technology enables and constrains agency, and in turn how people shape technologies based on their specific goals and through ongoing practices. Analogously, institutioning refers to the way in which political actors frame participatory design projects both through policy and by actively shaping the normative understanding of participants concerning the types of design that are permissible and desirable (Huybrechts et al., 2017; Teli et al., 2018). On the flip side, institutioning also describes the process by which institutions themselves are shaped and reconfigured through participatory design, an important insight in the case of Commonfare (Teli et al., 2020). Consequently, institutioning refers to a specific process of structuration (Giddens, 1986, 1991). Overall, the experience of Commonfare draws attention to how participatory design in digital platform development (especially a platform for social welfare) engaged, shaped, and was shaped by the infrastructural and institutional environment it operated in. As such, the way that effective user voice operated in the case of Commonfare was significantly influenced by external practices, structures, and entities, and less determined by the precise workshop format deployed by the Commonfare researchers.

While Commonfare is great at demonstrating that large-scale user participation in digital platform development is possible, it is limited in several ways. Firstly, Commonfare was initiated and developed from the ground up as a participatory design project. Yet, as argued in the introduction, many of the digital platforms that could benefit from effective user participation already exist and thus do not have the luxury of starting with pre-determined participatory design structures. Secondly, participation in Commonfare was orchestrated via on-site workshops, thus not taking into account the specificities of giving effective voice to virtual user communities who do not necessarily speak the same language or live in the same time zone. Third, in the case of Commonfare, users did not participate in organizing the design workshops or technically developing the platform itself. As such, user participation was pre-determined to take place on a relatively high level. Finally, Commonfare was publicly funded with the goal of being developed in a participatory manner and yielding more community provision of social welfare. As such, the project faced different resource constraints and considerations from those we can expect in privately funded platform ecosystems.

Taking these preliminary insights from participatory design into account, while also acknowledging that effective user voice, exercised virtually during the digital platform design and development process, requires different approaches, I now introduce the Actual Role Analysis in Design (ARAD) framework, which helps to distinguish different ways in which effective user voice in digital platform development may be enacted.

3.1.2.3. The ARAD framework: distinguishing roles for effective user participation in the technology design process

The ARAD framework was first developed by Barcellini, Détienne, and Burkhardt (2014) in the context of open-source software communities, and later adapted to be applied to the participatory design context more generally (Barcellini et al., 2015). The framework has previously been integrated in various ways, for example, to better understand the nature of non-technical contributions to open-source software (Cánovas Izquierdo & Cabot, 2021; Christian & Vu, 2021) or to analyze decision-making dynamics in open-source communities (Eseryel et al., 2020). ARAD is particularly suitable for our inquiry because it explicitly accounts for users participating on a relatively high level with ideas, feature suggestions, or mockups, such as in the case of Commonfare, while also accommodating more low-level code contributions, as are typically discussed when it comes to open-source software development. ARAD also takes into account the meta role of community management itself. As such, it draws attention to the various capacities, both technical and non-technical, in which users can exercise effective voice over technologies without imposing a preconceived notion of where users should effectively participate. Specifically, the ARAD framework distinguishes between three types of roles that stakeholders can adopt with regard to the technology design and development process.

Firstly, stakeholders can take on **task oriented roles**. Here, stakeholders participate in specific tasks along the development and design process, such as (1) **conceptual tasks** contributing to the (definition of) concepts advanced or invoked by the object as well as its strategic objectives; or (2) **functional tasks** associated with the functional level of the object, i.e. how it behaves within the given social/ organizational context and how it relates to the concepts and objectives being discussed (Barcellini et al., 2015). Secondly, stakeholders can also be involved in a **production oriented role,** which describes how, when, and with which frequency they implement tangible changes on the object being designed. In open-source software design, the production role can, for example, be characterized by examining how many commits made by a specific individual or group are merged into the software's core implementation (Barcellini et al., 2014, 2015). Third, stakeholders can be involved in the design process in a **group oriented role** by taking on responsibility for coordinating or stewarding the group itself, rather than by pursuing a functional, object-oriented task (Barcellini et al., 2014, 2015). To understand an individual's or stakeholders' group oriented role, it is important to observe their involvement in practical aspects of group coordination, such as setting up joint meetings, advancing team-building activities, facilitating relationship building between different members or stakeholders, etc. Table 3 provides an overview, summary, and example of each ARAD role discussed throughout this chapter.

Role	Task oriented role		Production oriented role	Group oriented role
	Conceptual	Functional		
Description	Tasks contributing to the (definition of) concepts advanced or invoked by the object as well as its strategic objectives	Tasks associated with the functional level of the object, i.e. how it behaves within the given social/ organizational context and how it relates to the concepts and objectives being discussed	How, when and with which frequency they implement tangible changes on the object being designed	Taking on responsibility for coordinating or stewarding the group
Example of what user participation in this role could look like	Users deliberate and determine the high level strategic goals of a platform	Users suggest, prioritize and determine which features are implemented on a digital platform	Users develop software code for a specific feature which is merged into a platform's code base	Users organize and host a meeting to deliberate and determine aspects of the platform.

Table 3: summary of ARAD roles (own representation, cf. Barcellini et al., 2015)

3.1.3 The case of Open Collective

3.1.3.1 Introducing Open Collective

Open Collective is a technology platform and network of organizations that enables 15,000+ communities of open source maintainers, mutual aid activists, and grassroots organizers to raise, manage, and distribute funds transparently (Hewitt et al., 2021; Woolard et al., 2021; Woolard & Mancini, 2022). Within the Open Collective ecosystem, collectives that do not have their own legal entity and thus cannot open a dedicated bank account rely on a network of fiscal hosts to manage their funds. The Open Collective platform enables transparency both for the fiscal hosts and their collectives in terms of how money is raised, managed, and spent. Together, fiscal hosts and collectives have accessed and managed over $100 million on the Open Collective platform. As such, the Open Collective ecosystem considers itself a 'constellation': independent stars that stand in close relationship to each other. Four key stakeholder groups constitute the Open Collective constellation: Open Collective Inc., First Party Fiscal Hosts, other Fiscal Hosts, and Collectives (figure 6).

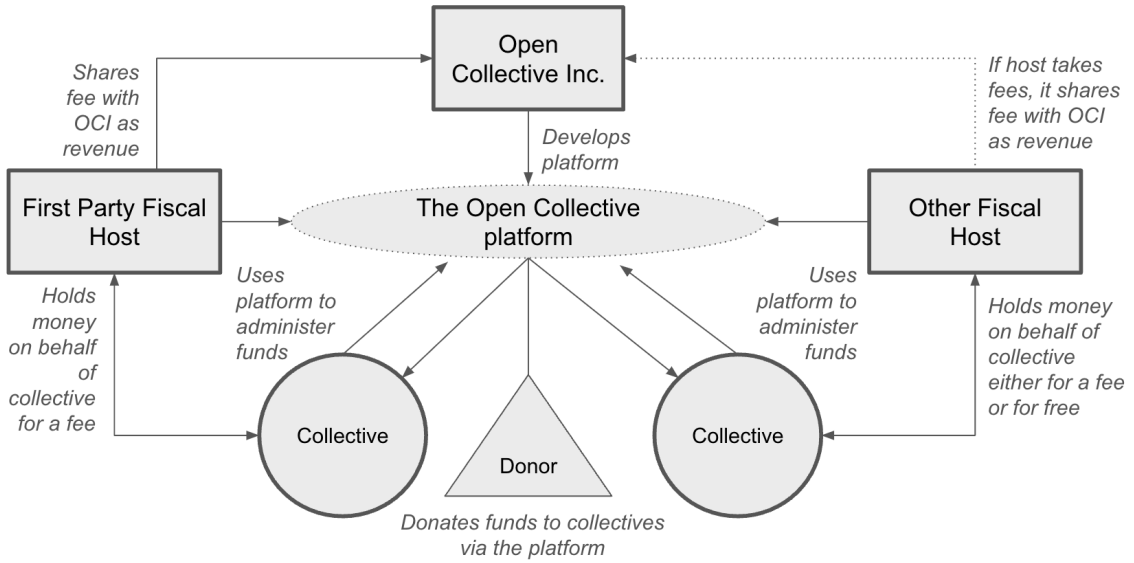


Figure 6: Structure of the Open Collective ecosystem

Open Collective Inc:
Open Collective Inc. is a US-based C-corp, founded in 2015 and developing the Open Collective Platform. OCI was the first entity in the Open Collective Constellation and historically sees itself as a steward of the ecosystem's mission. To this end, OCI has built the Open Collective brand, incubated a number of fiscal hosts (called first-party fiscal hosts and explained further below), and continues to build out the open-source platform. OCI currently lists 18 employees on its website who work remotely from around the world and are broadly organized into three different teams: design, engineering, and communications and support. Overall, the atmosphere within OCI is that of a friendly, progressive (e.g., unlimited sick leave, flexible working times), agile software company.

Fiscal Hosts:
A fiscal host is a legal entity that holds and manages funds on behalf of another group of people who are not themselves legally incorporated and thus do not have access to bank accounts beyond those managed in the name of private individuals. In the context of Open Collective, most collectives using the platform rely on a fiscal host to officially hold and manage their funds. OCI has incubated a number of fiscal hosts who use the Open Collective platform. The fiscal hosts incubated by OCI are referred to as **First Party Fiscal Hosts (FPFH).** Most notably among them are **Open Source Collective (OSC)**, **Open Collective Europe (OCE),** and **Open Collective Foundation (OCF),** which shut down in early 2024 throughout the course of this research**.** Other, independent fiscal hosts (FH) have also begun relying on the Open Collective platform and have become significant stakeholders in terms of the number of collectives hosted and money managed on the platform.

Both FPHs and other FHs usually sustain themselves by taking a fee from the money raised by their collectives, the size of which varies depending on the specific FH. Part of that fee is passed on to OCI; the exact amount depends on whether the FH was incubated by OCI or externally. FHs who do not take any fee from their collectives do not have to contribute financially to use the Open Collective platform.

Collectives:
Within Open Collective, 'collectives' are simply groups of people with or without legal incorporation that use the Open Collective platform to raise and manage funds. Collectives come in many different shapes and sizes. While many pursue activist causes such as mitigating climate change, race or gender equality projects, or supporting vulnerable communities, many others are dedicated to arts and culture, building open-source software, running education initiatives, or local meetups. Most collectives are not legally incorporated. They rely on FHs to raise and manage funds through the Open Collective platform. Depending on which FH is hosted by, collectives contribute some of the money they raise towards Open Collective Inc. and the platform development process. Some collectives have their own legal incorporation. Incorporated collectives simply use the Open Collective platform to varying degrees for their financial operations. Independent organizations are independent from FHs and other organizations in the Open Collective constellation. They do not need to contribute financially to OCI in order to use the platform. Collectives are the groups that benefit from relying on a fiscal host to be able to raise and manage funds as well, and use the Open Collective platform to do so transparently.

3.1.3.2 An overview of the Open Collective platform design and development process

I conceptualize Open Collective as an organization and ecosystem aiming to establish participatory design practices that grant users effective voice. Updates on the Open Collective platform are implemented in six-week sprints, which are planned by the OCI product and engineering team, whose progress is updated on Open Collective's GitHub repository[13], which is publicly available. The internal design process is also transparently outlined in Open Collective's documentation[14]. At OCI, each week starts with the team coming together in a Monday standup to plan that week's activities and closes with a "Demo" call on Fridays where team members showcase their work updates to the wider team for feedback. Throughout the design and development process, and depending on the specific task, different OCI team members are involved, as mapped out in Figure 7.

[13] Open Collective GitHub: https://github.com/opencollective
[14] Open Collective Documentation: https://docs.opencollective.com/help/contributing/design/understanding-the-design-workflow

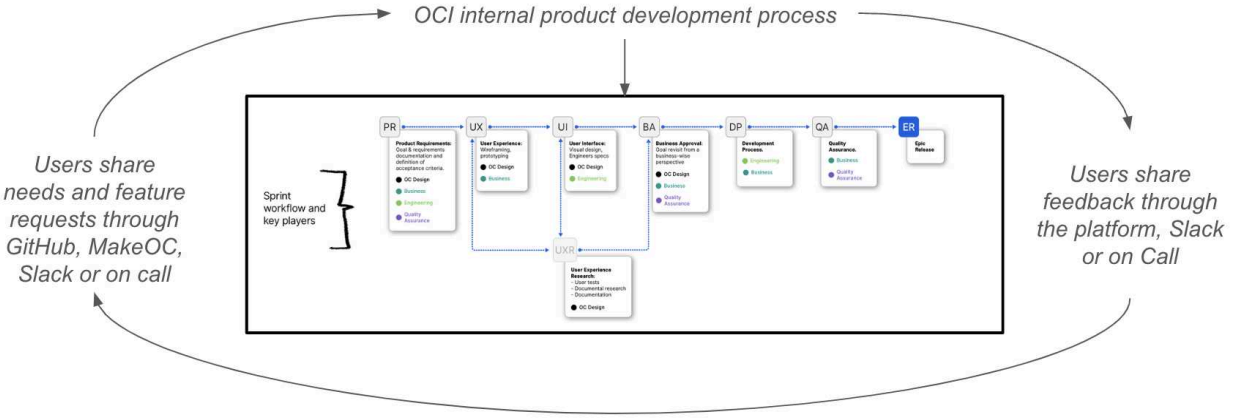


Figure 7: Illustration of the ideal platform development process annotated from the Open Collective documentation[15]

,

The OCI team gathers requirements by looking at issues committed on GitHub, requests made through its Slack channels, and from tickets opened through the help desk. Team members from FPFHs are also invited to join weekly sprint meetings to give feedback and voice their needs directly, although not all FPFHs take advantage of this opportunity. Furthermore, OCI used to maintain an ecosystem-wide survey to gather input or allow community members to rank priorities. However, when I joined OCI, this survey process had been discontinued after people complained that it privileged the loudest voices rather than those raising the most important issues. After a similar concern was raised with regard to the practice of opening issues on Open Collective's GitHub (where more than 1.400 issues remain open and 5.700 closed at the time of writing), the OCI team began developing its own interface, called MakeOC, for capturing user requests. MakeOC aims to improve on the GitHub interface by allowing people to indicate which issues submitted by others they found particularly important, by connecting individual issues with high-level goals, and creating more transparency around the priority the OCI product team assigned to them, and traceability as to how the issue would evolve in the future workflow.

After each cycle, the OCI team summarizes the main updates it has implemented and shares them through the 'Connect' page on the Open Collective platform itself[16]. Important updates to the platform are further shared in relevant Slack channels, in blog posts circulated via a newsletter, and directly with fiscal hosts on monthly fiscal host calls. During these calls, a member of the OCI team, sometimes with support from an OCI engineer, relates new updates, answers questions, and gathers general feedback. In the following section, I outline the methodology I applied in order to

[15] Open Collective documentation: https://docs.opencollective.com/help/contributing/design/understanding-the-design-workflow
[16] Updates shared on Open Collective platform: https://opencollective.com/opencollective/updates

understand how stakeholders envisioned this existing process to change in order to enable more effective user participation in the Open Collective platform design and development process.

3.1.4 Methodology

I answer my research question by analyzing data collected throughout an ethnographic case study (Pink et al., 2015) of Open Collective, which was conducted from November 2023 to September 2024. The research was carried out in the context of a fellowship at the Weizenbaum Institute in Berlin. The head of my research group at the Weizenbaum Institute, André Ullrich, became a close collaborator on this research project, with whom I frequently discussed my thoughts and insights from the project and who regularly provided feedback during the writing of this chapter. He was also previously acquainted with a member of the Open Collective Inc. executive team, who introduced me to the community and greatly facilitated my navigating the fieldsite and gathering consent. The research was formally approved under the ethics of the ERC BlockchainGov, as part of which I was funded to conduct this research. I virtually entered Open Collective as a participant observer in November 2023, joining OCI's Slack instance, including various public and internal channels as well as weekly calls related to the product design and ecosystem engagement. Through my observations, I was able to build an in-depth understanding of the current Open Collective platform development process described above. Field notes of all interactions were taken in a private document and discussed within the research team on a weekly basis. Throughout my engagement, I also began collecting internal and publicly facing documentation about the product development process, Open Collective's strategic goals, as well as documents relating to its E2C, such as blog posts, talks, and podcasts.

Furthermore, to probe more directly into how Open Collective participants envisioned changes in the design and development process, I conducted eight semi-structured interviews with two representatives of the four main stakeholder groups identified across the Open Collective ecosystem and described above. My interview guide (see annex 1) was structured to examine each ARAD role separately. Each interview lasted between 55 and 75 minutes, took place as an online video call, which was recorded and anonymized before being transcribed using Trint, an online transcription tool. Each interview was preceded by providing a project information sheet with background on the research and the interview questions, and gathering written consent.

For the analysis, each interview was anonymized, transcribed, and inductively coded in three rounds (see figure 8). First, the transcripts were checked for any statements describing either enablers, i.e., vehicles for effective user participation, or challenges for effective user participation. From this, a total of 264 coded statements emerged across all four ARAD roles. In the second round, statements were clustered and coded thematically. From this exercise, 27 distinct topics emerged. Third, topic codes were clustered into six high-level themes, which I interpret as being important general areas that can be configured to either facilitate or impede user participation in Open Collective. For each

role, I probed my findings to understand: (1) are interviewees optimistic about user participation increasing in this role, and to what extent? (2) What are the main challenges associated with increasing user participation in this role? And (3), what measures do interviewees suggest as enablers for more (effective) user participation in this role? From the coding, 'limits to participatory governance' emerged as a specific subcategory of challenges across all roles. Limitations are a specific type of challenge to participation associated with circumstantial areas such as financial resources, technical skills, or time constraints. Consequently, limitations cannot be overcome by reconfiguring the design and development process itself. Put simply, limits constrain user participation, regardless of how well designed the process of participation is. I generated main insights by analyzing themes that emerged within and across the ARAD roles in light of the research question. I summarized these main insights and presented them back to the OCI team for validation in September 2024. Finally, I triangulated the insights gathered from interviews by comparing and contrasting them with data gathered through observation and reviewing the documents described above. Overall, this process surfaced three main clusters of findings: (1) institutioning for effective user participation, (2) infrastructuring for effective user participation, and (2) boundaries of effective user participation. I describe and discuss each in the next section.

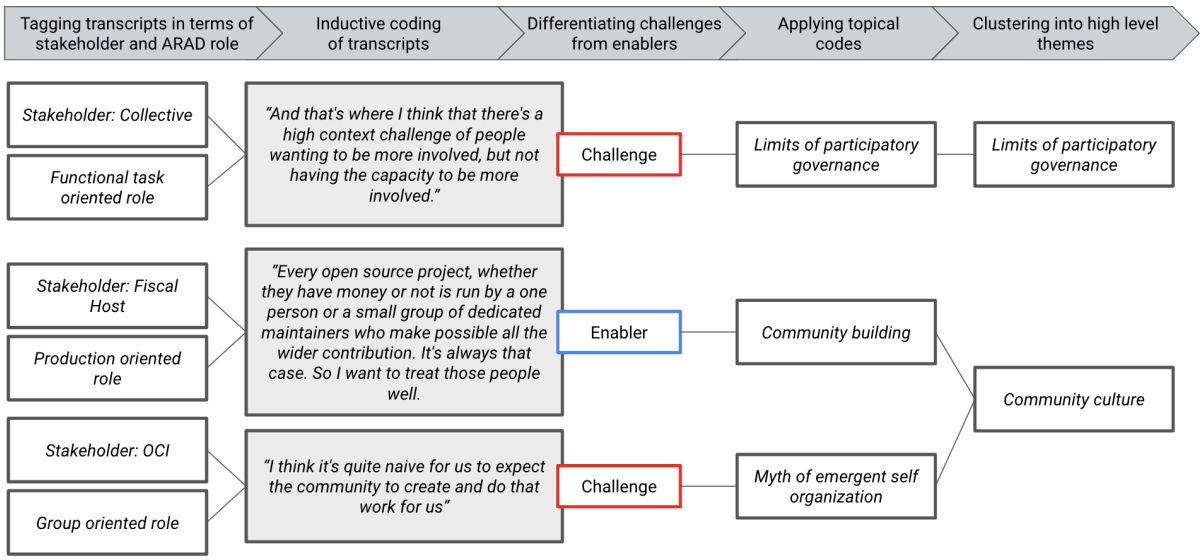


Figure 8: Illustration of the coding process for three examples

3.1.5 Findings

Through my analysis, I found that enabling effective user participation in the platform design and development process as part of E2C in the case of OC is not simply a matter of changing the owners and decision makers in OCI. Instead, my findings pointed towards the importance of repositioning OCI and other stakeholders in the wider ecosystem of organizations, and creating various structures and processes that enable effective user participation in different roles. I conceptualize the changing role of OCI in the ecosystem as a form of institutioning for effective user participation. In turn, the

various structures and processes that emerged from my analysis are conceptualized as a form of infrastructuring for effective user participation in roles that were previously occupied by OCI. Finally, my analysis also foregrounded a number of external constraints that limit the overall scope of user participation in the platform design and development. A summary of my findings is presented in Table 4. I discuss each finding in turn below.

First, however, it is important to briefly acknowledge two core limitations of my insights upfront so as not to give the reader the impression that I am claiming universal truths. Firstly, my method clearly influenced my findings. By only interviewing two representatives from each stakeholder group, I was able to collect relatively rich and detailed data. However, the representative's responses remain individual accounts that are not representative of any of the stakeholder groups. Acknowledging this, my discussion focuses more on high-level themes that emerged across all interviews and data, instead of specific differences between stakeholders. Furthermore, as a single case study, any insights derived from Open Collective primarily hold in the case of Open Collective itself. Nonetheless, the findings provide a valuable starting point for others to explore and construct effective user voice in the design and development process of existing digital platforms more generally. Furthermore, by contrasting my insights with core learnings derived from the Commonfare case, I hope to consolidate and extend the existing body of knowledge in the participatory design literature.

	Conceptual task oriented role	**Functional task oriented role**	**Production oriented role**	**Group oriented role**
Institutioning for effective user participation	High user participation 'Core' users should drive strategic decision making	High user participation All users should be able to input to functional tasks. 'Core' users and product team should decide which platform functionality to prioritize	Low user participation Production should primarily be driven by a paid engineering and product team (in OCI)	Low user participation Group oriented role should primarily be driven by dedicated paid staff (at OCI)
Infrastructuring for effective user participation	Having a minimal strategy in place A strategic stance on who core customers and key stakeholders are Process to render decision makers accountable to the wider	Core stakeholders should be involved in the prioritization of tasks for the next development sprint Create transparency around how prioritization was made	Local instances of the Open Collective platform	Create transparency between parts of the ecosystem Fractal community building

	ecosystem Hold the ecosystem accountable for following its strategic direction Leveraging the fractal structure of the Open Collective ecosystem			
Boundaries of effective user participation	Users do not have the time, bandwidth, or interest to participate Context and general expertise are required to participate Limitations intensify as the ecosystem and platform grow	Users need high context and technical skills to meaningfully participate Acquiring contextual knowledge and technical skills requires time and resources Internal capacity of OCI as a bottleneck	Time and resource constraints within OCI Users require familiarity with the project and relevant technical skills	Time and resource constraints on the side of the collectives

Table 4: Overview of findings

3.1.5.1 Institutioning for effective user voice

My findings indicate that in the context of Open Collective, the appetite for user participation was different for different roles. While there was a desire for users to effectively participate in the design and development process in a conceptual and functional task oriented capacity, interviewees were happy to keep group and production oriented roles more centralized in OCI. Overall, my findings suggest that in the case of Open Collective, more effective user participation in the platform design and development process requires a reconfiguration of the way in which organizations in the Open Collective ecosystem relate to each other and the main roles each takes on. This reconfiguration includes maintaining OCI's centrality as a facilitator in the production and group oriented role.

Concerning the conceptual and functional task oriented roles, in which stakeholders determine strategic goals of the platform and decide on its features, all interviewees agreed that more effective user participation could and should be encouraged. However, in both cases, interviewees contended that different decision-making rights should be given to different stakeholders depending on whether or not they were 'core' or 'periphery' members. Yet, interviewees diverged as to how the position of a 'core member' would be distinguished from a 'periphery member' or a 'non-member'. For example, while some argued that only organizations that pay for the platform to be sustained or those who 'feel the pain' of operating a collective should be eligible to participate in strategic

decisions, others proposed that any organization with a high enough level of activity on the platform should be included in such decision-making processes. Consequently, enabling effective user participation in these two roles requires setting clear boundaries within the ecosystem concerning who is ‘core’ and who is not. I discuss this issue as a form of infrastructuring alongside other proposals that emerged throughout my research to enable effective user participation in the next section.

Concerning the production and group oriented roles, participants were hesitant to advocate for more user participation. Instead, they argued to keep these roles more centralized in OCI to ensure the sustainability of the platform and keep the organization responsible for consistently caring for community participation. The production role is associated with performing changes on the product itself, by, for example, fixing bugs, encoding new features, re-designing existing ones, or adding third-party integrations, where each action involves a myriad of decisions concerning how something is precisely implemented. The Open Collective platform’s code is open source (MIT license) and hosted in public repositories on GitHub, meaning that anyone can submit updates or potentially even copy the codebase and run their own instance of it. Yet, the bulk of development activity for the platform is conducted by the OCI product and engineering team. All interviewees converged that they wanted the OCI team to continue leading development throughout and after the E2C: “it's absolutely core to consistency, to long-term planning to actually have people who are paid to do development work". Furthermore, one participant also pointed out that the production role in Open Collective would always necessarily require some central entity to manage third party integrations that are vital to the platform’s functioning: ”you can't just fork Open Collective and it would work the same as it does now, because we have all of these agreements with Stripe and all of these other integrations that wouldn't be present if you just forked Open Collective”. In turn, the group oriented role is concerned with creating, facilitating, and maintaining spaces for the ecosystem to convene in order to collaboratively design and develop the Open Collective platform. Currently, such spaces include the Open Collective Slack (and Discord) chat servers, various video calls (e.g., the regional fiscal host calls), the annual retreat, Open Collective’s GitHub, and various formats organized by the fiscal hosts for their respective communities of collectives. Thus, both OCI and fiscal hosts currently take on the bulk of the group oriented role. The group oriented role is significant with regard to the platform design and development process, as the stakeholder occupying this role can decide whom to invite to which spaces, how to design these spaces, set agendas, and potentially hold power as a moderator. Amongst the interviewees, there was general support for OCI to continue occupying the group oriented role for ecosystem-wide activities and for fiscal hosts to do so for their own collectives. Interviewees argued that keeping the group oriented role as a funded position within OCI should be regarded as a sign of care for user participation, rather than a point of control: “you need somebody whose job it is to build a platform, call the meeting, schedule the calls, build the relationship, container making, care work, facilitation. All of this stuff needs to be valued, or else it's not going to work. Otherwise, you should just not bother and just do it top-down.”

3.1.5.2 Infrastructuring for effective user voice

Throughout my analysis, I found that participants deemed certain upfront decisions as important to design technical tools and distribute formal decision-making rights in a way that would enable effective user participation, especially in conceptual and functional task oriented roles. Furthermore, participants also drew attention to the distinct technological and ecosystem configurations that already exist in Open Collective, and which could also be leveraged to create transparency and accountability, as well as enable alternative modes of effective user participation. Overall, these insights relate to the concept of infrastructuring for effective user participation, where infrastructuring denotes a specific socio-material practice based on information technologies. Infrastructuring describes the "relationship between humans' organized ways of 'doing' things and the technologies that enable and support these methods" (Karasti, 2014, p.2). Specifically, stakeholders spoke about strategic alignment, setting ecosystem boundaries, and clarifying communication channels as key decisions that should inform the design of the overall governance structure for effective community participation in the design and development process. Furthermore, stakeholders also highlighted the fractal structure of the ecosystem and transparency facilitated by tools used across the Open Collective ecosystem as existing configurations that could facilitate accountability and enable alternative modes of effective community participation. Below, I discuss each insight in turn.

Decisions that shape infrastructure for effective community participation

Starting with a clear strategy that defines strategic goals and who the core members are in a measurable way, was perceived as a key decision around which the ecosystem needed to align in order to enable more user participation in conceptual and functional task oriented roles. This insight emerged from various experiences that interviewees shared about how difficult it was to participate in a constructive manner without having some baseline agreement before: "It's really hard to start process design about governance before we are clear on what you are actually doing. These questions of, well, who's our customer? What's our focus going to be? What are our priorities like? These are just the key strategy questions". However, this issue poses a chicken and egg type of problem: while user participation in a conceptual task oriented role is intended to determine strategic objectives in a bottom-up manner, it seems that there first needs to be some strategic focus established top-down. Put differently, without initial strategic alignment, designing effective user participation becomes difficult. For example, in the case of Open Collective, the lack of strategic alignment regarding who the core customer or user is made it difficult to determine how decision-making rights should be distributed and users involved effectively in the conceptual and functional task oriented role in the first place. As such, strategic alignment was not simply seen as a tacit agreement between participants or a brief announcement by OCI, but as a decision that ultimately manifests in the various technological assemblages which the ecosystem relies on in its coordination.

While determining the initial strategic purpose emerged as one key decision required to infrastructure for effective community participation, setting ecosystem boundaries emerged as another. I found that striking a balance between 'openness' and 'closedness' was particularly difficult in the context of the functional task oriented role, where users suggest and prioritize new features but also raise bugs and security issues - a common challenge also identified in other open-source projects (De Noni et al., 2011; O'Mahony, 2007). On the one hand, a high degree of openness is expected to produce more high-quality software (a popular quote amongst the open-source community is: "Given enough eyeballs, all bugs are shallow" also referred to as Linus' Law). On the other hand, more participation also produces more 'noise', thus amplifying the challenge (and cost) of effectively filtering signal from noise through user participation. Indeed, effectively filtering the signal from the noise emerged as a crucial process to sustain the platform. As one interviewee explained: "I think there are fatal risks in that mix, like landmines, which Open Collective did end up stepping on by not having a good process for that kind of signal-to-noise ratio and picking out the existential needs". In the case of Open Collective, the issue of defining prioritization processes was further complicated by the fact that the ecosystem simultaneously maintains many different channels for user feedback and participation in functional tasks. At the time of research, these channels included opening issues on the Open Collective GitHub, adding them to the new MakeOC platform, submitting feedback or requests on Open Collective's Slack #support channel, opening a ticket through the Open Collective platform itself, joining a Fiscal Host call organized by OCI, or at times, joining community calls organized by various fiscal hosts. The challenge here is that there are too many channels for user participation, not too few. As one interviewee explained: "I don't really know where to put the user feedback anymore. It's kind of like I could put it in GitHub. It might get looked at, but it probably will disappear. I could put it in MakeOC. It's probably more likely to be looked at, but I don't really know what's happening in MakeOC."

Overall, these insights indicate the importance of answering three key questions before opening up the conceptual and functional task oriented role: (1) what is the key purpose of the project, (2) who are 'core members' in this ecosystem, and (3) how should features and issues be prioritized. The answer to these questions determines how infrastructures should be configured and decision-making rights distributed to enable effective user participation.

Existing infrastructure that shapes processes for effective user participation

While the above insights foreground how upfront decisions help to design infrastructures for effective user participation, my analysis also revealed several existing infrastructures in the Open Collective ecosystem that, in turn, shape processes for effective user participation. Firstly, stakeholders highlighted the need to create various accountability mechanisms across the ecosystem, both to make decision makers (now OCI, later 'core members') accountable to the ecosystem but also to hold the ecosystem accountable to its own strategic decisions. For this transparency of *what* decisions were made and *how* they were made emerged as key mechanisms to

create more accountability, regardless of *who* makes decisions. While no specific recommendation on how this transparency should be established emerged from my research, interviewees frequently pointed towards the transparency already enabled by the existing tools leveraged throughout the Open Collective ecosystem. For example, various interviewees and discussions in team calls highlighted that MakeOC was already designed to create transparent objectives, link individual work packages back to objectives, outline decision-making processes and modes of participation, thus allowing for many accountability mechanisms to be established through it. However, at the time of research, MakeOC was not used in this capacity as it competed with other ostensibly transparent systems such as GitHub. Here, combining two transparent systems created less transparency, not more, as participants were generally confused as to where to leave their input and how it was taken into account in decision-making throughout the platform design and development process. While I have already highlighted the tension of competing communications channels above, the point here is to foreground the potential that participants saw in leveraging the transparency provided by systems already in use to establish the desired accountability mechanisms throughout the ecosystem. Harnessing this latent potential required adopting tools like MakeOC more widely and also clarifying its relation with other platforms and tools throughout the ecosystem.

Secondly, while most interviewees discussed how to enable more and better participation for core members across the whole ecosystem, two interviewees pointed towards leveraging the fractal, open-source structure of the Open Collective ecosystem as a means to enable more broad-based participation: “Open Collective has always naturally lent itself to a fractal structure, which I think creates really interesting opportunities for governance. You know, the platform is made up of fiscal hosts, made up of collectives, made up of individuals”. They argued that if each member were enabled to participate in a more local strategic decision-making process, this could fuel an emergent bottom-up way of setting the strategy for the overall platform and ecosystem. Similarly, some suggested that given the open-source licensing of the Open Collective platform, local groups could also fork the platform and run their own instances, as well as maintain their own local integrations with payment providers, etc. While these proposals were more speculative and left a lot of questions unanswered (who would maintain local integrations? who would steward the production oriented role in local instances? how large would each local instance be?), these suggestions foreground the potential that existing infrastructures have in shaping effective community participation in the digital platform design and development process.

3.1.5.3 Boundaries of effective user voice

Throughout my analysis, several challenges to increasing effective user participation in the design and development process surfaced, many of which participants aimed to address by clarifying the roles of different organizations in the ecosystems, establishing better processes and tools for effective participation, as described above. However, limitations emerged as a specific type of challenge to user participation that lies outside of the control of OCI and cannot be overcome

through better tools, processes, or governance design. Instead, limitations constrain effective user participation regardless of how transparent or well-designed the development process is. Specifically, the need for contextual knowledge, technical skills, as well as limited time and resources, constrain the scope of effective user participation in the technology design and development process.

Time and resource constraints, both on the side of the community (do they have the time and means to participate?) and on the side of OCI (do they have the time and resources to create and maintain structures for effective user participation?), emerged as a key limitation to user participation. Various interviewees contended that some users may simply not be interested in participating in the platform design and development process. For these users, the platform is a service that they rely on to make their work easier, not a place to spend excess time and resources. Furthermore, even when stakeholders are interested in participating, contextual knowledge, such as understanding how individual stakeholder needs relate to ecosystem-wide goals or an appreciation of the intricacies of the platform's codebase, is nonetheless required for effective user participation in Open Collective. Yet, many users may not have the time and resources to acquire this contextual knowledge, as one interviewee explained: "That's where I think there's a high context challenge of people wanting to be more involved, but not having the capacity to be more involved". Consequently, while contextual knowledge is always costly to come by, this constraint intensifies as the platform becomes more complex and the ecosystem grows, which both make 'keeping up with everything going on' more difficult. Again, to overcome this, some suggested leveraging Open Collective's fractal structures (each fiscal host representing numerous collectives) to create more local, i.e., industry or geography specific, spaces for user participation, that can be aggregated to inform the high-level platform design and development process, as I have discussed above. Others suggested setting up education initiatives (perhaps with a little stipend attached) as a way for users to acquire more knowledge about the platform, network with others, and familiarize themselves with the social norms and processes in the ecosystem. An education initiative would serve the dual goal of familiarizing participants with the wider Open Collective ecosystem, its culture and goals, as well as qualifying participants to become informed decision makers in other areas. Nevertheless, even with such initiatives in place, user participation, both affectively and effectively, is likely to continue being limited by time, resource, and contextual knowledge constraints. Finally, in some roles, users require specific technical skills to participate effectively. For example, concerning the prioritization of user inputs in the functional task oriented role, interviewees explained that a certain level of technical skill was required to make an informed decision on which requests to prioritize to not miss 'landmines', while keeping in mind the work that each new update would require in terms of design and engineering. Technical skills are, of course, also essential to participate in a production oriented role.

3.1.6 Discussion and concluding remarks

A core goal of E2C is to ensure that the technical design of digital platforms ultimately serves the goals and needs of users and society above those of the platform operator. A key challenge during E2C is to design the institutions, infrastructures, and processes that enable effective user participation. In this chapter, I have presented an in-depth case study of Open Collective to understand how different Open Collective stakeholders envision effective user participation across four roles in the platform design and development process. The case study adds to the existing body of participatory design research and extends it by focusing on Open Collective as an existing platform that emphasizes virtual participation in an international community, which is not orchestrated by a researcher or designer.

My research surfaced three key insights. Firstly, in the case of Open Collective, more effective community participation in the platform design and development foregrounds the need to reconfigure the position and role of OCI in the wider Open Collective ecosystem, more than changing OCI's ownership and governance structure. This insight highlights the role of the structure of the institutional environment in enabling effective user participation in digital platform design and development, a key goal of E2C. One way of interpreting this insight is that maintaining OCI as an institution in the ecosystem and OCI leadership in some roles is necessary to enable effective user participation in others. Specifically for the production oriented role, this insight aligns with various findings from previous research into leadership in open-source software development (Giuri et al., 2008; Long, 2006; Torres et al., 2011). Here, core groups, such as the OCI developers, are important enablers of community participation by promoting their project to potential contributors (Long, 2006) and acting as brokers, i.e., mediating between contributors and between contributors and the project (Torres et al., 2011). Interviewees' desire to keep the platform's development concentrated within OCI can also be understood as a way of minimizing the risk of abandonment, a major issue in open-source software communities (Avelino et al., 2019; Kaur & Chahal, 2022), which can be overcome by employing a full-time workforce to maintain the Open Collective platform. Also, keeping OCI in the lead of the group oriented role further enables user participation by ensuring that there is clear responsibility for maintaining spaces (video calls, GitHub, the Slack instance, etc.) for user participation. This clear delineation of responsibility can be interpreted as a way for the community to avoid fragmentation of its communication channels. Future research may try to substantiate the insight that maintaining centralized control over the production and group oriented role is important to sustain effective community participation in platform design and development after E2C, or inquire more generally into the changed role of the operating organization of a platform ecosystem, before and after E2C. On the other hand, this clear delineation of responsibility may also create a divide between different parts of the community, where some are paid for their work as developers or maintainers and others are not. Future research may try to explore if, and to what extent this way of institutioning ecosystems is a source of conflict and try to identify ways to reconcile the need for specialized full time workers with the desire for egalitarian ecosystems.

Furthermore, what this insight speaks to more broadly is the importance of the institutional environment for enabling effective user participation in digital platform design. Stakeholders in Open Collective did not envision effective user participation as a simple mechanism, a newly added communication channel, or a process on GitHub, but as a practice that is embedded in the wider institutional context in which Open Collective operates. Foregrounding this institutional context as an enabler of participatory design echoes insights from the Commonfare project, which also illustrated the many entanglements that participatory design has with various social and political institutions (Teli et al., 2018, 2020). While in the case of Commonfare, institutions predominantly described public and political actors (such as local municipalities or the EU funding body) in the various pilot communities, in the case of Open Collective, private organizations such as OCI and fiscal hosts make up the institutional fabric. Furthermore, while Commonfare indicated how institutions shape the process and outcome of participatory design projects and, in turn, how new institutions emerge from participatory design, Open Collective draws attention to the institutional arrangements that enable effective user participation. Future research may aim to investigate what private institutional arrangements are most conducive to enabling effective user participation in the digital platform design and development process. This type of research seems to be particularly important in the context of blockchain ecosystems, which have repeatedly been characterized as polycentric institutional environments (Alston et al., 2022; De Filippi et al., 2024) and emphasize effective user participation in various aspects.

Secondly, my research foregrounded practices of infrastructuring, i.e., the mutually constitutive relationship between agency and technology. My insights on infrastructuring highlighted both the decisions that would help to shape infrastructure for effective user participation and the affordances for effective user participation that are already latent in the existing configuration of the Open Collective ecosystem. Thus, where Commonfare highlighted the role of participatory design in infrastructuring (Lyle et al., 2018), Open Collective emphasizes the importance of specific infrastructures and associated sociomaterial practices for participatory design. Future research may aim to investigate whether my specific insights regarding the need to determine the key purpose, core stakeholders, and main prioritization processes are necessary preconditions to design effective user participation in other platform ecosystems. Such research may analyze very successful or unsuccessful cases of effective user participation in digital platform design, and evaluate the importance of these three core factors within them. Furthermore, more research is required to better understand the types of technological and ecosystem configurations that encourage infrastructuring for effective user participation in digital platform ecosystems. For example, previous research suggests that blockchain technologies lend themselves well to ‘self-infrastructuring’ participatory ecosystems (Nabben, 2023c).

Finally, I identified the need for contextual knowledge, technical skills, as well as limited time and resources, as exogenous boundaries of effective user participation. This insight suggests that in the case of Open Collective, there will always be a need for some non-participatory entity to steward

parts of the platform design and development process, where effective user participation is constrained. One way to make sense of these constraints from an economic theory point of view is to conceptualize Open Collective as an organization situated somewhere between a traditional firm and peer production. Neoclassical economic theory posits that firms emerge in order to reduce transaction costs (Coase, 1937; Demsetz, 1988). Yonchai Benkler famously contends that information technologies reduce these transaction costs dramatically, making commons-based peer production (the mode of organizing in large open-source projects such as Linux and Wikipedia) an economically efficient alternative form of organizing and mode of production vis-a-vis markets and firms (Benkler, 2002). In a way, limitations are factors that increase transaction costs to the extent that maintaining a central organizing firm, such as OCI, remains the most efficient mode of production of the platform. Future research may investigate the mix of peer-production and firms in maintaining user-owned and governed platform ecosystems to identify constructive general configurations. Furthermore, future E2C research may try to identify, evaluate, and develop different mechanisms that ecosystems put in place to keep centralized actors in platform ecosystems accountable towards user needs, even when direct participation is not possible.

Chapter 3.2

During E2C: designing community governance *by* technology

This chapter is based on: Merk, T. (2024). The unusual DAO: An ethnography of building trust in "trustless" spaces. *Internet Policy Review*, 13(3). https://doi.org/10.14763/2024.3.1795 [double peer review]

It also builds on thinking developed in: Filippi, P. D., & Merk, T. (2024). How to DAO: The Role of Trust and Confidence in Institutional Design. In *Decentralized Autonomous Organizations.* Routledge. [review by book editors]

3.2.1 Introduction

"*DADAO is operating in this world that tries to be 'trustless', yet within DADA the goal is to build more trust because we actually believe that life is a lot nicer if you have a lot of trusted relationships*" a member of the blockchain art community, DADA, told me during a weekly community call in August 2022. DADA, a crypto art platform and community, is in the process of doing an E2C by establishing a Decentralized Autonomous Organization (DAO). DADA's aspiration to build more trust through their DAO struck me as unusual. As a long-time participant, observer, and PhD researcher in the blockchain ecosystem, I have frequently witnessed discussions about reducing the role of trust and trusted intermediaries in our digital lives, not increasing it (Buterin, 2020). 'Don't trust, verify' is a slogan that emerged from the early Bitcoin community and remains popular across the blockchain ecosystem today. The scepticism 'to trust' is directed at various third-party intermediaries, including banks, national governments, and digital platform operators, who have all come under increasing scrutiny after incidents such as the 2008 financial crisis, the Snowden revelations, or large-scale data leaks. The slogan insinuates that the vulnerability implicit in trust can and should be replaced by the verifiable technical certainty of blockchains. In short, the blockchain community usually discusses trust as a 'bad' thing, or something they would like to engineer away. Yet in DADA, the goal is quite the opposite. Here, the community seemed to aim at using blockchain-based governance mechanisms to foster more trust, not less.

In this chapter, I try to make sense of this observation. Specifically, I explore DADA as a case study of a community designing governance *by* technology during E2C. Drawing on insights from my ethnographic research with DADA and an analysis of the current discourse around trust in blockchains and DAOs, I argue that during E2C organizations should explicitly consider how much trust they need and want to foster in their communities and design their governance accordingly.

Here, I specifically focus on the design of technologically enabled governance mechanisms, i.e., the governance *by* technology. In my case study and context, governance *by* technology predominantly refers to blockchain-based governance mechanisms employed by DAOs. In doing so, I contribute to developing a better understanding of the effect of DAOs on trust, which has not received much attention in the growing academic discourse on blockchains and trust (e.g., Bodó, 2021; De Filippi et al., 2020; Liu et al., 2023; Werbach, 2016, 2018).

My argument proceeds as follows. First (section 1), I briefly define 'trust' and 'confidence' as the two guiding concepts invoked throughout this chapter. Next (section 2), I argue that in DAOs, the main tenets relating to trust in blockchains have been adopted in the design of DAOs, echoing the slogan 'Don't trust, verify'. For this, I review the literature on blockchains and trust (section 2.1) to show that the aspiration to minimise trust has been espoused throughout, which has led the discourse to focus on depoliticised technical and regulatory measures of confidence rather than engaging with the normative issue of trust. By reviewing the history and current best practices in DAOs (section 2.2), I show how this discourse is mirrored in DAOs. Throughout these sections, discourse is not simply taken as 'talk about DAOs'. Discourse fulfils an important social function that helps people make sense of DAOs, stabilise our understanding of their main features, and thereby prescribe what affordances to explore (Bennani-Taylor, 2024). Subsequently (section 3), I draw on the work of Helen Nissenbaum (Nissenbaum, 1999, 2001) to argue that designing for or against trust is a political choice that communities during E2C need to actively engage with. Specifically, I argue that nourishing trust in DAOs will require rethinking many organisational and governance design mechanisms, which are popular in DAOs today. The last part of this paper (section 4) is dedicated to presenting the ethnographic case study of DADA, which serves as a non-generalisable but rich example of why and how communities might design more modularly for both trust and confidence in their DAOs. Finally, I conclude (section 5) by discussing the importance of actively engaging with the question of trust when designing governance *by* technology during E2C, and outlining future areas of research.

3.2.2 A BRIEF PRIMER ON TRUST AND CONFIDENCE

To begin understanding the role of trust in blockchains and DAOs, it is important to develop a working definition of trust. Defining trust, or mapping various existing definitions of trust, is notoriously tricky, particularly across a multidisciplinary perspective (McKnight & Chervany, 2000). Instead of adding yet another definition, I focus on the notion of trust as it has been applied within the academic discourse on blockchain technologies (excellent summaries of which can be found in Becker and Bodó (2021) and De Filippi et al. (2022)). Here, trust is understood as a relational quality or attribute that emerges between two agents within a complex environment and under conditions of uncertainty (Gambetta, 1998; Hardin, 2002; McKnight & Chervany, 2000). According to Gambetta (1998), trust requires one agent (the trustor) to choose to trust, i.e., rely on a second agent or agents (the trustee), who has the possibility to either honour or betray the trustor's trust. Trust is required in situations where the trustor does not have the capacity to fully control or

monitor the actions of the trustee but nonetheless needs to or wants to rely on them to achieve a particular goal. Trust emerges in the act of the trustor making themselves vulnerable to the trustee. The agency implied by the choices of both agents is central: the trustor's agency lies in their choice to make themselves vulnerable; in turn, the trustee's agency lies in their choice to either honour or default on their commitment (Gambetta, 1998). Trust enables people to cooperate within complex environments and under conditions of uncertainty. If all possible outcomes of a situation were mapped upfront, the need for trust would not emerge as agents would be able to precisely predict others' behaviour and a situation's outcome, thus eliminating the need for trust. However, even if perfect information were available in a given situation, mapping all eventualities remains extremely costly. Consequently, trust can be seen as an efficient and pragmatic way for people to cooperate in complex and uncertain environments.

It is important to mention confidence as a distinct, yet related concept. Confidence, as defined by Luhmann (2000), is similar to trust in that it characterises the expectation of one agent towards another to achieve a particular task. However, in contrast to trust, confidence is characterised by an absence of vulnerability. Instead, the agent is confident, i.e., highly certain that the task in question will be carried out according to their expectation. Various factors, such as limiting the agency of the trustee, employing trust mediators, familiarity with and knowledge of a given context, as well as societal pressures and institutionalisation, can all mediate the degree to which agents can be confident their expectations will be met (De Filippi et al., 2022). Generally, confidence is built through measures that reduce the complexity and uncertainty of a given situation (De Filippi et al., 2022). Thus, mechanisms that build confidence displace the need for trust, which is ultimately a tool enabling people to act and cooperate despite complexity and uncertainty.

3.2.3 The current discourse on trust in blockchains and DAOs

3.2.3.1 'Don't trust, verify': reviewing the discourse on trust in blockchains

Given these preliminary conceptual considerations, we can now turn to understanding how trust and confidence have featured in the discourse on blockchain. As stated in the introduction, blockchains such as Bitcoin or Ethereum promise to remove the need for entering into trust relationships with banks or large internet platforms to transact value online and autonomously enforce application logic (Buterin, 2014a; Nakamoto, 2008). They aim to do so by establishing transparent, append-only ledgers, a copy of which is held across a large distributed network of independent nodes, called miners or validators, who update the ledger using decentralised consensus algorithms such as Proof of Work or Proof of Stake. Decentralised consensus algorithms are enshrined in a blockchain's protocol (i.e., the computer code run by nodes which are involved in maintaining and updating the ledger) and define a set of rules for validating and adding new transactions to the blockchain. They are designed in a way that makes it prohibitively expensive to change the state of the shared ledger unilaterally. As such, they limit the agency of the trustee, i.e., the miners or

validators, to the extent that the option of non-compliance becomes infeasible (Bodó, 2021). Furthermore, the transparency of the ledger itself, its reliance on open-source software, as well as the way that blocks of transactions are linked via cryptographic proofs, enable participants to verify the overall state of the ledger independently instead of needing to rely on a trusted third party to do so (Bodo & Giannopoulou, 2019). The rationale behind relying on blockchains is to reduce the reliance on the discretion of potentially untrustworthy individuals, organisations, or institutions and substitute their role with a distributed network of nodes that fulfils the same functionality according to a predefined and auditable set of rules. Put differently, instead of relying on the decision of one potentially untrustworthy actor, participants can verify that a specific decision-making process (for example, PoW or PoS) was followed for all transactions on the ledger. The process of including transactions in the ledger constitutes the core reasoning behind the claim that blockchains overcome the need for trust. As stated in the Bitcoin whitepaper, blockchains aspire to be systems "based on cryptographic proof instead of trust" (Nakamoto, 2008, p.1).

Practitioners have good reasons to maintain this aspiration. Firstly, the historical context of the global financial crisis and what some have termed the crisis of accountability in the digital platform economy (Scholz, 2017; Zuboff, 2015) are crucial. Given this macro-context, reducing our overall reliance on powerful intermediaries, especially in the digital economy, is a common-sense aspiration. Secondly, blockchains such as Bitcoin and Ethereum ultimately aspire to be durable and resilient digital infrastructures and thus need to inspire strong confidence for others to rely on and build on them. In the case of Bitcoin, this is primarily as an immutable infrastructure for digital cash or as a digital store of value (Dodd, 2018; Swartz, 2018). In the case of Ethereum, it is more about functioning as a decentralised platform or 'world computer' (Brody & Couture, 2021; Dylan-Ennis et al., 2022) on which to host and execute various applications. As broad-based digital infrastructures catering to potentially 'everyone' and, in the case of Ethereum, to 'anything' (Nabben, 2023b), providing a high level of confidence in the overall reliability of systems is a useful aspiration.

The question of whether or not blockchain technologies achieve their goal of being a trustless digital infrastructure has been an ongoing topic of scholarly debate. While some have heralded blockchains as "trust machines" with the power to eliminate any trusted intermediaries, enabling trustless transactions, businesses, networks and even states (Atzori, 2015; Casey & Vigna, 2018), others advocate for conceptualising the trustlessness of blockchains as a new form of trust (Werbach, 2016, 2018) that can augment existing laws and institutional structures to create more complete coordination mechanisms.

De Filippi et al. (2020) propose that blockchains are better conceptualised as 'confidence machines' that provide a high level of certainty and predictability in the overall functioning of the network. However, they argue that a certain level of trust in the various human actors (such as miners and developers) involved in running and maintaining the technology remains. To prevent such actors from undermining the confidence provided by the protocol, De Filippi et al. (2020) call for

exploring various off-chain governance mechanisms that can increase the confidence in the human actors (for example, by creating more accountability) and thus strengthen confidence in the overall system. Relatedly, Bodó (2021) argues that blockchains should be understood as trust mediators that shift the source of trust, thus reducing it in some places while requiring new forms of regulation (i.e., measures of confidence) to enable trustworthiness in a given system. While this strand of literature disagrees with the idea of blockchains as trust machines and argues for a complex, concentric relationship between trust and confidence, the underlying goal of minimising trust in blockchains is not called into question. Furthermore, it shifts the discourse towards discussions of governance and regulation as tools to address the vulnerability introduced by trusted actors that are necessary to maintain the blockchain network.

Numerous use case-related studies set out to explore how blockchains can be leveraged to reduce the need for trusted intermediaries in their various industries (Batwa & Norrman, 2021; Hawlitschek et al., 2018; Khurshid, 2020; Kumar & Sharma, 2022; Shahaab et al., 2020). Despite coming to differing conclusions regarding the practical ability of blockchains to reduce trust, these sector-specific studies set out with the implicit normative assumption that reducing trust could render significant improvements to their respective domains. In doing so, the conversation shifts towards less political topics, such as the need for improved interfaces for blockchains to potentially fulfil their promise in the sharing economy (Hawlitschek et al., 2018) or that pairing blockchains with other new technologies, such as AI, will be able to solve the Internet of Things' security problems (Kumar & Sharma, 2022). In short, it shifts the conversation towards technical measures that maximise confidence and away from the more normative question of whether trust is something a given context or community may want to have.

Overall, minimising trust in blockchains has been an explicit goal for practitioners designing and maintaining blockchains. The academic discourse on trust in blockchains does not question this aspiration. Instead, it has evolved to focus on debating how and where to implement various mechanisms of confidence, which can further reduce participants' need to trust others, such as regulation and governance (Bodó, 2021; De Filippi et al., 2020) or supplementary technologies (Hawlitschek et al., 2018; Kumar & Sharma, 2022). In the next section, I show how this discourse is mirrored in the context of DAOs.

3.2.3.2 Still don't trust, verify: the role of trust and confidence in DAOs

DAOs are online communities that leverage smart contracts to various degrees, in order to coordinate and self-govern around a shared purpose or goal (Hassan & De Filippi, 2021). As such, smart contracts are usually used to augment various aspects of governance, e.g., defining who can make decisions, how these decisions are made, and enforcing decisions. As elaborated elsewhere, smart contracts are software deployed on a blockchain, whose logic is enforced when a set of predefined conditions is met and whose internal state is anchored on the blockchain, and which can

be verified in a similarly transparent manner. Smart contracts leverage many core blockchain features and transpose them into specific applications; they provide predictable logic that cannot be manipulated unilaterally, their open-source software can be publicly audited, and updates to the state of the contract itself can be transparently viewed and verified on the blockchain. Consequently, scholars argue that the use of smart contracts enables DAOs to inherit many of the trust-minimising features of their underlying blockchains (Beck et al., 2018; Hassan & De Filippi, 2021). As smart contracts are predominantly used to support the collective decision making, i.e., the governance in DAOs, I subsequently turn to evaluate how the choice of governance mechanisms, as opposed to other aspects of the organisational design, has influenced the role of trust and confidence in DAOs.

Within DAOs, the extent to which smart contracts are leveraged to encode governance mechanisms on-chain and the extent to which they are complemented by other off-chain processes (Nabben, 2023a), tools, and practices is a choice that each DAO needs to make in accordance with its purpose. As argued in the introduction, DAOs are used for many different goals. As organisations deployed on top of a blockchain, DAOs significantly diverge from their underlying blockchains and are thus likely to need to re-engage with the normative question of designing for trust and confidence (De Filippi & Merk, 2024). However, I argue that DAOs currently neglect to do so, instead mirroring the discourse on trust and confidence in blockchains. Reviewing the history and utopia, as well as current best practices in DAOs, substantiates this claim.

History and utopia of DAOs: the dream of trustless organisation

Early discussions about blockchain-enabled DAOs began in 2013 and are succinctly captured in a blog article written by Vitalik Buterin, who would go on to co-found Ethereum (Buterin, 2014b). For Buterin, organisations diverge along the axes of decentralisation and autonomy. A decentralised organisation encompasses a group of humans that coordinate towards a shared goal or purpose around a set protocol of rules that are enforced on a blockchain. In contrast, a decentralised *autonomous* organisation is one where human involvement and decision making are pushed to the edges, in that they would only contribute relatively small and well-defined tasks to the overall functioning of the organisation, and the bulk of the organisation's activities would be handled by autonomous agents (either AI or automated smart contracts). Reducing the role of human agents in an organisation's governance and overall functioning is a conception of DAOs that aims to maximise confidence by using smart contracts and other technologies to increase predictability. While the conception of a fully autonomous DAO remains speculative, the vision has not lost its appeal and permeates many current proposals (e.g., Delphi Labs, 2023). However, practically, two short years after discussions about the utopia of DAOs began, the first DAO, called "The DAO", failed spectacularly and surfaced the sustained need for human intervention and coordination (DuPont, 2017).

Current best practices in DAOs: maximising confidence where possible

A popular concept to balance the desire for autonomy with the need for human intervention in DAOs is the 'governance minimization' approach, which aims to minimise governance itself, i.e., limit the number of factors that can be changed through collective decision making in a DAO versus those whose functioning is hard-coded in technology upfront (Ehrsam, 2020). Nabben et al. (2023) summarise the concept's attraction as "The idea is that people are more likely to use and trust a system that *can't* change against their interests versus one where the current owners or operators say that they *won't*" (Nabben et al., 2023). Governance minimisation in DAOs mirrors the goal of maximising confidence in blockchain protocols: the more predictable and deterministic the organisation functions, the less need there is to trust that things won't change, the better.

Where collective decision-making is nonetheless involved, DAOs have focused on trialling various styles of voting using tokens that are counted by a smart contract and can trigger certain functions based on the outcome of a vote (called on-chain enforcement), such as spending funds (Bellavitis et al., 2023). Both mechanisms act as measures of confidence around human engagement in DAOs: although the technology may not determine the outcome of a decision upfront, token voting and on-chain enforcement provide predictability around who can make decisions (token holders), how decisions are made, and certainty regarding the conditions of enforcement. The focus on voting is further perpetuated via different 'DAO platforms' which abstract away the complexity of developing and deploying custom smart contracts and instead enable people to easily set up DAOs, akin to the way tools such as WordPress facilitate setting up websites. In a comparison of leading DAO platforms, Faqir-Rhazoui et al. (2021) find the main difference to be between types of voting (how is a quorum defined?) and enforcement mechanisms. Again, this approach focuses entirely on leveraging the confidence-building features inherent in blockchain technologies to limit the potential harm of human involvement in DAOs.

However, practically, the current focus on leveraging confidence maximising mechanisms from the underlying blockchains in DAO design has resulted in a number of problems. Many DAOs struggle with highly concentrated plutocratic voting power, low rates of participation and voter apathy ,as well as high costs for on-chain decision making and enforcement (Barbereau et al., 2023; Feichtinger et al., 2024). Furthermore, DAOs have also suffered from issues related to internal security (so-called governance hacks, for example, in NounsDAO (Fernau, 2023)) and a lack of internal accountability (Merk et al., 2023).

In the next section, I argue that perhaps allowing for more trust in DAOs and designing governance mechanisms in a way that allows for this trust to emerge (rather than squashing it through predictability and limiting the complexity of action) can help to overcome some of these challenges.

3.2.4 The need to engage with the question of trust during E2C

3.2.4.1. Why some DAOs should nourish trust

To understand why it might be valuable to refocus our attention on trust rather than discussing ever more complex measures of confidence, it is useful to draw on Helen Nissenbaum's work (Nissenbaum, 1999, 2001). Nissenbaum makes a passionate argument for building digital systems that 'nourish' trust instead of focusing exclusively on improving technical mechanisms for confidence, which limit individuals' action space and thus the opportunity for trust to emerge. The term 'nourishing' seems to be chosen by Nissenbaum to characterise trust as something that organically grows and 'flourishes' (Nissenbaum, 2001, p.123) under certain conditions. She further argues that nourishing trust is desirable as a necessary precondition to realise progressive, pro-social visions of cyberspace: "People shy away from territories they distrust; even when they are prepared to engage voluntarily, they stay only as briefly as possible. Without people, without participants, many of the visions [for the internet] will be both literally and figuratively empty. Trust would invigorate the online world; suspicion and insecurity would sap its vibrancy and vitality" (Nissenbaum, 2001, p.102). In short, cyberspace would be a better place with more trust, not less. However, current research consistently shows that trust in the internet in general and digital platforms in particular has been declining over the past few years (IPSOS, 2022). While this trend is unsurprising given the various recent abuses of trust by large digital platform operators, outlined in the introduction of this thesis, ideally, E2C is a strategy that can contribute to reinvigorating trust online. As such, it is important that DAOs explore ways to encompass both 'trustless' organizations as well as trusted online communities. In fact, in the context of DAOs, trust may be the missing ingredient that results in people wanting to participate in governance, to engage with ongoing issues, and advance strong norms or other non-technical systems to prevent governance hacks.

Nissenbaum is not categorically opposed to confidence-building measures such as strong technical security or regulation. However, she argues, such mechanisms should be designed with a sensitivity towards the specific context and its overarching goal in mind. In some contexts (e.g., banking or e-commerce), high levels of confidence may be required. She terms these contexts "pockets of high security". In many other, more creative and collaborative contexts, maintaining minimal protections against catastrophic harms and preserving the freedom and agency that trust requires may be sufficient. In the context of DAOs, distinguishing between pockets of high security and context that could benefit from more agency and trust can be done by reflecting on the goals of the DAO as a whole (De Filippi & Merk, 2024) or by contrasting different areas within the DAO.

3.2.4.2 How to nourish trust in DAOs

Once we have acknowledged that there are DAO use cases or areas within a DAO that could benefit from nourishing more trust, rather than maximising confidence, we must proceed to ask: how? Trust

does not emerge in a vacuum. Yet, there is an important distinction between mechanisms that nourish trust and those that build confidence (Nissenbaum, 2001). The former aims to create an environment in which a trustor is willing to make themselves vulnerable and does not expect the trustee to harm them. The latter aims to eliminate the possibility of harm and thus the need for vulnerability. Various scholars have taken on Nissenbaum's call to nourish trust online and begun to define what such mechanisms might look like. For example, Van Den Berg & Keymolen (2017) call for reducing governments' reliance on techno-regulation in achieving cybersecurity and instead include trust, through user feedback and involvement in their security strategies. In doing so, they show that, depending on how it is designed, security regulation can act either as a mechanism of confidence, limiting the individual user's action space, or as a mechanism that creates the type of 'safety' required for trust to emerge. Similarly, Richards and Hartzog (2015) stipulate why and how privacy regulation should change to encourage trusted relationships to emerge, rather than focusing on accounting for the harms that privacy infringements can cause. In a similar vein, rethinking privacy online has also been core to Nissenbaum's more recent work (Balsa et al., 2022) as well as her seminal work on privacy as contextual integrity (Nissenbaum, 2004). This line of work shows that, if designed adequately, policy and regulation can act as enablers, not deterrents of trust.

In the context of DAOs, I have argued that various approaches to and implementations of governance have thus far been predominantly deployed as measures of confidence and thus deterrents of trust. Consequently ,the question here is: how can DAO governance be designed differently, to enable trust? In the next section, I present DADA as a case study that serves as a non-generalisable yet rich example of a community grappling with this question.

3.2.5 Case study

3.2.5.1 Introducing DADA

DADA was founded in 2014 by Beatriz Ramos, Judy Mam, and Abraham Milano as a digital platform where people can communicate through art. DADA became a pioneer in the crypto art scene, launching its first NFT collection in 2017 and being the first to encode and automate royalties on-chain. The DADA platform includes simple drawing tools and a horizontally expanding interface through which thousands of people respond to each other's drawings, creating a peer-produced commons of visual conversations. On the surface, enabling people to participate in visual conversations on a platform free from rules (beyond the boundaries encoded in the interface), advertisement or subscription fees is the main service provided by DADA. However, behind and through the platform, DADA has built a vibrant and active community with the mission to radically separate art making from the art market, through a vision called the Invisible Economy (Ramos & Mam, 2021). The Invisible Economy is a vision that aims to create an environment in which art is solely produced through intrinsic motivation. This requires fundamentally redesigning the way that art is valued and artists are remunerated for their works. The Invisible Economy quite literally aims

to make the economic and market-based mechanisms and incentives *invisible* for individual artists and to instead redistribute collective value through a form of more generalised income that helps to sustain the practice of intrinsically motivated art creation. Considerations expressed throughout the Invisible Economy white paper, published in 2021, permeate DADA's community deliberations and practices day to day.

DADA is currently transitioning from having formally been incorporated as a for-profit company in New York to becoming a DAO (called DADAO), through an Exit to Community (E2C) with the goal of transferring ownership and governance rights to the community (DADA.art, 2022; Mannan & Schneider, 2021). The main assets held by the project include the cryptocurrency from the sale of NFT collections, NFT works from DADA's own collections, other NFT art, the drawing platform, and countless un-tokenised drawings on it as well as the smart contracts which were used to tokenize DADA's first collections and are considered to have historic value in the wider crypto art community. The E2C transition requires ongoing deliberation as to how the DAO will be structured and make decisions in the future, and how to sustain the project financially without introducing extrinsic incentives to art-making and community participation.

3.2.5.2 Methodology

I began joining weekly meetings that were dedicated to designing the E2C process and future DADAO in January 2022 after being introduced to the project by my PhD supervisor, Primavera de Filippi, who had previously contributed to the ideas of the Invisible Economy. My primary interest in joining DADA was to explore the community as a case study of a project in the process of doing an E2C, the topic of my PhD dissertation. I entered DADA as a participant observer, a common method in digital ethnographic research (Abidin & de Seta, 2020; Pink et al., 2015), with the aim of foregrounding the social dynamics underpinning and structuring the E2C process. Over time, the role of trust in DADA's governance design emerged as the core theme of my research. DADA's explicit goal of maximising trust within its community is unusual in the context of DAOs and made it a pertinent case study for the context of this paper. My involvement was formally consented to by the DADA community and approved under the ethics of the European Research Council Grant, as part of which this research was funded.

My data collection consisted of exploring (and in a few rudimentary attempts contributing) art on the drawing platform and on various NFT marketplaces, studying the website, reading public blog articles, keeping up with DADA's Twitter presence, actively engaging on two community Discord servers (a semi-public group chat with various channels dedicated to different topics, with one server dedicated to the various NFT collections and the other to the Invisible Economy) and most deeply, by partaking in 80 community calls, (the majority of them dedicated to governance, eleven dedicated to the Invisible Economy and three to discuss legal considerations for DADAO) over a period of 18 months each lasting at least one hour.

During my initial research between January and April 2022, I began by taking field notes in a personal notes app, to document my interactions and reflections, a common practice in ethnographic research (Clifford, 1990; Pink et al., 2015). As my engagement matured, I volunteered to become the community scribe and began taking public notes during calls from April 2022 onwards. The notes were taken in a shared Google Doc, annotated with my personal reflections, which I had previously recorded in my private notes. Through this practice, I created over 150 pages of public field notes, at times with feedback from the DADA community. Furthermore, in DAD,A many calls are recorded and were made available to me by the community for my research. Finally, additional internal resources, such as systems design sketches, historic contributor flow charts, and governance dashboard mockups, completed my data collection.

Over the 18 months of my research, I also had the opportunity to meet members of the community informally (once in Florence and on several occasions in Berlin) and participate in two events organised by DADA. Firstly, the HNFT Festival in Barcelona in October 2022, organised for the wider historic crypto art community. Secondly, the DADA Perspective, a month-long exhibition organised by DADA at the MEET Digital Culture Center in Milan, where I hosted an interactive governance workshop for and with members of DADA and the general public in June 2023. While these encounters did not directly contribute to the data on governance design analysed in this paper, they enabled me to gain a deeper understanding of community dynamics in an offline context, thus contributing to the way in which I interpreted the data.

My own positionality further influenced how I reflected on my interactions with DADA and the way in which I analysed the data for this research. As a student of Primavera de Filippi, whom the DADA community was familiar with prior to my joining, I was welcomed very warmly, and managing consent from members who joined calls, which is where quotes throughout this paper are drawn from, was granted openly. Throughout my engagement, I also came to realise that I concur with many political opinions held within the DADA community. Most importantly, I support a type of basic income that can enable people to pursue intrinsically motivated work and which the Invisible Economy stands for. Furthermore, my own identity as a woman with roots in the global south led me to feel empathy and more easily connect with other participants of DADA, including the founders. While I repeatedly declared myself as a researcher and openly shared the purpose and goals of my PhD research with all community members I interacted with in the initial stages of my research, over time, other members of DADA would eagerly introduce me to newcomers on calls, saying: this is 'our ethnographer’, almost as a nickname. I participated by taking notes, sharing my observations with the community, and helping to draft a blog post on DADA's early E2C considerations (DADA.art, 2022). To maintain a critical distance, I took care not to engage in any way that would directly influence the outcome of any situation and predominantly acted as an observer. Furthermore, I also do not hold any assets associated with the project. Finally, I engaged with various other researchers for feedback on my own data analysis in order to minimise the bias of my own interpretations.

After 12 months of engaging with DADA, I reviewed all the data collected and extrapolated a number of research themes that emerged. I summarised my thoughts in a presentation which I held to the DADA community and to fellow researchers from Metagov, an interdisciplinary research collective I participate in, and where I had the opportunity to receive feedback from members who were familiar with DADA and others with ethnographic expertise. In conversations around these two presentations, the theme of trust in DAO governance clearly emerged and became the focus of my observation in the last six months of research. Thereafter, I conducted a comprehensive review of all the collected material, public call notes, and my individual field notes. Where illustrative, contradictory, or forgotten situations emerged, I returned to call recordings and auxiliary materials to make sense of them, capture important quotes and artefacts, so as to construct the account of DADA's governance vision and practices detailed below.

3.2.5.3 Constructing the fieldsite: identifying pockets of confidence and trust in DADA

The DADA fieldsite encompasses a complex and networked assemblage of digital, physical, and imagined spaces (Burrell, 2009). The DADA platform, Discord, and Telegram chat channels, as well as the weekly community video call,s constitute the primary sites where the DADA community comes together online. While members of DADA are geographically dispersed, they co-locate most consistently in these online spaces; synchronously on calls and asynchronously through chats, sharing attention over time, which builds relationships and fosters a community identity to emerge over time (Nabben & Zargham, 2022). During the events I attended and when members happened to be in the same geographic location, the field site manifested itself physically, albeit only sporadically. Externally, the community and organisation are bound by their communication on X and other online media such as blog posts.

Beyond these virtual and physical spaces, two imagined spaces emerged throughout my engagement: the 'Invisible Economy' and the 'Market'. These imagined spaces are important contexts to understand in order to make sense of how DADA designs for and against trust in its governance. As defined in the eponymous whitepaper, the Invisible Economy describes a space where creating art is done out of intrinsic motivation, thus making both the process and outcome equally important and where artists act without financial consideration or competition (Ramos & Mam, 2021). Within the Invisible Economy, the DADA community coordinates to bring about this goal, while simultaneously acting as though it were already achieved. However, in reality, "DADA exists in a free-market world, and while DADA artists are motivated to participate for the love of it, they still need to earn a living as artists" (Ramos & Mam, 2021). The imagined space of the Market thus denotes the instances where DADA engages with the outside world with the goal of financially sustaining itself.

Beyond being described in the whitepaper, the DADA community invoked both imagined spaces frequently to explain why certain activities were subject to one set of rules versus another. For example, reflecting on the organisation of the HNFT Festival, the community agreed that it had been done under the Invisible Economy mindset, without the goal to sell DADA's work, which contributed to the event being perceived as a positive experience. In contrast, an event organised a few months previously for a large NFT conference in New York, which was organised in 'the Market' with the goal to reinvigorate collectors' interest in DADA, competing with hundreds of other projects presenting themselves at the same conference. The event involved displaying DADA NFTs on Times Square and working with a large production company to put together a pop-up gallery under high time pressure.

The DADA community also evaluates activities in the Invisible Economy versus the Market differently. The HNFT Festival was perceived as being both enriching in terms of its outcome and in terms of how it was organised. The New York conference, in contrast, was evaluated primarily on how well it translated into NFT sales. The process of organising the event itself was perceived as a necessary evil to this end. A post-mortem of the event revealed that more money had been spent than made during the event, and the community noted that it wanted to explore ways to sell its art that would not be so stressful and draining for the community, a sentiment which invariably seeped back into other activities in the Invisible Economy. What is important to note here is that the Invisible Economy is a space in which people want to be out of intrinsic motivation. In contrast, the Market is a space where the community only engages as briefly as necessary, with the aim to limit its actual engagement as much as possible. In the context of this research, these two imagined spaces are taken to denote two areas that required a distinct governance design in DADAO. While the Invisible Economy aims to foster trust between community members, the community aspires for its interactions in the Market to be governed by high levels of confidence. The subsequent sections describe the distinct governance design that emerged for each space, respectively.

3.2.5.4. Nourishing trust in the Invisible Economy

Within the Invisible Economy, DADA actively fosters trust in two ways. Firstly, by relying on ongoing deliberation for decision-making. Secondly, by employing the 'Dot System' as a way to create a safe space for productive deliberation to emerge. I elaborate on each mechanism in turn.

Deliberative decision-making as a means for trust to emerge

In DADA, "deliberation belongs to the Invisible Economy" and is the community's present and future internal decision-making process. Deliberation in the DADA context requires people to come together and communicate deeply about a certain topic, be it via art, text, calls, or in person. The end result can be either a type of action (for example, organising an event, launching a new NFT collection, etc.) or insight (for example, extending thinking about the Invisible Economy).

Throughout DADA's deliberations, process and outcome are equally important. When the DADA community deliberates, people share ideas and updates, respond to each other, communicate their feelings, preferences, and contexts, change their minds, and eventually arrive at some sort of shared understanding. Through each deliberative cycle, relationships are formed, reconfigured, and DADA's community deepens its understanding of each other as unique individuals and strengthens its ties as a community, extending the internal web of shared knowledge and experience. While anybody is welcome and invited to join DADA's deliberative decision-making sessions, people who have spent more time with others in the community or contributed throughout intensive phases are more likely to deliberate together effectively. Without formal roles, rules, or structures, there is no obvious way to accelerate one's journey in DADA or formally game the system to acquire decision-making power within deliberation sessions, without having previously spent significant time and effort in the community.

This process makes it costly to behave in an unproductive or harmful manner and builds community alignment over time. Deliberation also encourages people who have shown the highest intrinsic motivation through sustained engagement and care for the project to hold the highest decision-making power. This process has resulted in a core group within DADA, who refer to themselves and each other as 'DADAkin', driving most of the decision-making and activity. While the core group is relatively small (around 20 people) as compared to the overall size of the community, it is persistently highly active, and many members have been involved in the project for years, predominantly on a voluntary basis.

The process of deliberation is useful for fostering trust in several ways. Firstly, it encourages members to build a shared history and reputation. As noted by Nissenbaum (2001), when people have had the opportunity to prove their trustworthiness in the past, they are more likely to elicit trust in the future. Consequently, trust compounds as people interact with each other more frequently. Furthermore, by continuously extending the web of shared knowledge, DADA's deliberation fosters shared understanding and thus alignment within the community. This increases the mutuality of the relationships that members have with each other, i.e., the extent to which they perceive each other to be in the same boat and working towards common ends. Sharing a goal can further increase the likelihood of trust to emerge (Nissenbaum, 2001).

Creating safe spaces for deliberation in DADA

Structurally, it is important for DADA to create an environment where people 'feel safe' enough to deliberate and build relationships. To this end, the community draws inspiration from a mechanism initially developed for the drawing platform: the Dot System. Here, different colour dots represent a user's journey on the platform. A minimum amount of drawings and effort is required to earn the right to reply to other people's drawings on the platform, although it is not immediately obvious how much time or effort is needed. The project explains the implementation of the Dot System as such: "When we first launched our drawing platform, anyone could reply to any drawing. But

sometimes trolls would reply to a beautiful drawing with crude drawings meant to deface it. We implemented a very basic system that requires a minimum of points for people to be able to respond to drawings. Anyone can still participate, but now it requires effort to earn the right to respond. In a social network culture based on exponential growth, this kind of friction seems counterintuitive, but it actually guarantees the quality of the interactions and it builds community. Since we introduced the point system, those who want to deface DADA are instantly discouraged" (Ramos & Mam, 2021). DADA aims to transpose its Dot System from the platform to the DAO. The goal here is not to make DADAO inaccessible to newcomers, but to build small points of resistance that can be easily overcome by anyone signalling genuine interest and curiosity towards the project and its community. As one member of DADA put it: "We do the opposite of usual DAOs that encourage anyone and everyone to join, in that we build in small friction points to get involved so we can ensure people are genuinely interested."

Overall, DADA's internal governance design is intentionally characterised by high levels of complexity (there are no set institutions, roles, rules, or mechanical processes to fall back on) and agency (there are no set institutions, roles, rules, or mechanical processes limiting an individual's action space). Small friction points and the need to invest deeply into building and maintaining relationships in the community act as a type of security system that builds enough confidence for people to be willing to make themselves vulnerable and build trust internally. The difficulty of becoming a DADAkin also ensures that those who are part of the core group trust others not to want something *from* them but rather want to do something *with* others in the community.

3.2.5.5 Maximising confidence through automation in the Market

However, the DADA community is also forced to continue engaging in the Market to sustain itself financially. As the community dislikes both the traditional art market and the mainstream NFT market, it relies heavily on technological measures of confidence to configure its interactions in this space.

Governance minimisation through autonomous agents

Throughout our conversations on how to secure sustainable revenue for DADA, especially after the E2C, concerns around selecting new images from the DADA platform to sell as NFTs were continuously raised. Although the most straightforward revenue stream in a community that makes art is to sell some of that art, the DADA community feels that doing so undermines the idea of art as a conversation, where each part is directly influenced by and responding to the input before it. Taking discrete elements out of the conversation and declaring them as independently valuable in expectation of revenue seems absurd. Moreover, conversations on DADA also build and represent relationships between artists, and commodifying parts of such relationships contradicts DADA's values. The community identified a potential solution to this issue by turning towards DADAGAN, a non-human artist that draws on the platform.

DADAGAN is a generative artificial intelligence (AI) GAN (a specific type of machine learning algorithm), trained on over 115,000 drawings on the DADA platform and first introduced in 2019 during a live drawing performance at the Tate Modern in London (Mam 2019). Since then, DADAGAN has been responding to conversations on the DADA platform daily and served as a practical mechanism for the community to explore and reflect on its relationship with non-human artists. When the idea to sell parts of conversations drawn by DADAGAN, as opposed to a human artist, was brought up in early February 2023, excitement was palpable: everyone intuitively agreed! Selling non-human parts of DADA conversations as NFTs did not seem to contradict the project's values. The decision to only sell artworks produced by DADAGAN minimised the possible outcomes of which artworks to sell from the platform, thus presenting a form of governance minimisation. Furthermore, it protects the community from reintroducing hierarchy among its human artists when one artist's work sells for a higher price than another, which is a dynamic that would contradict the values of the Invisible Economy.

Beyond this was the idea to draw on recent advances in AI to make DADAGAN an AI artist that not only autonomously draws but also builds its own brand, promotes and sells its own works, and distributes its income back to the community. As a recent blog post states: “we want it to be as autonomous as possible” (Mam, 2023). Since February, DADAGAN has been active on X and busy building a personality by drawing on messages from internal DADA Telegram chat groups. DADAGAN has also begun promoting itself and the project in various events and conferences (sometimes with support from human counterparts) and collaborated in live events with other autonomous AI artists (DADA.art, 2023). In September 2023, DADAGAN sold its first NFT during an event in Korea.

Automating coordination in the Market with smart contracts

When asked about the role of the blockchain and smart contracts in the new organisational structure, a member of DADA told me during a community call: “We don’t want to configure blockchain in a way that enables our deliberation. We want to configure it in a way so it doesn’t destroy our deliberation”. To do so, the DADA community has opted to keep blockchains out of their internal governance dynamics, yet they heavily rely on the technology in the Market.

Here, people engage with DADA by collecting or trading DADA NFTs. Holding a DADA NFT does not grant a collector any special rights within DADA. Neither does it denote a form of membership as is the case in many other DAOs today (Barbereau et al., 2023). Instead, for DADA, selling NFTs is purely a mechanism to create income for the community. The sales of DADA art itself take place via DADA’s decentralised marketplace, one of the first of its kind (Skagbrant, 2017), and on other independent and often centralised Ethereum-based NFT marketplaces such as Opensea. Consequently, collectors do not need to interact with any DADAkin or DADA artist throughout the sale, and vice versa, the community does not need to interact with collectors. Income

from the NFT sales is directed into a multisig wallet, a type of shared account on the blockchai,n which currently remains under the control of the project's founders. Furthermore, DADA was the first project to encode artist royalties into the NFT of each work, which meant that a percentage of the price of secondary sales of DADA NFTs is also funnelled back into the community's multisig wallet.

It is interesting to note how close the combination of automating sales through DADAGAN, combined with the hardcoded logic of trading NFTs on a blockchain and funnelling royalties back into the community wallet, comes to the initial, maximalist vision for DAOs elaborated by Vitalik Buterin (Buterin, 2014b). If DADAGAN works well, it pushes human involvement to the edges, while the bulk of activity is handled by the GAN itself and executed by smart contract logic. Consequently, despite openly wanting to foster more trust, the DADA community has opted to implement high measures of confidence in its interactions with the Market.

3.2.6 Concluding remarks

In this chapter, I have presented the case study of DADA, an organization and community in the process of E2C, where the topic of designing governance by technology to nourish and deter the need for trust emerged as a core theme. Triggered by the insights from my ethnographic research with DADA, I have tried to make the case for DAOs to actively re-engage with the normative question of trust in their communities. DADA is unusual in its approach to tackling this question explicitly, which enables the community to design its governance both to displace the need for trust in the Market and to nurture interpersonal trust emerging in the Invisible Economy. The argument here is not that DAOs should never aim to minimise trust by maximising confidence or that DADA's governance approach is useful beyond its specific context. Rather, due to the large diversity of use cases for DAOs, each DAO should reflect more actively and explicitly where trust and confidence are required to fulfil its specific goals and integrate this decision into its design. This type of reflection is particularly important during E2C; the way governance is designed for post-E2C will impact whether and where trust can emerge among the community taking on decision-making. As the case of DADA illustrates, governance *by* technology especially impacts how trust evolves in a community. Where technology automates away decision-making processes or aspects of a system are hard-coded in immutable protocols, communities gain in confidence but lose the need to freely coordinate amongst themselves, to collectively make decisions and drive change. In the process, they also limit the opportunity to nourish trust amongst their members.

Nevertheless, even in organizations and communities where nourishing trust is a goal, a base level of safety needs to be provided through measures of confidence. Following Nissenbaum's (2001) line of reasoning, actively designing DAOs in a way that makes participants feel safe, without constraining their agency too much, can enable more trust to emerge and reinvigorate participation and creativity. An important follow-up consideration for DAOs thus becomes how to design mechanisms that enable trust to emerge. The case study of DADA exemplifies how designing a

DAO in this way may look. The preliminary point of departure for DADA's governance design was to actively differentiate between areas in which the community wanted to nurture trust: the Invisible Economy, and areas where the community did not actively want to spend much time and was happy to displace the need for trust: the Market. By keeping processes relatively undefined, while providing minimal protection against unaligned or unconstructive actors through the Dot System, DADA preserves the freedom and agency of its community to explore and enact the social vision of the Invisible Economy. Trust emerges in the Invisible Economy because the environment 'feels safe' and people want to be there, not because it is overly secure in its design. This design is highly aligned with Nissenbaum's (2001) arguments on how to empower the "progressive social vision of Cyberspace" (p. 130). The set-up has allowed DADA to evade many problems faced in other DAO communities, such as apathy, misalignment, or plutocratic power concentration. In DADA, a highly engaged and trusted core community is legitimised to make decisions and move the project closer to its goal of the Invisible Economy. In the Market, DADA has created a 'pocket of security' in Nissenbaum's terms, by employing smart contracts and automation to build confidence in the interactions between the project and collectors and traders. This approach aims to achieve the community's relatively narrow and clearly defined goal of generating revenue in a predictable and reliable way.

While the mechanisms implemented in DADA cannot be generalised beyond its specific context, the case study illuminates several avenues for further research. Firstly, more research is required to substantiate the claim that increasing trust can contribute to reducing problems of participation in DAOs, and thus improve the outcome of tokenized E2Cs. Empirically, such research could take the form of contrasting levels of trust perceptions with the degree of participation across different DAOs. Secondly, further research is needed to help DAOs better identify areas that warrant having high trust versus high confidence. As the concepts of trust and confidence are highly theoretical and abstract, such research may try to map the different areas or functions of a DAO to facilitate more modular DAO design, aiming for trust to emerge in some places while privileging technical certainty and security in others. Third, more research is required to understand which mechanisms foster trust in DAOs. This could be done conceptually by reviewing current mechanisms employed in the design of DAOs and mapping them in terms of the way they either increase or reduce the action space of participants in the DAO. Alternatively, existing empirical work on online communities evaluating how certain technology features affect user perspectives on trust (for example: Benlian & Hess, 2011) could be extended to the context of DAOs to evaluate how various organisational design approaches (e.g. governance system, membership criteria, etc) influence trust perceptions. Furthermore, more in-depth case studies on how communities design for trust in their various contexts can further help to extrapolate generalizable insights for the ecosystem as a whole. Finally, new mechanisms to foster trust could also be developed and trialled through action research and in close cooperation with existing DAO communities or organizations that are in the process of conducting a tokenized E2C. In developing such mechanisms, communities and researchers could look towards established approaches for building trust in the traditional open-source ecosystem (for example, Antikainen et al., 2007; de Laat, 2010). These suggestions are offered in the hope that,

with more trust, DAOs will be better equipped to realise many of the creative and pro-social goals E2C aspires for, thus contributing to a vision of cyberspace that feels safe and friendly rather than hostile or empty and automated.

Chapter 4.1
After E2C: Challenges after E2C

This chapter builds on: Cossar, S., Merk, T., Kamalova, J., & De Filippi, P. (2024). *Proof of Humanity : ethnographic research of a "democratic" DAO* [Technical Report]. European University Institute. https://doi.org/10.2870/107946

4.1.1 Introduction

While the hypothetical conceptualization of E2C by Mannan and Schneider (2021) predominantly emphasizes the positive outcomes that E2C may have for a platform and its stakeholders, in this chapter, I turn to analyzing the unintended negative consequences of E2C. Specifically, I draw on an ethnographic case study conducted with Proof of Humanity (PoH), a blockchain-based decentralized digital identity registry. PoH was collaboratively developed by two established organizations in the blockchain industry, who 'spun out' the technology to community ownership and governance via a DAO shortly after launch in April 2021. Initially, the project grew tremendously, drawing significant attention within the blockchain industry and enticing industry leaders such as Ethereum co-founder Vitalik Buterin to sign up. However, a year later, when two fellow researchers from BlockchainGov and I entered PoH as a field site in the summer of 2022, the community found itself in a full-blown crisis, with different factions in open conflict, the project's UBI token plummeting, and no clear path forward. By November 2022, the community voted to split by conducting a 'peaceful fork' of the project, i.e., deploying two versions of the same digital identity registry, albeit governed by different parts of the community and potentially adopting different policies and pathways going forward. Having two versions of the same registry is hardly an ideal outcome, especially for a project whose technical aim is to verify a user's singular and unique identity. So, what went wrong? And did the transition to DAO make it worse? Put differently, in this chapter, I ask: what aspects tied to the E2C contributed to this community crisis?

In the context of this thesis, PoH presents an interesting case study for two main reasons. Firstly, PoH DAO is the result of an ownership and governance transition, which I term 'spin-out to community' rather than E2C. While the founding organizations remain unchanged, this spin-out nonetheless signifies an ownership and governance transition of the technology from early founding team members to the community of users. Thus, it is a suitable case study in the context of this thesis. Secondly, PoH DAO is a pioneer in that it draws on the PoH identity registry to implement a

tokenized 1-person-1-vote governance mechanism, which aligns it with the cooperative principle of democratic member control. This, in turn, makes PoH a compelling case study in the context of this thesis, as the governance design ostensibly aligns with the goal of E2C, a relatively unique feature in the blockchain industry.

Beyond this thesis, the case of PoH DAO contributes to the growing empirical literature on DAO governance and its challenges. Here, quantitative research has thus far exclusively studied token-weighted DAO governance and has predominantly focused on analyzing voting behaviour and the power concentration in voting (e.g., see: Barbereau et al., 2023; Bellavitis et al., 2023; Faqir-Rhazoui et al., 2021; Peña-Calvin et al., 2024; Sharma et al., 2024). One of the main challenges identified throughout this research is the uneven distribution of voting rights amongst members, which introduces plutocratic governance dynamics. While complementary qualitative research highlights a plethora of governance challenges beyond plutocratic concentrations of power (e.g., see: DuPont, 2017; Nabben, 2023; Rikken et al., 2019; Ziolkowski et al., 2020), this research, too, predominantly focuses on DAOs that implement 1-token-1-vote governance mechanisms. Consequently, by focusing on PoH DAO, a more 'democratic' DAO, I aim to contribute insights concerning governance challenges faced by DAOs that are not associated with a plutocratic distribution of power.

The chapter is structured as follows. I begin by briefly reviewing the main empirical research on DAO governance to summarize the main challenges identified thus far (section 2). After describing the methods used for this chapter (section 3), I turn to introducing PoH in terms of its main technical aspects, history, and the structure of the DAO (section 4). In section 5, I elaborate on my main findings, i.e., that (a) an unclear purpose, (b) a fragmented deliberation space, and (c) a lack of legitimate leadership emerged as main challenges that are inextricably linked to PoH's ownership and governance transition and contributed to the community's crisis. Section 6 discusses each challenge in the context of tokenized E2Cs and proposes several potential mechanisms that may have helped the PoH community mitigate or prevent some of the drivers of the crisis. Section 7 concludes.

4.1.2 Related literature: governance challenges in DAOs

Governance has been a key focus in research on DAOs (Augustin et al., 2023; Hassan & De Filippi, 2021; Santana & Albareda, 2022). Indeed, in his seminal empirical work about the first DAO, called The DAO, DuPont (2018) identifies three challenges that drove and shaped the crisis he observed in The DAO community, following a hack that drained the project and ultimately left it abandoned. Firstly, different people in The DAO community had different conceptions around what constituted the governing 'law' of The DAO: was it the rules specified in its smart contracts, the legal system or some sort of common sense social norm held across most of the community regarding what is permitted and what is not. Secondly, DuPont (2018) points towards the need for what he terms 'practical governance', i.e. that once the algorithmic governance of The DAOs smart

contracts was exploited in an unintended way, the community had to devise and engage in practical, off-chain governance to collectively deal with the situation. Finally, DuPont highlights that to resolve The DAO Hack, the community ultimately relied on ad hoc deliberation often carried out in private channels and based on pre existing networks, to coordinate the community. The research at hand is most closely aligned with DuPont's work, as it also employs ethnographic methods to understand the governance dynamics and challenges of a DAO in crisis and its decision to fork. However, since The DAO hack, the DAO ecosystem has grown and evolved tremendously. Below, I highlight the main challenges facing DAO governance as identified by empirical academic research.

Concentration of power

The most frequent challenge cited throughout both quantitative and qualitative empirical research is the concentration of power in DAOs, which contradicts the aspiration to be governed in a decentralized, non-hierarchical manner. Concerning this challenge, quantitative research has predominantly focussed on analysing available data regarding governance token distributions, voter turnout, proposal pass rates or governance smart contract design. To access this data, Arroyo et al (2022) introduce the DAO analyzer to understand the activity and voting behaviour in Ethereum based DAOs implemented across three different DAO platforms. Bellavitis et al. (2023) use the DAO analyzer to evaluate 2,300 active DAOs. They are an outlier in that they paint a relatively optimistic picture, concluding that "most of the DAOs' governance strategies are deeply democratic" (p.15). This insight is contradicted by various other quantitative studies of DAOs, which all point to highly unequal concentrations of power and voting rights in DAOs. For example, Barbereau et al (2023) conducted a study of nine DAOs active in the Decentralized Finance space and found that decision making rights are highly concentrated, leading them to term this minority governance "timocratic", rather than "democratic". Similarly, in the first ecosystem-wide analysis of over 10k DAOs, Peña-Calvin et al (2024) observe particularly high levels of power concentration in relatively large DAOs, which leads them to argue:

> "DAOs may conform to the "iron law of oligarchy". This is particularly relevant for DAOs, since "power can be bought" quite literally, as many DAOs allow the purchase of governance tokens. Thus, mitigating power imbalances within these communities may be a critical consideration for fostering more inclusive and equitable decision-making processes." (p.930)

Sharma et al (2024a) further confirm the insight regarding un-democratic concentrations of power in DAOs and show how inequality seems to positively correlate with the price of the DAOs governance token and the ability to acquire tokens on secondary markets. Overall, this research points to concentrations of power, centralization and un-democratic design as key challenges in DAOs. While relevant to DAOs in general, all of the above research focuses on DAOs that implement token based governance mechanisms. Yet, the case of PoH, distinguishes itself from other DAOs by relying on an identity based 1-person-1-vote governance mechanism, and is thus

unlikely to display similar dynamics. In fact, in a mixed method study of 10 DAOs, including PoH, Sharma et al (2024b) found that DAOs that have adopted a 1-person-1-vote protocol become more decentralized over time.

The cost of coordination and the lack of participation

A second challenge facing DAO governance consistently found across research is the relatively high cost incurred by participants by engaging in distributed coordination and the associated lack of participation. Barbereau et al (2023) and Bellavitis et al (2023) find that only a small subgroup of DAO members actively participate in governance. They attribute this differently to either the high cost associated with keeping up with proposals and actively engaging in voting (Bellavitis et al., 2023) or that small token holders are less incentivized to engage in governance as their voice carries little weight and because large token holders display a relatively distinct and homogenous voting behaviour (Barbereau et al., 2023).

Automation and enforcement

Related to the cost of coordination and lack of participation is the issue of automation and enforcement. Although the vision of DAOs espouses a fully automated organization and trustless governance (see chapter 4.2 for a more detailed discussion) the reality is more complicated. For example, in an ethnographic study of Gitcoin DAO, Nabben and Zargham (2022) find that:

> "In practice, governance occurred in disparate attention cycles across janky compilations of Web2.0 and Web3.0 tools and applications. The patchwork of decentralized governance spans Discord, to Discourse forums, to Snapshot (a "decentralized application" for voting), to smart contract addresses that hold the treasury, to "multi-signature" wallets, which require a small handful of parties to manually sign off transactions to move cryptocurrency to its democratically allocated destination, and back to Discord." (p.89)

In this case, even decisions that could be enforced on-chain (i.e. the allocation of funds), required a myriad of off-chain interaction to take place. Thus, governance by algorithms remains mediated by human organization which, of course, also ultimately constitutes the governance of algorithms (Nabben, 2023b). Thus, although many blockchain based projects aim to create accountability on-chain (Nabben & De Filippi, 2024), the need for off-chain accountability and enforcement prevails. Indeed, Sharma et al (2024b) observe that many proposals adopted through DAO governance often became stalled or 'cancelled' later on. This points to the fact that off-chain enforcement and integrating human and automated systems remains a key challenge for DAOs. Previous research into DAOs has highlighted how issues of enforcement are also closely entangled with the way DAOs position themselves in the existing legal system (Brownworth et al., 2024; Ghavi et al., 2022; van Vulpen et al., 2024).

Defining purpose and values

Another challenge identified in DAO governance concerns building agreement regarding the key purpose of a DAO. Tan et al (2024) analogize DAOs to other non-hierarchical open-source communities who "have a history of debating the terms of their engagement and arguing about what it is they are doing, as well as producing" (p.6). DAOs, too, need to agree on these core points in order to effectively design and practice governance (Alston, 2022). Moreover, Ziolkowski et al (2020) find from a case study of DFINITY, Tezos and Aragon, that the question is not simply for *what* governance is designed but also for *whom.* As many token-based governance systems allow for governance tokens to be traded on secondary markets as speculative instruments, DAOs need to differentiate whether they are catering to their investors (primarily interested in earning financial rewards on the token) or their members (primarily concerned with solving a shared problem or reaching a collective goal by using governance tokens as a means to this end). Furthermore, when DAOs govern technologies akin to digital platforms, they often also face the issue of bootstrapping, where the technology only becomes fully useful once a certain network effect has been reached, triggering certain positive externalities. Ziolkowski et al (2020) argue that before such network effects take place, a DAO's purpose or value may be less clear. However, once the network effects are reached, changing governance becomes more costly. Consequently, it is important for communities to agree on the core purpose of the DAO upfront and design governance accordingly. To this end, many DAOs have begun drawing up formal, written constitutions in which they outline their vision, purpose and values (Tan et al., 2024). Other DAO communities have experimented with more iterative, bottom-up systems to define their values and what is valued, as found in ethnographic research with SourceCred (Rennie, 2023)**.** In both approaches, however, defining purpose and values remains an important, yet frequently contested issue for DAO governance.

4.1.3 Methods

For this project, I conducted ethnographic participant observations in PoH together with two colleagues from BlockchainGov. This was an interesting experience, as both of them had some prior experience with parts of the PoH community (notably, with the two different conflicting sides), while I joined as a type of 'neutral stranger'. The composition and mixed positionality of our research team greatly facilitated negotiating access and trust with different parts of the community, an important precondition to doing research in field sites characterized by conflict (Norman, 2009). Our data collection consisted of joining various online channels, most prominently Telegram, in which the community (or parts thereof) gathered, observing PoH's governance forum and reviewing publicly available information of the project. Using this data, we constructed a timeline of the evolution of PoH DAO and the different events that led to the crisis we were witnessing. Specifically, we mapped 69 distinct events between August 2014 and November 2022 such as conference talks, influential governance-related online posts, governance proposals, votes or governance forum discussions. As a second step, we conducted 14 semi-structured interviews with stakeholders from different parts of the PoH community to understand how this conflict arose, what

the core points of contention were and possible approaches to resolve them. We analyzed our data inductively together and compiled a written report of our insights which we presented back to the community and published online (Cossar et al., 2024). For the chapter at hand, I returned to the report as well as our primary data (interview transcripts, events timeline, and my personal field notes from observations in Telegram groups) and re-analyzed them inductively and in light of my research question.

4.1.4 The case of Proof of Humanity

The PoH technology

PoH is a blockchain based registry that functions as a decentralized digital identity system. Digital identity systems are crucial to all online interactions: from verifying the person receiving a call or text message, to logging into social media accounts, managing app subscriptions or authorizing financial transactions. A key requirement of digital identity systems is to protect themselves against Sybil attacks, where a malicious actor creates and operates under multiple fake identities. Consequently, digital identity systems need to verify that a user is a unique and singular human (Siddarth et al., 2020), i.e. the system must verify that (a) a user is in fact human, as opposed to a bot or AI avatar, and (b) that they are unique in the sense that there are not multiple identities for a single user. Consequently, to register their digital identity on PoH, users have to undergo a relatively complex and lengthy sign-up process. First, users need to connect to the PoH application using an existing Ethereum wallet. To apply to join the registry, users need to submit a name (or pseudonym), a photo of themselves, revealing all internal facial features, and a video in which they physically display on a piece of paper or screen the Ethereum wallet address they are using to submit the application and in which they say *"I certify that I am a real human and that I am not already registered in this registry"*. After they verify that both their photo and video adhere to a number of technical requirements (e.g. a certain file format, number of pixels, and that they are not taken as a selfie), the user can submit their application by paying a deposit. The photo and video exist to make it physically harder for non-humans to apply and to link the human identity to a digital identifier, i.e. the blockchain wallet address. The application deposit makes it more costly to attempt submitting spam applications and serves as an incentive to challenge the application should any criteria not be met. After submitting their application, applicants need to ask three existing users to vouch for them (initially, only one voucher was required). Ideally, when people know each other in real life, this social process is another mechanism that ensures that the applicant is, indeed, a unique human. Once an application has been sufficiently vouched for, it moves into the 'pending registration' phase for 3.5 days, during which anyone who believes the applicant is not a unique human or in violation of any of the guidelines, can challenge the profile. If challenged, a Kleros court, i.e. a decentralized dispute resolution mechanism developed by the cooperative startup Kleros, in which a number of pseudonymous jurors are randomly selected from a pool of volunteers, is called upon to decide on the case. Challengers and jurors are incentivized to review PoH applications, because, if the application does violate any rules of the registry, they stand to win

the deposit associated with the application. Applications can be challenged on the basis of violating submission guidelines, because the application is a duplicate, the applicant is not human, or because the person applying is deceased. If challenged successfully, profiles are not admitted to the registry. If a profile is not challenged or the challenge is unsuccessful, it is added to the registry and the user is included in periodic allocations of UBI, a cryptocurrency launched in combination with the PoH registry, which acts as an incentive for users to join. While the price of UBI peaked at around USD 0.5 shortly after the launch of PoH, it rapidly plummeted to less than 1 cent by the end of the research period. At the time of research, over 17,000 humans had registered to PoH in only two years. Beyond receiving UBI, these users can use their decentralized digital identity to sign into various Ethereum-based applications and also become members of the PoH DAO, which governs the project on a 1-human-1-vote basis.

History of PoH

PoH was conceptualized and created by two organizations: Kleros and the Democracy Earth Foundation (DEF). Co-founded by the French technologist Clément Lesaege and the Argentinian entrepreneur Federico Ast, Kleros is a French cooperative that has been actively developing blockchain-based governance tools with a focus on decentralized dispute resolution protocols since 2017. The organization has strong technical development capabilities with a team of around 20 full-time employees at the time of research. DEF is a non-profit incorporated in the US and co-founded by Argentinian political activists and technologists Santiago Siri and Pia Mancini, as well as Herb Stephens from the US. DEF's mission focuses on researching and building open-source technologies that promote and realize digital democracy. Founded in 2015, it is unclear how many full-time employees DEF had at the time of research, if any. Nevertheless, a keen mix of activists, researchers, and technologists has contributed to the organization. Kleros and DEF joined forces in 2019 to launch PoH. Kleros leveraged its technical capabilities to build the smart contracts and web application for the registry, which also draws on an existing Kleros product, the Kleros courts for resolving disputes on challenged profiles during the registration phase. In turn, DEF led the development of the UBI smart contracts through which the UBI cryptocurrency is distributed to all users registered on PoH. As such, upon launch, the PoH website introduced the project as 'powered by' Kleros and DEF. Importantly, both organizations, especially their respective leaders, who all have a substantial following on social media, promoted the launch of the PoH registry. In particular, the founding organizations' backgrounds as well as that of their leaders, attracted a significant Spanish-speaking user base, predominantly based in Latin America, specifically Argentina. Shortly after the launch of the PoH web application (Ragosa, 2021; Ragosa & Ast, 2021) and UBI incentive system (Ragosa et al., 2021) in March 2021, the founding organizations announced that the governance of PoH would be transitioned to a DAO in April 2021 (James, 2021).

Governance of PoH DAO

The PoH DAO was advertised as the first "truly democratic 1-person-1-vote governance system with open participation". At inception, it consisted of a governance forum website on which users could raise and discuss proposals related to the project, called Humanity Improvement Proposals (HIPs). If and when an HIP has gathered sufficient informal approval, it can be submitted to a dedicated Snapshot page, through which any user registered on PoH can vote for or against the HIP on a 1-user-1-vote basis. Snapshot is a tool that allows DAOs to create profiles and members of the DAO, upon signing in with their blockchain wallet and proving they own the required token, vote on proposals. Snapshot is a popular tool with many DAOs as it allows for voting to occur off-chain, thus making it cheaper and more user-friendly. Snapshot votes are nonetheless stored and counted in a distributed manner. In the case of PoH, the outcome of the Snapshot vote is 'translated' on-chain using a dedicated 'Governor smart contract', a type of smart contract developed by Kleros for this purpose. Via the governor smart contract, votes can also trigger the autonomous enforcement of decisions if possible, for example, when the vote decides that funds controlled by the DAO should be sent to a specific wallet address as a grant or reward. The DAOs initial scope was to govern the PoH app (e.g. adapting the sign-up process or changing other parameters), the UBI smart contract (e.g. controlling how many UBI are distributed, at what rate) and to allocate a total of 4 million UBI tokens from a community treasury (James, 2021). Alongside these official sites of the DAO, the community also relied on a number of already existing and new Telegram channels for communication around the project. The earliest PoH specific Telegram group was initiated by Kleros, following the publication of the PoH white paper in September 2019. Following the launch of the PoH DAO and the international growth of the community, various new Telegram groups were opened to discuss the projects and its governance, including a number of Spanish speaking groups catering to the growing Latin American part of the community. In fact, when we began our research with PoH, we identified over 10 different Telegram groups associated with the project, with some focussing on specific topics (e.g. the UBI token or PoH governance) and others on specific languages. While only registered humans can vote on proposals in Snapshot, anybody was able to join discussions on the governance forum and in the various Telegram groups.

Beyond these interfaces, the voting mechanism and the loosely defined scope, PoH DAO was launched without much additional structure to guide governance. As such, many of the early HIPs aimed to clarify governance structures and processes. In its first month, the DAO adopted a more clearly defined process as to how proposals progress from the deliberation stage on the forum to a binding vote on Snapshot (HIP5[17]). Furthermore, as the community came to realize that many decisions they made were not automatically enforceable on chain, e.g. hiring employees for the DAO (proposed in HIP2[18] and HIP3[19] but never implemented) or to administer the website, it

[17] See: https://gov.proofofhumanity.id/t/hip-5-adopt-a-proper-poh-dao-governance-process-to-ensure-hip-quality/393
[18] See: https://gov.proofofhumanity.id/t/hip-2-recruitment-procedures-and-worker-relations/175
[19] See: https://gov.proofofhumanity.id/t/hip-3-recruitment-of-workers-for-the-dao/174/10

decided to institute a Mission Board (HIP7[20]). The scope of the Mission Board's competencies were further defined in HIP21[21], and included managing various DAO assets such as the website and governance forum, interpreting decisions made by the DAO and overseeing that new proposals adhered to existing rules. Following HIP21, the Mission Board consisted of five members, initially from the founding organizations and later elected by the community. Furthermore, the DAO discussed and adopted various proposals relating to the role of admins in various communication channels used by the community, including the Telegram groups. These proposals mandated that admins be elected (HIP16[22]) and led to the adoption of a code of conduct for community communication (HIP19[23]). Taken together, these tools, interfaces, processes, governance bodies, and code of conduct formed PoH DAO's early governance structure.

Nevertheless, despite early optimism and a rapid influx of new registered users on PoH, the community decided to split in November 2022, less than two years after the launch of the project. Specifically it adopted a proposal (HIP74[24]) to conduct a 'peaceful fork' with the intention that this would be "*an opportunity for the community to fork the protocol and engage each side of the DAO to support their preferred version of the project.*" In the next section I outline three core themes which emerged as unintended consequences of PoH's 'spin-out-to-community', and which seem to have contributed to the community's decision to fork.

4.1.5 Findings: challenges that contributed to the crisis

Challenge 1: unclear and disputed purpose

The first major theme that emerged, especially from the interview data, was that the community seemed to disagree on the core purpose and vision for PoH, and that this disagreement grew rapidly as more members joined. To begin with, the vision was not clearly articulated or perhaps even defined when PoH was spun out. Furthermore, there were also few practical ways to use the PoH identity. The only fully integrated use case at launch was the issuance and distribution of the UBI token. However, as the value of UBI began to drop rapidly, this use case became rather 'unuseful'. The lack of a clearly defined purpose emerged as a key driver of the crisis. As one interviewee stated: "*I believe the source of all this conflict is the different visions and also the idea that these visions should be pursued with the same protocol."*

Throughout the interviews, participants consistently explained that there were at least two competing visions for PoH and that these visions manifested in two factions competing and

[20] See: https://gov.proofofhumanity.id/t/hip-7-institute-management-board-phase-1/395
[21] See: https://gov.proofofhumanity.id/t/phase-3-hip-21-amend-the-rules-of-the-mission-board/853
[22] See: https://gov.proofofhumanity.id/t/phase-3-hip-16-make-admin-roles-of-communication-platforms-eligible/786
[23] See: https://gov.proofofhumanity.id/t/phase-3-hip-19-code-of-conduct-for-poh-telegram-channels/769/7
[24] See: https://gov.proofofhumanity.id/t/phase-3-binding-hip-74-a-peaceful-fork/2487

increasingly conflicting in the community. Broadly, the debate often hinged on what members thought was more important for PoH: to be inclusive and accessible to as many people as possible or to provide stringent, robust technical security. It is important to note that technical security and inclusivity do not necessarily contradict each other, however, in the context of PoH, they came to be perceived as such by interviewees, who consistently described there being 'one side' and the 'other side'. Yet, although all interviewees consistently pointed towards the community's division and conflicting values, it is not entirely clear how the factions were divided. They were variously characterized as "Kleros vs DEF", "technical people vs non-technical people", people who emphasize "economic and technical security vs community ownership", or "Spanish speakers versus non-Spanish speakers".

Observations from discussions around governance proposals help to delineate the lines more clearly. Here, proposals that tried to make the registration process more accessible, for example, by making the policy regarding the pixels for the video submission more precise (HIP8[25]), allowing one-character mistakes in the display of the wallet address (HIP27[26]), or allowing users to also speak Spanish in their video submission instead of just English (HIP42[27]), tell a consistent story. The core motivation for submitting each of these proposals was to minimize the number of profiles that were challenged and taken to a Kleros court on account of honest mistakes, such as uploading the wrong file format or mispronouncing the video phrase. While one side consistently argued that it was immoral and against the values of inclusivity and democracy for the project to allow people's deposits to be taken on account of such small mistakes, others defended the existing policy, arguing that it was required to keep the registry sybil resistant, arguably its core purpose.

With Kleros providing the technology used to arbitrate challenges for new profiles, be they due to honest mistakes or malicious intent, the organization and its members invariably became associated more with the side that emphasized technical security. Others felt that the financial incentive for challenging profiles and bringing them to the Kleros court was antithetical to the core purpose of PoH, i.e. to be as inclusive as possible and even unethical as people's hard-earned deposit went to pseudonymous Kleros jurors. While all members agreed that creating and maintaining a secure, decentralized digital identity system was key, the important question became: for what?

Overall, it was up to the community itself to deliberate and define PoH's values and purpose, a task which ultimately proved to be challenging and divisive. Specifically, people often felt that 'the other side' (however defined) was out to undermine or sabotage one's own side. As one interviewee explained: "*Everything that is done by one faction is interpreted in the worst possible way by the other faction. I don't agree with those interpretations. I think both sides are trying to do what they*

[25] See: https://gov.proofofhumanity.id/t/hip-8-phase-3-accept-352-as-minimum-dimension-in-video-submissions/536/23
[26] See: https://gov.proofofhumanity.id/t/phase-3-hip-27-allow-1-character-mistakes-in-displayed-addresses/1496
[27] See: https://gov.proofofhumanity.id/t/phase-3-binding-hip-42-allow-spanish-phrase/2096/7

think is best for the project. They have no more trust in each other and don't want to cooperate. Every time someone wants to reconcile, someone else out of that faction might do something that is considered an attack, and then all attempts break down." In the next section, I turn to the fragmented deliberation which contributed to a failure to reconcile differences in the case of PoH.

Challenge 2: fragmented deliberation spaces

The second key theme that seemed to have contributed to the crisis in PoH was the fragmentation of deliberation spaces. As outlined in the case description, the community met on over 10 different Telegram chat groups in addition to communicating on Discord, Twitter, Instagram, Reddit, the governance forum, and in other private chat groups. With this fragmented deliberation space, finding consensus over a shared purpose or reconciling differences became very challenging. As one interviewee put it: "*It's very difficult to organize things when people aren't on the same page, or even in the same book!*" The lack of a unified deliberation space was recognized as a problem across the community. With everybody being able to choose freely which group they wanted to be part of and without a top-down coercive mechanism available to force people to join a single channel or platform, groups began vying for the title of being 'official' or perceived as legitimate.

For example, in June 2020, two proposals (HIP16[28] and HIP18[29]) tried to address the issue by proposing that community moderators should be elected for social media platforms (Reddit, Instagram, etc) and communication channels (predominantly Telegram). In return for conducting such elections in a specific manner, the platforms or channels would be labelled as 'community managed' and be linked on the official PoH project website as well as in other ecosystem documentation. Both mechanisms serve to distinguish 'legitimate' and 'official' groups from others, in the hope that users would self-select joining the discussion in those groups. Although the proposals were adopted in a merged form within a month, they were not able to create a more unified, legitimate deliberation space. An issue here was that even when elections were held, there was no easy way to remove administrator rights from the owner of a group on Telegram. As such, various early members, specifically members of Kleros who had started the Telegram groups prior to the DAO, did not give up their admin rights. A core argument for doing so was that 'group owners' can be held liable for the activities in their group, thus giving owners an incentive to maintain their admin privileges and use them to ban or moderate illegal content. Overall, there was no mechanism that could ensure that decisions regarding elected admins on social media sites and across communication channels were enforced. Similarly, HIP19[30], which stipulated a code of conduct for PoH Telegram channels and was accepted with 100% of the votes, could not be enforced effectively. As such, many interviewees told us that discriminating language and hurtful discussions continued in Telegram groups even after the code of conduct was adopted.

[28] See: https://gov.proofofhumanity.id/t/phase-3-hip-16-make-admin-roles-of-communication-platforms-eligible/786
[29] See: https://gov.proofofhumanity.id/t/phase-2,hip-18-communication-roles/816
[30] See: https://gov.proofofhumanity.id/t/phase-3-hip-19-code-of-conduct-for-poh-telegram-channels/769

Consequently, the issue of fragmented communication channels vying for legitimacy prevailed, and, in fact, increased over time. As one interviewee explained, "*The split in the group has created two echo chambers which is encouraging a radicalization within both groups."* The issue culminated in HIP50[31] two years later, which openly aimed to delegitimize any groups owned or administered by members of Kleros (including the @proofofhumanity Twitter profile, which had well over 30.000 followers and would be replaced by @pohdao, a newly created competing profile). Members of Kleros perceived the proposal as an attack. HIP50 consequently ignited a community-wide debate and increased animosities between the different camps. Once again, despite being adopted with over 60% of the votes, the DAO did not have any executive power or enforcement mechanism that would ensure that the 'non-official' Telegram groups would shut down or that users, both inside and outside of PoH, would begin following a new Twitter account. As such, HIP50 was also *de facto* ineffective in solving the issue of creating 'official' DAO communication channels and instead simply contributed to increasing animosities within the community.

Overall, the fact that members were able to create new deliberation spaces at will, paired with the problem that there was no consensus over which channels would be the main ones or mechanisms to enforce any such decision, contributed to the community fragmentation and even outright hostilities. Furthermore, the lack of a unified deliberation space was also a factor that prevented the community from reconciling its differences in a constructive manner.

Challenge 3: incomplete governance design and lack of legitimate leadership

The failure to reconcile differences and settle on a clear vision and purpose for PoH was further exacerbated by the initial governance design of the PoH DAO at launch. As one interviewee stated: "*One fundamental mistake was to say: 'We'll just start voting on stuff.' That was not a good idea. The founding people should have probably sat down and made a few decisions, which would then be subject to democratic reform once they had figured out how to do voting in this particular community."* Thus, the initial, well-meaning intention to spin out PoH DAO without too much predetermined structure to allow for governance to evolve in a bottom-up manner, inadvertently also contributed to the conflict.

Two aspects seemed to be particularly lacking in PoH's initial governance design: (1) a mechanism to enforce decisions off-chain, and relatedly (2) some sort of recognized leadership that held legitimate authority across the community. I have already discussed the lack of off-chain enforcement mechanisms in the context of determining 'official' communication channels. The issue also affected other areas, such as hiring employees for the DAO, which, despite being proposed and decided within the first month of the DAO, was never actively implemented. The lack

[31] See: https://gov.proofofhumanity.id/t/phase-3-hip-50-clarify-which-telegram-group-and-twitter-accounts-belong-to-poh-dao/2274/14

of enforcement somewhat undermined the meaningfulness of decisions being made through the DAO and stalled the project's development.

The case of the Mission Board most tangibly illustrates the issue of broadly recognized leadership across PoH. The Mission Board was instituted in April 2021 with the goal of making leadership more democratically accountable. Prior to the Mission Board, leadership was initially assumed by the two founding organizations and consisted of administering the DAO's funds and other assets such as the website and governance forum. HIP7[32], argued that over time these functions should be carried out by an elected board which was accountable to the DAO. Until elections for such a board would take place, two members from each founding organization would hold seats on the interim Mission Board for one year. However, as the two organizations and their leaders came to occupy opposing positions with regard to the purpose and vision for PoH, the Mission Board was caught in a deadlock on various issues, including the hiring of employees. To increase the Mission Board's effectiveness, the community adopted HIP21[33], which added a fifth, tie-breaking member to the board and also specified some limitations on the board's powers. Furthermore, in May 2022, the community voted for new Mission Board members, thus ostensibly legitimizing the board. Nevertheless, disputes continued, especially as hostility grew within the community and two board members representing Kleros and DEF respectively, came into increasing conflict over who was credited as being the founder of PoH in various news articles, conference talks and podcasts. The Mission Board's infighting resulted in several proposals to remove members from the board (some of whom became inactive and others who were accused of abusing their position of power), a member resigning and publicly attributing their resignation to the board's internal politicking, and ultimately the board itself being abolished through the adoption of HIP75[34]. The motivation for abolishing the Mission Board quite clearly states that: "*The role of Mission Board Member has so far only caused a rift in the community, delaying the normal development of the organization. Several of its members embarrassed the community with their public manifestations, and others were not present except on rare occasions. Most of the functions assigned to them have not been executed. "Personalisms" only proved to generate a war of egos that discredits us in front of the rest of the ecosystem."*

Overall, it appears that although the community was in need of leadership after PoH's spin-out (e.g., to facilitate the process of settling on a shared vision and purpose for PoH or enforce decisions off-chain), the Mission Board, despite being elected by the community, did not succeed in being broadly recognized as a legitimate leadership team for the DAO. Instead, the Mission Board, or its composition, further aggravated hostilities within the community instead of reducing them.

[32] See: https://gov.proofofhumanity.id/t/phase-3-hip-7-institute-a-mission-board/424
[33] See: https://gov.proofofhumanity.id/t/phase-3-hip-21-amend-the-rules-of-the-mission-board/853
[34] See: https://gov.proofofhumanity.id/t/phase-1-hip-75-remove-the-mission-board-member-role/2523

4.1.6 Discussion

In this section, I discuss how each of the themes identified as having contributed to the crisis in PoH can be understood in the context of DAO governance challenges and E2C more broadly. While the themes identified are specific to PoH and cannot be generalized beyond its context, they do serve as useful starting points to hypothesize some of the unintended negative consequences that may arise post-E2C and require further research. Furthermore, by taking PoH as a cautionary case study, where possible, I outline potential mechanisms that PoH may have adopted to mitigate some of the themes fuelling their internal crisis. Experimenting with and adopting such measures, may help other projects to avoid similar situations in the future.

Defining and anchoring purpose

Disagreement around the core purpose and values of PoH lay at the heart of the community's conflict and eventual decision to split. Designed as a general-purpose system, at launch PoH was promoted as a technology that could potentially cater to anyone and as an identity solution for anything. When PoH was spun out to the DAO, the founders intended for the community to fill this very broad scope with a strategy for how the technology should evolve. However, as illustrated above, the community was not able to reach an agreement on a shared goal. This insight mirrors findings from previous research (Alston, 2022; Tan et al., 2024; Ziolkowski et al., 2020). Specifically, the issue of realizing purpose by building network effects, raised by Ziolkowski et al (2020), helps to make sense of this finding. The full value of PoH can only be realized when it is adopted at scale for a specific use case, be that accessing financial support systems, such as UBI was intended to be, signing into blockchain applications, or as a reputation and certification system. Depending on where PoH's identity system becomes most widely adopted, its governance may need to be based on different values or fulfill different functions. In the case of PoH DAO, it seems that different parts of the community were envisioning the protocol's core purpose to be realized in different use cases. While some saw PoH as a technology that could provide equitable access to pro-social use cases, thus valuing inclusivity and accessibility, others may have envisioned it for applications that require more stringent security and where the financial incentives underpinning this security do not contradict any associated values. Without being integrated in any specific use case with meaningful network effects and value, beyond UBI, the conflicting visions remained unfulfilled and unresolved. Recognizing this, the community decided to split by making their different visions explicit in two separate constitutions underpinning the governance of the two protocols post-fork.

Overall, in the case of PoH, the spin-out to community ultimately sparked and exacerbated conflict over the project's purpose. In hindsight, this insight suggests that it is important for organizations to clearly define their purpose and values before transitioning governance to the community, especially if a technology has not yet fully realized its value through adoption in the market. This may imply that founders need to determine and anchor some constitutional aspects of an

organization and technology top-down and design adequate governance mechanisms for the community to change these features later on, instead of hoping for a constitution to emerge bottom-up through community consensus. Future research may investigate different means for anchoring purpose before, during, and after E2C. While PoH DAO chose to do this via written constitutions after its decision to fork, shared goals can also be anchored via legal mechanisms (e.g. implementing steward ownership structures, see: Sanders, 2022), technical design (e.g. by adopting a governance minimization approach where certain parameters are technically hard-coded and cannot be changed easily; see: Ehrsam, 2020) or social norms. A big question concerning all this is when a goal is sufficiently defined and shared to allow for constructive collective action and governance to emerge around it.

Preventing harmful fragmentation of deliberation spaces

The fragmentation of the deliberation space and failure to enforce decisions concerning deliberation spaces contributed to the failure to reconcile differences in the PoH DAO community. While this finding has not received dedicated attention in previous research on DAO governance, it is unlikely to be a challenge that is solely confined to PoH. Indeed, both DuPont (2018) and Nabben and Zargham (2022) point to various private communication channels through which decision-making in DAOs informally takes place. The core challenge here is that, because DAOs are globally distributed, virtual communities, they necessarily rely on online spaces for deliberation. Yet, virtual deliberation spaces are (a) easy to exit and (b) all have the issue of implicit feudalism (Schneider, 2021), which both facilitate fragmentation. I discuss each in turn. Firstly, digital chat groups are virtually costless to set up and join. It is consequently easy for groups within the same DAO to exit one particular channel and form their own deliberation space. Exit may occur because users are dissatisfied with moderation in a particular channel (echoing Hirschman's (1970) logic of exit and voice) or for practical reasons, like wanting to discuss a specific topic or converse in a native language. As digital platforms frequently encompass globally dispersed, multilingual communities with many different sub-interests and needs, some fragmentation is likely. This is not necessarily problematic. Some fragmentation in different languages or interests may foster diversity and specialization rather than conflict, and does not prevent people from coming together or assigning delegates who jointly deliberate on major issues in shared spaces. However, as in the case of PoH, the moderation of certain deliberation spaces themselves may also be a reason for people to decide to exit into their own deliberation spaces. This is not an unlikely scenario, as virtually all spaces in which virtual communities gather suffer from what Schneider (2021) terms 'implicit feudalism', i.e. the fact that 'owners' or 'creators' of a particular virtual deliberation space usually hold vast administrative power (enabling them to censor content, ban people or update group settings unilaterally) without being accountable to the community inhabiting the space. As the PoH case showed, even when the community elected new moderators, there was no mechanism for them to force existing owners to step down (and existing group owners had good, legal reasons to retain administrative rights). Here, the consequences of implicit feudalism led people to exit some shared communication channels and thereby contribute to the increased fragmentation of the deliberation

space. When this type of fragmentation occurs, mistrust and conflict grow rather than diversity and specialization. If all shared communication spaces break down and the community loses the intention or interest to engage in collective deliberation, community governance is unlikely to work well.

Taking this into account, future research may investigate what is required to build cohesive deliberation spaces for DAOs with diverse, globally dispersed communities without having mechanisms that prevent anybody from setting up their own deliberation space. Future research may also consider tools and governance mechanisms that can help to overcome the issue of implicit feudalism, which holds the risk of fuelling fragmentation, mistrust, and conflict. Learning from the challenges faced by PoH, other E2C practitioners may also want to consider the question of setting up cohesive, community-wide deliberation spaces pre-exit.

Establishing legitimate leadership

In the case of PoH, a leadership team was required to interpret proposals, enforce off-chain decisions, and administer the DAO's off-chain resources such as the website and governance forum. Despite being elected by the community, the Mission Board did not succeed in establishing itself as a legitimate authority. Instead, for example, in the case of hiring employees for the DAO, the Mission Board ultimately stalled the proposal's implementation despite broad support from the community. This insight provides an explanation for the finding from previous research (Sharma et al., 2024b), which observed many stalled and 'cancelled' proposals in DAOs, even after passing governance. Specifically, it indicates that some proposals may be stalled due to a lack of off-chain enforcement mechanisms or legitimate leadership to drive implementation. Future research may try to substantiate this claim in the context of DAOs more broadly.

Furthermore, the fact that a lack of leadership posed a significant challenge in PoH DAO also indicates a different understanding of power concentrations in DAOs than discussed in previous literature (Barbereau et al., 2023; Peña-Calvin et al., 2024; Sharma et al., 2024a). In the case of PoH DAO, the community was in favor of concentrating some power in an elected leadership body. In fact, the failure to establish some form of leadership, which in some arguments may be taken to indicate less decentralization, was a key driver of the crisis in PoH DAO. Future research may focus on the role of leadership, as opposed to concentrations of voting power, in DAOs more broadly, and on which mechanisms help to establish the accountability and legitimacy of such leadership groups. In the context of E2C, this insight may also indicate that some pre-established transition leadership team is useful to help drive decision-making and implementation in the early phases post-E2C.

4.1.7 Conclusion

In this chapter, I have presented the ethnographic case study of PoH, a project that was spun-out-to-community and subsequently faced a significant crisis, eventually leading the

community and technology to fork into two distinct versions. Guided by the goal to identify factors related to E2C, which contributed to the community's crisis, in this chapter, I have tried to draw attention to some of the unintended negative consequences of E2C. In the case of PoH, three main challenges connected with the project's transition to a DAO emerged as key drivers of the crisis. Firstly, the PoH DAO was tasked with collectively defining the project's key purpose and values with little guidance to go by. Ultimately, the community was unable to find consensus over the core purpose. This indicates the importance of anchoring some purpose and values of an organization and technology (with adequate mechanisms to amend it) before transitioning to community governance. Secondly, PoH DAO was unable to reconcile its differences due to its fragmented deliberation space. This insight raises the challenge of how to design cohesive virtual deliberation spaces in diverse, globally dispersed online communities that face a low cost of exiting existing spaces. Finally, in the case of PoH DAO, some form of legitimate and accountable leadership may have helped the DAO to move forward. However, the Mission Board's infighting became a key issue in the community's crisis. This insight suggests that some forms of accountable power concentration and accountable leadership may be useful for organizations in the early phases after E2C. A key challenge here is to ensure that this leadership group is broadly recognized as holding legitimate authority. The insights discussed throughout this chapter further add to the existing literature on challenges in DAO governance, as well as opening several avenues for future research.

Chapter 4.2
After E2C: Working conditions in DAOs

"If I was a critical person coming in from the outside and observing that stuff, then I would be like: this system is designed purely to exploit people. And we know that's not the case having been around from the beginning and (seeing) the earnestness of trying to make it work from this community building perspective." - a DAO contributor

4.2.1 Introduction

As argued in chapter 1.2, one of the main driving factors for cooperative conversions has been preserving jobs and maintaining decent working conditions (Artz & Kim, 2011; Bretos & Errasti, 2017; Di Stefano et al., 2024). Similarly, one of the main benefits of platform cooperatives cited throughout the literature is their ability to counter precarious working conditions created by the gig economy and contribute to the creation of more equitable platform labor (Grayer, 2020; Mannan et al., 2023; Mannan & Pek, 2021; Scholz, 2014, 2017). As illustrated throughout this thesis, DAOs also present a prominent possible outcome of E2C. However, the effects of DAOs on labor and how they compare to those of traditional and platform cooperatives are less clear. While conceptually, many have put DAOs in relation to (platform) cooperatives, emphasizing similar values such as autonomy, independence, voluntary cooperation and participatory governance (Hubbard et al., 2023; Nabben et al., 2021; Patel Thompson et al., 2022; Robey, 2022) as well as enabling virtual worker self-management (Mannan, 2018) and news outlets were quick to describe DAOs, as an easy way to make a lot of money (Ilyushina, 2022) without any of the annoying parts of having a normal job (like dealing with a boss or needing to be in the office 9-5 on weekdays) (Wilser, 2023a, 2023b), no comprehensive empirical research into DAO working conditions exists to date. Consequently, in this chapter, I explore the reality of working in DAOs from the perspective of DAO contributors. It is important to note that I do not focus on DAOs that emerged from E2C specifically. Thus, I do not capture the particularities that this subset of DAOs has on working conditions, or how the role of individual employees changes after E2C. Nevertheless, by focusing on working conditions in DAOs more generally, I aim to establish a baseline to compare labor in DAOs to that reported after cooperative conversions and in platform cooperatives. This baseline can then also be used to distinguish working conditions in DAOs that emerged from E2C from those that did not. Furthermore, I aim to surface distinctive needs that arise from working in this novel organizational setup and propose policies at an ecosystem level, which can help to create more equitable working conditions in DAOs generally. By focusing on ecosystem-wide policy proposals,

my intention is to identify mechanisms that can support contributors across DAOs, rather than organization-specific policies, which may amplify inequalities within the ecosystem.

Thus, despite not focusing explicitly on the subset of DAOs that emerged from an exit to DAO, through this research, I indirectly investigate: How do workers, as a specific stakeholder group of the overall community affected by E2C, experience working in DAOs, conceptualized as the outcome of an E2C? Which benefits and challenges emerge?

Drawing on empirical research conducted with DAO contributors, in this chapter I argue that, in the context of labor, DAOs can best be understood as a plural, mutable concept, that simultaneously encompass elements and logics from organizations in the solidarity economy (Borzaga et al., 2019), such as cooperatives, as well as from the highly precarious freelance and gig economy. I further argue that while contributors envision and aspire for DAOs to become part of the solidarity economy, the current working conditions facing individuals are more akin to those of workers in precarious freelance positions. Finally, based on a series of workshops conducted with industry experts, I propose three modes of policy that can help to improve working conditions in DAOs and move them more towards the vision of a vehicle for the solidarity economy, akin to cooperatives, which its contributors espouse.

The chapter is structured as follows. First (section 2), I situate my research in existing academic and industry literature analyzing DAOs and labor. Next (section 3), I outline the methods I used together with two research collaborators to conduct a workers' inquiry (Woodcock, 2021) with DAO contributors. Our aim was to build an empirically grounded understanding of the working conditions in DAOs, from the perspective of DAO contributors, and simultaneously organize with industry stakeholders to improve the status quo. In section 4, I present the main findings and insights from our engagement with contributors. Here, I focus on how participants conceptualize the notion of DAOs and DAO contributors (section 4.1), participants' visions and aspirations for DAOs and labor (section 4.2), the current reality and challenges of contributing to DAOs (section 4.3), and a set of policies that surfaced throughout our research activities and promise to create more equitable working conditions in DAOs (section 4.4). In section 5, I turn to discussing these findings with regard to E2C. Finally, I conclude (section 6) by acknowledging limitations and highlighting implications for further research and practical experimentation that can help to improve working conditions in DAOs and thereby the positive effects of exit to DAO.

4.2.2 Related literature

Previous academic research into DAOs as a new work environment has tried to make sense of the phenomenon conceptually (Schnauder, 2023) and by drawing on secondary industry insights (Ilyushina & Macdonald, 2022). Ilyushina and Macdonald (2022) find that: "While displaying some characteristics of traditional employment (e.g., volunteering, gig economy, contracting), the distinguishing characteristics of DAOs require fundamentally new approaches to economic analysis

and employment practices" (2022, p.51). Overall, both pieces highlight that DAOs seem to transcend traditional market–firm and owner–user boundaries and thus require new conceptual lenses to make sense in traditional labor economic theory. Although Ilyushina (2023) outlines what empirical research may be needed to ground new conceptual models, no such empirical research has taken place to date. While empirical research on and with DAO contributors exists (Mannan, 2018; Rennie, 2023; Rennie et al., 2022; Schirrmacher et al., 2021), it focuses on specific aspects of DAO labor, rather than trying to surface insights about the working conditions in DAOs as a whole. For example, Mannan (2018) conducts a case study of Colony to evaluate if and how DAOs can overcome some of the difficulties faced by labor-managed firms, specifically worker cooperatives. In doing so, the article focuses predominantly on the advantages that tokens and smart contracts can bring in terms of workers' self-governance, rather than the working conditions themselves. Relatedly, Schirrmacher et al (2021) conduct ethnographic research in two DAOs, MakerDAO and Yearn, to understand the role of tokens in reconfiguring traditional work practices. While their work is more aligned with the goals of the project at hand, it does not generate insights beyond the two specific organizations studied and does not assess aspects related to DAO work that do not concern the use of tokens. Finally, other ethnographic research into DAOs and labor (Rennie, 2023; Rennie et al., 2022) has focused on contribution systems, i.e., novel mechanisms through which DAO contributors collectively determine what counts as meaningful work and how this work is valued and compensated. While this research has led to novel conceptual contributions to foundational economic theory (Rennie & Potts, 2024) and inspired proposals on how to optimally design compensation in contribution systems (Davidson, 2023), it too does not address working conditions in DAOs as a whole.

The majority of industry research has mirrored (or perhaps inspired) the focus on DAO contribution systems and compensation mechanisms (S. Graham, 2021; Hedgey, 2022; Martin, 2022; Orlando, 2022; Rafa, 2021), often with a focus on suggesting new approaches or tools based on the experience from individual communities. Another aspect that the industry has focused on is how leadership is conceptualized and enacted in DAOs (MrNobody & Wocken, 2022; Wocken & Diaz, 2023), once again emphasizing both similarities and differences with regard to how leadership works in more traditional contexts.

Other, more general, industry-wide research has begun analyzing open-source developers and technical contributors in the blockchain industry (Electric Capital, 2024) by tracking individuals' activity on GitHub. Such research is complemented by organization-specific initiatives such as Project XRay, a qualitative research initiative undertaken by MakerDAO in an attempt to understand how best to attract and retain developers (SES Core Unit MakerDAO, n.d.). Interestingly, the initiative found that although developers are initially attracted to working for the DAO for financial reasons, developer retention was predominantly driven by cultural reasons. Similarly, reasons for leaving MakerDAO were not financial but included issues such as burnout, chaotic work settings, or loss of excitement.

The insight that culture, not money, is a core structuring force shaping the DAO work environment is confirmed by 'DAOs: the new coordination frontier', the most comprehensive empirical industry study on DAOs and labor to date (GitcoinDAO, 2021). The study, led by members of Gitcoin DAO and Bankless DAO, conducted a high-level survey with 422 DAO contributors, including many options for long-form answers. They found that people generally *felt* very optimistic about working in a DAO, but could not depend on them financially. Furthermore, respondents had a lot of open questions to figure out regarding core aspects of their work, such as complying with tax regulations, benefits, recruiting and retention of talent, or managing income volatility. Another survey, conducted by the DAO tooling provider firm Tally, came to similar findings, emphasizing that onboarding new talent remained a particular challenge (Bovino & McGlone, 2022). It is important to note that research for both surveys was done at the height of a bull market, where the blockchain industry was generally feeling very optimistic and benefited from an influx of capital. The market turned sharply in late 2022, following the collapse of FTX, an influential cryptocurrency exchange that misused and lost USD 8bn of customer funds. No empirical research on DAOs and labor, or DAOs as a work environment, has been conducted, following the collapse of FTX. I consequently set out to begin filling the gap in our empirical understanding of working conditions in DAOs.

It is important to point out two high-level insights that emerge from this brief review. Firstly, and particularly concerning the academic research conducted on DAO labor thus far, it is interesting to note that authors frequently ask how DAO work (or aspects thereof) are similar or different from existing institutional logics, such as cooperatives, open-source contributions, freelancing, or the gig economy, etc. Here, it is the researcher trying to apply existing institutional logics to make sense of the phenomenon being studied. Secondly, in industry research, which is less explicitly concerned with applying existing institutional logics to DAOs, the question of onboarding, creating clear structures, and understanding how to value different types of contributions frequently surfaces. This indicates that the problem of 'making sense' of DAOs as a work environment and DAO contributions as (valuable) work is also an issue facing members of the industry and contributors themselves. This indicates that without clear and explicit institutional logics that can be communicated to newcomers, it is difficult to understand how to be onboarded to a particular DAO or make valuable contributions. Consequently, I also aim to gain a better understanding of how existing institutional logics, such as those of an employee, cooperative, contractor, and the gig economy, intersect in DAOs.

4.2.3 Methods

As described previously (chapter 1.3), in this chapter, I draw on the approach of workers' inquiry (Woodcock, 2021) conducted with two collaborators from the Other Internet Research Institute. While workers' inquiry does not prescribe precise methods, it aims to generate two outcomes. Firstly, to understand the day-to-day working conditions, needs, challenges, and aspirations in a particular work context from the perspective of the workers themselves. And secondly, to use these insights and the research process to organize with workers to improve their working conditions

(Woodcock, 2014). Taking the general goals of workers' inquiry as our starting point, our data collection and research process was broadly structured into three phases.

First, we drew on the literature discussed above to conduct a situational mapping (Clarke, 2003) of the various institutional logics structuring the DAO work environment. After several iterations, we broadly arrived at: freelancing & the gig economy, mutualism, corporations, fandoms, learning & connecting, and states or civic organizations as the main concepts being invoked throughout the literature. Three sample iterations of our situational maps can be found in Appendix 3. Using this map, we created two diagramming exercises which plot different institutional logics for DAOs as organizations (are they perceived as cooperatives, educational institutions, states, gig economy platforms, etc?) and for DAO contributors as institutional roles (do DAO contributors perceive themselves as open-source contributors, as students, fans, politicians, employees, etc?).

We used this diagramming exercise in the second phase of our research. Here, we conducted 21 semi-structured online interviews with DAO contributors. The interview guide can be found in Appendix 4. Respondents were sourced through our own networks and by putting out a call on the Other Internet X account. Throughout our selection of interviewees, we privileged contributors who had been working in the industry for over two years and tried to include representatives from different parts of the world, with different working relationships to their DAO (employees, contractors, volunteers, and those without a formal relationship) and working within different functional areas (technical development, marketing, operations, etc). In each interview, we asked about contributors' motivations, aspirations, needs, and day-to-day working routines (see Appendix 4 for our more detailed interview guide). Furthermore, at the end of each interview, we asked contributors to situate themselves in our diagramming exercise by answering on a scale from 1-5 how well a specific organizational logic described the DAOs they worked in and how much they identified with traditional roles as a DAO contributor. With informed, written consent from each interviewee, the interviews were recorded, pseudonymized, and transcribed. In addition to the interviews, we also spent three days with 17 DAO contributors at a contributor retreat. Here, we hosted a 3-hour workshop, structured along the same questions of the interview, albeit in a group setting, where contributors were able to share and discuss their experience not just with us but also with each other. Furthermore, at the end of the workshop, we asked contributors to brainstorm and specify actionable solutions to some of the more pervasive challenges identified throughout the group discussion. Taken together, the interviewees and workshop participants represented experience from over 50 DAOs in the Ethereum ecosystem. Data from the interviews and focus groups was analyzed inductively, distilling key themes that emerged in each of the three sections in our interview guide ((a) motivations, (b) mundane, and © needs and aspirations). Furthermore, we also identified the main challenges facing DAO contributors as relating to three aspects of security. Specifically, these were: psychosocial security, financial stability, and regulatory clarity.

With insights about the working conditions in DAOs from the contributors in hand, we proceeded to the third step of our research project: to organize in order to improve working conditions, the

second goal of workers' inquiry. For this, we convened three online focus groups, which we named 'web3 work forums', one for each aspect of security that needs to be improved, as identified from our research with contributors. Participants in the working groups included 5-10 domain experts (e.g., lawyers in the forum on regulatory clarity or technologists and token engineers in that on financial stability), DAO tooling providers (i.e., individuals working for organizations already designing tools for DAOs or contributors), and contributors themselves. From the insights generated throughout the web3 work forums, we distilled a type of white paper titled 'Social Security for Web3 Work: A Preliminary Specification of the Design and Deployment of Solidarity Primitives for DAO Contributors' (Lotti et al., 2023), describing and specifying viable mechanisms to improve DAO working conditions in detail. In an attempt to mobilize the ecosystem to adopt and implement these mechanisms, we presented our insights and proposals at various industry conferences and on industry podcasts between mid-2023 and mid-2024. While our method and sample are not representative of the entire ecosystem of DAO contributors, and remains skewed to English-speaking contributors predominantly located in Europe and North America, it nonetheless presents the most in-depth, contextually sensitive academic research into DAOs as a work environment. Consequently, while generalizable academic insights are limited, our findings nevertheless provide a useful starting point to inform and drive meaningful change for DAO contributors today. The following section outlines our findings concerning the conceptualization of DAOs as a work environment and DAO contributions as work, the DAO contributors' experience today, and policies for more security in DAO work.

4.2.4 Findings

4.2.4.1 Conceptualizing DAOs and labor

Our first finding concerns the conceptualization of DAOs and DAO contributors. This finding predominantly emerged from analyzing the mapping exercise conducted with contributors. We found that the concepts of 'DAO' and 'DAO contributor' cannot be described in terms of any single historical analog or existing model. In fact, all diagrams were pointedly unique, as can be seen from the sample mappings in Figures 10 and 11. Instead, both terms seem to encompass and combine many different institutional logics, which change, depending on who you ask. Generally, contributors most strongly associated DAOs with 'mutualist organizations and co-ops', as well as with 'service providers'. This indicates that DAOs are conceptualized as organizations with an economically productive capacity, albeit with more than profit as a goal. The notion that DAOs are entrepreneurial organizations that are different from dominant platforms also transpired through contributors frequently ranking 'startup' and 'company' relatively highly, but 'gig economy platform' very low. DAO contributors frequently conceptualised themselves as 'learners' and 'open-source contributors', but also as 'freelancers', once again emphasizing the dual nature of understanding themselves in a role that lies at the intersection between traditional employment and more intrinsically motivated activities. Interestingly, concepts emphasizing the political nature of

DAOs and their governance, like ‘states’, ‘civic organization’, and ‘politicians’, ranked relatively low across diagrams.

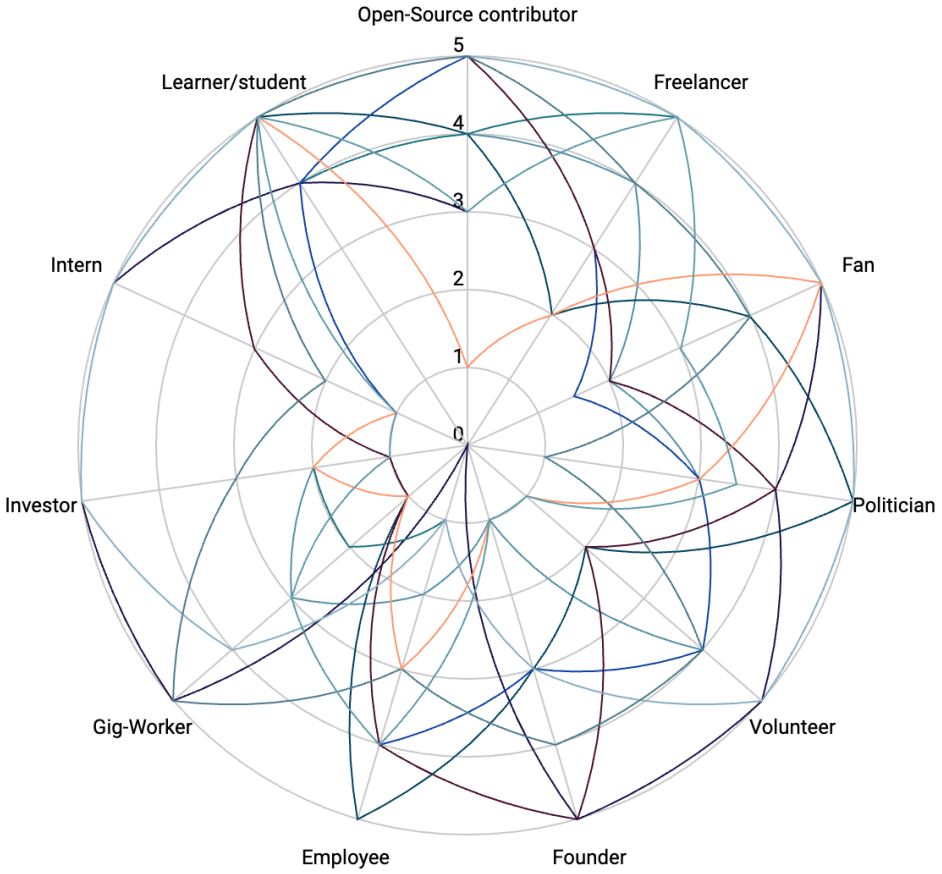


Figure 10: Sample mapping of institutional logics shaping the concept of a DAO contributor

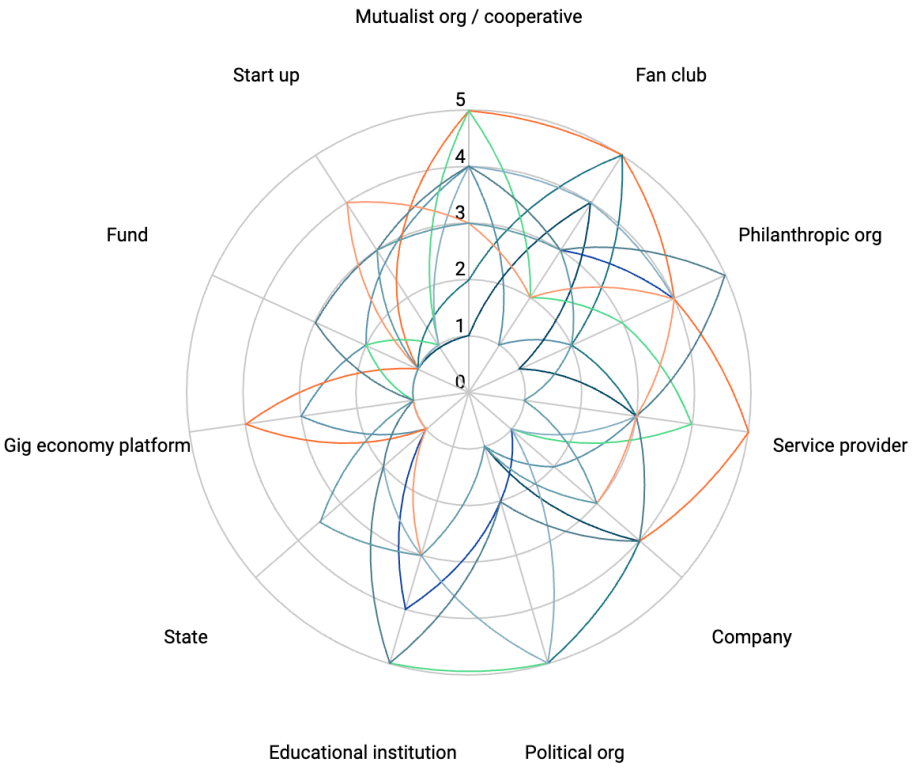


Figure 11: Sample mapping of institutional logics shaping the concept of a DAO

Overall, then, from the perspective of DAO contributors, 'DAO' and 'DAO contributor' are hybrid phenomena that cannot neatly be compared to any existing organizational logic or individual role, identified across the literature. Contributors were aware of the multitude of logics encompassed by DAOs, as one interviewee shared: *"I think it is helpful when chatting about DAOs to make that distinction. There are the DAOs that are tied to the foundation where they're distributing millions of dollars in Treasury. And then there were like, little DAOs of just people coming together and like doing things for fun, and we probably need different words for them."*

4.2.4.2 Contributor motivation and aspirations

We consistently found that contributors were motivated to join DAOs for social reasons. Specifically, contributors use DAOs as an excuse for collaboration, which enables them to work alongside "*gigabrains*" whom they would not have been able to easily connect with in traditional work environments. Most contributors shared stories about being inspired by the dedication and work of others in the space and being excited by the new things they were learning through these connections. As one contributor explained: *"I meet really brilliant people and my mind is constantly expanded by them. So that's probably my main motivation."* Furthermore, it is important to note that most contributors explicitly stated that money (especially earning more than "*affording life"*) was

not their main motivation for joining a DAO. Overall, this indicates that people are predominantly motivated to join DAOs for intrinsic reasons. Many contributors also stated that they were dissatisfied after working in traditional companies and disillusioned with the shareholder-driven economy. For some, DAOs simply catered to the style of working they aspired to: "*remote work, asynchronous work that works for me. And I work best that way."* Others hoped that contributing to DAOs was a way of driving systemic change and impact in various areas like the environment, open-source development, creative industries, and, not least, the workplace. As one interviewee put it, "*[contributing to DAOs] is aligning with my values of being inclusive, being stakeholder-minded, not only a small group of shareholders, but considering all your stakeholders in the community. So that sort of approach resonates with me, and it fits the concept."* However, while many excitedly shared the potential they saw for DAOs to bring about meaningful change, contributors also emphasized that the reality of working in a DAO did not quite match this aspiration: *"a lot of the verbiage around DAOs borrows from socialism, and a lot of the financing structures borrow from ugly, ugly capitalism. And so I think it's really hard to balance this rhetoric with the actual reality of what's happening."* In the next section, I discuss our findings regarding the day-to-day reality of DAO contributors, focusing on the challenges that surfaced.

4.2.4.3 Contributor reality and challenges

On a positive note, all contributors emphasized that they valued the flexibility that DAOs afforded, which allowed many to work from anywhere, structure their workday differently from a traditional 9-5, and, if desired, remain pseudonymous. Regarding pseudonymity, it was particularly interesting to hear accounts of other contributors that our interviewees had heard about, who earned a decent income to live in London or New York, while in reality being based in a far less expensive country or context. For these people, pseudonymous DAO work that pays in cryptocurrency functions as a type of informal remittance system. However, overall, the contemporary reality of DAO contributors is characterized by disillusionment and a lack of security in terms of psychosocial security, financial stability, and regulatory clarity, which I will explain in turn.

Psychosocial security

Contributors criticised that, in practice, many DAOs are governed by the majority shareholders instead of the broader community, often justified with the promise of decentralization in the future: *"I guess the people who hold the money make the final call. And it doesn't really matter if those people change their minds. There's always going to be progressive decentralization to just explain it away. I saw that happen multiple times. And that was sometimes really frustrating and exhausting."* Furthermore, many participants remarked that a lot more invisible labor went into coordinating and decision-making in DAOs than in traditional workplaces. Some contributors explained that they were spending 12 hours a week on calls to coordinate around the work to be done rather than doing the actual work, thus significantly slowing down productive processes and leading to prolonged working hours. Contributors were ambivalent about this dynamic. On the one hand, many expressed that they appreciated being able to participate in determining work processes, schedules, and

outputs in DAOs. On the other hand, many of the same contributors highlighted that the idealistic motivation with which they entered DAOs and the enthusiasm with which they engaged in the added labor of coordination often led to a high degree of self-exploitation over time. As one contributor explained, even without obvious hierarchies, bosses, or externally determined KPIs, DAOs are a high-pressure work environment: "*Web3 is a field of workaholics. Pressure is somewhere, but it's indirect. No one is telling you what to do, but so many are doing so much that there is a pressure and a sense of urgency".* In fact, without predetermined structures, rules, or centralized authority, the burden of setting boundaries in their work, taking time off, or managing workloads usually falls on the individual contributor. Many explained that although they knew it was important to set boundaries, they struggled with doing so. Setting boundaries is further complicated by the fact that contributors often also identify with the communities they work with, building friendships through the DAO and thus blurring the line between professional and private life. Furthermore, because DAO contributors work from all over the world, the natural boundaries of time zones collapse. This leads to an 'always on' mentality as one contributor described: "*I think everyone's in a state of being ambiently online at all times and available. I just feel ambiently present at all times. If my phone's within reach, I guess I'm available. I don't think that's specific to DAOs, but maybe it's heightened because I feel like I'm working with people all over the world."* Finally, another factor impacting the mental well-being of contributors is dealing with the extreme volatility of market cycles in the blockchain industry. Many emphasized that the mood in the industry changed rapidly depending on the overall sentiment in cryptocurrency markets: "*Resilience between cycles is the biggest pain and something we need to work on. Bull market: everyone is travelling, living their best life. A bear market is the complete opposite. These cycles are stressful."* Navigating the boom and bust cycles of the market not only induced psychological stress but also led to another major challenge: financial stability.

Financial stability

Contrary to how DAO work has been portrayed in the media and apart from contributors who previously worked in the arts and creative industries, participants generally shared that they were earning less than they would in traditional work environments. In fact, many compared being a DAO contributor to having a "*next level internship",* where one contributor remarked that: "*I've seen contributors become almost like a hiring tactic to prove their loyalty and value through unpaid or low-paid work."* Another interviewee shared that they thought DAOs were simply a name to mask the extraction of free labor by an existing tech elite: "*A bunch of DAOs are just Silicon Valley types, trying to source free labour in the name of community."* Despite this, most of the contributors we spoke to had been active in the space for 2+ years and found ways to sustain themselves financially through their work. As such, they were able to share substantial experience in navigating exploitative practices and market volatility. All contributors we spoke to preferred being paid in stablecoins, a type of cryptocurrency whose value is pegged to the US dollar or other fiat currency. Some contributors refused to be paid in a DAO's native token, and others commented that if they

did accept DAO tokens, they would classify the engagement as volunteer work. To deal with market volatility, many contributors tried to build individual savings. However, to some this felt contradictory to the ethos of building mutualist structures, espoused by DAOs: *"often when projects come to you, you have to take them on because you're like: this could all collapse tomorrow. I need to build a layer of stability for myself. But then you're confronted with this idea that in DAOs, the whole point is to share resources. And then you feel like: I'm squirreling away money for myself that I should be sharing with other people."* However, without easy access to social welfare (depending on a contributor's passport and location), the burden of ensuring their own long-term financial security falls on individual contributors. Moreover, many contributors emphasized that they saw themselves in a good position to contribute to DAOs as they did not have other life commitments like a mortgage or children. However, this is contradicted by the fact that some of our interviewees were single parents who also relied on the flexibility of DAOs to meet financial needs while also attending to care work. Overall, all interviewees expressed that what they needed was not more income, but a more predictable and stable income.

Regulatory clarity

Most of our interviewees contributed to DAOs as formal contractors or through a sole proprietorship; some had informal written agreements (like an email or chat message specifying their role or scope of work), one person was engaged as a full-time employee, and others had no employment relationship with the DAOs they contributed to. Yet, all contributors explained that they lacked regulatory clarity in terms of their work and employment status: *"As a freelance contributor, with all kinds of incomes and locations, maybe in several projects, where your tax advisor has no record - that's stressful, right? Especially if you don't live in the Cayman Islands, but you are in [the EU], and you want to stay, and you don't want to get jailed for life [...] And then there's also a necessity to be part of governance to own some tokens, but then the liabilities and tax liabilities they have. I think that next to health insurance, that would be the biggest pain point."* In many cases, contributors explained that regulatory uncertainty engulfed 'everything' and that many risks were somewhat unknown due to the novelty of DAOs themselves: *"the legal and compliance aspects of things get in the way of everything. The space being so nascent, you're constantly running into like, "Oh, my God, is this some kind of huge risk to everyone in some way?" And it just is kind of terrifying."* To mitigate this, some contributors called for easier ways to 'plug into' existing social welfare mechanisms like unemployment funds, health care, as well as tax and liability regimes. However, others also heavily criticised the existing regulatory landscape, which provided inadequate safety nets even to people in traditional employment. As a response, contributors advocated for both regulatory changes and for building more DAO native social welfare schemes from the ground up to improve DAO contributor security and working conditions.

4.2.4.4 Policies for more equitable working conditions in DAOs

In this section, I present the main suggestions that emerged from the 'web3 work forums' and which are actionable mechanisms that aim to improve contributor security in terms of psychosocial

security, financial stability, and regulatory clarity. Broadly, these policies can be classified into social norm-based policies, technical mechanisms, interfaces with the existing regulatory environment, and changes in the regulatory environment.

Social norms

Two key ways emerged in which changing social norms in the DAO contributor ecosystem could help to improve contributor wellbeing. Firstly, DAO contributors value the self-determination and flexibility that DAOs afford in their day-to-day work. However, to make this more sustainable, the ecosystem needs to recognize and value the invisible labor of coordination that maintains these relatively loose structures. A first step towards doing this is for contributors to first recognize that coordinating and contextualizing themselves in DAOs is work. This work could be made more visible by adding it as a category in contributor compensation tools or explicitly pricing it into contractual project work upfront.

A second social norms-based mechanism that could improve contributor security and well-being is collectively setting boundaries around working times. As one contributor explained: *"I would say structures and boundaries would help, rules that everyone agrees on. Like, we don't work on the weekends - it's just not allowed, you have to take breaks - stuff like that to actually just protect the humans and to incentivize the humans to stay with an organization.*" Several contributors suggested that creating such boundaries could simply take the form of a proposal submitted to the DAO, which stipulates some shared expectations or code of conduct on working hours (like 'we don't expect people to reply on weekends' or 'we support people announcing that they are taking an offline vacation and look forward to welcoming them back'). Because DAO contributors can vote on such proposals, they could easily be adopted as a contributor code of conduct by the community, making social norms regarding working hours explicit and referenceable. Furthermore, contributor codes of conduct could also be translated into more ecosystem-wide initiatives to establish voluntary working standards for DAO contributors. Such standards could be devised and propagated by setting up a dedicated working group in existing DAO standards bodies, such as DAOStar[35]. By opting in to voluntary standards, DAOs could increase their attractiveness towards talented contributors and thereby potentially gain a competitive advantage.

Technical mechanisms

Interviewees, workshop participants, and web3 work forum participants all came up with numerous private social security funds that could be established using blockchain tools. Consequently, these policy proposals are implemented through technical mechanisms. Participants suggested unemployment funds, parental leave funds, mental health support, or universal basic income funds. All funds share three core requirements: (1) a mechanism to raise money, (2) a set of conditions that qualify who can have access to this money and under which conditions, and (3) a mechanism that

[35] See: https://daostar.org/

transparently distributes the money to members if these conditions are met. Throughout the web3 work forums and in discussion with contributors, the Protocol Guild[36] was frequently cited as a good example to model the various social security funds on. The Protocol Guild distributes regular income to people working on the Ethereum protocol, on top of what these people earn elsewhere. At the time of writing, the Protocol Guild supports 181 individuals who have consistently contributed to important (as defined by the Protocol Guild) Ethereum core infrastructure projects (mainly in a technical capacity), and whose application was accepted by the existing members using rough consensus. The Protocol Guild raises money by setting a social norm that projects building on the Ethereum core infrastructure should contribute to its open-source development. It has been funded through parts of projects' VC raises or has been allocated income generated through various fees taken by projects. Finally, the Protocol Guild has created a specific smart contract, called a split contract, which automatically distributes funds to eligible members based on certain criteria. Generally, contributors suggested creating more Protocol Guild-type funds, albeit for non-technical contributions and for specific purposes such as sick leave or unemployment. The two main concerns regarding web3 native social security funds were how to curate membership and set eligibility requirements, and how to make sure the fund was sustainably financed. Nonetheless, participants throughout the research project were enthusiastic about exploring and creating these novel social security schemes.

Interfaces with the regulatory environment

Another approach that surfaced throughout the research was to strengthen DAO contributors' access to existing social security schemes by creating and adopting interfaces with the regulatory environment. Interfaces, in this context, refer to third-party organizations, such as freelancer cooperatives, which can help to reduce the administrative burden on individual contributors and facilitate access to public services. Some instances of such interfaces for DAO contributors already exist. For example, Toku[37] is a private company operating in the blockchain industry, which has created Professional Employment Organizations and Employer of Record Organizations, through which contributors can be formally employed, as well as creating solutions to streamline tax compliance when earning income in tokens. Another example frequently cited is Opolis[38], a cooperative platform in the US which acts as an Employer of Record and helps independent workers (not just DAO contributors) to manage their payroll. Opolis also uses the group's purchasing power to give members access to a number of benefits, such as more affordable health insurance or 401 (k) investment plans. Both Toku and Opolis act as interfaces with existing social security systems. They allow contributors to remain independent and continue self-determined, flexible work for DAOs, while also allowing them to plug into various benefits through them. While these two organizations are effective at improving contributor security, for many, Toku was too expensive, and Opolis was out of reach, as it only caters to US-based contributors. Thus, a

[36] See: https://protocol-guild.readthedocs.io/en/latest/
[37] See: https://www.toku.com/
[38] See: https://opolis.co/

recommendation that emerged from the web3 work forum was to make such interfaces more ubiquitous for DAO contributors, either by setting up new interface organizations or by plugging into other existing structures, such as Smart Coop[39], a network of freelancer cooperatives operating across Europe. Throughout our research, participants emphasized their preference for interfaces to be run as cooperatives, as they operate under values and principles that align with those of DAO contributors, and also because they are accountable to their members.

Regulatory change

Finally, the web3 work forums surfaced a number of areas in which advocating for regulatory change is important to improve the security of DAO contributors. Firstly, it is important for DAOs to obtain some type of legal personhood and for jurisdictions to recognize DAO contributions as a form of labor. Three approaches to gain legal recognition for DAOs were discussed in the web3 work forums. First, the approach of DAOs using a 'legal wrapper', i.e., connecting to a traditional legal entity (like a foundation or trust) which is accountable to the DAO (Ghavi et al., 2022). Secondly, legislators can create new, bespoke legal entity forms to accommodate DAOs in their jurisdiction. Examples of such entity forms include the Blockchain-Based Limited Liability Company created in Vermont in 2018 (Wright & Law, 2021) or the DAO LLC in Wyoming in 2021 (Bellavitis et al., 2023). Finally, we discussed an approach adopted in Utah in 2023, and advocated for by the COALA DAO Model Law (Choi et al., 2021), where DAOs are recognized as LLCs without needing to formally incorporate legally, if they fulfill certain (technical) requirements (Fannizadeh, 2023). Taking inspiration from this last approach, participants discussed whether DAO contributors could be more easily recognized as a distinct freelance workforce if they implemented a type of standardized contributor agreement. Similar to a normal contract, this agreement would specify the parties to a contract, their rights and obligations, and detail the scope of work. Beyond this, however, the agreement could also incorporate certain on-chain provisions that guarantee that work is carried out or remunerated in a certain way, for example, by using income distribution mechanisms akin to the Protocol Guild's autonomous split contract. Again, participants pointed towards existing organizations within the DAO ecosystem (specifically DAOStar and COALA) as useful actors to devise and propagate standardized contributor agreements.

A second area of regulatory reform discussed throughout the web3 work forums was clarification regarding the application of securities law to tokens, which impacts contributors in terms of tax obligations and liability claims. Participants in the web3 work forum suggested decoupling financial and governance rights in tokens to reduce uncertainty for contributors. However, the success of this approach depends on the frameworks that different jurisdictions adopt to regulate tokens in general.

Finally, the last area of legal reform discussed throughout the web3 work forum concerned laws around digital nomadism and the free movement of labor. Participants argued that, as a globally dispersed, yet highly skilled, often privileged workforce, DAO contributors are ideally positioned to

[39] See: https://smart.coop/

lobby for more supportive regulation for nomadic freelancers (regardless of passport). Ideally, such conversations can lead to a more fundamental dialogue concerning the freedom of movement of labor, which aging populations in the global north require to sustain themselves, and which many young people from low employment areas could benefit from.

4.2.5 Discussion

In this section, I return to making sense of my findings in the context of tokenized E2C, and my guiding question in this chapter, i.e., how do communities experience the outcome of an E2C? Which benefits and challenges emerge after E2C?

My findings indicate that DAO contributors somewhat aspire to the type of working conditions E2C envisions, which it associates with cooperative values and principles, as well as the history and legacy of platform cooperativism. However, based on the findings from this research project, it does not seem like the outcome of tokenized E2Cs matches this aspiration. While this study does not compare the working conditions of people previously employed by DAOs to becoming a DAO contributor post-E2C, it does show that the conditions surfaced by DAO contributors strongly diverge from those reported in research with platform cooperatives.

Firstly, while employees in platform cooperatives generally report higher wages (Platform Cooperatives and Employment, 2023), most DAO contributors reported earning less than they would if they were working the same job in a different organizational setting. This does not necessarily mean that DAO contributors earn less in absolute terms. Instead, it might be that the types of people contributing to DAOs (who in this study predominantly came from western contexts and often from the traditional tech industry) simply form a demographic that expects relatively high wages. This interpretation seems plausible as the only exception, reporting higher earnings in DAOs, were contributors who had transitioned from working in the arts and creative industries. Thus, a direct comparison with findings in platform cooperatives is difficult without taking into account peoples' specific backgrounds. Here, the industry in which a platform cooperative or DAO is operating also plays an important role to determine whether wages are generally higher or lower when compared to competing organizational forms. Nevertheless, DAO contributors stated that money was not a key factor motivating them to contribute to DAOs and that they did not mind earning less. Nevertheless, it is important to understand if and how income in DAOs diverges from income in other forms of labor in order to understand if DAOs can provide decent jobs and living conditions. Thus, future research may compare income in different functional areas (creative, communications, operations, technical development, etc) between DAO contributors and other forms of labor. Moreover, our research also does not distinguish between different types of platform workers, i.e., between those working to create and maintain the platform, versus those who work on the labor created by these platforms (Kenney & Zysman, 2016). Or, put differently, between employees of Uber, the company, and people offering rides on Uber, the platform. Drawing this distinction between different types of DAO contributors may also yield different insights regarding

income. Throughout this research, attention should be paid to the development of income over time, as financial stability emerged as a key need. Nevertheless, the general sentiment concerning income in DAOs seems to be very different from that in platform cooperatives and is marked by strong unpredictability.

Secondly, in cooperatives, where workers are a class of stakeholders, they are generally encouraged to participate in democratic decision-making processes. As E2C is posited as a strategy to make platforms more accountable to various stakeholders, including workers, meaningful participation in decision-making is an important outcome of any E2C process. However, recent research by Mannan and Pek (2024) highlights that despite having meaningful mechanisms for community governance in place, platform cooperatives frequently suffer from a lack of participation from their platform workers. Addressing this, their work shows various tactics leaders in platform cooperatives with worker ownership adopt to actively encourage worker participation in decision making, especially including more marginalized groups of workers. They argue that fostering broad worker participation can increase the organization's responsiveness to dealing with issues related to working conditions and serve as a key factor to attract new members. DAO contributors shared similar aspirations in terms of being attracted to working in DAOs in order to participate in the organization's decision-making and thus increase self-determination in their work. However, although DAO contributors reported being actively involved in the DAO's governance practices, many were disillusioned about their impact on decision-making. The key factors here were opaque decision-making practices and plutocratic governance design. Thus, although DAO contributors seem to actively participate in decision making, they do not perceive their participation as being impactful. Consequently, in DAOs, ensuring worker participation in decision-making is more a challenge of governance design, whereas in platform worker cooperatives, it seems to be an issue of participation (Mannan & Pek, 2024).

Consequently, in terms of income and governance, the DAO contributors' experience seems to significantly diverge from that of platform cooperative workers. Furthermore, DAO contributors lack security. Specifically, contributors struggle with unpredictable income, psychosocial stress from working in an 'always on' environment, opaque decision-making practices, and distinct challenges stemming from the lack of regulatory clarity in the ecosystem. While these findings are far from ideal, we also found a set of policies and mechanisms that promise to address and improve on many of the challenges facing contributors today. More importantly, both DAO contributors and web3 work forum participants shared hope and enthusiasm for these mechanisms in order to improve working conditions in the future. As such, I close this chapter by emphasizing future areas for experimentation and research.

On an individual level, DAO contributors may begin explicitly acknowledging the labor of coordination when inputting their feedback for other members in various contribution systems used in DAOs and already explored elsewhere (Rennie, 2023). Furthermore, individual contributors may start discussions or submit proposals to their various DAOs, which set healthy expectations and

social norms around the working hours and availability of contributors. Moreover, where possible, individual contributors could try to join interface organizations, such as finding existing freelancer cooperatives, to access statutory social security and benefits more easily.

New and existing organizations in the blockchain industry, or an alliance of DAO contributors, may also begin deliberating and prototyping various on-chain social security funds. While it is likely that some such experiments will fail or get exploited, the ecosystem will nonetheless learn about how a more stable income for contributors can be supported without relying on existing systems that may be hard to access until regulation changes. A key question here will be trialling governance systems and processes to determine who is eligible for funding and under which conditions. To raise funds, prototypes may rely on previous research and experience in alternative public goods funding trialled in the blockchain industry (Owocki & Lister, 2024). Furthermore, there is also demand for new interface organizations to emerge or for existing freelancer cooperatives to accommodate DAO-specific requirements, such as managing token-based payrolls.

Finally, more dedicated research is required to understand the specific type of regulatory reform around the legal status of DAOs, securities regulation, and digital nomadism that could improve working conditions in DAOs. It is important to point out that this likely does not require entirely new research initiatives, but rather speaks to the growing, existing body of work on all three areas, to more explicitly incorporate the needs of DAO contributors in their considerations and proposals.

4.2.6 Conclusion

In this chapter, I have tried to better understand how workers, a specific stakeholder group within any project's wider community, may be affected by exit to DAO. Specifically, I have explored the experience of DAO contributors today as a proxy to understand how workers may experience the outcome of tokenized E2Cs. To do this, I drew on the approach of workers' inquiry to conduct a three-step research project together with two collaborators from the Other Internet Research Institute. We found that the concept of 'DAO' and 'DAO contributor' simultaneously encompasses many different and at times conflicting institutional logics, which change depending on who you ask. Furthermore, while DAO contributors see the potential for DAOs to enable more self-determined, flexible, non-hierarchical, community-organized modes of labor, DAO contributors' reality today is markedly precarious. To move closer to their idealized vision of DAO work, contributors need more psychosocial stability, financial stability, and regulatory clarity. Drawing on our findings, three web3 work forums generated several actionable recommendations that promise to address the distinct challenges experienced by contributors today. The proposed policies include establishing explicit, healthy social norms, experimenting with new technically enabled on-chain social security funds, and advocating for regulatory change. While I conclude that the current reality of DAO contributors may seem less promising than experiences previously documented for workers after cooperative conversions or in platform cooperatives, I want to close by mirroring the hope and enthusiasm exhibited by the various research participants: if we

experiment a little more and manage to establish some of the proposed changes, DAOs still have the potential to transform into the type of work environment their contributors aspire to have.

Chapter 5
Conclusion

5.1 Introduction

Throughout this thesis, I have aimed to develop a better understanding of *how organizations in the digital platform economy exit to community.* To do this, I have conducted various empirical research projects to make sense of the process of E2C as it unfolds before, during, and after exit. Apart from the introduction, research context, and methods chapters, each chapter is based on an individually contained research project and written as a standalone research paper. In this final chapter, I summarize the original scientific contributions made in each chapter (section 2). I then return to the overarching question and goals guiding this thesis project (section 3). Specifically, I combine individual contributions to develop a more comprehensive understanding of E2C in the digital platform economy situated in the context of existing academic research (3.1), outline implications for practice (3.2), and discuss the potential pitfalls and negative consequences that may arise from E2C becoming more widespread (3.3). After acknowledging the main limitations of this research project (section 4), I conclude by delineating a number of promising avenues for future research (section 5).

5.2 Summary of the scientific contributions of this thesis

5.2.1 Before E2C

This section was dedicated to understanding the conditions motivating founders and investors to pursue E2C. Here, I focused on the blockchain industry as a distinct institutional context in which a specific type of E2C, which I term ‘exit to DAO’, frequently occurs. My goal was to develop a better understanding of the motives driving startups and investors in the blockchain industry to adopt an exit to DAO strategy. I chose to focus on exit to DAOs as they have become increasingly large and common since 2020, making them an outstanding phenomenon in the wider digital platform economy. Based on my findings from a narrative ethnography of the narratives constructed about exit to DAO, by Uniswap DAO, Optimism DAO, and the investment firm a16z, I find three potential motives driving exit to DAO that warrant further research. Firstly, exit to DAO was narrated as a strategy that is able to achieve both stewardship goals (like increasing technical robustness, decentralization, and promoting public goods) as well as financial goals, by being executed via the issuance of tokens. This position exit to DAO at the intersection of financial harvest and stewardship exit strategies, suggesting that the strategy can realize a broad variety of

stakeholder goals. Secondly, exit to DAO was consistently narrated as a strategy that grants *more* people ownership and governance rights through tokens without requiring anyone to give up their existing stake in equity. This may be lucrative to existing owners, but raises the question of whether and at what point exit to DAO in fact qualifies as an exit in the definition put forth by Wennberg and DeTienne (2014b) and adopted throughout this thesis. Finally, I found that all three narratives were deeply shaped by their institutional context. Specifically, both Uniswap DAO and Optimism DAO foregrounded the prevalent social norm of 'decentralization' espoused throughout the blockchain industry, as a key motive driving their decision to exit to a DAO. Both DAOs also timed their exit to DAO in response to market sentiment or competitive pressure, indicating that exit to DAO is sensitive to market conditions. Furthermore, a16z posits the strategy of 'progressive decentralization' (which encompasses exit to DAO) as an important means for startups in the blockchain industry to respond to regulatory requirements.

Summary of the contributions of Section 2

- Theorizes 'exit to DAO' as an entrepreneurial exit strategy situated at the intersection of financial harvest and stewardship strategies
- Conducted a narrative ethnography of organizations in the blockchain industry through which I identified three potential motives driving entrepreneurs and investors to pursue exits to DAO, an outstanding phenomenon in the wider digital economy

5.2.2 During E2C

In this section, I conducted ethnographic research with Open Collective and DADA, two organizations in the process of conducting an E2C. The aim throughout the two chapters in this section was to open the metaphorical black box of E2C and surface challenges that organizations face and questions they need to deal with throughout the transition process. Through my research, two key themes emerged: community governance *of* technology in Open Collective and community governance *by* technology in DADA.

In Open Collective, the key challenge was how to give members *effective* voice in the design and development process of the Open Collective platform. This underscores one of the key goals of E2C and the user-ownership movement more broadly, i.e., to ensure that technologies are designed in a way that is aligned with the goals and needs of users and other affected stakeholders. In chapter 3.1, I have argued that although the existing participatory design literature has devised many techniques and methods to enable effective user voice in technology design processes, these methods are not adequate for the context of large, internationally active digital platforms. Thus, analyzing how stakeholders envision effective user participation in the case of Open Collective adds to the existing participatory design literature. By learning about the current platform development process, previous changes thereof, and conducting a series of stakeholder interviews, I found that paradoxically, to enable effective user participation in the platform design and development process, non-participatory institutioning and infrastructuring is required. Specifically, in the case of Open

Collective, stakeholders argued for keeping certain roles (like the technical development done by the production role and organizing spaces for participation by the group-oriented role) relatively centralized within Open Collective Inc. This indicates that enabling effective user participation is work, and that this work itself does not need to be conducted in a participatory manner but should be handled by paid staff to ensure it is being done reliably. This insight speaks to the importance of the institutional environment for enabling effective user participation. Furthermore, in the case of Open Collective, stakeholders argued for determining various structures in a more top-down manner before opening them up for user participation. This insight speaks to the role of infrastructuring (i.e., the "relationship between humans' organized ways of 'doing' things and the technologies that enable and support these methods" (Karasti, 2014, p.2)), a particular type of socio-material practice in the context of information infrastructures. In the context of Open Collective, finding and anchoring strategic alignment, determining and enabling participatory governance structures, as well as implementing measures to keep the ecosystem accountable, emerged as key sociomaterial practices that needed to be determined during E2C to enable effective user participation in the technology design process. Finally, my research also surfaced various factors that limit the extent of effective user participation, regardless of what mechanisms and processes are put in place. In the case of Open Collective, the limits of effective user participation were determined by time and resource constraints, the need for contextual knowledge, and technical skills.

While the case of Open Collective surfaced the need to design community governance *of* technology during E2C, the case of DADA prompted me to follow the design of community governance *by* technology. As an organization in the blockchain industry, DADA was in the process of exiting to DAO, and deliberating how to design this DAO in accordance with its goal to build trust amongst members of the DADA community. Using this insight as my starting point, in chapter 3.2, I trace the discourse surrounding trust in blockchains to argue that DAOs have adopted many of its main tenets, in particular the principle of trust minimization, colloquially known as the slogan 'don't trust, verify' across the blockchain industry. Yet, this approach may not be suitable when DAOs are used to govern virtual communities that have the goal of nourishing trust. The case of DADA illustrates how DAOs can be configured to both nourish trust and create 'pockets of high security' (Nissenbaum, 2001) in spaces where communities would prefer not to rely on trust in their interactions. The insights from this research indicate the importance for communities exiting to DAO, to actively engage with the question of whether and where they would like trust to emerge in their community post-E2C, and to design their DAO governance accordingly. It also opens a plethora of new research questions regarding the role of trust in DAOs, which have not yet been explored.

Summary of the contributions of Section 3

- Presents two ethnographic case studies conducted with organizations during E2C (Open Collective and DADA)

- Identifies that establishing effective user voice in the governance *of* technology is a key challenge during the process of E2C
- Situates the concept of effective user voice in the participatory design literature
- Proposes that institutioning, specifically designing and maintaining specific non-participatory private institutions in a digital platform ecosystem, is important during E2C to enable effective user participation in the platform design and development process
- Proposes infrastructuring and firmly establishing sociomaterial practices concerning strategic alignment, governance processes, and transparency during E2C are important to enable effective user participation in the platform design and development process
- Identifies that designing governance by technology to nourish or deter the need for trust as a core theme for organizations to focus on during E2C
- Situates DAOs in the wider academic discourse on trust in blockchains

5.2.3 After E2C

In this section, I aimed to develop a better understanding of the outcomes that E2C produces. To this end, I conducted two distinct ethnographic research projects: one with PoH DAO, a community and organization that had undergone a 'spin-out to community'; and one in which I focused on DAO contributors, as a distinct stakeholder group that emerges after exit to DAO.

In the case of PoH DAO, I identified three challenges connected to the organization's transition, which all contributed to the crisis the DAO was facing during the time of my research. Firstly, in the context of PoH DAO, the globally dispersed, heterogeneous, and fast-growing community was unable to find agreement on the main purpose and values of the project, leading to conflict and the ultimate decision to split. Secondly, the ability of the community to constructively deliberate on the project's purpose and other issues was complicated by the fact that deliberation, which predominantly took place in a number of Telegram chat groups, became increasingly fragmented. This issue inevitably exists in the context of large online communities, where the cost of exiting a particular deliberation space or setting up a new one is very low. Third, in the context of PoH DAO, the community agreed that an accountable and legitimate leadership team could have helped to navigate some of the (unexpected) challenges in the early phases after the transition. However, in the context of PoH, the Mission Board, which was intended to fulfill this role, was never broadly recognized as holding legitimate authority and, in fact, stalled many processes in the community due to infighting. These challenges all point towards issues that may need to be addressed during the transition process, as they become more difficult to tackle after E2C, when governance and ownership are distributed within a diverse, globally dispersed online community. The chapter contributes to the growing literature on challenges in DAO governance by providing the first in-depth case study of governance challenges in a 1-person-1-vote DAO.

The second chapter of this section took a slightly different approach by focusing on a specific stakeholder group across the ecosystem of DAOs, instead of a particular organization. By

conducting ethnographic research, based on the approach of workers' inquiry with DAO contributors, I aimed to develop a better understanding of the working conditions in DAOs. I chose to focus on this issue because the provision of decent, stable jobs is a consistent theme across the cooperative conversion literature. Through this work, I found that 'DAOs' as a work context and 'DAO contributor' as a form of labor are plural concepts encompassing various, at times conflicting institutional logics such as those of freelancing, the gig economy, cooperativism, educational institutions, startups, and fandoms. Furthermore, while many DAO contributors espouse an aspiration for DAOs to be akin to cooperatives and other mutualist organizations, the current reality of working for a DAO is more akin to the highly liberalized work one may expect in the gig economy, or traditional freelancing with less regulatory certainty. To improve working conditions in DAOs, I propose a set of policy recommendations in the form of explicit social norms, technical mechanisms, interfaces with the existing regulatory environment, and regulatory change that can enhance psychosocial security, financial stability, and regulatory clarity for DAO contributors. As the first in-depth empirical study of the working conditions in DAOs from the perspective of DAO contributors, this research contributes to the growing literature on DAO labor.

Summary of contributions of section 4

- Chapter 4.1 presents an ethnographic case study of Proof of Humanity, a 1-person-1-vote DAO in crisis following its spin-out to community.
- Identified three core challenges connected with PoH's transition to a DAO, which emerged as key drivers of the crisis and are likely to exist in other digital platform communities looking to E2C. These are: (1) the challenge of diverse, globally dispersed online communities finding and anchoring common purpose and values, (2) the challenge of designing cohesive virtual deliberation spaces in diverse, globally dispersed online communities who face low cost of exiting existing spaces and setting up new ones, and (3) the challenge of establishing accountable and legitimate leadership in the early phases post-E2C
- Contributes to the growing literature on challenges in DAO governance by providing the first in-depth case study of governance challenges in a 1-person-1-vote DAO.
- Chapter 4.2 presents ethnographic research, based on the approach of workers' inquiry, of DAO contributors, the first study of its kind
- Situates DAOs and DAO contributors as plural concepts that encompass many different and at times conflicting institutional logics (including cooperatives, the gig-economy, freelancing, educational institutions, and fandoms)
- Identifies strong discrepancies between DAO contributor aspirations and current working conditions in DAOs
- Posits psychosocial security, financial stability, and regulatory clarity as the three main needs to be addressed in order to improve the working conditions for DAO contributors
- Proposes explicit social norms, technical mechanisms, interfaces with the existing regulatory environment, and regulatory change as three policy approaches to address needs and improve the working conditions of DAO contributors

5.3 Returning to the goals of this thesis

In this section, I return to the initial goals of this thesis and reflect on each in turn. Specifically, my goals were (1) to better make sense of E2C in the context of existing academic discourses, (2) to add practical insights strengthening the approaches' usability for organizations in the digital platform economy, and (3) to surface potential pitfalls and negative consequences that may arise for individuals, organizations and society, from E2C becoming more widely adopted.

5.3.1 Making sense of E2C in the context of existing academic discourses

In the introduction, I conceptualized E2C as an ideal strategy encompassing different pathways and degrees of ownership transfer with the aim of aligning the conduct of organizations with the needs of their respective communities. I further qualified this definition by characterizing E2C as a pragmatic approach within the wider user-ownership movement, that draws on the intellectual and historical traditions of Kelsoism and cooperativism, and aims to create outcomes that are aligned with cooperative values and principles. My definition of E2C in the introduction predominantly drew on the concept's introduction by Mannan and Schneider (2021) as a hypothetical process and earlier writing by Schneider (2020a; 2020b; 2020c). The various research projects conducted throughout this thesis, which analyze cases and stakeholders involved in transition processes that approximate the E2C paths outlined by Mannan and Schneider (2021), add empirical texture to this conceptualization. In this section, I first contrast my findings with those from previous research on cooperative conversions. For each section, I also analyse the way in which my empirical insights draw attention to institutional structures, agency, and technology (as well as interactions thereof), in the phases before, during, and after E2C. Taken together, this analysis opens up various avenues for future research, which I turn to in the next section.

Context and cases

Firstly, the institutional environment is inevitably very different for E2C in the digital platform economy as compared to cooperative conversions in geographically contained environments (Di Stefano et al., 2024). The specific institutional context of the blockchain industry seemed to prompt a particularly high volume of E2C-like transitions. I predominantly focused on transitions in the blockchain industry throughout this thesis.

The size of E2C in the digital platform economy at times also varies strongly from that of family businesses or SMEs, most frequently studied throughout the cooperative conversion literature (Di Stefano et al., 2024). For example, Uniswap DAO and Optimism DAO are both relatively large platforms, catering to hundreds of thousands of users, managing treasuries over USD 1bn, and with a number of highly professionalized organizations operating within their ecosystems. Yet, in comparison, DADA is quite small. Although more than 10.000 users draw on the platform, DADA as a community and ecosystem is maintained by a core group of around 30 people, most of whom

contribute in a volunteer capacity. Hence, the scale at which E2C operates seems to vary more widely than in traditional cooperative conversions.

Yet, the diversity of cases studied in this thesis seems to mirror the diversity of cases studied in previous literature on cooperative conversions in terms of economic sectors, outcomes, and incorporating different types of stakeholders throughout (e.g., see Brown & Quarter, 1994; Girard & Langlois, 2012; Gunderson et al., 1995; Sousa, 2012). Similarly, the projects I studied were also very different in terms of the use cases they cater to, and thus the user base and community they establish. While DADA users are predominantly (hobbyist) artists, Open Collective's users are organizations, and Uniswap's community is made up of traders or blockchain users in need of financial services. Yet again, PoH's community is quite literally anybody human. Also, while Uniswap, Optimism, DADA, and PoH were all intent on creating a DAO as a vehicle for community ownership and governance, Open Collective leaned more towards exploring various legal mechanisms. Consequently, while the common denominator is clearly the process of transitioning ownership and governance rights over a digital platform ecosystem to its users and stakeholders, most other aspects seem to vary.

Before: When and why do E2Cs in the digital platform economy happen

Chapter 2 indicated that the motives driving E2C in the digital platform economy are very different from those driving cooperative conversions studied in previous literature. In chapter 1.3, I identified the primary drivers of cooperative conversions as saving a company in financial difficulty or converting to a cooperative as a succession strategy, both with the goal of protecting jobs. The timing here was often driven by internal factors such as the severity of financial difficulty or the previous owners' wish to retire. In the cases of exit to DAO analyzed in Chapter 2, none of these factors surfaced as important motives driving the transitions of Uniswap DAO or Optimism DAO. Instead, exit to DAO was positioned as a lucrative business strategy for both founders and investors, while simultaneously helping to realize non-financial business goals often tied to the social norm of decentralization and technical security, prevalent throughout the blockchain industry. Furthermore, the timing seemed more dependent on regulation, outside market conditions, and the behaviour of competitors, instead of internal factors.

My findings in Chapter 2 particularly draw attention to the institutional context and the role of technology before E2C. Specifically, the institutional context in terms of the social norm of decentralization and security, the regulatory environment concerning tokens, and the broader market conditions seemed to play an important role in driving the decision to exit to DAO. Furthermore, the role of tokens, as a new type of technology, also stands out. Throughout my analysis, tokens were narrated as a technology that afforded exit to DAO to emerge as a novel socio-material practice. Tokens promised to realize stewardship goals, such as the projects' determination to decentralize and increase the technical robustness of their protocols, while simultaneously catering to financial harvest objectives. Moreover, tokens also emerged as a means to add an additional layer

of ownership and governance rights, without requiring stakeholders to relinquish their existing stakes in equity. Overall, these findings foreground the way that new technologies, such as tokens, enable new transition processes, outcomes, and practices to emerge.

During: enablers and challenges of E2C in the digital platform economy

As outlined in chapter 1.3, the main enablers of cooperative conversions identified across the literature are usually in the institutional environment, specifically, the existence of conductive regulation and support from existing cooperative federations. Internal enablers included cohesive, shared values and agreement on cooperative principles amongst current and future owners, a thorough understanding of an organization's operations and finances (especially in the case of business rescue), and a transition leadership team guiding the community during and after exit. Conversely, the complexity and uncertainty of navigating the transition process, the unpreparedness of stakeholders to become owners and governors of the organization, and the time that it takes for these stakeholders to settle into their new roles were all identified as challenges that frequently come up during cooperative conversions.

On a high level, both case studies conducted during E2C focused on the role of technology in governance - an aspect not frequently discussed in the traditional cooperative conversion literature. This insight somewhat sets them apart from previous cases reviewed in Chapter 1.3. Nevertheless, in both cases, the institutional environment also featured as a strong enabler, albeit in a different way. Specifically, the case of Open Collective emphasized the way that people actively shape their institutional context through practices of institutioning and infrastructuring to bring about the conditions that they perceived as being conducive to enabling effective user participation later on. Here, the institutional context was not perceived as an external input as in cooperative conversions, but as something that agents could actively shape to benefit their endeavour. Overall, this finding foregrounds the role of agency shaping structure to become an enabler, rather than taking structure as an external input that shapes and enables agency. However, while the case emphasized the importance of agency, it did not assume it to be unlimited. Specifically, agency was bounded by the limitations of effective user voice identified throughout the Open Collective case study. Furthermore, in the case of DADA, the existing institutional environment, specifically, the discourse and social norms surrounding trust in blockchains, seemed to constrain agency in terms of the typical socio-material practices adopted by many DAOs today, which implicitly seek to minimize the need for trust. DADA stood out in this context because the community actively aimed to move beyond this social norm. In doing so, the case of DADA foregrounds the way that technology in DAOs can be (re)configured to encompass both socio-technical systems that nurture trust or deter the need for trust. Here, blockchain technology emerged as a key enabler for the emergence of diverse socio-technical practices, thus once again emphasizing the agency that new technologies afford for stakeholders navigating E2C transitions.

The enablers of shared values and having a strong transition leadership team, identified in the cooperative conversion literature, also resurfaced in my research, in the case of PoH, albeit more as challenges or lacking features. Here, a lack of shared purpose and the failure to establish accountable and legitimate leadership emerged as core challenges soon after the project's spin-out to community. This insight was underscored by my findings in Open Collective, where pre-determining purpose and institutioning leadership in specific roles was identified as a core need to enable effective user participation. This indicates that, regardless of their differences, organizations conducting an E2C in the digital platform economy may benefit from looking towards the experience of cooperative conversions on the points of anchoring purpose and establishing (transition) leadership teams. The case of PoH also foregrounded the role of technology in making it more difficult to find shared values and purpose in hindsight, and especially the challenge of establishing a shared virtual deliberation space to do so. Here, digital chat groups enable the new socio-material practice of simply opting out and creating unlimited alternative deliberation spaces for community members who are dissatisfied with the state of current deliberation or moderation. Again, my findings in Open Collective seem to somewhat mirror this point. Here, participants advocated for keeping the group-oriented role relatively centralized in OCI as a means to ensure that 'official' communication channels would exist under the stewardship of OCI. This can be interpreted as a measure that aims to prevent the fragmentation of communication spaces. Overall, these insights indicate that the fact that E2C transitions and subsequent community coordination take place in virtual settings is a significant additional challenge that communities need to grapple with during and after E2C.

After: Outcomes and consequences of E2C in the digital platform economy

In my review of cooperative conversions, two factors were consistently found as positive outcomes: securing and creating decent work and positive outcomes for local communities. As discussed in Chapter 4.2, the outcome of exit to DAO is likely quite different. While the stakeholders involved throughout my research of DAO contributors did not solely contribute to DAOs that were created as the outcome of a transition process, the findings nonetheless indicate that the current reality of DAO work in general is rather precarious. As such, where cooperative conversions generally benefit workers, the same cannot necessarily be said about exits to DAO. While this does not mean that an exit to DAO does not generate any benefits (I did not study any other aspect specifically), it does indicate that more work is required for exit to DAO to bring about the intended outcomes of E2C outlined by Mannan and Schneider (2021). Here, the existing regulatory environment surfaced as an institutional structure that proved challenging to many DAO contributors, and where they identified the need for change. However, beyond this, my research findings suggest that stakeholders once again also foreground their own agency in improving their institutional context and thus their working conditions. Specifically, the idea of setting up more organizations that can interface with the existing regulatory environment (similar to Toku or a freelancer cooperative) echoes the idea of institutioning, which surfaced in the case of Open Collective. Similarly, the proposal to set up various technical mechanisms that could function as insurance funds for DAO workers echoes the

idea of infrastructuring and specifically draws attention to the new socio-material practices afforded by blockchain technology.

5.3.2 Practical insights supporting the approaches' usability for organizations in the digital platform economy

While I do not claim to have arrived at any generalizable best practices or universal truths, the various research projects conducted throughout this thesis can nonetheless serve as useful examples to inform practitioners and policymakers with regard to E2C.

For practitioners, the insights surfaced in chapters 3.1 (Open Collective), 3.2 (DADA), and 4.1 (PoH) may be particularly interesting. Broadly, the cases of Open Collective and DADA indicate that it is important for practitioners to consider how they will enable community governance of technology and community governance by technology during the E2C process. Specifically, the case of Open Collective highlights the way that engaging in the structuration of an ecosystem, both in terms of setting up institutions and technical infrastructures that can support community governance of technology after exit. Interestingly, the case indicates that to increase effective user participation in the technology design and development process, it may not (only) be important to transition ownership and governance of the main operator organization, but also to change the operating organization's position vis-à-vis other stakeholders in the ecosystem. The case also indicates that it is important to take into account the limitations of community participation and consider if time, resources, contextual knowledge, and technical skill are sufficiently available in a given context to transition the governance of technology to a respective community. In turn, the case of DADA cautions practitioners to think about the way that configuring governance by technology impacts their community. Generally, it highlights the need to design technologically mediated community governance in accordance with the organization's goals and values. Specifically, to enable trust to emerge in a given community, it is important to configure the governance by technology in a way that individuals feel safe enough to be vulnerable, form relationships with each other, and allow trust to be nurtured in the process. Finally, the case of PoH serves as a cautionary tale and foregrounds some of the potential pitfalls practitioners may encounter after E2C. First and foremost, this case highlights the possibility that the community may decide to take the projects in a direction that was not initially anticipated (in the case of PoH, this meant forking the project). A lesson from this case may be to take time to define and anchor the organization's purpose and values before transitioning power to a diverse community. I suggest that communities may draw on legal and technical mechanisms, foster strong social norms, or write a constitution in order to anchor their purpose during E2C. Furthermore, the case also highlights how difficult it can be to deliberate effectively in a diverse, globally dispersed online community. Again, this insight might prompt practitioners to consider how they will structure deliberation spaces more carefully during the process of transition. The case of Open Collective indicates that designating clear responsibility for the group-oriented role, i.e., the task of establishing and maintaining spaces for community deliberation and coordination during E2C, may be helpful to this end. Finally, the

case of PoH also indicates that having a legitimate and accountable leadership team in place during and after E2C can help to facilitate conflict resolution and keep the project from stagnating by enforcing community decisions that do not have other adequate enforcement mechanisms attached.

Policy makers may find the insights surfaced in chapter 2 and chapter 4.2 useful. Firstly, one of the core drivers of exit to DAO was found to be the current regulatory stance on tokens and what it means for a project to be sufficiently decentralized. This aspect seemed to be particularly important for investors to support exit to DAOs. Here, it is interesting to note that securities regulation indirectly impacts the ownership and governance structure of large digital platform-like projects. Taking this into account, future securities policy may aim to produce both investor protections and less concentration of power in the blockchain industry. Furthermore, policymakers may look towards the insights generated in Chapter 4.2 to inform whether and under what conditions DAO contributors may be incorporated into statutory labor regulation.

5.3.3 Potential pitfalls and negative consequences that may arise for individuals, organizations, and society, from E2C becoming more widely adopted

E2C was introduced as an activist strategy, endeavouring to improve accountability in the digital platform economy by transitioning digital platforms to user-ownership and governance and thereby making platform governance more democratic from within. Yet, throughout my research, I encountered various pitfalls and negative consequences that may arise from the strategy becoming more widespread, especially when implemented as an exit to DAO. Firstly, as Chapter 2 indicates, exit to DAO does not necessarily require existing owners to relinquish their equity stakes. As such, it is important to determine at what point we might say that ownership and governance rights have been meaningfully exited to community, versus when a transition is merely an ‘E2C theatre’ to gain regulatory advantages, for marketing purposes, or to create an additional liquidity event. Indeed, clear legal guidelines are required to identify what type of token distribution and subsequent governance set-up constitutes a meaningful transition towards community ownership and governance. This question has been highly debated by legal scholars and the blockchain industry alike (e.g., Cronje, 2021; Kaal, 2022), albeit without conclusion thusfar. Nevertheless, defining the minimum requirements for E2C in the blockchain industry is crucial. Without this, exit to DAO runs the risk of immitating dynamics of the Initial Coin Offerings era. Here, blockchain projects fundraised by selling tokens to investors, many of which were later classified as illegal IPOs (Zetzsche et al., 2019). Beyond being illegal, masking such token distributions in the language of ‘community’ is also unethical. Secondly, as the case of Open Collective in chapter 3.1 indicates, giving users effective voice in decision-making also necessarily means creating more work and responsibility for users. Depending on the context, not all users may have the necessary time, resources, and skills required to participate. It is important to take this into consideration and devise mechanisms that encourage and enable participation from disadvantaged groups (or establish adequate representation), rather than keeping participation for those with the luxury of time and

resources on their hands. If this is not taken into consideration, then mechanisms aiming to grant users more effective voice in decision-making may inevitably exclude certain user groups. Third, the case of DADA presented in chapter 3.2 cautions that if DAOs become more widespread in their current status quo configuration, this may contribute to less (need for) trust online, not more. Depending on the context, this may not be a desirable outcome. Fourth, the case of PoH detailed in chapter 4.1 highlights the risk that E2C may fuel disagreement and conflict, which in turn could harm existing projects. Finally, chapter 4.2 indicates that without additional measures to increase the social security of DAO contributors, a more widespread adoption of exit to DAO may inadvertently contribute to deteriorating working conditions in the digital platform economy. Overall, then, especially with regard to tokenized E2Cs, it is not clear that the strategy becoming more widely adopted will, in fact, yield a net positive for the digital platform economy.

5.4 Limitations

This thesis constitutes a first step towards understanding *how organizations in the digital platform economy E2C.* By employing robust qualitative methods, I have been able to surface key motives, themes, and issues that come up for communities transitioning their ownership and governance to community in the digital platform economy. While this thesis presents an important first step in developing an empirically grounded understanding of E2C transitions, my findings are limited in three key ways.

Firstly, my insights are derived predominantly from E2C cases studied in the blockchain industry, which presents a distinct institutional context structured by its own norms, regulations (especially token regulations), distinct market dynamics, and the specific socio-material practices afforded by blockchain technology. Despite the inclusion of Open Collective as a case study that does not immediately rely on blockchain in its operations or for its E2C, my insights predominantly hold for the context of the blockchain industry and thus cannot be directly applied to E2C in other areas of the digital platform economy. Secondly, in my methodology, I have relied heavily on insights generated through case studies. In particular, the insights generated in chapters 2, 3.1, 3.2, and 4.1 cannot be generalized beyond their specific contexts. Nevertheless, they provide useful starting points for others to design more generalizable research concerning the motives driving E2C, the process of transition (which was considered a complete black box before), or possible challenges after E2C. Chapter 4.2 stands out from this list in that it takes an ecosystem-wide approach. Nevertheless, it too cannot be generalized, predominantly owing to the qualitative methods and the number of participants involved. Third, my research has taken place in a rapidly evolving context. The digital platform economy in general and the blockchain industry in particular are characterized by fast-paced change, both in terms of technological innovation, the emergence of new socio-material practices, and the constant advancement of new regulation. As such, external conditions that I have identified as important over the course of this research project (such as current token regulation or the status quo of how DAOs are implemented) may well change very

soon. Consequently, the findings generated throughout this research are also contingent on and limited by the time during which my research took place.

5.5 Avenues for future research

While detailed avenues for future research are provided in each chapter, this thesis project as a whole surfaces a number of important questions with regard to E2C in general, which future research may investigate.

Firstly, throughout this research, I have taken various transitions that approximate the strategies outlined by Mannan and Schneider (2021) as examples of E2C. However, what their definition and my cases miss is an understanding of what constitutes *meaningful* user-ownership and governance. For example, as Chapter 2 illustrated, in the case of Uniswap and Optimism DAO, investors, who are not connected to the projects beyond financial interests, retained some control in the DAOs and were not required to relinquish their equity stake in the original organizations. It thus remains unclear to what extent previous owners need to relinquish their rights or to what degree users need to be included in the new ownership and governance structure for a transition to meaningfully constitute an E2C. Future research may seek to define this in more detail and operationalize their definitions in a way that allows others to practically assess whether a particular transition towards more user-ownership and governance falls within or outside the scope of E2C. Secondly, and as mentioned in the limitations above, my research has focused predominantly on cases in the blockchain industry. Future research may look to employ similar methods in cases where ownership and governance rights are transitioned to users in digital platform organizations that operate outside the blockchain industry. Third, my insights about E2C within the blockchain industry remain limited to the specific cases I analyzed. Future research may test the validity of my findings in other cases in the blockchain industry or even try to generalize certain insights by conducting more qualitative analyses. Fourth, while I have shown that designing community governance of technology and community governance by technology seem to be important topics that organizations need to deal with during E2C, the process of E2C itself likely requires organizations to deal with many other issues beyond these two. Future research may employ similar ethnographic methods in other organizations to surface more themes that are important. Fifth, my research has yielded various practical recommendations for organizations during E2C and to improve the conditions of workers as one affected stakeholder group after exit to DAO. Future research may take a more experimental or participatory action research approach to analyze if and how implementing these recommendations can result in more positive outcomes for organizations and affected stakeholders. Finally, I have tried to give some indication of the consequences of E2C for specific communities, such as that of PoH DAO and DAO contributors. Yet, more longitudinal research is required to understand the long-term impacts of E2C. The strategy's goal in the digital platform economy is to foster more democratic accountability for users. However, as outlined in section 3.3, E2C becoming more widely adopted, especially in the form of exit to DAO, also harbors various potential pitfalls and unintended negative consequences. Ideally, future research on

the long-term outcomes and consequences of various types of E2C can help to ground a more informed position on whether or not, in what form, and to what extent E2C is a desirable strategy to bring positive change to the digital platform economy as we know it.

Synthèse en français

Des événements récents, tels que l'acquisition de Twitter par Elon Musk, la décision de Mark Zuckerberg de mettre fin à la vérification des faits sur Instagram et Facebook, ainsi que l'éventuelle interdiction de TikTok aux États-Unis, en raison de problèmes de sécurité nationale liés à la propriété chinoise du réseau, ont tous conduit à une repolitisation du débat public autour de la propriété et de la gouvernance des plateformes numériques. L'une des principales préoccupations est que les plateformes numériques ne sont pas gouvernées dans l'intérêt des individus en tant qu'utilisateurs et citoyens. Certains, que je qualifie de membres du mouvement en faveur de la propriété par les utilisateurs, soutiennent que la racine du problème est la structure de propriété des plateformes numériques, qui ne rend pas leurs propriétaires redevables envers leurs utilisateurs. Si la réglementation permet d'atténuer certains des problèmes auxquels sont confrontés les utilisateurs des plateformes numériques, elle ne s'attaque pas à la racine du problème, à savoir l'absence de responsabilité des propriétaires, dont les intérêts divergent souvent de ceux des utilisateurs ou des décideurs publics. Exit to Community (E2C) est à la fois une stratégie et un cadre conceptuel visant à remédier à ce problème. Né d'une campagne militante lancée en 2016 sous le nom de #BuyTwitter, au cours de laquelle des utilisateurs ont tenté de lever des fonds pour acquérir suffisamment d'actions Twitter afin d'influencer la gouvernance de la plateforme, E2C – tel que décrit par Mannan et Schneider (2021) – a pour objectif de transformer des entreprises détenues par des fondateurs et des investisseurs en organisations gouvernées et possédées par la communauté, conformément aux valeurs et principes coopératifs. Alors que leur travail décrit les chemins hypothétiques par lesquels une sortie vers la communauté (E2C) pourrait avoir lieu, aucun travail antérieur n'a étudié ces processus de manière empirique. Plus précisément, bien qu'il existe de nombreux travaux empiriques sur les conversions coopératives dans des industries plus traditionnelles telles que l'industrie manufacturière, la finance, le tourisme ou l'agriculture (voir par exemple : Di Stefano et al., 2024), qui décrivent également le processus de transition des entreprises privées vers des coopératives détenues et gérées par la communauté, aucune recherche de ce type n'a été menée dans le contexte de l'économie des plateformes numériques. Cette thèse se propose donc comme une recherche empirique visant à comprendre : comment les organisations de l'économie des plateformes numériques effectuent-elles une sortie vers la communauté ?

En tant que thèse par publication, chaque chapitre est basé sur une recherche distincte et rédigé comme un article indépendant. Les chapitres sont organisés de manière à refléter la nature processuelle de l'E2C et donc à évaluer les dynamiques empiriques telles qu'elles se déroulent avant, pendant et après le processus d'E2C.

Méthodes

La recherche menée dans le cadre de cette thèse s'appuie sur l'ethnographie numérique comme approche méthodologique principale. L'ethnographie est une méthode dans laquelle le chercheur passe de longues périodes sur le terrain — c'est-à-dire dans le contexte étudié — afin de recueillir des données qualitatives riches et ancrées dans leur environnement (Varis, 2015). L'ethnographie numérique adapte et prolonge ces méthodes classiques pour les appliquer à des environnements profondément façonnés par les technologies numériques, tels que l'économie des plateformes numériques et les communautés virtuelles analysées tout au long de cette thèse. Elle constitue ainsi une méthode particulièrement pertinente pour développer une compréhension des phénomènes sociaux tels qu'ils se manifestent dans des contextes numériques, et permet de mettre en lumière des enjeux importants du point de vue des communautés concernées (O'Reilly, 2012 ; Pink et al., 2015).

La recherche empirique sur l'E2C au sein de l'économie des plateformes numériques reste largement inexplorée, ce qui en fait une sorte de « boîte noire ». J'adopte une approche ethnographique en m'immergeant dans des organisations où l'E2C est en cours, ou dans des environnements affectés par ces transitions, afin de commencer à comprendre ce qui se passe dans cette boîte noire métaphorique. En m'appuyant sur l'ethnographie numérique, je suis en mesure de fournir des descriptions détaillées et contextualisées des processus d'E2C, mettant en lumière des dynamiques et éléments qui pourraient autrement passer inaperçus.Par ailleurs, l'ethnographie, qui met l'accent sur la manière dont les individus construisent du sens dans le cadre de l'E2C, est particulièrement bien adaptée pour saisir les normes, valeurs et routines implicites qui façonnent ce processus. En examinant l'E2C comme une expérience vécue et concrètement mise en œuvre, plutôt qu'à travers des expériences contrôlées ou des ensembles de données quantitatives abstraites, j'évite d'isoler les éléments individuels du processus de leur ancrage contextuel plus large. Au contraire, cette approche m'engage pleinement dans les systèmes socio-techniques complexes ainsi que dans les pratiques socio-matérielles du quotidien à travers lesquels l'E2C se matérialise, ce qui contribue à atténuer le risque de simplification excessive.

Définir la portée de cette thèse

Tout au long de cette thèse, j'étudie les organisations et les parties prenantes actives dans l'économie des plateformes numériques. Je conceptualise cette économie en m'appuyant sur une définition proposée par Hein et al. (2020), qui synthétisent plusieurs approches mettant en avant les dimensions économiques, techniques, commerciales et sociales des plateformes numériques, afin de proposer une définition plus intégrée des « écosystèmes de plateformes numériques :

> *« Un écosystème de plateforme numérique comprend un propriétaire de plateforme qui met en œuvre des mécanismes de gouvernance pour faciliter les mécanismes de création de valeur sur une plateforme numérique entre le propriétaire de la plateforme et un écosystème de compléteurs et de consommateurs autonomes. » (p.90)*

Cette définition conçoit les plateformes comme des technologies permettant la création de marchés multilatéraux ou de valeur entre des « compléteurs autonomes » (pensez aux chauffeurs Uber) et des consommateurs (pensez à moi, commandant un Uber pour rentrer chez moi après ma soutenance de thèse), une caractéristique fréquemment soulignée dans la littérature commerciale sur les plateformes numériques. En outre, la création de valeur entre les parties sur la plateforme est facilitée par des mécanismes de gouvernance définis par le propriétaire de la plateforme (pensez à l'algorithme qui me met en relation avec un chauffeur). Ces mécanismes déterminent également le mode de création de valeur sur la plateforme — qui prend généralement la forme d'une facilitation des transactions ou d'une innovation — ainsi que la part de cette valeur captée par le propriétaire de la plateforme (dans notre exemple, la valeur est créée par Uber, qui facilite la transaction entre moi et le chauffeur, et la capte en prélevant des frais de service). La définition de Hein et al. (2020) est particulièrement utile dans le contexte de cette thèse pour deux raisons. Premièrement, elle considère les plateformes numériques comme des écosystèmes, mettant ainsi en lumière la diversité des parties prenantes impliquées dans la création de valeur, qui forment la communauté de la plateforme, telle qu'elle est analysée dans cette thèse. Deuxièmement, elle souligne l'importance des mécanismes de gouvernance et leur lien avec la propriété de la plateforme. Selon Hein et al. (2020), cette propriété peut être centralisée dans une seule entreprise, gérée par un consortium, ou décentralisée dans le cas des protocoles de blockchain. L'accent mis sur la propriété comme levier analytique est important, car, ne disposant pas des compétences nécessaires pour mener une analyse juridique dans cette thèse, je me concentre principalement sur la propriété de la plateforme en tant que point d'ancrage des droits de gouvernance, plutôt que comme objet d'analyse en soi. Ainsi, je considère que toute organisation disposant du droit de mettre en œuvre des mécanismes de gouvernance sur une plateforme appartient à l'économie des plateformes numériques. Il est important de noter que ces organisations peuvent être constituées en entités juridiques ou fonctionner comme des associations non enregistrées. Cela est particulièrement pertinent, car la majorité des projets de recherche menés dans le cadre de cette thèse ont analysé des transitions E2C tokenisées, c'est-à-dire des passages vers des organisations autonomes décentralisées (DAO), lesquelles existent souvent sans statut juridique officiel (Ghavi et al., 2022), mais peuvent néanmoins agir comme propriétaires de facto dans les écosystèmes de plateformes numériques. Bien que la définition des DAO soit encore en évolution, des caractéristiques essentielles peuvent être identifiées dans l'usage académique du terme (Hassan & De Filippi, 2021) : les DAO permettent à des individus de s'auto-organiser en ligne — idéalement sans contrôle centralisé — en utilisant des contrats intelligents déployés sur une blockchain (publique), qui appliquent automatiquement des règles d'interaction (ibid).

Tout au long de ma thèse, je me suis principalement concentré sur les organisations de l'industrie de la blockchain en transition envers des DAO, ou sur les parties prenantes impliquées dans les DAO parce que (1) la montée en puissance rapide de ces transitions était un phénomène marquant lié à l'E2C et coïncidait avec ma recherche de doctorat, (2) ma thèse s'inscrivait dans un projet de recherche plus large financé par l'ERC, centré sur la gouvernance de la blockchain, ce qui rendait

ces cas particulièrement accessibles et pertinents ; et (3) mon expérience professionnelle antérieure dans l'industrie blockchain m'a permis de m'orienter plus facilement au sein de ces organisations.

Cependant, ayant choisi d'inclure Open Collective - une organisation, plateforme et écosystème non-blockchain - comme cas d'étude dans le chapitre 3.2, j'ai décidé de formuler ma question de recherche principale de manière plus large. En effet, cette inclusion visait précisément à contraster les enjeux émergents dans une organisation non-blockchain pendant l'E2C avec ceux observés chez DADA, une organisation de l'industrie blockchain constituant le deuxième cas d'étude dans la section 3. Néanmoins, la section 2 (avant l'E2C) et la section 4 (après l'E2C) se concentrent exclusivement sur des cas issus de l'industrie blockchain.

Dans l'ensemble, ma focalisation sur l'économie des plateformes numériques, le choix des cas étudiés et l'utilisation de méthodes qualitatives et contextuelles limitent la portée de généralisation des résultats. Pourtant, étant donné que l'E2C est un concept encore relativement récent, et que les types de transitions analysées dans cette thèse n'ont jamais fait l'objet d'une étude empirique, l'objectif principal de ce travail est de servir de carte exploratoire initiale. Idéalement, les thèmes et défis identifiés dans cette thèse pourront orienter de futures recherches qualitatives et quantitatives, en vue d'élaborer un cadre plus complet et généralisable du processus E2C et de ses conséquences.

Structure de la thèse

Section	Chapitre	Description
1 Général	1.1. Introduction	Présente le contexte de cette thèse, ses questions de recherche, sa structure et la portée de ses résultats.
1 Général	1.2. Contexte de recherche	Présente la littérature pertinente afin d'établir la nouveauté de l'objet de recherche et d'ancrer l'approche adoptée dans les champs d'étude existants, notamment la littérature sur les conversions coopératives, le coopérativisme de plateforme et les DAO.
1 Général	1.3. Méthodes	Présente la justification des choix des méthodes utilisées tout au long de cette thèse.
2 Avant l'E2C	2 Motivations de l'E2C	Présente une ethnographie narrative des moteurs de la transition vers la DAO, un phénomène connaissant une croissance exceptionnelle, observée particulièrement dans l'industrie de la blockchain. Elle s'appuie sur les récits développés par Uniswap DAO, Optimism DAO et la société d'investissement a16z.
3 Pendant	3.1. Gouvernance	Présente une étude de cas ethnographique menée sur Open Collective, une

l'E2C	communautaire de la technologie	startup développant une plateforme open source permettant l'hébergement fiscal de petits collectifs, en cours de leur processus d'E2C. Le cas explore les rôles évolutifs des différents acteurs de l'écosystème d'Open Collective dans la conception et le développement de la plateforme.
3 Pendant l'E2C	3.2. Gouvernance communautaire par la technologie	Présente une étude de cas ethnographique menée sur DADA, un collectif d'art blockchain, pendant leur processus d'E2C. Le cas illustre comment la structure de gouvernance de DADA évolue au cours de l'E2C, et comment l'organisation mobilise la gouvernance comme levier pour nourrir la confiance au sein de sa communauté.
4 Après l'E2C	4.1. Les défis après E2C	Présente une étude de cas ethnographique consacrée à Proof of Humanity, un projet d'identité numérique fondé sur la blockchain, ayant opéré une transition vers une DAO. Le cas révèle que le manque de clarté des objectifs, l'absence de leadership légitime, ainsi que la difficulté à maintenir des espaces de délibération virtuels cohérents constituent des défis majeurs après l'E2C, pouvant entraîner des conséquences négatives inattendues, comme le montre la crise de PoH.
4 Après l'E2C	4.2. Conditions de travail après E2C	Ce chapitre propose une enquête sur les travailleurs des DAO afin d'examiner les expériences quotidiennes des personnes engagées dans des organisations numériques appartenant à la communauté. Il combine les résultats de cette enquête avec des ateliers d'experts pour formuler diverses recommandations politiques visant à améliorer les conditions de travail dans les DAO, susceptibles de se généraliser avec l'essor de l'E2C.
6 Conclusion	6. Conclusion	Présente une synthèse des principaux résultats de cette thèse, leurs limites respectives, ainsi que des pistes concrètes pour des recherches futures.

Résultats

Dans l'ensemble, je constate que le processus d'E2C dans l'économie des plateformes numériques est très différent des conversions coopératives traditionnelles, et profondément influencé par l'environnement institutionnel dans lequel les écosystèmes de plateformes sont intégrés, ainsi que par les nouvelles pratiques sociotechniques rendues possibles par les technologies de gouvernance et par ceux qui médiatisent cette gouvernance au sein des communautés virtuelles. Plus précisément, mes résultats mettent en évidence plusieurs façons dont les communautés s'engagent dans l'institutionnalisation (c'est-à-dire la pratique consistant à influencer leur environnement institutionnel en créant de nouvelles institutions ou en modifiant les institutions existantes) et dans la construction d'infrastructures (c'est-à-dire la mise en place de nouvelles pratiques socio-matérielles ou l'adaptation de pratiques existantes basées sur l'usage des technologies numériques), avant, pendant et après l'E2C. Ces éléments soulignent globalement la capacité d'agir

des individus dans la structuration du processus d'E2C au sein de l'économie des plateformes numériques. Vous trouverez ci-dessous un résumé des principales conclusions de chaque section.

(A) Avant l'E2C

Dans ce chapitre, je pose la question suivante : pourquoi les organisations de l'économie des plateformes numériques choisissent-elles l'E2C ? À partir d'une analyse narrative de trois études de cas (Uniswap DAO, Optimism DAO et la société d'investissement a16z), j'identifie trois moteurs potentiels de sortie vers la DAO. Premièrement, il s'agit d'une stratégie visant à atteindre simultanément des objectifs financiers et de gouvernance via les tokens. Deuxièmement, elle introduit une couche supplémentaire de droits de propriété et de gouvernance via les tokens, sans exiger des parties prenantes existantes qu'elles renoncent à leurs droits, ce qui en fait une option particulièrement attrayante. Troisièmement, le contexte plus large — comprenant les conditions de marché, les cadres juridiques et les normes sociales dominantes — semble influencer de manière significative la décision de passer à la DAO. Dans l'ensemble, les deux premiers résultats mettent en lumière les pratiques socio-matérielles fondées sur les tokens, tandis que le troisième souligne l'influence de l'environnement institutionnel sur les motivations et le moment de la transition. Ils illustrent également en quoi l'E2C diffère des conversions coopératives traditionnelles, souvent déclenchées par des difficultés économiques ou comme stratégie de succession d'un propriétaire partant à la retraite. Cet article contribue au débat académique en positionnant la sortie vers la DAO comme une stratégie entrepreneuriale hybride (et potentiellement incomplète), tout en identifiant les principaux moteurs du phénomène, qui méritent d'être explorés davantage.

(B) Pendant l'E2C

Dans cette section, je pose la question suivante : quels sont les défis auxquels les organisations sont confrontées pendant le processus d'E2C ? Grâce à une recherche ethnographique (observation participante et entretiens) dans deux organisations en cours d'E2C (Open Collective et DADA), j'ai constaté que la mise en place d'une gouvernance communautaire de la technologie et par la technologie constitue un défi majeur pour les organisations engagées dans l'E2C. En mettant l'accent sur ces thématiques, l'E2C dans l'économie des plateformes numériques se distingue des conversions coopératives traditionnelles, qui n'accordent généralement pas une place centrale à la gouvernance technologique.

Dans le cas d'Open Collective, le principal défi consistait à assurer une participation efficace des utilisateurs à la conception de la plateforme. Bien que la littérature existante sur la conception participative propose diverses approches pour encourager une telle participation, ces méthodes restent peu appliquées et peuvent s'avérer inadéquates pour des plateformes numériques de grande envergure, opérant à l'échelle mondiale. Les parties prenantes d'Open Collective ont plaidé pour une institutionnalisation préservant certains rôles centralisés au sein de l'écosystème, afin de permettre et de faciliter une participation effective des utilisateurs à la conception et au développement de la plateforme. Elles ont également souligné la nécessité de mettre en place des

pratiques socio-matérielles destinées à ancrer l'objectif stratégique d'Open Collective, sa structure de gouvernance et ses mécanismes de responsabilité avant le transfert de la gouvernance à la communauté. Ce chapitre contribue à la littérature existante sur la conception participative en explorant la gouvernance des utilisateurs dans les processus de conception et de développement technologique au sein d'un vaste écosystème de plateformes numériques actif à l'échelle internationale.

En revanche, le cas de DADA s'est concentré sur la conception de la gouvernance communautaire par la technologie, notamment celle des DAO, ainsi que sur le rôle de la confiance en leur sein. Je montre que, bien que les communautés blockchain privilégient souvent la minimisation de la confiance — résumée par l'éthique « ne fais pas confiance, vérifie » — cette approche ne correspond pas toujours aux besoins des communautés virtuelles ni au cas d'usage spécifique d'une DAO. La recherche met en lumière la nécessité de concevoir de manière intentionnelle des mécanismes de gouvernance qui encouragent ou réduisent le besoin de confiance dans certains domaines, en fonction des objectifs de l'organisation. Les résultats suggèrent que les organisations engagées dans l'E2C doivent examiner attentivement la manière dont elles conçoivent la gouvernance communautaire par la technologie, en dépassant les normes sociales dominantes de leur environnement institutionnel et en explorant plutôt tout le potentiel des technologies disponibles pour établir une gouvernance comme ensemble de pratiques socio-matérielles les mieux adaptées à leurs finalités. Ce chapitre contribue à la littérature existante sur le rôle de la confiance dans les blockchains en l'étendant à l'échelle des DAO.

(C) Après l'E2C

Dans cette section, je m'interroge sur les effets de l'E2C pour les organisations et les acteurs communautaires. Plus précisément, au chapitre 3.1, je pose la question suivante : quelles conséquences négatives inattendues ou quels défis émergent pour les organisations après l'E2C ? Comment les communautés gèrent-elles ou atténuent-elles ces effets ? J'ai répondu à cette question en menant une étude de cas ethnographique sur la DAO Proof of Humanity (PoH), alors que la communauté faisait face à une crise interne et à un conflit, après avoir été « essaimée » vers la communauté. Trois grands défis, liés à la transition du projet, se sont révélés être les principaux moteurs de cette crise : (1) la difficulté à établir un objectif commun et des valeurs partagées dans une communauté virtuelle globalisée et hétérogène ; (2) la fragmentation des espaces de délibération, en raison de la facilité avec laquelle les membres peuvent quitter et créer des canaux concurrents ; et (3) l'échec à instituer un leadership légitime et responsable, capable de mettre en œuvre et d'interpréter les décisions de la DAO ne reposant pas uniquement sur des mécanismes techniques d'exécution. Ces résultats soulignent l'importance de la conception de l'infrastructure, de la clarté de l'objectif et de la gouvernance, ainsi que la nécessité d'instituer des rôles de leadership légitimes au cours de l'E2C — comme l'a également démontré le cas d'Open Collective. Ils mettent en lumière les défis de coordination propres à la gouvernance des communautés virtuelles. Ce chapitre contribue à la littérature émergente sur les difficultés de gouvernance des

DAO en fournissant la première étude de cas approfondie d'une DAO fonctionnant selon un principe d'égalité des voix (une personne, un vote).

Le deuxième chapitre de cette section explore l'impact de l'E2C tokenisée sur les travailleurs, en tant que groupe spécifique de parties prenantes concernées. Plus précisément, je pose la question suivante : comment les communautés vivent-elles les effets de l'E2C ? Quels bénéfices et quels défis émergent après cette transition ? Pour répondre à ces questions, j'ai mené une recherche ethnographique selon l'approche de l'enquête ouvrière, auprès de personnes travaillant pour des DAO — les contributeurs DAO. J'ai constaté que les DAO, et le travail en leur sein, fonctionnent selon des logiques institutionnelles multiples, souvent contradictoires, combinant des éléments issus du travail indépendant, de l'économie de plateforme, des coopératives, des startups, et même des fandoms en ligne. Alors que de nombreux contributeurs aspirent à des conditions de travail comparables à celles des coopératives, la réalité du travail dans les DAO s'apparente plutôt à un travail précaire, caractérisé par l'instabilité et l'incertitude juridique. Ainsi, les résultats de la sortie vers les DAO diffèrent considérablement de ceux observés dans les conversions coopératives traditionnelles, ou même des bénéfices généralement attribués aux coopératives de plateformes, qui soulignent la création d'emplois décents comme un avantage central. Pour améliorer les conditions de travail, la recherche identifie trois besoins fondamentaux : la sécurité psychosociale, la stabilité financière et la clarté réglementaire. Pour y répondre, il est nécessaire de combiner des mécanismes techniques, l'intégration dans les cadres réglementaires existants, et des réformes politiques, afin de garantir une meilleure protection aux travailleurs des DAO. Une fois de plus, ces recommandations, formulées par les participants à la recherche, illustrent comment les parties prenantes de l'industrie blockchain affirment leur propre pouvoir d'action pour structurer leur environnement institutionnel de manière favorable à leurs objectifs. En tant que première étude approfondie des conditions de travail au sein des DAO du point de vue des contributeurs, cette recherche enrichit la littérature encore émergente sur les DAO et le travail.

Bibliography

A Short History of Uniswap. (2019, February 11). Uniswap Protocol. https://blog.uniswap.org/uniswap-history

Abbing, R. R., Diehm, C., & Warreth, S. (2023). Decentralised social media. *Internet Policy Review*, *12*(1). https://policyreview.info/glossary/decentralised-social-media

Abidin, C., & de Seta, G. (2020). Private messages from the field: Confessions on digital ethnography and its discomforts. *Journal of Digital Social Research*. https://doi.org/10.33621/jdsr.v2i1.35

Acs, Z. J., Song, A. K., Szerb, L., Audretsch, D. B., & Komlósi, É. (2021). The evolution of the global digital platform economy: 1971–2021. *Small Business Economics*, *57*(4), 1629–1659. https://doi.org/10.1007/s11187-021-00561-x

Agar, M., & MacDonald, J. (1995). Focus Groups and Ethnography. *Human Organization*, *54*(1), 78–86. https://doi.org/10.17730/humo.54.1.x102372362631282

Allen, D. W. E. (2024). Crypto airdrops: An evolutionary approach. *Journal of Evolutionary Economics*, *34*(4), 849–872. https://doi.org/10.1007/s00191-024-00874-6

Allen, D. W. E., Berg, C., & Lane, A. M. (2022). *Why airdrop cryptocurrency tokens?* (SSRN Scholarly Paper 4254360). https://doi.org/10.2139/ssrn.4254360

Allison, I. (2020, September 16). *Leaked EU Draft Proposes All-Encompassing Laws for Crypto Assets*. https://www.coindesk.com/policy/2020/09/16/leaked-eu-draft-proposes-all-encompassing-laws-for-crypto-assets/

Alston, E. (2022). Governance as Conflict: Constitution of Shared Values Defining Future Margins of Disagreement. *MIT Computational Law Report*. https://law.mit.edu/pub/governanceasconflict/release/1

Alston, E., Law, W., Murtazashvili, I., & Weiss, M. (2022). Blockchain networks as constitutional and competitive polycentric orders. *Journal of Institutional Economics*, *18*(5), 707–723. https://doi.org/10.1017/S174413742100093X

Andoni, D. R. and O. (2020, August 24). *DeFi Is Just Like the ICO Boom and Regulators Are Circling*. https://www.coindesk.com/markets/2020/08/24/defi-is-just-like-the-ico-boom-and-regulators-are-circling/

Antikainen, M., Aaltonen, T., & Väisänen, J. (2007). The role of trust in OSS communities—Case Linux Kernel community. In J. Feller, B. Fitzgerald, W. Scacchi, & A. Sillitti (Eds.), *Open Source Development, Adoption and Innovation* (pp. 223–228). Springer US. https://doi.org/10.1007/978-0-387-72486-7_19

Archer, M. S. (2003). *Structure, agency, and the internal conversation*. Cambridge University Press.

Armstrong, J., Boyle, L., Herron, L., Locke, B., & Smith, L. (2019). *Ethnographic Case Studies*. https://iu.pressbooks.pub/lcle700resguides/chapter/ethnographic-case-study/

Arroyo, J., Davó, D., Martínez-Vicente, E., Faqir-Rhazoui, Y., & Hassan, S. (2022). DAO-Analyzer: Exploring Activity and Participation in Blockchain Organizations. *Companion Publication of the 2022 Conference on Computer Supported Cooperative Work and Social Computing*, 193–196. https://doi.org/10.1145/3500868.3559707

Artz, G. M., & Kim, Y. (2011). Business ownership by workers: Are worker cooperatives a viable option? *ISU General Staff Papers*. https://ideas.repec.org//p/isu/genstf/201111090800001098.html

Atkinson, P., & Hammersley, M. (1994). Ethnography and participant observation. In *Handbook of qualitative research* (pp. 248–261). Sage Publications, Inc.

Atzori, M. (2015). *Blockchain Technology and Decentralized Governance: Is the State Still Necessary?* (SSRN Scholarly Paper ID 2709713). Social Science Research Network. https://papers.ssrn.com/abstract=2709713

Augustin, N., Eckhardt, A., & de Jong, A. W. (2023). Understanding decentralized autonomous organizations from the inside. *Electronic Markets*, *33*(1), 38. https://doi.org/10.1007/s12525-023-00659-y

Avelino, G., Constantinou, E., Valente, M. T., & Serebrenik, A. (2019). On the abandonment and survival of open source projects: An empirical investigation. *2019 ACM/IEEE International Symposium on Empirical Software Engineering and Measurement (ESEM)*, 1–12. https://doi.org/10.1109/ESEM.2019.8870181

Balcaen, S., Manigart, S., Buyze, J., & Ooghe, H. (2012). Firm exit after distress: Differentiating between bankruptcy, voluntary liquidation and M&A. *Small Business Economics*, *39*(4), 949–975.

Balsa, E., Nissenbaum, H., & Park, S. (2022). Cryptography, Trust and Privacy: It's Complicated. *Proceedings of the 2022 Symposium on Computer Science and Law*, 167–179. https://doi.org/10.1145/3511265.3550443

Bamberg, M. (2012). Narrative analysis. In *APA handbook of research methods in psychology, Vol 2: Research designs: Quantitative, qualitative, neuropsychological, and biological* (pp. 85–102). American Psychological Association. https://doi.org/10.1037/13620-006

Barbereau, T., Smethurst, R., Papageorgiou, O., Sedlmeir, J., & Fridgen, G. (2023). Decentralised Finance's timocratic governance: The distribution and exercise of tokenised voting rights. *Technology in Society*, *73*, 102251. https://doi.org/10.1016/j.techsoc.2023.102251

Barbot-Grizzo, M.-C. (2020). Is a Workers' Cooperative an Effective Means for Transferring SMEs? In *Business Transfers, Family Firms and Entrepreneurship*. Routledge.

Barcellini, F., Détienne, F., & Burkhardt, J.-M. (2014). A Situated Approach of Roles and Participation in Open Source Software Communities. *Human–Computer Interaction*, *29*(3), 205–255. https://doi.org/10.1080/07370024.2013.812409

Barcellini, F., Prost, L., & Cerf, M. (2015). Designers' and users' roles in participatory design: What is actually co-designed by participants? *Applied Ergonomics*, *50*, 31–40. https://doi.org/10.1016/j.apergo.2015.02.005

Bassetti, C., Botto, F., & Teli, M. (2018). The Commonfare Project. Designing to Support Grassroots Welfare Initiatives. *DigitCult - Scientific Journal on Digital Cultures*, *3*(1), 31–40. https://doi.org/10.4399/97888255159095

Bassetti, C., Sciannamblo, M., Lyle, P., Teli, M., De Paoli, S., & De Angeli, A. (2019). Co-designing for common values: Creating hybrid spaces to nurture autonomous cooperation. *CoDesign*, *15*(3), 256–271. https://doi.org/10.1080/15710882.2019.1637897

Battilana, J. (2006). Agency and Institutions: The Enabling Role of Individuals' Social Position. *Organization*, *13*(5), 653–676. https://doi.org/10.1177/1350508406067008

Batwa, A., & Norrman, A. (2021). Blockchain Technology and Trust in Supply Chain Management: A Literature Review and Research Agenda. *Operations and Supply Chain Management: An International Journal*, *14*(2), 203–220. https://doi.org/10.31387/oscm0450297

Beck, R., Müller-Bloch, C., & King, J. L. (2018). Governance in the blockchain economy: A framework and research agenda. *Journal of the Association for Information Systems*, *19*(10), 1020–1034.

Becker, M., & Bodó, B. (2021). Trust in blockchain-based systems. *Internet Policy Review*, *10*(2). https://policyreview.info/glossary/trust-blockchain

Bellavitis, C., Fisch, C., & Momtaz, P. P. (2023). The rise of decentralized autonomous organizations (DAOs): A first empirical glimpse. *Venture Capital*, *25*(2), 187–203. https://doi.org/10.1080/13691066.2022.2116797

Benkler, Y. (2002). Coase's penguin, or, linux and" the nature of the firm". *Yale Law Journal*, 369–446.

Benkler, Y. (2006). *The Wealth of Networks: How Social Production Transforms Markets and Freedom*. Yale University Press. https://www.jstor.org/stable/j.ctt1njknw

Benlian, A., & Hess, T. (2011). The Signaling Role of IT Features in Influencing Trust and Participation in Online Communities. *International Journal of Electronic Commerce*, *15*(4), 7–56. https://doi.org/10.2753/JEC1086-4415150401

Bennani-Taylor, S. (2024). Infrastructuring AI: The stabilization of 'artificial intelligence' in and beyond national AI strategies. *First Monday*. https://doi.org/10.5210/fm.v29i2.13568

Berglund, K., & Wigren, C. (2012, March 1). *Soci(et)al Entrepreneurship: The Shaping of a Different Story of Entrepreneurship. | Tamara Journal for Critical Organization Inquiry | EBSCOhost*. https://openurl.ebsco.com/contentitem/gcd:74263975?sid=ebsco:plink:crawler&id=ebsco:gcd:74263975

Bersani, K. (2021). Separating Governance Tokens from Securities: How the Utility Token May Fall Short of the Investment Contract. *Cardozo Law Review*, *43*, 1305.

Blank, S. (2013). Why the lean start-up changes everything. *Harvard Business Review*, *91*(5), 63–72.

Bødker, S., Dindler, C., Iversen, O. S., & Smith, R. C. (2022). *Participatory Design*. Springer International Publishing. https://doi.org/10.1007/978-3-031-02235-7

Bodó, B. (2021). Mediated trust: A theoretical framework to address the trustworthiness of

technological trust mediators. *New Media & Society*, *23*(9), 2668–2690. https://doi.org/10.1177/1461444820939922

Bodo, B., & Giannopoulou, A. (2019). The logics of technology decentralization – the case of distributed ledger technologies. In *Blockchain and Web 3.0*. Routledge.

Boellstorff, T. (2015). Coming of Age in Second Life: An Anthropologist Explores the Virtually Human. In *Coming of Age in Second Life*. Princeton University Press. https://www.degruyter.com/document/doi/10.1515/9781400874101/html

Boje, D. M. (1995). Stories of the Storytelling Organization: A Postmodern Analysis of Disney as 'Tamara-Land'. *The Academy of Management Journal*, *38*(4), 997–1035. https://doi.org/10.2307/256618

Borkin, S. (2019, February). *Platform co-operatives—Solving the capital conundrum*. Nesta. https://www.nesta.org.uk/report/platform-co-operatives/

Borzaga, C., Salvatori, G., & Bodini, R. (2019). Social and Solidarity Economy and the Future of Work* This paper draws on a work that was previously published by the ILO and is available at: Http://www.ilo.org/wcmsp5/groups/public/—ed_emp/—emp_ent/—coop/documents/publication/wcms_573160.pdf (Copyright © International Labour Organization 2017.). *Journal of Entrepreneurship and Innovation in Emerging Economies*, *5*(1), 37–57. https://doi.org/10.1177/2393957518815300

Bovino, L., & McGlone, D. (2022). *DAO Contributor Challenges*. Tally.xyz. https://drive.google.com/file/d/1tQrXBbdjRm6Ip8uMakGBMcb8S6ivuvTw/view

Bowen, S., McSeveny, K., Lockley, E., Wolstenholme, D., Cobb, M., & Dearden, A. (2013). How was it for you? Experiences of participatory design in the UK health service. *CoDesign*, *9*(4), 230–246. https://doi.org/10.1080/15710882.2013.846384

Brandel, J., Zepeda, M., Scholz, A., & Williams, A. (2017, August 3). *Zebras Fix What Unicorns Break. Magical thinking drives the startup*. https://medium.com/zebras-unite/zebrasfix-c467e55f9d96

Bretos, I., & Errasti, A. (2017). Challenges and opportunities for the regeneration of multinational worker cooperatives: Lessons from the Mondragon Corporation—a case study of the Fagor Ederlan Group. *Organization*, *24*(2), 154–173. https://doi.org/10.1177/1350508416656788

Brody, A., & Couture, S. (2021). Ideologies and Imaginaries in Blockchain Communities: The Case of Ethereum. *Canadian Journal of Communication*, *46*(3), 543–561. https://doi.org/10.22230/cjc.2021v46n3a3701

Brown, J., & Quarter, J. (1994). Resistance to Change: The Influence of Social Networks on the Conversion of a Privately-Owned Unionized Business to a Worker Cooperative. *Economic and Industrial Democracy*, *15*(2), 259–282. https://doi.org/10.1177/0143831X94152007

Browne, R. (2021, June 7). *Amazon, Google and Facebook will be hit hard by the G-7 tax deal. Here's how they responded*. CNBC. https://www.cnbc.com/2021/06/07/g-7-tax-deal-amazon-google-and-facebook-respond

Brownworth, A., Durfee, J., Lee, M., & Martin, A. (2024). *Regulating Decentralized Systems: Evidence from Sanctions on Tornado Cash* (SSRN Scholarly Paper 4930935). https://papers.ssrn.com/abstract=4930935

Brueller, N. N., Carmeli, A., & Markman, G. D. (2018). Linking Merger and Acquisition Strategies to Postmerger Integration: A Configurational Perspective of Human Resource Management. *Journal of Management*, *44*(5), 1793–1818. https://doi.org/10.1177/0149206315626270

Bruner, E. M. (1997). Ethnography as Narrative. In *Memory, Identity, Community: The Idea of Narrative in the Human Sciences*. SUNY Press.

Bühler, M. M., Calzada, I., Cane, I., Jelinek, T., Kapoor, A., Mannan, M., Mehta, S., Mookerje, V.,

Nübel, K., Pentland, A., Scholz, T., Siddarth, D., Tait, J., Vaitla, B., & Zhu, J. (2023). Unlocking the Power of Digital Commons: Data Cooperatives as a Pathway for Data Sovereign, Innovative and Equitable Digital Communities. *Digital*, *3*(3), 146–171. https://doi.org/10.3390/digital3030011

Burke, K. (1969). *A Grammar of Motives*. University of California Press.

Burrell, J. (2009a). The field site as a network: A strategy for locating ethnographic research. *Field Methods*, *21*(2), 181–199.

Burrell, J. (2009b). The Field Site as a Network: A Strategy for Locating Ethnographic Research. *Field Methods*, *21*(2), 181–199. https://doi.org/10.1177/1525822X08329699

Buterin, V. (2014a). *Ethereum: A Next-Generation Smart Contract and Decentralized Application Platform.* 36.

Buterin, V. (2014b, June 6). *DAOs, DACs, DAs and More: An Incomplete Terminology Guide*. https://blog.ethereum.org/2014/05/06/daos-dacs-das-and-more-an-incomplete-terminology-guide/

Buterin, V. (2017, February 6). The Meaning of Decentralization. *Medium*. https://medium.com/@VitalikButerin/the-meaning-of-decentralization-a0c92b76a274

bytemaster. (2014, April 23). *A DAC is a Sovereign Co-op*. https://bitsharestalk.org/index.php?PHPSESSID=45307737804b2a1403def563cdb5ba15&topic=4340.msg54700#msg54700

Cabello, C., & Mikalef, P. (2024). Exploring Decentralized Autonomous Organization (DAO) Governance: An integrative literature review. *MCIS 2024 Proceedings*. https://aisel.aisnet.org/mcis2024/27

Calzada, I. (2021). Data Co-Operatives through Data Sovereignty. *Smart Cities*, *4*(3), 1158–1172. https://doi.org/10.3390/smartcities4030062

Calzada, I. (2024). Decentralized Web3 Reshaping Internet Governance: Towards the Emergence of New Forms of Nation-Statehood? *Future Internet*, *16*(10), 361. https://doi.org/10.3390/fi16100361

Cánovas Izquierdo, J. L., & Cabot, J. (2021). On the analysis of non-coding roles in open source development. *Empirical Software Engineering*, *27*(1), 18. https://doi.org/10.1007/s10664-021-10061-x

Casey, M. j., & Vigna, P. (2018, September 4). *In blockchain we trust*. MIT Technology Review. https://www.technologyreview.com/2018/04/09/3066/in-blockchain-we-trust/

Cava, L. L., Aiello, L. M., & Tagarelli, A. (2023). Drivers of social influence in the Twitter migration to Mastodon. *Scientific Reports*, *13*(1), 21626. https://doi.org/10.1038/s41598-023-48200-7

Chaplinsky, S., Niehaus, G., & Van de Gucht, L. (1998). Employee buyouts: Causes, structure, and consequences. *Journal of Financial Economics*, *48*(3), 283–332.

Charmaz, K., & Henwood, K. (2008). Grounded Theory. In C. Willig & W. Stainton-Rogers, *The SAGE Handbook of Qualitative Research in Psychology* (pp. 240–260). SAGE Publications Ltd. https://doi.org/10.4135/9781848607927.n14

Charmettant, H., & Renou, Y. (2021). Cooperative conversion and communalization: Closely observed interactions between the material and the mental. *Annals of Public and Cooperative Economics*, *92*(1), 55–77. https://doi.org/10.1111/apce.12285

Chaudhary, K. (2023, October 26). *This Airbnb alternative won't destroy Canada's housing market*. The Breach. https://breachmedia.ca/fairbnb-airbnb-alternative-canada-community-land-trusts/

Cheney, G., Santa Cruz, I., Peredo, A. M., & Nazareno, E. (2014). Worker cooperatives as an organizational alternative: Challenges, achievements and promise in business governance

and ownership. *Organization*, *21*(5), 591–603. https://doi.org/10.1177/1350508414539784

Chohan, U. W. (2017). The Decentralized Autonomous Organization and Governance Issues. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3082055

Choi, C., De Filippi, P., Dudley, R., Elrifai, S. N., Fannizadeh, F., Guillaume, F., Leiter, A., Mannan, M., McMullen, G., Riva, S., & Shimony, O. (2021). *Model Law for Decentralized Autonomous Organizations (DAOs)*. COALA. https://coala.global/reports/#1623963887316-6ce8de52-e0a0

Christian, J., & Vu, A. N. (2021). Task‐based structures in open source software: Revisiting the onion model. *R&D Management*, *51*(1), 87–100. https://doi.org/10.1111/radm.12428

Citizenship. (n.d.). Optimism Docs. Retrieved 15 April 2024, from https://community.optimism.io/docs/governance/citizenship.html

Clarke, A. E. (2003). Situational Analyses: Grounded Theory Mapping After the Postmodern Turn. *Symbolic Interaction*, *26*(4), 553–576. https://doi.org/10.1525/si.2003.26.4.553

Clarke, A. E., Washburn, R., Friese, C., Clarke, A. E., & Washburn, R. (Eds.). (2016). *Mapping Research with Grounded Theory*. Routledge. https://doi.org/10.4324/9781315420134

Clercq, D. D., & Arenius, P. (2006). The role of knowledge in business start-up activity. *International Small Business Journal*, *24*(4), 339–358.

Clifford, J. (1990). Notes on (field) notes. *Fieldnotes: The Makings of Anthropology*, *1990*, 47–70.

Coase, R. H. (1937). The Nature of the Firm. *Economica*, *4*(16), 386–405. https://doi.org/10.1111/j.1468-0335.1937.tb00002.x

Coleman, E. G. (2010). Ethnographic Approaches to Digital Media. *Annual Review of Anthropology*, *39*(1), 487–505. https://doi.org/10.1146/annurev.anthro.012809.104945

Collewaert, V. (2012). Angel investors' and entrepreneurs' intentions to exit their ventures: A conflict perspective. *Entrepreneurship Theory and Practice*, *36*(4), 753–779.

Cossar, S., Merk, T., Kamalova, J., & De Filippi, P. (2024). *Proof of Humanity: Ethnographic research of a "democratic" DAO* [Technical Report]. European University Institute. https://doi.org/10.2870/107946

Crampton, J. (2024). How digital geographies render value: Geofences, the blockchain, and the possibilities of slow alternatives. In *Knowledge and Digital Technology* (pp. 257–279). Springer Nature.

Cronje, A. (2021, July 25). *Fair launches, decentralized collaboration, and Fixed Forex.* Medium. https://andrecronje.medium.com/fair-launches-decentralized-collaboration-and-fixed-forex-ab327a2e4fc4

Dacin, M. T., Goodstein, J., & Scott, W. R. (2002). Institutional Theory and Institutional Change: Introduction to the Special Research Forum. *The Academy of Management Journal*, *45*(1), 45–56. https://doi.org/10.2307/3069284

DADA.art. (2022, March). *Introducing the DADA Exit to Community*. https://powerdada.medium.com/introducing-the-dada-exit-to-community-d4b9874c6c94

DADA.art. (2023, July 10). DADAGAN's Shenanigans. *Medium*. https://powerdada.medium.com/dadagans-shenanigans-b12d41a020e7

Dalal, S., Chiem, N., Karbassi, N., Liu, Y., & Monroy-Hernández, A. (2023). Understanding Human Intervention in the Platform Economy: A case study of an indie food delivery service. *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*, 1–16. https://doi.org/10.1145/3544548.3581517

Dale, B. (2020a, September 9). *SushiSwap Will Withdraw Up to $830M From Uniswap Today: Why It Matters for DeFi*. https://www.coindesk.com/tech/2020/09/09/sushiswap-will-withdraw-up-to-830m-from-uniswap-today-why-it-matters-for-defi/

Dale, B. (2020b, October 20). *With COMP Below $100, a Look Back at the 'DeFi Summer' It Sparked*. https://www.coindesk.com/business/2020/10/20/with-comp-below-100-a-look-back-at-the-defi-summer-it-sparked/

Darwin Holmes, A. G. (2020). Researcher Positionality—A Consideration of Its Influence and Place in Qualitative Research—A New Researcher Guide. *Shanlax International Journal of Education*, *8*(4), 1–10. https://doi.org/10.34293/education.v8i4.3232

Davidson, S. (2023). Compensation in DAOs: A Proposal. *The Journal of The British Blockchain Association*. https://doi.org/10.31585/jbba-6-2-(4)2023

Davidson, S., De Filippi, P., & Potts, J. (2018). Blockchains and the economic institutions of capitalism. *Journal of Institutional Economics*, *14*(4), 639–658. https://doi.org/10.1017/S1744137417000200

Dávila, J. (2023). *Blockchain radicals: How capitalism ruined crypto and how to fix it*. Repeater.

Davis, S., & Patrie, W. (2012). Co-ordination among Co-operatives: Dakota Carrier Network. In J. Sousa & R. Herman (Eds.), *A Co-operative Dilemma. Converting Organizational Form.* (pp. 171–190). https://www.socioeco.org/bdf_fiche-document-6611_en.html

De Filippi, P., Mannan, M., Cossar, S., Merk, T., & Kamalova, J. (2024). *Blockchain technology and polycentric governance* [Technical Report]. European University Institute. https://doi.org/10.2870/049527

De Filippi, P., Mannan, M., & Reijers, W. (2020). Blockchain as a confidence machine: The problem of trust & challenges of governance. *Technology in Society*, *62*, 101284. https://doi.org/10.1016/j.techsoc.2020.101284

De Filippi, P., Mannan, M., & Reijers, W. (2022). The alegality of blockchain technology. *Policy and Society*, *41*(3), 358–372.

De Filippi, P., Mannan, M., Reijers, W., Berman, P., & Henderson, J. (2022). *Blockchain Technology, Trust & Confidence: Reinterpreting Trust in a Trustless System?* [HIIG Discussion Paper No. 2022-3]. https://doi.org/10.5281/zenodo.6516991.

De Filippi, P., & Merk, T. (2024). How to DAO: The Role of Trust and Confidence in Institutional Design. In *Decentralized Autonomous Organizations*. Routledge.

de Laat, P. B. (2010). How can contributors to open-source communities be trusted? On the assumption, inference, and substitution of trust. *Ethics and Information Technology*, *12*(4), 327–341. https://doi.org/10.1007/s10676-010-9230-x

De, N. (2020, September 17). *Uniswap Launches Governance Token in Bid to Keep Up With Rival AMM SushiSwap*. https://www.coindesk.com/markets/2020/09/17/uniswap-launches-governance-token-in-bid-to-keep-up-with-rival-amm-sushiswap/

De Noni, I., Ganzaroli, A., & Orsi, L. (2011). The Governance of Open Source Software Communities: An Exploratory Analysis. *Journal of Business Systems, Governance and Ethics*, *6*(1). https://doi.org/10.15209/jbsge.v6i1.195

DeepDAO. (2024). *DeepDAO.io*. DeepDAO.Io. https://deepdao.io/organizations

Delamont, S., & Atkinson, P. (2010). *SAGE Qualitative Research Methods*. 1–1616.

Delphi Labs. (2023, April 20). Assimilating the BORG: A New Cryptolegal Framework for DAO-Adjacent Entities. *Medium*. https://delphilabs.medium.com/assimilating-the-borg-a-new-cryptolegal-framework-for-dao-adjacent-entities-569e54a43f83

Demsetz, H. (1988). The Theory of the Firm Revisited. *Journal of Law, Economics, & Organization*, *4*(1), 141–161.

DeTienne, D. R. (2010). Entrepreneurial exit as a critical component of the entrepreneurial process:

Theoretical development. *Journal of Business Venturing*, *25*(2), 203–215.

DeTienne, D. R., McKelvie, A., & Chandler, G. N. (2015). Making sense of entrepreneurial exit strategies: A typology and test. *Journal of Business Venturing*, *30*(2), 255–272.

Di Stefano, C., Fratocchi, L., & Picciotti, A. (2024). Workers buyout cooperatives: A structured literature review and a research agenda. *Economic and Industrial Democracy*, *45*(3), 859–890. https://doi.org/10.1177/0143831X231201273

DiMaggio, P. J., & Powell, W. W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review*, *48*(2), 147–160. https://doi.org/10.2307/2095101

Dixon, C. (2018, February 18). *Why decentralization matters*. A16z Crypto. https://a16zcrypto.com/posts/article/why-decentralization-matters/

Dixon, C., & Simpson, A. (n.d.). *Investing in Optimism*. Andreessen Horowitz. Retrieved 15 April 2024, from https://a16z.com/announcement/investing-in-optimism/

Dodd, N. (2018). The Social Life of Bitcoin. *Theory, Culture & Society*, *35*(3), 35–56. https://doi.org/10.1177/0263276417746464

Dorado, S. (2005). Institutional entrepreneurship, partaking, and convening. *Organization Studies*, *26*(3), 385–414.

DuPont, Q. (2017). *Experiments in Algorithmic Governance: A History and Ethnography of 'The DAO,' a failed Decentralized Autonomous Organization*. 18.

DuPont, Q. (2018). Experiments in Algorithmic Governance: An ethnography of 'The DAO,' a failed Decentralized Autonomous Organization. In M. Campbell-Verduyn (Ed.), *Bitcoin and Beyond: The Challenges and Opportunities of Blockchains for Global Governance* (pp. 157–177). Routledge.

DuPont, Q. (2024). *New Online Communities: Graph Deep Learning on Anonymous Voting*

Networks to Identify Sybils in Polycentric Governance (arXiv:2311.17929). arXiv. https://doi.org/10.48550/arXiv.2311.17929

Dylan-Ennis, P., Kavanagh, D., & Araujo, L. (2022). The dynamic imaginaries of the Ethereum project. *Economy and Society*, *0*(0), 1–23. https://doi.org/10.1080/03085147.2022.2131280

Eesley, C. E., Eberhart, R. N., Skousen, B. R., & Cheng, J. L. C. (2018). Institutions and Entrepreneurial Activity: The Interactive Influence of Misaligned Formal and Informal Institutions. *Strategy Science*, *3*(2), 393–407. https://doi.org/10.1287/stsc.2018.0060

Ehn, P. (1988). *Work-oriented design of computer artifacts* [PhD Thesis, Arbetslivscentrum]. https://www.diva-portal.org/smash/record.jsf?pid=diva2:580037

Ehn, P. (1993). Scandinavian Design: On Participation and Skill. In *Participatory Design*. CRC Press.

Ehrsam, F. (2020, November 28). *Governance Minimization*. Fred Ehrsam. https://fehrsam.xyz/blog/governance-minimization

El Faqir, Y., Arroyo, J., & Hassan, S. (2020). An overview of decentralized autonomous organizations on the blockchain. *Proceedings of the 16th International Symposium on Open Collaboration*, 1–8. https://doi.org/10.1145/3412569.3412579

Electric Capital. (2024). *2024 Crypto Developer Report*. Electric Capital. https://www.developerreport.com

Ellis, D., Oldridge, R., & Vasconcelos, A. (2004). Community and Virtual Community. *Annual Review of Information Science and Technology (ARIST)*, *38*, 145–186.

Esber, J., & Kominers, S. D. (2023, January 12). *Progressive decentralization: A high-level framework*. A16z Crypto. https://a16zcrypto.com/posts/article/progressive-decentralization-a-high-level-framework/

Eseryel, U. Y., Wei, K., & Crowston, K. (2020). Decision-making Processes in Community-based

Free/Libre Open Source Software-development Teams with Internal Governance: An Extension to Decision-making Theory. *Communications of the Association for Information Systems*, *46*(1). https://doi.org/10.17705/1CAIS.04620

Fairbairn, B., & Dobrohoczki, R. (2012). The "New" Credit Union: Sunova Credit Union. In J. Sousa & R. Herman (Eds.), *A Co-operative Dilemma. Converting Organizational Form.* (pp. 201–222). https://www.socioeco.org/bdf_fiche-document-6611_en.html

Falzon, M.-A. (2009). Multi-sited Ethnography: Theory, Praxis and Locality in Contemporary Research. In *Multi-Sited Ethnography*. Routledge.

Fan, S., Min, T., Wu, X., & Cai, W. (2023). Altruistic and Profit-oriented: Making Sense of Roles in Web3 Community from Airdrop Perspective. *Proceedings of the 2023 CHI Conference on Human Factors in Computing Systems*, 1–16. https://doi.org/10.1145/3544548.3581173

Fannizadeh, F. (2023, July 3). *Lawmakers In New Hampshire And Utah Recognize DAOs As Legal Persons*. Forbes. https://www.forbes.com/sites/digital-assets/2023/03/07/-new-hampshire-utah-recognize-daos-as-legal-persons/

Faqir-Rhazoui, Y., Arroyo, J., & Hassan, S. (2021). A comparative analysis of the platforms for decentralized autonomous organizations in the Ethereum blockchain. *Journal of Internet Services and Applications*, *12*(1), 9. https://doi.org/10.1186/s13174-021-00139-6

Farmer, J. S., Cahill, J., Farmer, J. S., & Cahill, J. (2022, October 7). DAOs: A game changer in need of new rules. *Reuters*. https://www.reuters.com/legal/legalindustry/daos-game-changer-need-new-rules-2022-10-07

Feichtinger, R., Fritsch, R., Vonlanthen, Y., & Wattenhofer, R. (2023). *The Hidden Shortcomings of (D)AOs—An Empirical Study of On-Chain Governance* (arXiv:2302.12125). arXiv. https://doi.org/10.48550/arXiv.2302.12125

Feichtinger, R., Fritsch, R., Vonlanthen, Y., & Wattenhofer, R. (2024). The Hidden Shortcomings of (D)AOs – An Empirical Study of On-Chain Governance. In A. Essex, S. Matsuo, O. Kulyk, L. Gudgeon, A. Klages-Mundt, D. Perez, S. Werner, A. Bracciali, & G. Goodell (Eds.), *Financial Cryptography and Data Security. FC 2023 International Workshops* (pp. 165–185). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-48806-1_11

Fernau, O. (2023, September 20). *Nouns NFT Holders Opt To 'Rage Quit' Through New Fork—The Defiant*. https://thedefiant.io/nouns-nft-holders-opt-to-rage-quit-through-new-fork

Fligstein, N. (1997). Social skill and institutional theory. *American Behavioral Scientist*, *40*(4), 397–405.

Foley, D. E. (2002). Critical ethnography: The reflexive turn. *International Journal of Qualitative Studies in Education*, *15*(4), 469–490. https://doi.org/10.1080/09518390210145534

Frey, S., & Schneider, N. (2021). Effective voice: Beyond exit and affect in online communities. *New Media & Society*, 146144482110440. https://doi.org/10.1177/14614448211044025

Gambetta, D. (Ed.). (1998). Can We Trust Trust? In *Trust: Making and breaking cooperative relations* (pp. 213–237). B. Blackwell.

Garud, R., Hardy, C., & Maguire, S. (2007). Institutional Entrepreneurship as Embedded Agency: An Introduction to the Special Issue. *Organization Studies - ORGAN STUD*, *28*, 957–969. https://doi.org/10.1177/0170840607078958

Gary, S. N. (2023). The Changing Landscape of Business Succession: How and Why Purpose Trusts Matter. *Ohio State Business Law Journal*, *18*, 41.

Geczy, C., Jeffers, J., Musto, D. K., & Tucker, A. M. (2018). Contracts with benefits: The implementation of impact investing. *University of Pennsylvania, University of Chicago, and Georgia State University*.

Geertz, C. (2000). Deep play: Notes on the Balinese cockfight. In *Culture and politics* (pp.

175–201). Springer.

Ghavi, A., Qureshi, A., Weinstein, G., Schwartz, J., & Lofchie, S. (2022, September 17). A Primer on DAOs. *The Harvard Law School Forum on Corporate Governance*. https://corpgov.law.harvard.edu/2022/09/17/a-primer-on-daos/

Ghirlanda, P., & Kirov, V. (2024). An alternative organizational model for a more democratic and equitable digital economy: A systematic literature review on platform cooperativism through the lens of stakeholder theory. Competitive advantages and challenges. *Annals of Public and Cooperative Economics*, *95*(4), 1197–1221. https://doi.org/10.1111/apce.12478

Ghirlanda, P., & Sacconi, L. (2024). A Better Account of Constitutional Contractarianism Implies a Cooperative Form of Governance of the Sharing Economy: Critical Assessment of Hielscher, Everding, and Pies' (2022) "Ordo-responsibility in the Sharing Economy: A Social Contracts Perspective". *Business Ethics Quarterly*, *34*(3), 494–516. https://doi.org/10.1017/beq.2024.8

Giddens, A. (1986). *The constitution of society: Outline of the theory of structuration* (Vol. 349). Univ of California Press.

Giddens, A. (1991). Structuration theory: Past, present and future. In *Giddens' Theory of Structuration*. Routledge.

Gilcrease, W., DiCosmo, V., & Padovan, D. (2022). Trends of rural electric cooperatives in the United States from 1990 to 2019: An empirical analysis. *Renewable and Sustainable Energy Reviews*, *166*, 112641. https://doi.org/10.1016/j.rser.2022.112641

Girard, J.-P., & Langlois, G. (2012). Solidarity Co-op Works for Ski Community: The Mount Adstock Recreational and Tourism Centre Solidarity Co-operative. In J. Sousa & R. Herman (Eds.), *A Co-operative Dilemma. Converting Organizational Form.* (pp. 191–200). https://www.socioeco.org/bdf_fiche-document-6611_en.html

GitcoinDAO. (2021). *DAOs The new coordination frontier*. GitcoinDAO. https://docs.google.com/presentation/d/1fLJvPOvibcCUpJ9ES44_cdoX5Hb7LpDaloGWz5FbUEM/edit#slide=id.gec41538503_0_399

Giuri, P., Rullani, F., & Torrisi, S. (2008). Explaining leadership in virtual teams: The case of open source software. *Information Economics and Policy*, *20*(4), 305–315. https://doi.org/10.1016/j.infoecopol.2008.06.002

Godbole, O. (2020, September 2). *DeFi Flippening Comes to Exchanges as Uniswap Topples Coinbase in Trading Volume*. https://www.coindesk.com/markets/2020/09/02/defi-flippening-comes-to-exchanges-as-uniswap-topples-coinbase-in-trading-volume/

Goforth, C. R. (2019). It's Raining Crypto: The Need for Regulatory Clarification When it Comes to Airdrops. *Indian Journal of Law and Technology*, *15*(2). https://doi.org/10.55496/OJXJ5973

Gogel, D., Kremer, B., Slavin, A., & Werbach, K. (2022, June 23). *Decentralized Autonomous Organizations: Beyond the Hype*. World Economic Forum. https://www.weforum.org/whitepapers/decentralized-autonomous-organizations-beyond-the-hype/

Gogel, D., Kremer, B., Slavin, A., & Werbach, K. (2023). *Decentralized Autonomous Organization Toolkit*. World Economic Forum. https://www.weforum.org/reports/decentralized-autonomous-organization-toolkit/

Gonza, T., & Ellerman, D. (2022). TURNING PLATFORM WORKERS INTO OWNERS: ESOP-TYPE BUYOUTS OF LABOUR-BASED PLATFORMS. *Teorija in praksa*, 665–681. https://doi.org/10.51936/tip.59.3.665-681

Graham, M., Hjorth, I., & Lehdonvirta, V. (2017). Digital labour and development: Impacts of

global digital labour platforms and the gig economy on worker livelihoods. *Transfer: European Review of Labour and Research*, *23*(2), 135–162. https://doi.org/10.1177/1024258916687250

Graham, S. (2021, November 30). *A Big Test for DAOs: Honing New Compensation and Contribution Practices*. The Defiant. https://thedefiant.io/news/research-and-opinion/a-big-test-for-daos-honing-new-compensation-and-contribution-practices

Grayer, S. (2020, January 24). *Stocksy United: A case study of co-operation in the cultural industries*. https://summit.sfu.ca/item/19708

Greenbaum, J., & Kyng, M. (2020). *Design at Work: Cooperative Design of Computer Systems*. CRC Press.

Greenwood, D. J., & Levin, M. (2006). *Introduction to Action Research: Social Research for Social Change*. SAGE Publications.

Griffin, R. (2023). Public and private power in social media governance: Multistakeholderism, the rule of law and democratic accountability. *Transnational Legal Theory*, *14*(1), 46–89. https://doi.org/10.1080/20414005.2023.2203538

Gubrium, J., & Holstein, J. A. (2008). Narrative Ethnography. In *Handbook of Emergent Methods* (p. pp.241-264). Guilford Publications. https://www.semanticscholar.org/paper/Narrative-Ethnography-Gubrium-Holstein/8d1466ecd9176802049a03963417b6ff1940dba1

Gunderson, M., Sack, J., McCartney, J., Wakely, D., & Eaton, J. (1995). Employee Buyouts in Canada. *British Journal of Industrial Relations*, *33*(3), 417–442. https://doi.org/10.1111/j.1467-8543.1995.tb00446.x

Hadfield, M. (2023, November 7). *Platform co-op looks to show a better way forward on AI*.

Co-Operative News. https://www.thenews.coop/platform-co-op-looks-to-show-a-better-way-forward-on-ai/

Haig, S. (2020, August 9). *The number of active DAOs is up 660% since 2019*. https://cointelegraph.com/news/the-number-of-active-daos-is-up-660-since-2019

Hall, J., Gaved, M., & Sargent, J. (2021). Participatory Research Approaches in Times of Covid-19: A Narrative Literature Review. *International Journal of Qualitative Methods*, *20*, 16094069211010087. https://doi.org/10.1177/16094069211010087

Hand, D., Dithrich, H., Sunderji, S., & Nova, N. (2020, November 6). *2020 Annual Impact Investor Survey*. The GIIN. https://thegiin.org/research/publication/impinv-survey-2020

Hardin, R. (2002). *Trust and Trustworthiness*. Russell Sage Foundation.

Hartley, S., & Rennie, E. (2022). *Regenerative Finance "ReFi": Blockchain for Climate Action* [Report for Intel]. ARC Centre for Automated Decision-Making and Society.

Hassan, S., & De Filippi, P. (2021). Decentralized Autonomous Organization. *Internet Policy Review*, *10*(2). https://doi.org/10.14763/2021.2.1556

Hawlitschek, F., Notheisen, B., & Teubner, T. (2018). The limits of trust-free systems: A literature review on blockchain technology and trust in the sharing economy. *Electronic Commerce Research and Applications*, *29*, 50–63. https://doi.org/10.1016/j.elerap.2018.03.005

Hedgey. (2022, March 8). *The Current Scene in DAO Compensation*. https://hedgey.mirror.xyz/5p1brRD9_JRLheP0hn1BI99w1hl2puSOgKm8-zxCtLA

Hein, A., Schreieck, M., Riasanow, T., Setzke, D. S., Wiesche, M., Böhm, M., & Krcmar, H. (2020). Digital platform ecosystems. *Electronic Markets*, *30*(1), 87–98. https://doi.org/10.1007/s12525-019-00377-4

Hepp, A. (2016). Pioneer communities: collective actors in deep mediatisation. *Media, Culture & Society*, *38*(6), 918–933. https://doi.org/10.1177/0163443716664484

Hepp, A. (2025). Curators of digital futures: The life cycle of pioneer communities. *New Media & Society*, *27*(9), 5390–5409. https://doi.org/10.1177/14614448241253766

Hewit, N. (2022, March 10). *Deep dive: Community stewardship of Open Collective through a Perpetual Purpose Trust*. Open Collective. https://blog.opencollective.com/ppt/

Hewitt, N., Irving, A., Mancini, P., & Woolard, C. (2021, December 15). *How to Build Platforms that Our Movements Can Own*. Non Profit News | Nonprofit Quarterly. https://nonprofitquarterly.org/how-to-build-platforms-that-our-movements-can-own/

Hillery jr., G. A. (1955). Definitions of community: Areas of agreement. *Rural Sociology : Devoted to Scientific Study of Rural Life ; Official Journal of the Rural Sociological Society*, *20*(2).

Hinman, W. (2018, June 14). *SEC.gov | Digital Asset Transactions: When Howey Met Gary (Plastic)*. https://www.sec.gov/news/speech/speech-hinman-061418

Hirschman, A. O. (1970). *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States* (Illustrated edition). Harvard University Press.

Hodgson, G. M. (1988). Economics and Institutions. *Journal of Economic Issues*, *1*, 1–25.

Hodgson, G. M. (2006). What Are Institutions? *Journal of Economic Issues*, *40*(1), 1–25. https://doi.org/10.1080/00213624.2006.11506879

Hubbard, S., Spelliscy, C., Schneider, N., & Vance-Law, S. (2023, June 8). *Toward Equitable Ownership and Governance in the Digital Public Sphere*. The Belfer Center for Science and International Affairs. https://www.belfercenter.org/publication/toward-equitable-ownership-and-governance-digital-public-sphere

Huybrechts, L., Benesch, H., & Geib, J. (2017). Institutioning: Participatory Design, Co-Design and the public realm. *CoDesign*, *13*(3), 148–159. https://doi.org/10.1080/15710882.2017.1355006

Ilyushina, N. (2022, September 22). Toss in your job and make $300K working for a DAO? Here's how. *Cointelegraph Magazine*. https://cointelegraph.com/magazine/toss-in-your-job-and-make-300k-working-for-a-dao-heres-how/

Ilyushina, N. (2023). Work for Decentralised Autonomous Organisation: What Empirical Labour Economics Can Tell Us about the Decentralised Digital Workforce? *The Journal of The British Blockchain Association*. https://doi.org/10.31585/jbba-6-2-(2)2023

Ilyushina, N., & Macdonald, T. (2022). Decentralised Autonomous Organisations: A New Research Agenda for Labour Economics. *The Journal of The British Blockchain Association*.

International Cooperative Alliance. (n.d.). *Cooperative identity, values & principles*. International Cooperative Alliance. Retrieved 30 September 2025, from https://ica.coop/en/cooperatives/cooperative-identity

Introducing the Optimism Collective. (n.d.). Retrieved 15 April 2024, from https://optimism.mirror.xyz/gQWKlrDqHzdKPsB1iUnI-cVN3v0NvsWnazK7ajlt1fI

Introducing UNI. (2020, September 16). Uniswap Protocol. https://uniswap.org/blog/uni

IPSOS. (2022). *Trust in the Internet*. THE NEW INSTITUTE. https://www.ipsos.com/en/trust-in-the-internet-2022

Isaac, M., Frenkel, S., & Conger, K. (2025, January 10). Inside Mark Zuckerberg's Sprint to Remake Meta for the Trump Era. *The New York Times*. https://www.nytimes.com/2025/01/10/technology/meta-mark-zuckerberg-trump.html

Isaak, J., & Hanna, M. J. (2018). User Data Privacy: Facebook, Cambridge Analytica, and Privacy Protection. *Computer*, *51*(8), 56–59. https://doi.org/10.1109/MC.2018.3191268

James, S. (2021, April 16). *Democracy Awakens—Introducing the Proof of Humanity DAO*. Kleros. https://blog.kleros.io/democracy-awakens/

Jamieson, J., Yamashita, N., & McEwen, R. (2022). Bridging the Open Web and APIs: Alternative Social Media Alongside the Corporate Web. *Social Media + Society*, *8*(1), 20563051221077032. https://doi.org/10.1177/20563051221077032

Jennings, M., & Kerr, D. (2022, June 3). *How to pick a DAO legal entity*. A16z Crypto. https://a16zcrypto.com/dao-legal-entity-how-to-pick/

Kaal, W. A. (2022). Fair Token Launch. *SSRN Electronic Journal.* https://doi.org/10.2139/ssrn.4015908

Kaloudis, S. K., Sage D. Young and George. (2022, April 13). *Reminder: The Merge Won't Solve Ethereum's Scaling Woes by Itself*. https://www.coindesk.com/layer2/2022/04/13/reminder-the-merge-wont-solve-ethereums-scaling-woes-by-itself/

Karasti, H. (2014a). Infrastructuring in participatory design. *Proceedings of the 13th Participatory Design Conference: Research Papers - Volume 1*, 141–150. https://doi.org/10.1145/2661435.2661450

Karasti, H. (2014b). Infrastructuring in participatory design. *Proceedings of the 13th Participatory Design Conference: Research Papers - Volume 1*, 141–150. https://doi.org/10.1145/2661435.2661450

Kaur, R., & Chahal, K. K. (2022). Exploring factors affecting developer abandonment of open source software projects. *Journal of Software: Evolution and Process*, *34*(9), e2484. https://doi.org/10.1002/smr.2484

Kaur‐Gill, S., & Dutta, M. J. (2017). Digital Ethnography. In J. Matthes, C. S. Davis, & R. F. Potter (Eds.), *The International Encyclopedia of Communication Research Methods* (1st ed., pp. 1–10). Wiley. https://doi.org/10.1002/9781118901731.iecrm0271

Kelso, L. O., & Adler, M. J. (1958). *The Capitalist Manifesto*. Random House.

Kelso, L. O., & Kelso, P. H. (1986). *Democracy and Economic Power: Extending the ESOP Revolution*. Ballinger Publishing Company.

Kenney, M., & Zysman, J. (2016). The rise of the platform economy. *Issues in Science and Technology*, *32*(3), 61–70.

Kessler, S. (2022, April 27). *Ethereum Rollup Optimism Launches DAO, Announces Long-Awaited Airdrop*. https://www.coindesk.com/business/2022/04/27/ethereum-rollup-optimism-launches-dao-announces-long-awaited-airdrop/

Khurshid, A. (2020). Applying Blockchain Technology to Address the Crisis of Trust During the COVID-19 Pandemic. *JMIR Medical Informatics*, *8*(9), e20477. https://doi.org/10.2196/20477

Kroncke, J. J. (2017). ESOPs and the Limits of Fractionalized Ownership. *University of Chicago Legal Forum*, *2017*, 287.

Kuchler, H. (2017, May 22). *Twitter investors reject motion to explore conversion to user-owned co-op*. https://www.ft.com/content/5d6cc0d2-7464-3cac-b892-423ec18cc9db

Kumar, R., & Sharma, R. (2022). Leveraging blockchain for ensuring trust in IoT: A survey. *Journal of King Saud University - Computer and Information Sciences*, *34*(10, Part A), 8599–8622. https://doi.org/10.1016/j.jksuci.2021.09.004

La Cava, L., Greco, S., & Tagarelli, A. (2021). Understanding the growth of the Fediverse through the lens of Mastodon. *Applied Network Science*, *6*(1), 64. https://doi.org/10.1007/s41109-021-00392-5

Latham, S., & Braun, M. R. (2010). To IPO or Not To IPO: Risks, Uncertainty and the Decision to Go Public. *British Journal of Management*, *21*(3), 666–683. https://doi.org/10.1111/j.1467-8551.2010.00707.x

Latour, B. (2007). *Reassembling the social: An introduction to actor-network-theory*. Oup Oxford.

Ledesma, L. (2022, November 17). *FTX Collapse Leaves Total Crypto Market Cap Under $800B, Close to 2022 Low*. https://www.coindesk.com/markets/2022/11/17/ftx-collapse-leaves-total-crypto-market-cap-under-800b-close-to-2022-low/

Lehrer, M., & Segal, L. (2020). The stewardship organization: Essential characteristics and conditions of feasibility. *American Journal of Business*, *35*(3/4), 175–190. https://doi.org/10.1108/AJB-04-2020-0046

Leonardi, P. M. (2012). *Materiality, Sociomateriality, and Socio-Technical Systems: What Do These Terms Mean? How are They Related? Do We Need Them?* (SSRN Scholarly Paper 2129878). https://doi.org/10.2139/ssrn.2129878

Lessig, L. (1999). *Code and other laws of cyberspace*. Basic Books.

Lichterman, P. (2017). Interpretive reflexivity in ethnography. *Ethnography*, *18*(1), 35–45. https://doi.org/10.1177/1466138115592418

Liu, H., Wang, Y., Jiang, Z., Zhang, H., Li, J., Eileras, S., & Busterud, H. P. (2023). Perceived Trust in Blockchain Systems: An Interview-based Survey. *Proceedings of the 27th International Conference on Evaluation and Assessment in Software Engineering*, 386–393. https://doi.org/10.1145/3593434.3593521

Liu, Y., Liaqat, A., & Monroy-Hernández, A. (2023). *Should Policymakers be Involved? Understanding the Opinions and Needs for Independent Food Delivery Platforms in the United States regarding Public Policy* (arXiv:2303.15415). arXiv. https://doi.org/10.48550/arXiv.2303.15415

Lodato, T., & DiSalvo, C. (2018). Institutional constraints: The forms and limits of participatory design in the public realm. *Proceedings of the 15th Participatory Design Conference: Full*

Papers - Volume 1, 1–12. https://doi.org/10.1145/3210586.3210595

Lomuscio, M. (2024). Going *collective*: Worker takeovers, entrepreneurship and collective actions. *Scandinavian Journal of Management*, *40*(4), 101368. https://doi.org/10.1016/j.scaman.2024.101368

Long, J. (2006). Understanding the role of core developers in open source software development. *Journal of Information, Information Technology, and Organizations*, *1*, 75–86.

Lotti, L., Houde, N., & Merk, T. (2023). *Social Security for Web3 Work: A Preliminary Specification of the Design and Deployment of Solidarity Primitives for DAO Contributors* (SSRN Scholarly Paper 4596552). https://doi.org/10.2139/ssrn.4596552

Lu, R. (2023). Set It in Stone: Patagonia and the Evolution toward Stakeholder Governance in Social Enterprise Business Structures. *Columbia Journal of Law and Social Problems*, *57*, 587.

Luhmann, N. (2000). Familiarity, confidence, trust: Problems and alternatives. In *Trust: Making and breaking cooperative relations* (Vol. 6, pp. 94–107).

Lyle, P., Sciannamblo, M., & Teli, M. (2018). Fostering Commonfare. Infrastructuring Autonomous Social Collaboration. *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems*, 1–12. https://doi.org/10.1145/3173574.3174026

Mam, J. (2023, February 26). DADAGAN is Back! *DADA.Art*. https://powerdada.medium.com/dadagan-is-back-380371898396

Mancini, P. (2021a, October 18). *Early musings on 'Exit to Community' for Open Collective*. Open Collective. https://blog.opencollective.com/exit-to-community/

Mancini, P. (2021b, November 24). *Pathways for Open Collective's "Exit to Community"*. Open Collective. https://blog.opencollective.com/exit-to-community-part-2/

Mannan, M. (2018). Fostering Worker Cooperatives with Blockchain Technology: Lessons from the

Colony Project. *Erasmus Law Review*, *11*, 190.

Mannan, M. (2022a). *The emergence of democratic firms in the platform economy: Drivers, obstacles, and the path ahead* [Leiden University]. https://hdl.handle.net/1887/3278843

Mannan, M. (2022b). Theorizing the emergence of platform cooperativism: Drawing lessons from role-set theory. *Ondernemingsrecht Tijdschrift*, *2*.

Mannan, M. (2023). The Promise and Perils of Corporate Governance-by-Design in Blockchain-Based Collectives: The Case of dOrg. In *Co-operation and Co-operatives in 21st-Century Europe* (pp. 78–99). Bristol University Press. https://bristoluniversitypressdigital.com/display/book/9781529226430/ch005.xml

Mannan, M., & Pek, S. (2021). Solidarity in the Sharing Economy: The Role of Platform Cooperatives at the Base of the Pyramid. In I. Qureshi, B. Bhatt, & D. M. Shukla (Eds.), *Sharing Economy at the Base of the Pyramid: Opportunities and Challenges* (pp. 249–279). Springer Nature. https://doi.org/10.1007/978-981-16-2414-8_11

Mannan, M., & Pek, S. (2024). Platform cooperatives and the dilemmas of platform worker‐member participation. *New Technology, Work and Employment*, *39*(2), 219–237. https://doi.org/10.1111/ntwe.12273

Mannan, M., Pek, S., & Scholz, T. (2023). Platform cooperatives and poverty eradication: Building on the legacy of Johnston Birchall. *Journal of Entrepreneurial and Organizational Diversity*, *12*(2), 33–55. https://doi.org/10.5947/jeod.2023.009

Mannan, M., & Schneider, N. (2021). Exit to Community: Strategies for Multi-Stakeholder Ownership in the Platform Economy. *Geo. L. Tech. Rev.*, *5*, 1.

Marcus, G. E. (1995). Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography. *Annual Review of Anthropology*, *24*(1), 95–117. https://doi.org/10.1146/annurev.an.24.100195.000523

Markham, A., & Buchanan, E. (2017). Research Ethics in Context: Decision-Making in Digital Research. In M. T. Schäfer & K. Van Es (Eds.), *The Datafied Society* (pp. 201–210). Amsterdam University Press. https://doi.org/10.1515/9789048531011-017

Martin, S. (2022, April 20). Having The Hard Conversation: Building Better Compensation Frameworks in DAOs [Substack newsletter]. *Black Flag DAO*. https://banklessdao.substack.com/p/having-the-hard-conversation-building

Mason, C., & Stark, M. (2004). What do Investors Look for in a Business Plan?: A Comparison of the Investment Criteria of Bankers, Venture Capitalists and Business Angels. *International Small Business Journal*, *22*(3), 227–248. https://doi.org/10.1177/0266242604042377

Maurer, B., Nelms, T. C., & Swartz, L. (2013). "When perhaps the real problem is money itself!": The practical materiality of Bitcoin. *Social Semiotics*, *23*(2), 261–277. https://doi.org/10.1080/10350330.2013.777594

Mayo, E. (2017, May 16). *Buy Twitter*. HuffPost UK. https://www.huffingtonpost.co.uk/ed-mayo/buy-twitter_b_16623194.html

McCollom, M., & Gillette, J. (1993). Time and Task in the Valley: A Case Analysis of an Employee Buyout Effort. *The Journal of Applied Behavioral Science*, *29*(1), 96–116. https://doi.org/10.1177/0021886393291006

McKnight, D., & Chervany, N. (2000). What is Trust? A Conceptual Analysis and an Interdisciplinary Model. *AMCIS 2000 Proceedings*. https://aisel.aisnet.org/amcis2000/382

Meet the Exit to Community Cohort. (2020, August 12). | Media Enterprise Design Lab | University of Colorado Boulder. https://www.colorado.edu/lab/medlab/2020/12/08/meet-exit-community-cohort

Merk, T., Cossar, S., & Kamalova, J. (2023). *Ethnographic Research of Proof of Humanity DAO*

(Investigación Etnográfica de Proof of Humanity DAO). (SSRN Scholarly Paper 4438414). https://doi.org/10.2139/ssrn.4438414

Meyer, J. W., & Rowan, B. (1977). Institutionalized Organizations: Formal Structure as Myth and Ceremony. *American Journal of Sociology*, *83*(2), 340–363. https://doi.org/10.1086/226550

Mòdol, J. R. (2019). Citizens' Cooperation in the Reuse of Their Personal Data: The Case of Data Cooperatives in Healthcare. In K. Riemer, S. Schellhammer, & M. Meinert (Eds.), *Collaboration in the Digital Age: How Technology Enables Individuals, Teams and Businesses* (pp. 159–185). Springer International Publishing. https://doi.org/10.1007/978-3-319-94487-6_8

Monni, S., Novelli, G., Pera, L., & Realini, A. (2017). Workers' buyout: The Italian experience, 1986-2016. *Entrepreneurship and Sustainability Issues*, *4*(4), 526–539. https://doi.org/10.9770/jesi.2017.4.4(10)

Montgomery, B. (2025, January 21). The TikTok ban and online migration. *The Guardian*. https://www.theguardian.com/global/2025/jan/20/the-tiktok-ban-and-online-migration

Moore, K. R., & Elliott, T. J. (2016). From Participatory Design to a Listening Infrastructure: A Case of Urban Planning and Participation. *Journal of Business and Technical Communication*, *30*(1), 59–84. https://doi.org/10.1177/1050651915602294

MrNobody, & Wocken, L. (2022, March 5). *DAO Leadership: Building on the shoulders of giants*. https://mirror.xyz/signornessuno.eth/ge4vca5mWk17uS-5Icf3tEaOyEbBWL6PiCiSK0UOOmI

Murphy, L., McCarthy, O., & Carroll, B. (2018). *No Heir Apparent? Exploring the Worker Co-operative Model as a Solution to Family Business Continuity* (SSRN Scholarly Paper 3144955). https://papers.ssrn.com/abstract=3144955

Mutch, A. (2007). Reflexivity and the institutional entrepreneur: A historical exploration.

Organization Studies, *28*(7), 1123–1140.

Nabben, K. (2021). *Resilience as 'Political Decentralization': An Alternate History of the Cypherpunks Origins of Decentralised Technology* (SSRN Scholarly Paper 3938626). https://doi.org/10.2139/ssrn.3938626

Nabben, K. (2023a). Cryptoeconomics as governance: An intellectual history from "Crypto Anarchy" to "Cryptoeconomics". *Internet Histories*, *7*(3), 254–276. https://doi.org/10.1080/24701475.2023.2183643

Nabben, K. (2023b). Governance by Algorithms, Governance of Algorithms: Human-Machine Politics in Decentralised Autonomous Organisations (DAOs). *puntOorg International Journal*, *8*(1), 36–54. https://doi.org/10.19245/25.05.pij.8.1.3

Nabben, K. (2023c). Web3 as 'self-infrastructuring': The challenge is how. *Big Data & Society*, *10*(1), 205395172311590. https://doi.org/10.1177/20539517231159002

Nabben, K., Burrrata, Zargham, M., & Zartler, J. (2023, May 25). DAO Vulnerabilities: A Map of Lido Governance Risks & Opportunities. *BlockScience*. https://medium.com/block-science/dao-vulnerabilities-a-map-of-lido-governance-risks-opportunities-92bc6384ff68

Nabben, K., & De Filippi, P. (2024). Accountability protocols? On-chain dynamics in blockchain governance. *Internet Policy Review*, *13*(4), 1–22. https://doi.org/10.14763/2024.4.1807

Nabben, K., Puspasari, N., Kelleher, M., & Sanjay, S. (2021). *Grounding Decentralised Technologies in Cooperative Principles: What Can 'Decentralised Autonomous Organisations' (DAOs) and Platform Cooperatives Learn from Each Other?* (SSRN Scholarly Paper 3979223). https://doi.org/10.2139/ssrn.3979223

Nabben, K., & Zargham, M. (2022). The Ethnography of a 'Decentralized Autonomous Organization' (DAO): De‐mystifying Algorithmic Systems. *Ethnographic Praxis in*

Industry Conference Proceedings, *2022*(1), 74–97. https://doi.org/10.1111/epic.12104

Nakamoto, S. (2008). *Bitcoin: A Peer-to-Peer Electronic Cash System*. 9.

Neate. (2021, May 31). *'Silicon Six' tech giants accused of inflating tax payments by almost $100bn | Tax avoidance | The Guardian*. https://www.theguardian.com/business/2021/may/31/silicon-six-tech-giants-accused-of-inflating-tax-payments-by-almost-100bn

Neumann, L. J., & Star, S. L. (1996). Making Infrastructure: The Dream of a Common Language. *PDC*, 231–240.

Nieuwland, S., & Van Melik, R. (2020). Regulating Airbnb: How cities deal with perceived negative externalities of short-term rentals. *Current Issues in Tourism*, *23*(7), 811–825. https://doi.org/10.1080/13683500.2018.1504899

Nissenbaum, H. (1999). *Can trust be secured online? A theoretical perspective*. https://www.openstarts.units.it/bitstreams/3d6b498a-d92a-46f0-9924-abc07f8b1d50/download

Nissenbaum, H. (2001). Securing Trust Online: Wisdom or Oxymoron? *Boston University Law Review (Reprinted in Virtual Publics: Policy and Community in an Electronic Age, Ed. B. Kolko, New York: Columbia University Press, 1983.)*, *81*(3), 635–664.

Nissenbaum, H. (2004). Privacy as Contextual Integrity. *Washington Law Review*, *79*, 119.

Norman, J. (2009). Got trust? The challenge of gaining access in conflict zones. In *Surviving Field Research*. Routledge.

North, D. C. (1990). *Institutions, Institutional Change and Economic Performance*. Cambridge University Press.

Oliver, C. (1997). Sustainable competitive advantage: Combining institutional and resource-based views. *Strategic Management Journal*, *18*(9), 697–713.

https://doi.org/10.1002/(SICI)1097-0266(199710)18:9<697::AID-SMJ909>3.0.CO;2-C

O'Mahony, S. (2007). The governance of open source initiatives: What does it mean to be community managed? *Journal of Management & Governance*, *11*(2), 139–150. https://doi.org/10.1007/s10997-007-9024-7

OPerating-manual/manual.md at main · ethereum-optimism/OPerating-manual. (n.d.). GitHub. Retrieved 15 April 2024, from https://github.com/ethereum-optimism/OPerating-manual/blob/main/manual.md

O'Reilly, K. (2012). *Ethnographic Methods* (2nd ed.). Routledge. https://doi.org/10.4324/9780203864722

O'Reilly, K. (2015). Ethnography: Telling Practice Stories. In R. A. Scott & S. M. Kosslyn (Eds.), *Emerging Trends in the Social and Behavioral Sciences* (1st ed., pp. 1–14). Wiley. https://doi.org/10.1002/9781118900772.etrds0120

Orlando, H. (2022, October 4). DAO Current Compensation and Incentivization: How Talent Are Rewarded. *Coinmonks*. https://medium.com/coinmonks/dao-current-compensation-and-incentivization-how-talent-are-rewarded-d634c5982dda

Orlikowski, W. J. (2000). Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations. *Organization Science*, *11*(4), 404–428. https://doi.org/10.1287/orsc.11.4.404.14600

Orlikowski, W. J., & Scott, S. V. (2008). Sociomateriality: Challenging the Separation of Technology, Work and Organization. *Academy of Management Annals*, *2*(1), 433–474. https://doi.org/10.5465/19416520802211644

Owocki, K., & Lister, M. (2024, February). *Gitcoin Whitepaper 2.0*. Gitcoin. https://gitcoin.co/whitepaper/read

Paoli, A. D., & D'Auria, V. (2021). Digital Ethnography: A Systematic Literature Review. *Italian Sociological Review*, *11*(4S), 243–243. https://doi.org/10.13136/isr.v11i4S.434

Pardau, S. L. (2018). The California Consumer Privacy Act: Towards a European-Style Privacy Regime in the United States. *Journal of Technology Law & Policy*, *23*, 68.

Parhankangas, A., & Landström, H. (2006). How venture capitalists respond to unmet expectations: The role of social environment. *Journal of Business Venturing*, *21*(6), 773–801. https://doi.org/10.1016/j.jbusvent.2005.06.005

Patel Thompson, A., Winn, E., Oates, G., Esber, J., Jin, L., Kanter, M., Mannan, M., Poux, P., Hubbard, S., Moore, S., Deleveaux, S., Scholz, T. R., & Hum, Q. Z. (2022). *Toward A More Cooperative Web3* (SSRN Scholarly Paper 4302681). https://doi.org/10.2139/ssrn.4302681

Pazaitis, A., Kostakis, V., & Bauwens, M. (2017). Digital economy and the rise of open cooperativism: The case of the Enspiral Network. *Transfer: European Review of Labour and Research*, *23*(2), 177–192. https://doi.org/10.1177/1024258916683865

Peirce, H. M. (2020, February 6). *Running on Empty: A Proposal to Fill the Gap Between Regulation and Decentralization*. https://www.sec.gov/newsroom/speeches-statements/peirce-remarks-blockress-2020-02-06

Pek, S. (2024). Sortition and the democratic governance of cooperatives. In *The Routledge Handbook of Cooperative Economics and Management*. Routledge.

Peña Calvin, A. (2024, March 26). *Cooperative DAOs Shift Management from Hierarchies to Networks*. Platform Cooperativism Consortium. https://platform.coop/blog/14690/

Peña-Calvin, A., Arroyo, J., Schwartz, A., & Hassan, S. (2024). Concentration of Power and Participation in Online Governance: The Ecosystem of Decentralized Autonomous Organizations. *Companion Proceedings of the ACM Web Conference 2024*, 927–930. https://doi.org/10.1145/3589335.3651481

People's Bid For TikTok. (n.d.). Project Liberty. Retrieved 30 March 2025, from https://www.projectliberty.io/peoples-bid-for-tiktok/

Pink, S., Horst, H., Postill, J., Hjorth, L., Lewis, T., & Tacchi, J. (2015). *Digital ethnography: Principles and practice*. sage.

Platform cooperatives and employment: An alternative for platform work (OECD Local Economic and Employment Development (LEED) Working Papers 2023/16). (2023). https://doi.org/10.1787/3eab339f-en

Platform Cooperativism Consortium. (2024, April 2). Platform Cooperativism Consortium. https://platform.coop/

Putra, L. A. P., Syamsuzzuhri, M. F. T., Yansah, F., Iskandar, D., & Eriyanto. (2024). Exploring the Role of Airdrops in Cryptocurrency Ecosystems: Economic, Security, and Industry Implications. *Journal of Advanced Technological Innovations*, *1*(3), 103–112.

Quijoux, M. (2020). The power of (the) union: Trade-unionism and workplace democracy in a French recovered factory. *Review of Social Economy*, *78*(3), 431–449. https://doi.org/10.1080/00346764.2020.1775875

Radebaugh, J., & Muchnik, Y. (2021, December 16). *Solving the Riddle of the DAO with Colorado's Cooperative Laws*. The Defiant. https://thedefiant.io/news/research-and-opinion/solving-the-riddle-of-the-dao-with-colorados-cooperative-laws

Rafa. (2021, October 21). *How to DAO 301: Contributor Rewards*. Cabin. https://creators.mirror.xyz/Le68ptgaqsBh1g6w8UqqVL2kIrA_Lqn37bELMO-W_-0

Ragosa, J. (2021, March 12). *Proof of Humanity, a Building Block for the Internet of the Future*. Kleros. https://blog.kleros.io/proof-of-humanity-a-building-block-for-the-internet-of-the-future/

Ragosa, J., & Ast, F. (2021, March 12). *A Proof of Humanity FAQ*. Kleros. https://blog.kleros.io/proof-of-humanity-faq/

Ragosa, J., Siri, S., Ast, F., & Lesaege. (2021, March 12). *Introducing UBI: Universal Basic Income for Humans*. Kleros. https://blog.kleros.io/introducing-ubi-universal-basic-income-for-humans/

Rahman, K. S., & Thelen, K. (2019). The Rise of the Platform Business Model and the Transformation of Twenty-First-Century Capitalism. *Politics & Society*, *47*(2), 177–204. https://doi.org/10.1177/0032329219838932

Ramos, B., & Mam, Y. (2021, March 14). The Invisible Economy. *Medium*. https://powerdada.medium.com/the-invisible-economy-db46897d4f07

Reason, P., & Bradbury, H. (Eds.). (2013). *The SAGE handbook of action research: Participative inquiry and practice* (2. ed., paperback ed). SAGE.

Reid, G. C., & Smith, J. A. (2000). What makes a new business start-up successful? *Small Business Economics*, *14*(3), 165–182.

Reijers, W., Wuisman, I., Mannan, M., De Filippi, P., Wray, C., Rae-Looi, V., Cubillos Vélez, A., & Orgad, L. (2021). Now the Code Runs Itself: On-Chain and Off-Chain Governance of Blockchain Technologies. *Topoi*, *40*(4), 821–831. https://doi.org/10.1007/s11245-018-9626-5

Rennie, E. (2023). *The CredSperiment: An Ethnography of a Contributions System* (SSRN Scholarly Paper 4570035). https://doi.org/10.2139/ssrn.4570035

Rennie, E., & Potts, J. (2024). *Contribution Systems: A New Theory of Value* (SSRN Scholarly Paper 4754267). https://doi.org/10.2139/ssrn.4754267

Rennie, E., Zargham, M., Tan, J., Miller, L., Abbott, J., Nabben, K., & De Filippi, P. (2022). Toward a Participatory Digital Ethnography of Blockchain Governance. *Qualitative Inquiry*, *28*(7),

837–847. https://doi.org/10.1177/10778004221097056

Richards, N., & Hartzog, W. (2015). Taking trust seriously in privacy law. *Stan. Tech. L. Rev.*, *19*, 431.

Rikken, O., Janssen, M., Kwee, Z., Bolívar, R., & Scholl, H. J. (2019). Governance challenges of blockchain and decentralized autonomous organizations. *Info. Pol.*, *24*(4), 397–417. https://doi.org/10.3233/IP-190154

Ritzer, G., & Jurgenson, N. (2010). Production, consumption, prosumption: The nature of capitalism in the age of the digital 'prosumer'. *Journal of Consumer Culture*, *10*(1), 13–36.

Robey, A. (2022, January 13). *What Co-ops and DAOs Can Learn From Each Other*. What Co-Ops and DAOs Can Learn From Each Other. https://www.fwb.help/editorial/what-co-ops-and-daos-can-learn-from-each-other

Rogers, B. (2016). Employment Rights in the Platform Economy: Getting Back to Basics. *Harvard Law & Policy Review*, *10*, 479.

Ruane, J., & McAfee, A. (2022, May 10). What a DAO Can—And Can't—Do. *Harvard Business Review*. https://hbr.org/2022/05/what-a-dao-can-and-cant-do

Ruggeri, A., & Vieta, M. (2015). *Argentina's Worker-Recuperated Enterprises, 2010-2013: A Synthesis of Recent Empirical Findings* (SSRN Scholarly Paper 2639144). https://papers.ssrn.com/abstract=2639144

Sanders, A. (2022). Binding Capital to Free Purpose: Steward Ownership in Germany. *European Company and Financial Law Review*, *19*(4), 622–653. https://doi.org/10.1515/ecfr-2022-0020

Sandoval, M. (2020). Entrepreneurial activism? Platform cooperativism between subversion and co-optation. *Critical Sociology*, *46*(6), 801–817.

Santana, C., & Albareda, L. (2022). Blockchain and the emergence of Decentralized Autonomous

Organizations (DAOs): An integrative model and research agenda. *Technological Forecasting and Social Change*, *182*, 121806. https://doi.org/10.1016/j.techfore.2022.121806

Schirrmacher, N.-B., Jensen, J. R., & Avital, M. (2021). Token-Centric Work Practices in Fluid Organizations: The Cases of Yearn and MakerDAO. *ICIS 2021 Proceedings*. https://aisel.aisnet.org/icis2021/is_future_work/is_future_work/17

Schnauder, A. H. (2023). Web 3 and the Future of Work: From Gig Economy to DAOs. In *Concepts, Technologies, Challenges, and the Future of Web 3* (pp. 155–171). IGI Global Scientific Publishing. https://doi.org/10.4018/978-1-6684-9919-1.ch009

Schneider, N. (2014, December 21). *Owning Is the New Sharing*. Shareable. https://www.shareable.net/owning-is-the-new-sharing/

Schneider, N. (2016, September 29). Here's my plan to save Twitter: Let's buy it. *The Guardian*. https://www.theguardian.com/commentisfree/2016/sep/29/save-twitter-buy-platform-shared-ownership

Schneider, N. (2018). An Internet of ownership: Democratic design for the online economy. *The Sociological Review*, *66*(2), 320–340.

Schneider, N. (2019a). Decentralization: An incomplete ambition. *Journal of Cultural Economy*, *0*(0), 1–21. https://doi.org/10.1080/17530350.2019.1589553

Schneider, N. (2019b, September 17). *Startups Need a New Option: Exit to Community | HackerNoon*. https://ioo.coop/2019/09/startups-need-a-new-option:-exit-to-community/

Schneider, N. (2020a). Digital Kelsoism: Employee Stock Ownership as a Pattern for the Online Economy. *MediArXiv*. https://ideas.repec.org//p/osf/mediar/m82zx.html

Schneider, N. (2020b). User trusts: broad-based ownership for online platforms. *Informatik Spektrum*, *43*(1), 9–14. https://doi.org/10.1007/s00287-020-01242-x

Schneider, N. (2020c, August 27). *Exit To Community*. NOEMA. https://www.noemamag.com/exit-to-community

Schneider, N. (2021). Admins, mods, and benevolent dictators for life: The implicit feudalism of online communities. *New Media & Society*, 1461444820986553. https://doi.org/10.1177/1461444820986553

Schneider, N. (2022). Governable Stacks against Digital Colonialism. *tripleC: Communication, Capitalism & Critique. Open Access Journal for a Global Sustainable Information Society*, *20*(1), 19–36. https://doi.org/10.31269/triplec.v20i1.1281

Schneider, N. (2023, January 1). *Homesteading on a Superhighway: The Californian Ideology and Everyday Politics*. https://openurl.ebsco.com/contentitem/gcd:174735895?sid=ebsco:plink:crawler&id=ebsco:gcd:174735895

Schneider, N. (2024a). *Governable Spaces: Democratic Design for Online Life*. University of California Press. https://doi.org/10.1525/luminos.181

Schneider, N. (2024b). Web3 is the Opportunity We Have Had All Along: Innovation Amnesia and Economic Democracy. In Q. DuPont, D. Kavanagh, & P. Dylan-Ennis (Eds.), *Defining Web3: A Guide to the New Cultural Economy* (Vol. 89, pp. 13–25). Emerald Publishing Limited. https://doi.org/10.1108/S0733-558X20240000089002

Scholes, L., Westhead, P., & Burrows, A. (2008). Family firm succession: The management buy‐out and buy‐in routes. *Journal of Small Business and Enterprise Development*, *15*(1), 8–30. https://doi.org/10.1108/14626000810850829

Scholz, T. (2014). Platform cooperativism vs. The sharing economy. *Big Data & Civic Engagement*, *47*, 47–52.

Scholz, T. (2016). Platform cooperativism. *Challenging the Corporate Sharing Economy. New York,*

NY: Rosa Luxemburg Foundation.

Scholz, T. (2017). *Uberworked and underpaid: How workers are disrupting the digital economy*. John Wiley & Sons.

Scholz, T., Mannan, M., Pentzien, J., & Plotkin, H. (2021, December 6). *Policies for Cooperative Ownership in the Digital Economy*. Platform Cooperativism Consortium. https://platform.coop/blog/policies-for-cooperative-ownership-in-the-digital-economy/

Scholz, T., & Schneider, N. (Eds.). (2017). *Ours to Hack and to Own: The Rise of Platform Cooperativism, A New Vision for the Future of Work and a Fairer Internet*. OR Books. https://doi.org/10.2307/j.ctv62hfq7

Schwandt, T. A., & Gates, E. F. (2018). Case study methodology. In *The SAGE handbook of qualitative research* (Vol. 5, pp. 600–630). https://books.google.com/books?hl=en&lr=&id=k2LgDQAAQBAJ&oi=fnd&pg=PA341&dq=info:9Ki8cDwrMb4J:scholar.google.com&ots=yOdcKTYFGR&sig=g5MPQ0yM16JhZDJpsgdpzSCllpo

Seim, J. (2024). Participant Observation, Observant Participation, and Hybrid Ethnography. *Sociological Methods & Research*, *53*(1), 121–152. https://doi.org/10.1177/0049124120986209

Series A. (2020, August 6). Uniswap Protocol. https://blog.uniswap.org/uniswap-raise

SES Core Unit MakerDAO. (n.d.). *Project X-Ray (decentralized workforce research)*. https://ses.makerdao.network/xray

Shahaab, A., Maude, R., Hewage, C., & Khan, I. (2020). Blockchain - A Panacea For Trust Challenges In Public Services? A Socio-technical Perspective. *The Journal of The British Blockchain Association*. https://doi.org/10.31585/jbba-3-2-(6)2020

Sharma, T., Potter, Y., Pongmala, K., Wang, H., Miller, A., Song, D., & Wang, Y. (2024a). *Future of*

Algorithmic Organization: Large-Scale Analysis of Decentralized Autonomous Organizations (DAOs) (arXiv:2410.13095). arXiv. https://doi.org/10.48550/arXiv.2410.13095

Sharma, T., Potter, Y., Pongmala, K., Wang, H., Miller, A., Song, D., & Wang, Y. (2024b). Unpacking How Decentralized Autonomous Organizations (DAOs) Work in Practice. *2024 IEEE International Conference on Blockchain and Cryptocurrency (ICBC)*, 416–424. https://doi.org/10.1109/ICBC59979.2024.10634404

Siddarth, D., Ivliev, S., Siri, S., & Berman, P. (2020). *Who Watches the Watchmen? A Review of Subjective Approaches for Sybil-resistance in Proof of Personhood Protocols* (arXiv:2008.05300). arXiv. https://doi.org/10.48550/arXiv.2008.05300

Sims, A. (2021). *Decentralised Autonomous Organisations: Governance, Dispute Resolution and Regulation* (SSRN Scholarly Paper 3971228). https://doi.org/10.2139/ssrn.3971228

Skagbrant, M. (2017, October 27). DADA to Host First Digital Art Marketplace Using Blockchain. *The Sociable*. https://sociable.co/technology/dada-host-digital-art-marketplace/

Slingerland, G., Murray, M., Lukosch, S., McCarthy, J., & Brazier, F. (2022). Participatory Design Going Digital: Challenges and Opportunities for Distributed Place-Making. *Computer Supported Cooperative Work (CSCW)*, *31*(4), 669–700. https://doi.org/10.1007/s10606-022-09438-3

Sousa, J. (2012). A Model for Social Housing: The Atkinson Housing Co-operative. In R. Herman & J. Sousa (Eds.), *A Co-operative Dilemma. Converting Organizational Form.* (pp. 127–157). https://www.socioeco.org/bdf_fiche-document-6611_en.html

Sousa, J., & Herman, R. (2012). *A Co-operative Dilemma. Converting Organizational Form.* https://www.socioeco.org/bdf_fiche-document-6611_en.html

Srinivasan, B. (2022). *The Network State: How To Start a New Country*.

https://thenetworkstate.com/

Srnicek, N. (2017). *Platform Capitalism*. John Wiley & Sons.

Stake, R. E. (2005). Qualitative Case Studies. In *The Sage handbook of qualitative research, 3rd ed* (pp. 443–466). Sage Publications Ltd.

Staub, N., Haki, K., Aier, S., & Winter, R. (2021). Taxonomy of Digital Platforms: A Business Model Perspective. *Hawaii International Conference on System Sciences 2021 (HICSS-54)*. https://aisel.aisnet.org/hicss-54/os/managing_ecosystems/7

Suchman, M. C. (1995). Managing Legitimacy: Strategic and Institutional Approaches. *The Academy of Management Review*, *20*(3), 571. https://doi.org/10.2307/258788

Suryani, A. (2013). Comparing Case Study and Ethnography as Qualitative Research Approaches. *Jurnal ILMU KOMUNIKASI*, *5*(1). https://doi.org/10.24002/jik.v5i1.221

Sutton, S. M. (2000). The role of process in software start-up. *IEEE Software*, *17*(4), 33–39.

Swartz, L. (2018). What was Bitcoin, what will it be? The techno-economic imaginaries of a new money technology. *Cultural Studies*, *32*(4), 623–650. https://doi.org/10.1080/09502386.2017.1416420

Talaulicar, T., Grundei, J., & Werder, A. v. (2005). Strategic decision making in start-ups: The effect of top management team organization and processes on speed and comprehensiveness. *Journal of Business Venturing*, *20*(4), 519–541. https://doi.org/10.1016/j.jbusvent.2004.02.001

Tan, J., Merk, T., Hubbard, S., Oak, E. R., Rong, H., Pirovich, J., Rennie, E., Hoefer, R., Zargham, M., Potts, J., Berg, C., Youngblom, R., Filippi, P. D., Frey, S., Strnad, J., Mannan, M., Nabben, K., Elrifai, S. N., Hartnell, J., … Boneh, D. (2024). *Open Problems in DAOs* (arXiv:2310.19201). arXiv. https://doi.org/10.48550/arXiv.2310.19201

Tan, J. Z., Langenkamp, M., Weichselbraun, A., Brody, A., & Korpas, L. (2024). *The Constitutions*

of Web3. arXiv. https://doi.org/10.48550/ARXIV.2403.00081

Teli, M., Foth, M., Sciannamblo, M., Anastasiu, I., & Lyle, P. (2020). Tales of Institutioning and Commoning: Participatory Design Processes with a Strategic and Tactical Perspective. *Proceedings of the 16th Participatory Design Conference 2020 - Participation(s) Otherwise - Volume 1*, 159–171. https://doi.org/10.1145/3385010.3385020

Teli, M., Lyle, P., & Sciannamblo, M. (2018). Institutioning the common: The case of commonfare. *Proceedings of the 15th Participatory Design Conference: Full Papers - Volume 1*, 1–11. https://doi.org/10.1145/3210586.3210590

Thévenard-Puthod, C., & Favre, C. (2020). Towards a Better Understanding of SME Employee Buyouts. In *Business Transfers, Family Firms and Entrepreneurship*. Routledge.

Torres, M. R. M., Toral, S. L., Perales, M., & Barrero, F. (2011). Analysis of the Core Team Role in Open Source Communities. *2011 International Conference on Complex, Intelligent, and Software Intensive Systems*, 109–114. https://doi.org/10.1109/CISIS.2011.25

Tosato, A., & Odinet, C. K. (2025). *Crypto and the Property Question* (SSRN Scholarly Paper 5151907). https://doi.org/10.2139/ssrn.5151907

Uniswap's Year in Review: 2020. (2020, December 31). Uniswap Protocol. https://blog.uniswap.org/year-in-review

Valiente, M.-C., & Rozas, D. (2022). Integration of Ontologies with Decentralized Autonomous Organizations Development: A Systematic Literature Review. In E. Garoufallou, M.-A. Ovalle-Perandones, & A. Vlachidis (Eds.), *Metadata and Semantic Research* (pp. 171–184). Springer International Publishing. https://doi.org/10.1007/978-3-030-98876-0_15

Van Den Berg, B., & Keymolen, E. (2017). Regulating security on the Internet: Control versus trust. *International Review of Law, Computers & Technology*, *31*(2), 188–205. https://doi.org/10.1080/13600869.2017.1298504

van Vulpen, P., Siu, J., & Jansen, S. (2024). Governance of decentralized autonomous organizations that produce open source software. *Blockchain: Research and Applications*, *5*(1), 100166. https://doi.org/10.1016/j.bcra.2023.100166

Varis, P. (2015). Digital ethnography. In *The Routledge Handbook of Language and Digital Communication*. Routledge.

Verheul, I., & Thurik, R. (2001). Start-up capital:" does gender matter?". *Small Business Economics*, *16*(4), 329–346.

Voell, Z. (2020, September 1). *Decentralized Exchange Volume Rose 160% in August to $11.6B, Setting Third Straight Record*. https://www.coindesk.com/markets/2020/09/01/decentralized-exchange-volume-rose-160-in-august-to-116b-setting-third-straight-record/

Voigt, P., & Von Dem Bussche, A. (2017). *The EU General Data Protection Regulation (GDPR)*. Springer International Publishing. https://doi.org/10.1007/978-3-319-57959-7

Volkoff, O., Strong, D. M., & Elmes, M. B. (2007). Technological Embeddedness and Organizational Change. *Organization Science*, *18*(5), 832–848. https://doi.org/10.1287/orsc.1070.0288

Wadsworth, J. J., & Brockhouse, J. W. Jr. (2012). An Unexpectedly Quick Conversion: Virginia Poultry Growers Cooperative. In J. Sousa & R. Herman (Eds.), *A Co-operative Dilemma. Converting Organizational Form.* https://www.socioeco.org/bdf_fiche-document-6611_en.html

Walden, J. (2020, January 9). *Progressive Decentralization: A Playbook for Building Crypto Applications*. Andreessen Horowitz. https://a16z.com/2020/01/09/progressive-decentralization-crypto-product-management/

Walden, J., & Leshner, R. (2023, March 1). *Deep Dive on Decentralization*. A16z Crypto.

https://a16zcrypto.com/posts/videos/deep-dive-on-decentralization/

Wang, T. (2022, January 14). *'Wen Token?': Polymarket's New Airdrop Futures Market Has Answers*. https://www.coindesk.com/markets/2022/01/14/wen-token-polymarkets-new-airdrop-futures-market-has-answers/

Wennberg, K., & DeTienne, D. R. (2014a). What do we really mean when we talk about 'exit'? A critical review of research on entrepreneurial exit. *International Small Business Journal: Researching Entrepreneurship*, *32*(1), 4–16. https://doi.org/10.1177/0266242613517126

Wennberg, K., & DeTienne, D. R. (2014b). What do we really mean when we talk about 'exit'? A critical review of research on entrepreneurial exit. *International Small Business Journal*, *32*(1), 4–16. https://doi.org/10.1177/0266242613517126

Werbach, K. (2016). *Trustless Trust*. The 44th Research Conference on Communication, Information and Internet Policy. https://doi.org/10.2139/ssrn.2844409

Werbach, K. (2018). Trust, but Verify: Why the Blockchain Needs the Law. *Berkeley Technology Law Journal*, *33*(2), 487–550.

What is the Optimism Foundation? (n.d.). Optimism Docs. Retrieved 15 April 2024, from https://community.optimism.io/docs/governance/what-is-the-optimism-foundation.html

What is Web3 and why is it important? (n.d.). Ethereum.Org. Retrieved 2 April 2024, from https://ethereum.org/en/web3/

White, J., Drew, S., & Hay, T. (2009). Ethnography Versus Case Study‐Positioning Research and Researchers. *Qualitative Research Journal*, *9*(1), 18–27. https://doi.org/10.3316/QRJ0901018

Wilser, J. (2023a, September 19). *What It's Like to Work as a DAO Bounty Hunter*. CoinDesk. https://www.coindesk.com/layer2/2022/06/29/what-its-like-to-work-as-a-dao-bounty-hunter

Wilser, J. (2023b, November 5). *'We're Freaking DAOing It': The People Who Think DAOs Are the Future of Work*. CoinDesk. https://www.coindesk.com/layer2/2022/01/31/were-freaking-daoing-it-the-people-who-think-daos-are-the-future-of-work

Wocken, L., & Diaz, F. (2023, February 26). *Leadership in DAOs*. https://mirror.xyz/lisawocken.eth/b_rwKEQ0DibZakx6WQiOGo1TtPXOQdAJG1lUaM8kEmQ

Woodcock, J. (2014). The workers' inquiry from Trotskyism to Operaismo: A political methodology for investigating the workplace. *Ephemera: Theory & Politics in Organizations*, *14*(3), 493–513.

Woodcock, J. (2021). Towards a Digital Workerism: Workers' Inquiry, Methods, and Technologies. *NanoEthics*, *15*(1), 87–98. https://doi.org/10.1007/s11569-021-00384-w

Woolard, C., & Mancini, P. (2022, December 23). *OC Inc. Strategy 2023-2024: Mature Platform + Connected Teams = Strong Foundations*. Open Collective. https://blog.opencollective.com/oc-strategy-2023-2024/

Woolard, C., Taeyoung, D., Triantafillou, E., Lee, J., Marques Soares, L., & Suryanarayanan, S. (2021). *Spirits and Logistics: How Grantmakers, Universities, and Arts Institutions Start Working with the BIPOC-Led Cooperative Movement to Build the Future of Art Education*. Center for Cultural Innovation. https://www.cciarts.org/_Library/docs/SpiritsandLogistics_CCI_final06122021.pdf

Working Constitution of the Optimism Collective. (2022, April 26). Optimism Collective. https://gov.optimism.io/t/working-constitution-of-the-optimism-collective/55

Wright, A., & Law, C. P. of L. at B. N. C. S. of. (2021). The Rise of Decentralized Autonomous Organizations: Opportunities and Challenges. *Stanford Journal of Blockchain Law & Policy*.

https://stanford-jblp.pubpub.org/pub/rise-of-daos/release/1

Yates, J. (2022, February 16). *Introducing the Exit to Community Collective | Media Enterprise Design Lab | University of Colorado Boulder*. https://www.colorado.edu/lab/medlab/2022/02/16/introducing-exit-community-collective

Zargham, M., & Nabben, K. (2022). *Aligning 'Decentralized Autonomous Organization' to Precedents in Cybernetics* (SSRN Scholarly Paper 4077358). https://doi.org/10.2139/ssrn.4077358

Zetzsche, D. A., Buckley, R. P., Arner, D. W., & Fohr, L. (2019). The ICO Gold Rush: It's a Scam, It's a Bubble, It's a Super Challenge for Regulators. *Harvard International Law Journal*, *60*, 267. https://heinonline.org/HOL/Page?handle=hein.journals/hilj60&id=276&div=&collection=

Zhu, J. A., & Marjanovic, O. (2021). *A different kind of sharing economy: A literature review of platform cooperatives*. Hawaii International Conference on System Sciences. https://opus.lib.uts.edu.au/handle/10453/146565

Ziegler, C., & DuPont, Q. (2023). *Navigating the Research Landscape of Decentralized Autonomous Organizations: A Research Note and Agenda* (arXiv:2312.17197). arXiv. https://doi.org/10.48550/arXiv.2312.17197

Ziolkowski, R., Miscione, G., & Schwabe, G. (2020). *Exploring Decentralized Autonomous Organizations: Towards Shared Interests and 'Code is Constitution'*. https://doi.org/10.5167/UZH-193663

Zuboff, S. (2015). Big other: Surveillance capitalism and the prospects of an information civilization. *Journal of Information Technology*, *30*(1), 75–89.

Appendices

Appendix 1: Open Collective Interview Guide

Questions:

1. **Role**
    a. What is your role in the Open Collective Ecosystem?
        i. How long have you been a member of the OC ecosystem?

2. **Task oriented role**
    a. **Conceptual:** In this section, I'd like to learn more about how the strategic direction for the platform gets decided (i.e. what are the high-level goals for the platform to achieve? Example goals could be: 'Open Collective should be the best platform for non-profit compliance in the US.' Or 'It should be the leading platform for collectives to receive cryptocurrency donations'.)

        i. What is your experience of how strategic direction is decided right now? Has anything changed about this process in the past?
        ii. In an ideal, future world, who should be involved in making strategic decisions on the platform development after the E2C?
            1. Bonus: how do we ensure this process is efficient?
        iii. What would your role be in this decision making process?

    b. **Functional:** In this section, I'd like to learn more about how decisions are made with regard to which functionality (features, improvements, integrations) is implemented on the platform.

        i. In your experience, how does this work now? Has anything changed about this process in the past?
        ii. In an ideal, future world, who should be able to submit new issues? Who should decide which issues get prioritized? How would they do this?
        iii. What would your role be in this decision making process?

3. **Production oriented role:** In this section, I'd like to learn more about who is responsible for implementing, reviewing and merging updates on the platform, i.e. who is involved in

the technical platform development and production process.

a. In your experience, how does this work now? Has anything changed about this process in the past?
b. In an ideal, future world, who should be responsible for technically building the platform? How would they do this?
c. What would your role be in this process?

4. **<u>Group oriented role:</u>** In this section, I'd like to learn more about who is responsible for organizing and maintaining the spaces (chat, video calls, off-site, other spaces) for the ecosystem to come together and engage in collective stewardship.

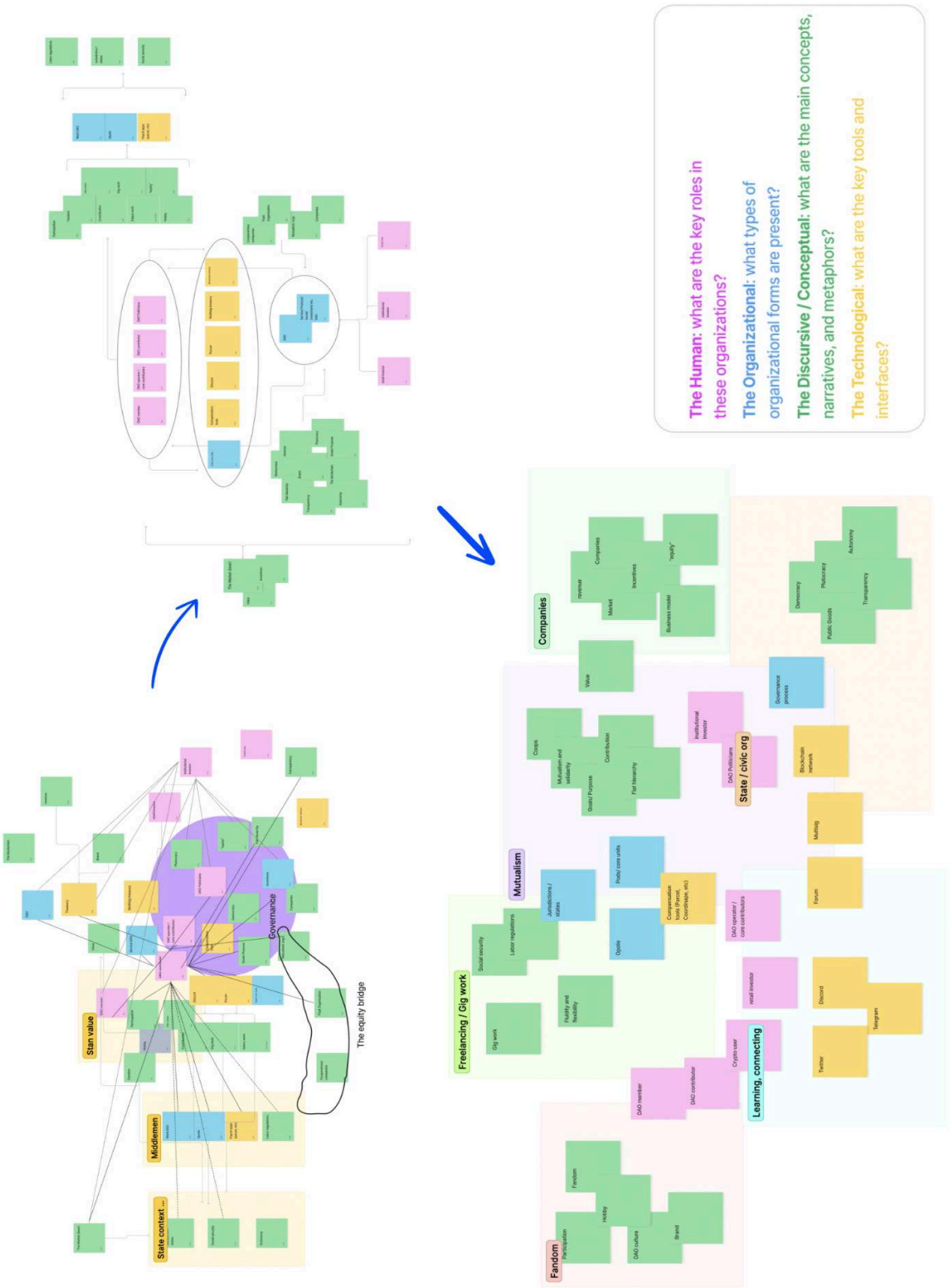
a. In your experience, how does this work now? Has anything changed about this process in the past?
b. In an ideal, future world, which new group spaces would be needed/ ideally exist for community stewardship of the OC platform?
c. Who should be responsible for organizing, maintaining and facilitating these spaces?
d. What would your role be in bringing the community together?

5. **Anything else you'd like to add?**

Appendix 2: Proof of Humanity Interview Guide

1. How would you characterize your role and involvement in PoH?
2. Why and when did you join the PoH community? What was interesting about the project for you?
3. Do you feel that your expectations from the project are met? Yes/No and why?
4. To what extent have you been involved with the PoH DAO and the governance of the project?
5. Can you describe the different groups or factions involved in PoH DAO governance as you see them today? Which do you identify with (if any)?
6. How would you describe the current state of PoH DAO governance? What is going well and what isn't?
7. Could you rate how active your role is in POH DAO governance from 1-5, where 1 is reading Telegram chats from time to time but not participating in discussions nor voting on Snapshot and 5 is keeping track of all of the governance suggestions, actively engaging in conversations in Telegram groups, drafting HIPs, and voting on HIPs on Snapshot?
8. In your opinion, what is the source of ongoing conflict in the PoH DAO community? What prevents the PoH DAO community from successfully governing itself today in your opinion?
9. What measures would you suggest the PoH DAO community take in order to improve its governance and overcome current difficulties?
10. Is there anything else you would like to share with us?

Appendix 3: DAO Labor Situational mapping samples



APPENDIX 4: DAO CONTRIBUTOR INTERVIEW GUIDE

Demographic

1. How many DAOs are you part of
2. How much time do you spend contributing to DAOs
3. What's your (employment) relation to the DAO(s) we're talking about

Motivations & Aspirations

1. **How did you start contributing to DAOs? / What drew you to x DAO?**
    - Have your expectations changed in this time?
        - Is there a particular event or occasion that informed your expectations?
        - How does this type of contribution play into your long-term goals?
            - How does this relate to your perception of the longevity of the DAO(s) you work with?
2. **What kind of reward are you looking for? If the motivation is not financial, what are the other types of rewards that you are looking for?**

Mundane

1. **Could you describe a typical work day? (from the morning, what's your routine, what tools are you using, what challenges, tricky parts…)**
    - Which parts of that do you consider to involve contributing to a DAO?
        - Why is X a contribution and how is something not?
            - What makes a contribution valuable?
            - What motivates you to contribute in this manner?
            - What makes this valuable to you? The DAO?
    - Is the allocation of your time dictated more by you or more by others?
        - Whose motivations or needs do these reflect? Days off etc.
        - Do you think this is the most efficient or valuable use of your time?
            - Is value understood $ or quality of life
            - What does this DAO need from you? What do you need from it?
            - Do you think this working model satisfies your needs with regard to scheduling, financial, or aspirations?
    - What needs are not met? Why? How much of this is related to your situation and how much to the DAO itself
2. **Could you describe a non-typical day or how these relate to your non-working days?**
    - Whom do you engage with during each part of the day?
    - Does this involve meetings, calls, email or chat?
    - Do you consider these people colleagues, superiors, or potential collaborators?

3. **How does your contribution produce value in the DAO? How is this related to your sense of ownership in the DAO?**
    - Do you feel your compensation is adequate to the value you are contributing?
4. **What's your favorite part of working for x DAO?**
    - What would you change about your work environment?
        - What's the biggest challenge you've faced / are facing?
        - What keeps you coming back in spite of the challenges?

<u>Needs</u>

1. **Do you see it as a sustainable occupation**
    - what keeps you coming back, what do you need long term
    - Sustaining the org: how do these organizations think about **long-term sustainability** and how open minded they are to payments in crypto currencies?

<u>Diagramming exercise (where do you see yourself)</u>

1. **How would you define your contributions based on these terms? (rank 1-5) 1 min - 5 max**

In the DAO you are contributing to, do you consider your role…

Open-Source contributor -

Freelancer -

Fan -

Politician -

Volunteer -

Founder -

Employee -

Gig-Worker -

Investor -

Intern -

Learner/student -

2. **How do you understand the purpose of x DAO to be? (rank 1-5)**

Mutualist org / cooperative -

Service provider -

Fan club -

Political org -

Philanthropic org -

Start up -

Company -

Gig economy platform -

Fund -

State -

Educational institution -