DAOs for the Creative Industries: Post-precarity Models

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Abstract. Working conditions in the creative industries have worsened under platform capitalism. However, the digitalization of work has also provided the conditions for the emergence of platform co-ops, open co-ops and blockchain-based organizations. These new organisational models have the potential to transform the current working conditions of digital workers. The overall aim of this paper is twofold: to discuss the role of these organisational models in creative industries and to shed light on alternative paths to empower workers through fairer work dynamics. To this end, we critically review illustrative case studies literature on platform co-ops, open co-ops, and blockchain-based systems in creative industries. We argue that the mutual influence between blockchain-based systems and platform co-ops can play a relevant role in the creative industries. We conclude with an open cooperativism transitional post-corporate forms scenario.

Keywords: Platform Cooperativism, Open Cooperativism, Decentralized Autonomous Organization (DAO), Blockchain-based systems, Creative Industries.

1 Introduction

The rise of platform capitalism has led to a worsening in working conditions. Precarious jobs, intermittent wages and intermittent health coverage have pervaded the life of workers. This situation has been especially noticeable in areas where freelance work is more embedded. That is the case for creative industries.

However, the digitalisation of work has also brought the emergence of platform co-ops, open co-ops and blockchain-based organisations. These new organisational models can potentially change the current relational dynamics of digital workers. One possible way to do this is by combining the features and capacities of platform co-ops and blockchain-based systems.

The proposal to hybridise platform co-ops and blockchain-based systems is not new. Scholz (2016) already opened up this possibility. More recently, Nabben *et al*. (2021) have analyzed the strengths and weaknesses of DAOs and platform co-ops, proposing feedback between the two models (Nabben *et al.*, 2021).

The overall aim of this paper is twofold: to discuss the role of these new organisational models in creative industries and to shed light on their potential to empower workers through fairer work dynamics, away from the extractivism of platform capitalism. To this

end, we critically review illustrative case studies literature. We argue that the mutual influence between DAOs and platform co-ops could play an important role in the future of the creative industries. We conclude with a tentative scenario where such hybrid models could be integrated into the open cooperativism transitional post-corporate forms. The paper is organised as follows: Section 2 provides the theoretical framework. Section 3 introduces the case studies literature. Section 4 presents the discussion. Finally, Section 5 is devoted to conclusions.

2 Theoretical framework

2.1 Creative Industries and Digital Work

The most widespread definition of *creative industries* is the definition provided by the UK Department for Culture, Media and Sport: "Those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property" (DCMS, 1998). Previously, Adorno and Horkheimer developed the concept of Culture Industries during the 1940s (Horkheimer & Adorno, 1947), which is critical to understanding the concept of Creative Industries.

Work in the creative industries is characterised by individuality and competitiveness (de Peuter *et al.*, 2020). It is done primarily online, and the workers, usually forcible freelancers or precarious, compete for a limited number of projects, short-term contracts and funding (Ibid.). Informality, enabled by the prevailing project-based work model (Ross, 2007; Castells, 2009; Kalleberg, 2009; Arnold & Bongiovi, 2013; Merkel, 2019) and by the flexibilisation, casualisation and political deregulation of labour (Mould et al., 2014; Merkel, 2019), is another key characteristic of creative industries. Informal practices contribute to consolidating specific characteristics in the sector: thus, informal recruitment favours the overrepresentation of the middle-class white male profile (Alacovska, 2017), and the type of contract and its temporality allows companies to avoid the responsibility for training and health coverage of employees (Merkel, 2019).

Invisible labour permeates the industry: getting projects or a job depends substantially on social media presence or branding (Arvidsson et al., 2016), networking (Currid, 2007), internships (Frenette, 2013), social contacts (Siebert & Wilson, 2013), and learning practical skills (Grugulis & Stoyanova, 2011). Time invested in these areas is not formally considered work and therefore is not usually remunerated. This functions as a threshold that discriminates heavily against workers with fewer resources or childcare responsibilities (Merkel, 2019).

The generation of value through the exploitation of intellectual property is at the core of the definition of creative industries (DCMS, 1998). Digitalisation has further increased the authorship problem. With a market focused predominantly on the production of digital goods and services, monetisation by the author becomes substantially harder for two reasons: the zero marginal cost of creating and distributing copies and the presence of

intermediary agents or platforms between the end-user and the author (Chalmers *et al.*, 2022). The latter foreshadows the content of the following section.

2.2 Platform Capitalism

The ambivalence of technology can lead to the reproduction of the values embedded in it, maintaining or even increasing levels of negative externalities and exploitation. Platform and surveillance capitalism are paradigmatic examples of this.

Far from resulting in a benefit to workers, the rise of platform capitalism has worsened working conditions (Mazzucato, 2018; Scholz, 2016). Competition-driven externally and mostly internally, precarious jobs, intermittent wages and intermittent health coverage have permeated workers' lives (Scholz, 2016). This has significantly affected low-skilled gig workers, who make up the vast majority of the workforce (Zwick, 2018).

Platforms consist of a digital environment that acts as an interface linking workers and users or consumers. The corporations that run them act as middlemen, charging a fee on the worker's earnings. The relationship between the proprietary platform and its vast majority of workers is far from being legally an employer-employee relationship. Under the premises of the flexibility and freedom of the digital era, the proprietary platforms advocate a freelance model. This allows them to avoid contractual obligations (Scholz, 2016). Far from empowering the worker, the proprietary platform tries to monopolise the market and isolate the workers. This isolation is twofold: isolation from the client and isolation from other workers. To this end, these platforms rely on their structure and governance. Design embedded coercion through centralisation and opacity limits the agency and autonomy of workers and enables unfair user and worker data use (Srnicek, 2017a). To this end, the platforms rely on centralised servers or data centers, and on closed-source. Top-down governance further contributes to these constraints favouring unequal distribution of resources and power (Smigiel, 2020; Scholz, 2016).

Surveillance capitalism arises from the pattern extraction performed by such proprietary platforms on the collected data (Linder, 2019; Srnicek, 2017b; Srnicek, 2017a). These patterns are monetised and/or used to predict and modify the behaviour of workers and consumers. The target behaviour encourages the maintenance of a cycle of maximising corporate profits, over-production and excess consumption (Kostakis *et al.*, 2021).

2.3 Platform Cooperativism

Platform cooperativism represents a growing alternative to platform capitalism based on the main idea of workers' shared ownership and democratic governance. Collaboration-driven internally and mostly competition-driven externally, platform co-ops constitute the application of the traditional cooperative concept to the digital environment (Scholz, 2016; Pazaitis *et al.*, 2017).

Scholz and Schneider (2016) lay the foundations of platform cooperativism through the following principles: a) anti-discriminatory open membership; b) democratic member

control; b) equitable member economic participation; d) autonomy and independence; e) education, training, and information; f) cooperation among cooperatives; g) concern for the community. These more intuitive principles, attributed to Susie Cagle, are an update of those of the International Co-operative Alliance (ICA) and have been the most widely disseminated and accepted by the community.
In platform cooperativism, activism and enterprise converge. Built on ideas of social justice, solidarity, and social benefit are core features (Scholz & Schneider, 2016; Pazaitis *et al.*, 2017). Thus, for many platform co-ops, social change and the generation of fair alternatives to platform capitalism is the primary goal, over and above wealth generation (Sandoval, 2020).

2.4 Open Cooperativism

Commons-based peer production (CBPP) is a socio-economic system of production characterised by the generation of shared resources and value by groups of individuals in the absence of hierarchies and economic incentives/market prices as the driving force (Benkler, 2008). Wikipedia and the GNU/Linux operating system serve as paradigmatic examples (Benkler & Nissenbaum, 2006).
From the conjunction of CBPP and the cooperative form of organisation emerges an alternative form of socio-economic organisation: open cooperativism. Open cooperativism aims at the radical reconfiguration of social relations with the technological means of production, and its primary goal is to create a commons-oriented counter-economy (Pazaitis *et al.*, 2017). Collaboration-driven internally and externally, open cooperativism does not propose a break with platform cooperatives. It proposes to redirect them towards the common good and away from generating artificial scarcity of eminently abundant resources such as the digital commons (Bauwens & Kostakis, 2016). Finally, it also advocates integrating them into an entrepreneurial coalition composed of generative enterprises. This coalition, the productive community and the for-benefit foundation constitute the three institutions that compound the new value-creation ecosystems associated with CBPP (Bauwens *et al.*, 2017).

2.5 Blockchain & Blockchain-based Systems

The blockchain and cryptocurrency economy, spurred by the coming of the Decentralized Autonomous Organization (DAO) and the Non-fungible Tokens (NFTs), has been widely used by the 'digital wealthy' and hidden sectors of the economy, making the ethical, moral and legal uses of these new technologies, at the very least, questionable (Dyntu & Dykyi, 2018; Matherson, 2021; Østbye, 2022). However, there is an undeniable potential for blockchain in other sectors of activity.
Blockchain is a distributed and append-only ledger technology. It enables immutable and decentralised data storage without the need for a third party or trusted authority (Underwood, 2016; Wright & De Filippi, 2015; Rozas *et al.*, 2021). Blockchain's potential

lies in the fact that it allows for the implementation of new infrastructure-level properties in a fully decentralised manner. Thus, it enables the direct upload and storage of code fragments/programs called smart contracts (Rozas *et al.*, 2021; Semenzin *et al.*, 2022). Smart contracts allow parties to verify whether a specific event or condition has been fulfilled.

A DAO is a blockchain-based system regulated by a set of smart contracts deployed on a public blockchain. Defining the governance structure of the organisation, the information encoded in these smart contracts mediates the interaction between the parties involved, allowing people to coordinate and self-govern themselves in a decentralised, horizontal, transparent and secure manner (Wright & De Filippi, 2015; Hassan & De Filippi, 2021).

Regarding the governance of the commons and including DAOs properties, Rozas *et al.* (2021) summarise the following properties of Blockchain: 1) tokenisation: the possibility of converting the rights to perform an action into tokens; 2) self-enforcement and formalisation of rules: the possibility of embedding organisational rules into smart contracts; 3) autonomous automatisation: the self-executing capability of smart contracts; 4) decentralisation of power over infrastructure: the fact that ownership and control are communalised due to the common ownership of the infrastructure on which they rely; 5) increasing transparency: the process of opening up organisational processes and their data by relying on the persistence and immutability of blockchain; 6) codification of trust: thanks to cryptographic primitives blockchain enables agreements without the need for third parties (Semenzin *et al.*, 2022).

In addition to smart contracts and DAOs, another innovative technology that the blockchain distributed ledger brings with it is NFTs. NFTs are blockchain-based cryptographic assets/tokens non mutually interchangeable. Its importance lies mainly in its potential to provide a public proof-of-ownership: the blockchain analogue of a certificate of authenticity or signature (Chalmers *et al.*, 2022; Chohan, 2021). Usually linked to physical or digital objects and combined with user licenses, their possibilities extend to structures and processes such as organisations and procedures.

3 Case Studies Literature in the Creative Industries

This section presents and critically reviews illustrative case studies literature on platform co-ops, open co-ops, and blockchain-based systems in the creative industries. The main objective of the section is to address the contribution of each of these organisational models to solving the problems outlined in the previous sections. The discussion is organised around the aforementioned models. Case studies have been drawn from the academic literature by purposive sampling. The only criterion used was data availability, selecting the best-documented cases. All of them are well-established initiatives, except for Plantoid, which constitutes an interesting anomaly to study due to its idiosyncratic characteristics. Leaving aside Plantoid, for which we lack data, the size of the initiatives

is variable, ranging from the 100 members employed by Enspiral (Pazaitis *et al.*, 2017) to the approximately 6.5 million registered users of Freesound (Fonseca *et al.*, 2017). The main limitation of the present study is the exclusive use of secondary data. Therefore, the author cannot guarantee the correct collection and treatment of the data or the absence of bias. Finally, although this could make theoretical generalisation difficult, the author considers the sample size of selected case studies sufficient to mitigate such biases considerably.

3.1 Platform Co-ops in the Creative Industries

Platform co-ops have been addressed extensively in the academic field of organisation studies. However, sufficiently documented research cases in the creative industries sector are scarce. The following three cases are presented below: Stocksy, Doc Servizi and Société Mutuelle d'Artistes (SMart).

Although it can be assumed to be a common starting point for most platform co-ops, the Stocksy, Doc Servizi and SMart cases illustrate an intentional choice of the platform co-op model as a way out of the precariousness of the creative labour (Grayer, 2020; Martinelli *et al*., 2019; Conaty *et al.*, 2018). Nevertheless, the measures implemented to overcome it differ substantially between these co-ops: Stocksy adheres to seven principles of platform cooperativism and uses co-ownership, redistribution of profits and transparency (Papadimitropoulos, 2021; Scholz & Schneider, 2016), while Doc Servizi and SMart opt for hiring workers under contracts that remain active when employment is discontinued. Without being mutually exclusive, this second alternative has the clear advantage of providing workers with health, social and professional coverage while maintaining their autonomy (Martinelli *et al*., 2019; Conaty *et al.*, 2018).

The differences between these co-ops extend to governance. Stocksy follows a transparent online flat decision-making process. The board includes directors from each of the three classes that conform the cooperative: founders and advisors, staff, and photographers. Every member has an equal voting share and can propose resolutions (Scholz & Schneider, 2016; Papadimitropoulos, 2021). Similarly, in Doc Servizi, business and budgetary decisions are taken democratically, following the one-member, one-vote principle (Chiappa & Martinelli, 2019). Finally, SMart has moved from association toward a Foundation model (Demoustier, 2009). The Management Board of the SMart Foundation is composed of 12 members, five of whom are artists. In addition, all members are invited to the Annual General Meeting. There, they have the right to vote, according to the one-member, one-vote principle (European observatory of Social economy, 2014). Despite the differences, the common feature is a remarkable enhancement of democratic bottom-up processes compared to proprietary platform models.

Regarding their similarities, they all share their deliberately internal collaborative and solidarity nature while imbued to some degree within the capitalist market. On the one hand, the collaborative and solidarity nature largely avoids worker-worker and worker-

client isolation through networks of trust, (more or less) frequent interactions focused on mutual support and even the creation of coworking physical spaces (Martinelli *et al*., 2019). On the other hand, the need to compete externally may lead them to replicate specific extractive dynamics such as the generation of artificial scarcity through the use of patents, copyright and proprietary licenses, or to internalise the prevailing values of the capitalist market and become easy targets for co-optation.

3.2 Open Co-ops in the Creative Industries

The presence in the literature of open cooperatives in the creative industries is restricted to the case of Enspiral. For illustrative purposes, we will also address two other platform co-ops which share some core features with open cooperatives: Freesound and Freesound Datasets. These two platform co-ops can be understood as proto-open co-ops.

The first shared core feature of these three cases is an orientation towards the generation of commons for the common good. Focused on the scientific and research community, and promoted by Pompeu Fabra University, Freesound and Freesound Datasets are two platform co-ops consisting of collaborative online databases. Freesound stores samples uploaded by users under Creative Commons licenses. This guarantees openness and acknowledgement for creators. Freesound Datasets uses Freesound content to generate and store open and curated evolving audio datasets to foster data-driven research approaches (Font *et al.*, 2013; Fuster & Espelt, 2017; Fonseca *et al.*, 2017). More than just a cooperative, Enspiral is a network of companies and professionals that foster social entrepreneurship. It is a CBPP system composed of three parts: the Enspiral Foundation, Enspiral Services and Enspiral Ventures. The Enspiral Foundation is the core node of the network. It is a limited liability company that works as a worker-owned co-op and reinvests all income in its social mission (Pazaitis *et al.*, 2017).

The second core feature is its openness. The my.enspiral platform software is open source and licensed under the GNU General Public License (GNU GPL). This also applies to Freesound and Freesound Datasets, both licensed under the GNU Affero General Public License (GNU AGPL). The software for all of them is publicly available in Github file repositories. However, openness in Enspiral is not limited to the purely technical structural aspect. It is a cross-cutting backbone feature that also extends to open governance and financial transparency. While governance in Freesound takes the form of an open forum moderated by researchers (Fuster & Espelt, 2017), with a section dedicated to the governance of Freesound Datasets, the most relevant decisions for Enspiral are taken by the Enspiral Foundation. As stated in its constitution, the Foundation is composed of a board of directors elected by the members of Enspiral, who can even fire them and amend the constitution. Moreover, Enspiral leadership is a fluid process. Far from a rigid hierarchy, we find a heterarchy: context-dependent fluctuating hierarchies (Pazaitis *et al.*, 2017). This symmetry helps balance the distribution of power, maximises member agency and autonomy, ensures fair data handling and avoids the

dynamics of surveillance capitalism while guaranteeing the platform's improvement and replicability.

Another differentiating aspect is that both Freesound and Freesound Datasets limit themselves to the generation of digital commons, employing open licenses and engaging in what Bauwens and Kostakis (2014) term as the communism of capital. This makes it difficult to make a living in the creative industries in two ways. On the one hand, if the type of license used prohibits the commercial exploitation of the derivative work, the members of the cooperative cannot monetise it in order to contribute to their livelihood. This situation contributes to keeping part of the work done in the creative industries invisible and fosters the gap between the generation of common value and the generation of stable monetary income. Ultimately, the involvement of members and the value generated are restricted. On the other hand, if the work is in the public domain or only requires attribution of authorship, the benefits extracted from it will not be redistributed among the members of the cooperative. What may appear to be freedom encourages unfair exploitation by large companies, who use open source as a cheap lab and often as a preliminary step to the closure of the derivative code. Commons-based reciprocity licenses, which allow a different type of use depending on the recipient, could prevent predation by non-commons oriented companies while enabling the continuity of the open co-op model and the livelihood of its members (Bauwens & Kostakis, 2014).

3.3 Blockchain Based-systems in the Creative Industries

Since the appearance of the Bitcoin whitepaper (Nakamoto, 2008), the academic literature on the Blockchain has continued to grow. However, contrary to what might appear, the case study literature on blockchain-based systems in the creative industries is not abundant. We will now present the two sufficiently documented cases we have come across: DADA and Plantoid.

DADA is an art creation platform and an artist collective. It was the first decentralised art marketplace on the Ethereum blockchain and the first with automatised royalties encoded into their smart contracts. The DADA platform acts as an environment where members interact through the visual medium and exchange digital artworks minted as NFTs. When an NFT is sold, the smart contract distributes 70 per cent of the profits to the artist and 30 per cent to DADA for the maintenance and development of the platform. If the NFT is resold, the smart contract automatically directs 60 per cent to the owner, 10 per cent to DADA, and 30 per cent to the artist (Potts & Rennie, 2019). This process constitutes a recurring loop. In addition to contributing to the platform's survival, this automatised redistribution of profits puts the artist at the centre and helps to discourage speculation.

Designed and implemented by the artist/researcher Primavera De Filippi, Plantoid is a DAO. Conceived as a vegetable analogue of an android, it is a hybrid life-form that simultaneously inhabits two environments: the physical environment (or physical world) and the digital environment (or numeric world). It consists of two essential components: the body and the spirit. The body consists of a plant-like metal sculpture controlled by a

Raspberry Pi, which reacts to users' cryptocurrency donations with music, dance or a light display. The spirit (or soul) only exists in the digital world as a set of smart contracts deployed on the Ethereum blockchain. This software, autonomous and executed decentrally among the network nodes, is inheritable. Encoded in it are the rules that determine the possible interactions with humans, those that allow governance by contributors, those that redistribute profits, and those that preserve the authorship of the creators (Primavera De Filippi, 2020; Potts & Rennie, 2019).

Despite the different nature of the analysed cases, both cases share some characteristics. On the one hand, the decentralised infrastructure on which they rely. On the other hand, the use of smart contracts and redistributive algorithms.

4 Discussion

Platform co-ops such as Doc Servizi and SMart alleviate precarity in the creative industries by providing their freelancer members with contracts that offer them health coverage, a stable income and salaried status while maintaining their autonomy. Platform co-op members' employee status can help counterbalance the informality of the sector. The three platform co-ops presented significantly improve bottom-up democratic processes compared to proprietary platform models. Clearly of an internal collaborative nature, these platform co-ops also solve the problem of isolation on both sides: isolation between workers and isolation from the customer. This, together with co-ownership, results in clear empowerment of workers, who take back control over their work. However, since these platform co-ops compete externally in the capitalist market, the risk (or even the need) of replicating capitalist extractive practices, internalising capitalist mindsets or being co-opted remains.

Focused on weaving a collaborative network of generative ecosystems outside the capitalist market, open co-ops such as Enspiral solve the aforementioned risks. With openness as a structural, governance and financial backbone, open co-ops break down the unequal distribution of power and resources. This maximises member agency and autonomy, ensures fair data handling and avoids the dynamics of surveillance capitalism while guaranteeing the platform's improvement and replicability. In turn, through the use of commons-based reciprocity licences, open cooperatives provide a plausible mechanism to avoid predation by non-commons-oriented enterprises while allowing for the continuity of the open cooperative model and the livelihood of its members (Bauwens & Kostakis, 2014). By not drawing a line between common value generation and paid work, open co-ops also minimise the invisibilisation of work characteristic of creative industries while encouraging members to stay involved.

Finally, blockchain-based systems provide decentralised data storage and processing/computation prescinding from the proprietary central server or data center structure. The communisation of resources contributes, together with the transparency and immutability that the distributed ledger of blockchain exhibits, to eliminating unequal

distribution of power and unfair use of data. Through that transparency and immutability, Blockchain based-systems also provide trust. Trust makes it easier to join projects in an increasingly global industry (Scholz, 2016). In addition, this distributed ledger brings some innovations, such as smart contracts, redistributive algorithms and NFTs.

Both DADA and Plantoid encode core features in smart contracts. The possibility of encoding in the smart contracts of a DAO the rules governing platform co-ops opens up many possibilities in the creative industries. Thus, DAOs could function as an autonomous infrastructure that would allow tasks to be transparently allocated through standardised criteria, with remuneration calculated according to objective scales, without workers necessarily being located in a particular country or having to deal with legal intricacies and with an automatised redistribution of profits through automatised royalties/redistributive algorithms. Furthermore, the combined use of NFTs and licences could help solve the authorship problems in creative industries.

To conclude, some of these platform co-ops implemented on DAOs, focused on the generation of commons and with openness as the backbone, could be integrated into the network of generative ecosystems characteristic of open cooperatives such as Enspiral. In addition to the advantages seen above, this would provide the possibility of self-replication of nodes through code inheritance as in the case of Plantoid, the possibility of generating decentralised markets such as DADA, and new applications for NFTs through the joint use of commons-based reciprocal licenses.

As we can see, although we find concrete implementations that solve many of the problems characteristic of the creative industries, there is no initiative that meets the necessary characteristics to solve them all.

5 Conclusions

Although platform capitalism has considerably worsened the (already bad) situation of work in the creative industries, the new models born out of the digitalisation of work have proven to alleviate to a large extent many of the problems already present, aggravated or originated by it. However, no single model solves all problems. Rather than being mutually exclusive models, they are complementary. Blockchain-based systems, particularly DAOs, show features that could enhance the potential of platform and open co-ops. We propose to hybridise these models by encoding the platform co-op rules in the set of smart contracts of a DAO. We posit a hypothetical situation where DAO-enhanced platform co-ops embedded in the creative industries capitalist market would coexist with DAO-enhanced open co-ops. The latter would consist of networks or coalitions of DAO-enhanced platform co-ops focused on generating common goods and with openness at their core, and with the ultimate goal of creating a commons-oriented counter-economy (Bauwens & Kostakis, 2014).

Finally, using blockchain as infrastructure, DAOs as part of the technological/algorithmic governance of platform and open co-ops, and NFTs and redistributive algorithms as a

means of safeguarding workers' rights would also provide the application of these technologies for the general interest, creation of wealth, and a post-precarity frame for digital labour.

References

Alacovska, A., 2017. The gendering power of genres: How female Scandinavian crime fiction writers experience professional authorship. *Organization*, *24*(3), pp.377-396.

Arnold, D. and Bongiovi, J.R., 2013. Precarious, informalizing, and flexible work: Transforming concepts and understandings. *American Behavioral Scientist*, *57*(3), pp.289-308.

Arvidsson, A., Gandini, A. and Bandinelli, C., 2016. Self-branding amongst freelance knowledge workers.

Bauwens, M. and Kostakis, V., 2014. From the communism of capital to capital for the commons: Towards an open co-operativism. *tripleC: Communication, Capitalism & Critique. Open Access Journal for a Global Sustainable Information Society*, *12*(1), pp.356-361.

Bauwens, M. and Kostakis, V., 2016. Why platform co-ops should be open co-ops. *Ours to hack and to own: The rise of platform cooperativism, a new vision for the future of work and a fairer Internet*, pp.163-166.

Bauwens, M., Kostakis, V., Troncoso, S. and Utratel, A.M., 2017. Commons Transition and P2P: a primer. *Transnational Institute and P2P Foundation http://commonstransition. org/commons-transition-p2p-primer/(last accessed 21 March 2019)*.

Benkler, Y. and Nissenbaum, H., 2006. Commons-based peer production and virtue. *Journal of political philosophy*, *14*(4)

Benkler, Y., 2008. The wealth of networks. In *The Wealth of Networks*. Yale university press.

Castells, M., 2009. *The rise of the network society*. John wiley & sons.

Chalmers, D., Fisch, C., Matthews, R., Quinn, W. and Recker, J., 2022. Beyond the bubble: Will NFTs and digital proof of ownership empower creative industry entrepreneurs?. *Journal of Business Venturing Insights*, *17*, p.e00309.

Chiappa, C. and Martinelli, F., 2019. Doc Servizi e la sua rete: un esempio di alleanza tra cooperazione e sindacati nel mondo dello spettacolo, della creatività e della cultura. *Quaderni di Rassegna Sindacale*, *13*(2), pp.109-123.

Chohan, U.W., 2021. Non-fungible tokens: Blockchains, scarcity, and value. *Critical Blockchain Research Initiative (CBRI) Working Papers*.

Conaty, P., Bird, A. and Ross, C., 2018. Working together. *Trade union and co-operative innovations for precarious workers, Manchester, Co-operatives UK*.

Currid, E., 2007. The warhol economy. In *The Warhol Economy*. Princeton University Press.

DCMS, U., 1998. Creative industries mapping document. *UK DCMS*, *3*.

de Filippi, P., 2020. PLANTOÏDE: UNE FORME DE VIE FONDÉE SUR LA BLOCKCHAIN.

Demoustier, D., 2009. SmART: un intermédiaire au service de la consolidation ou de la normalisation des pratiques culturelles?. *L'Observatoire*, (1), pp.64-67.

de Peuter, G., Sandoval Gomez, M., Dreyer, B. and Szaflarska, A., 2020. Sharing Like We Mean It: Working Co-operatively in the Cultural and Tech Sectors.

Dyntu, V. and Dykyi, O., 2018. Cryptocurrency in the system of money laundering. *Baltic Journal of Economic Studies*, *4*(5), pp.75-81.

European observatory of Social economy. (2014). *SMart, un acteur innovant de soutien aux artistes et à la création artistique et un réseau européen en construction.* https://www.ess-europe.eu/en/bonnepratique/smart-un-acteur-innovant-de-soutien-aux-artistes-et-la-creation-artistique-et-un

Fonseca, E., Pons Puig, J., Favory, X., Font Corbera, F., Bogdanov, D., Ferraro, A., Oramas, S., Porter, A. and Serra, X., 2017. Freesound datasets: a platform for the creation of open audio datasets. In *Hu X, Cunningham SJ, Turnbull D, Duan Z, editors. Proceedings of the 18th ISMIR Conference; 2017 oct 23-27; Suzhou, China.[Canada]: International Society for Music Information Retrieval; 2017. p. 486-93*. International Society for Music Information Retrieval (ISMIR).

Font, F., Roma, G. and Serra, X., 2013, October. Freesound technical demo. In *Proceedings of the 21st ACM international conference on Multimedia* (pp. 411-412).

Frenette, A., 2013. Making the intern economy: Role and career challenges of the music industry intern. *Work and Occupations*, *40*(4), pp.364-397.

Fuster, M. and Espelt, R., 2017. Platform Cooperativism Holistic Characterization and Delimitation: 10 Cases of Barcelona Ecosystem. *Re-embedding the Social: Cooperatives, Political Consumerism and Alternative Lifestyles. SASE*.

Grayer, S., 2020. *Stocksy United: A case study of co-operation in the cultural industries* (Doctoral dissertation, Communication, Art & Technology: School of Communication).

Grugulis, I. and Stoyanova, D., 2011. The missing middle: communities of practice in a freelance labour market. *Work, employment and society*, *25*(2), pp.342-351.

Hassan, S. and De Filippi, P., 2021. Decentralized Autonomous Organization. *Internet Policy Review*, *10*(2), pp.1-10.

Horkheimer, M. and Adorno, T.W., 1947. Dialektik der Aufklärung. Philosophische Fragmente [Dialectic of Enlightenment. Philosophical Fragments]. *Amsterdam, the Netherland: Querido*.

Kalleberg, A.L., 2009. Precarious work, insecure workers: Employment relations in transition. *American sociological review*, *74*(1), pp.1-22.

Kostakis, V., Giotitsas, C., Niaros, V., 2021 (forthcoming). Beyond global versus local Illuminating a cosmolocal framework for convivial technology development. Urban Studies xx(xx), xxx-xxx.

Linder, T., 2019. Surveillance capitalism and platform policing: the surveillant assemblage-as-a-service. *Surveillance & Society*, *17*(1/2), pp.76-82.

Martinelli, F., Bozzoni, S., Caroli, S., Tamascelli, F., Guerini, G., 2019. Platform Cooperativism in Italy and in Europe (CIRIEC Working papers No. 2019/027), CIRIEC Working papers. CIRIEC, Liège. https://doi.org/10.25518/ciriec.wp201927

Matherson, N., 2021. *The Driving Force of Cryptocurrency and Money Laundering* (Doctoral dissertation, Utica College).

Mazzucato, M., 2018. *The value of everything: Making and taking in the global economy*. Hachette UK.

Merkel, J., 2019. 'Freelance isn't free.'Co-working as a critical urban practice to cope with informality in creative labour markets. *Urban Studies*, *56*(3), pp.526-547.

Mould, O., Vorley, T. and Liu, K., 2014. Invisible creativity? Highlighting the hidden impact of freelancing in London's creative industries. *European Planning Studies*, *22*(12), pp.2436-2455.

Nabben, K., Puspasari, N., Kelleher, M. and Sanjay, S., 2021. Grounding decentralised technologies in cooperative principles: What can "Decentralised Autonomous Organisations"(DAOs) and platform cooperatives learn from each other?. *Available at SSRN*.

Nakamoto, S., 2008. Bitcoin: A peer-to-peer electronic cash system. *Decentralized Business Review*, p.21260.

Østbye, P., 2022. Exploring The Role of Law in The Governance of Cryptocurrency Systems and Why Limited Liability DAOs might be a Bad Idea. *Available at SSRN 4007547*.

Papadimitropoulos, E., 2021. Platform Capitalism, Platform Cooperativism, and the Commons. *Rethinking Marxism*, *33*(2), pp.246-262.

Pazaitis, A., Kostakis, V. and 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), pp.177-192.

Potts, J. and Rennie, E., 2019. Web3 and the creative industries: how blockchains are reshaping business models. In *A Research Agenda for Creative Industries*. Edward Elgar Publishing.

Rozas, D., Tenorio-Fornés, A., Díaz-Molina, S. and Hassan, S., 2021. When Ostrom meets blockchain: exploring the potentials of blockchain for commons governance. *SAGE Open*, *11*(1), p.21582440211002526.

Sandoval, M., 2020. Entrepreneurial activism? Platform cooperativism between subversion and co-optation. *Critical Sociology*, *46*(6), pp.801-817.

Scholz, T., 2016. Platform cooperativism. *Challenging the corporate sharing economy. New York, NY: Rosa Luxemburg Foundation*.

Scholz, T. and Schneider, N., 2016. Ours To Hack and Own: The Rise of Platform Cooperatives.

Semenzin, S., Rozas, D. and Collado, S.H., 2022. Blockchain-based application at a governmental level: disruption or illusion? The case of Estonia. *SocArXiv. March*, *3*.

Siebert, S. and Wilson, F., 2013. All work and no pay: consequences of unpaid work in the creative industries. *Work, employment and society*, *27*(4), pp.711-721.

Smigiel, C. (2020). Why did it not work? Reflections on regulating Airbnb and the complexity and agency of platform capitalism. *Geographica Helvetica*, *75*(3), 253-257.

Srnicek, N., 2017a. The challenges of platform capitalism: Understanding the logic of a new business model. *Juncture*, *23*(4), pp.254-257.

Srnicek, N., 2017b. *Platform capitalism*. John Wiley & Sons.

Underwood, S., 2016. Blockchain beyond bitcoin. *Communications of the ACM*, *59*(11), pp.15-17.

Wright, A. and De Filippi, P., 2015. Decentralized blockchain technology and the rise of lex cryptographia. *Available at SSRN 2580664*.

Zwick, A., 2018. Welcome to the Gig Economy: Neoliberal industrial relations and the case of Uber. *GeoJournal*, *83*(4), pp.679-691.