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Common Pool Resource Institutions: The rise of internet platforms in the social solidarity economy

Abstract

The research problem: Theories of organising are dominated by a neoliberal agenda. This authority has been disrupted by social and sustainable entrepreneurship research that highlights alternatives to this hegemony. The motivation for this paper is to argue that the emergence of internet platforms are contributing to new ways of working in the social solidarity economy (SSE). We focus our exploration on organisational practices and characteristics, evaluating platforms as contributions to commoning.

Method: Our approach offers a way out of the public-private dichotomy. We build theory by positioning the SSE as a series of approaches that hybridise redistribution, reciprocity and market: three distinct strategies of social organisations for achieving their primary purposes. Utilising Elinor Oström's theory of common pool resource institutions (CPRIs) and her design principles, we appraise three internet platforms (Kiva, Loomio and Kickstarter). We triangulate organisational, academic and media narratives to assess the embeddedness of their commoning practices and potential as social innovations for a post-capitalist economy.

Contribution to knowledge: Social enterprises (SEs) can develop internet platforms that use CBPP to build and support the SSE. This is the first paper to deploy Oström's work to study how SEs use CBPP, thereby developing the theoretical connections between these two fields. Our findings are part of a discourse that challenges neoliberalism and identifies how the SSE contributes to sustainable development.

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1. Introduction

The social solidarity economy (SSE) struggles to achieve mainstream acceptance wherever economics is dominated by neoliberal thought. However, before the 2008 crisis, Fukuyama started to question his 'end of history' thesis by observing the rise of neo-conservatism in the US (Fukuyama, 1992; 2006). Recently, internet platforms in the digital economy have offered another challenge to neoliberalism through commons-based peer production (CBPP), which advocates claim is a superior model for democratic participation (Laville, 2010; Scholz, 2016; Rosenfielde, 2018; Author 1 and Author 2, 2019a; Papadimitropoulos, 2019; Bauwens et al, 2019).

In this paper we respond to calls by Peredo, Haugh and McLean (2018) for research that advances theory by asking the question '*how can the rise of internet platforms shape commoning in the social solidarity economy?*' We answer this by synthesising key concepts taken from: 1) Polanyi's (1944) work on redistribution, reciprocity and markets; 2) Oström's (1990) principles of collective action, and 3) new co-operativism in the SSE that replaces representative democracy with direct democracy (Vieta, 2010).

The ILO (2011) defines the SSE as:

"a concept that refers to enterprises and organizations, in particular co-operatives, mutual benefit societies, associations, foundations and social enterprises, which specifically produce goods, services and knowledge while pursuing economic and social aims, *and fostering solidarity*".

Whilst John Pearce (2003) positions social and solidarity organisations within a third system of the economy, Lewis and Swinney (2008) reframe the debate to position the SSE as a transformational force that is not part of other systems. This is buttressed by Allard and Davidson's (2008) argument that SSE initiatives happen at all levels in all sectors by giving precedence to: cooperation, sustainability, equality, democracy, justice, diversity and local control. All these contributions argue that the SSE is cross-cutting at the intersection of the public, private and social economy.

The positioning of the SSE as an alternative paradigm is supported by Galera and Salvatori (2016), who see a new wave of responsible economic behaviours through renewed interest in citizenship and ecological action. Arruda (2009) suggests that organisations in this economy deliberately choose to prioritise the needs of people and ecological sustainability, placing economic and technological development at the service of social and human development. Indeed, Arruda (2009) identifies sharing, co-operation, co-responsibility, reciprocity, plurality, respect for diversity, freedom, equality and ethics as values that play out in bottom-up, local responses. These organisational ecosystems are consciously altruistic, autonomous, democratic, participative, empowering and governed through individual and collective responsibility (compare to Borzaga, et al, 2017). Fonteneau et al (2010) adds that participation might mix volunteers, waged staff and wider stakeholders in governance. However, as Arruda warns, the characteristics required for the SSE depend on fostering greater plurality amongst stakeholders in terms of skills, knowledge, modes of economic exchange, acknowledging social values and ecological capital (land, oceans, air and energy) to continue developing its momentum.

This plurality is evident in Utting's (2015, p1) argument that the SSE is 'beyond the fringe' because it embraces:

...forms of economic activity that prioritise social and often environmental objectives, and involve producers, workers, consumers and citizens acting collectively and in solidarity [...]

not only [in] traditional ‘social economy’ and ‘third sector’ organisations and enterprises such as cooperatives [...] but also myriad types of self-help groups [...], fair trade networks [...], consumers groups involved in collective provisioning, associations of ‘informal economy’ workers [...] solidarity finance, such as complementary currencies and community-based saving schemes [...], digital crowdfunding and sharing schemes associated with the ‘collaborative economy’.

In short, the SSE is replete with many tens, perhaps hundreds, of thousands of new social purpose organisations that go beyond capitalist economic formations (Parker et al., 2013). It organises solidarity action at the scale of nation states (e.g. Avaaz claims 57 million members)¹ and has financing initiatives that compliment, supplement or replace existing financial institutions. But as Bollier (2016) states, the challenge for SSE research is not just to articulate its alternative but also to identify strategies for its development.

The SSE has disrupted the hegemony of neoliberal discourse in the search for a post-capitalist economy within the digital economy:

‘Free Software and the related concept of Open Source [...] represent [a] non-commercial, emancipatory model [that is] winning serious victories against capitalism...

Stallman (2013, Byline)

Free in this context means free of the patents, copyrights and restrictions on usage and trading that characterise ‘capitalism’. Stallman’s ‘post-capitalism’ is non-commercial (i.e. not ‘profit’ oriented) and emancipatory (i.e. empowering and inclusive). In previous works (Author 1 and Author 2, 2019a), we argued that capitalism “is based on the principle of capital accumulation” where “private ownership of capital, land and the ‘means of production’ is considered preferable to co-operative and state ownership”. It follows that ‘post-capitalist’ enterprises would not prioritise (or seek for their own private benefit) accumulations of financial capital, and would either challenge the privatisation of resources or subvert private ownership to foster collective, community or public interest goals (Parker et al., 2013).

Methodologically, we use Oström’s (2009) research on common pool resource institutions (CPRIs) as a conceptual framework to interpret internet platforms as agents of commoning. As Ansari, Wijen and Gray (2013) put it, transnational commons are not pre-determined but socially constructed. The creation of a commons is shaped by institutional logics that include markets, professions, state action, family and community engagement. Post-capitalist theory is congruous with the SSE as both articulate a relational ontology regarding spaces and places for solidarity that create communities and economies (Healy, et al, 2018). As we argue, the SSE’s ‘social’ space is diverse with many inter-related organisational forms populating a complex economic system. This accounts for both its invisibility in policy development as well as its growing influence on practice.

To answer calls by Bollier and Peredo et al, we critically assess overlaps between the SSE and social enterprise (SE) by conceptualising three broad strategies for hybrid organisations (Author 1 and Author 2, 2019a). These are: 1) an economy of associations engaged in charitable trading activities (CTAs), 2) co-operative and mutual enterprises that improve members’ economic, social and cultural well-being (CMEs), 3) socially responsible businesses supported by impact investors (SRBs). All three contribute to the size, scale and impact of the SSE (Utting, 2015).

¹ See: <https://secure.avaaz.org/page/en/about/>

If - as Stallman (2013) suggests - 'serious victories' have been achieved in the field of software development, it makes sense to choose a sample of internet platforms in the SSE and assess them against Oström's CPRI principles to comment on their potential for building a post-capitalist economy. Through a case study approach, we examine three internet platforms as CPRI in the SSE (Kiva, Loomio and Kickstarter).

The rest of the paper is divided as follows. In section 2, we outline 'precarious' and 'commons' internet platforms. We frame the SSE in terms of three hybrid approaches to SE and distinguish them using Polanyi's theories of economic exchange (Polanyi, 1944). Each SE approach frames solidarity differently (within, with or for a community) to benefit members of stakeholder groups and contribute to the common good. In section 3, we set out Oström's (2009) design principles for CPRI as a conceptual framework to prepare for section 4 on research philosophy, methodology and methods. In section 5, we present case studies of internet platforms in the SSE and critically assess their potential for replicating sustainable economics in section 6. In section 7, we conclude by answering our research question and considering the implications for future research.

2. The SSE: The rise of internet platforms in a digital economy

From platform capitalism (Scholz, 2016) to platform commoning (Parker et al., 2013), we see a post-capitalist paradigm shift in the digital economy (Papadimitropoulos, 2019). The rise of internet platforms in the SSE is worthy of exploration not only because it is emergent but also because it is potentially transformational (Bauwens and Pantazis, 2018). Bauwens et al (2019) outline its two faces. The first is an extractive force. The second is a shared economy. Our focus is on platform commoning, not platform capitalism, on the basis of the argument that market-oriented platforms (Amazon, YouTube, Facebook, Uber and AirBnB) are a trojan horse for inequality and precarity, an extractive force pursuing valorisation, precarious employment practices, and exploiting the public through an unpaid army of skilled labour (Conaty, Bird and Ross, 2016; Heresco, 2016; Bauwens and Pantazis, 2018). Extractive platforms co-opt producers into a working class cyberfactory under strict surveillance, using proprietary software to promote wage theft and crowd fleecing that maximises shareholder profits (Fuchs, 2014, Scholz, 2016). As Papadimitropoulos (2019: 572) puts it, extractive platforms blur boundaries between 'virtual and real', 'work and play', 'production and consumption', 'private and public', as people become prosumers, producing commodities through posts, likes, interests, activities and personal data.

Platform commoning, in contrast, points to a post-capitalist paradigm – a shared democratised economy of localised and globalised commoning (Bauwens et al, 2019). These platforms adopt peer-to-peer (P2P) collaboration, crowdfunding, crowdsourcing; through open source software and hardware. The result is a self-managed, collaborative economy organised through open and platform cooperativism, succinctly expressed as commons-based peer production (CBPP) of prosumer strategies within the SSE.

Papadimitropoulos (2018) claimed CBPP was coined by Benkler (2006) to describe free and open source software that creates social and emotional value through social (rather than state or for-profit) production. CBPP's de-commodify and re-naturalise production to reclaim social, ecological and ethical values (Bollier, 2006). Key to emancipation and sustainability is value sovereignty - keeping surplus value within the ecosystem – to prevent depletion of resources (Bauwens, et al, 2019). As Scholz (2016) and Peredo et al (2018) argue, platform commoning changes ownership to (re)establish democratic governance and reinvigorate solidarity.

CBPP's new modes of production and ownership are scalable and autonomous from both state and capitalist institutions (Bauwens, et al, 2019), a self-managed, self-institutionalised society, characterised by direct democracy, less hierarchy and

mutualised governance to coordinate work and humanise technology, producing outcomes more equitable than those of state institutions (Papadimitropoulos, 2019), synonymous with a third mode of production that echoes Giddens' Third Way (Bauwens, 2005; Author 1 and Author 2, 2019).

A common criticism of platform capitalism is 'enclosure' (Kostakis and Bauwens, 2014). Hardin argued this was essential to protect society from free-riders and over-grazing (Peredo et al, 2018). Building on Oström (1990), Kostakis and Bauwens (2014) and Bauwens et al. (2019) contrast private enclosure with CBPP that has: 1) well-defined resources; 2) communities of users – prosumers – that add value through *equipotentiality* (equal opportunity to participate, pool knowledge, decentralise control, communicate without prior permission) and *holoptism* (transparent open access to information), and; 3) rules regarding the use, monitoring and sanctions producing *stigmergy* (mutual coordination to improve the system). All these characteristics fit with Oström's (1990) framing of CPRIs.

In summary, Bollier (2006) suggests that the 'commons' embraces and articulates a set of social values that go beyond market pricing and proprietisation. They honour informal, tacit, experiential, inter-generational, ecological, and even planetary realities that cannot be comprehended by rational actor theory in economics or neo-Darwinian survival-of-the-fittest narratives in neoliberalism. In the next section, we argue that 'commoning' for mutual benefit was integral to early developments in the field of SE that continues today through works to identify, define and promote the SSE (Utting, 2015; Author 1 and Author 2, 2019).

2.1 Hybridity and Solidarity in the SSE

The term 'social enterprise' initially gained a foothold within the UK co-operative movement and community regeneration sector (Teasdale, 2012) by advocating for a movement of employee-owned businesses and philanthropically-minded co-operative societies funded by community shares (Brown, 2004; Author 1 & Southcombe, 2012). In 1997, a coalition of co-operatives and development agencies formed Social Enterprise London (SEL), then a national body – the Social Enterprise Coalition (SEC) - to lobby for co-operatives, social firms, trading charities, community and employee-owned enterprises (Teasdale, 2012). They persuaded the UK government's Social Exclusion Unit to develop strategies for 'neighbourhood renewal' through SEs (Westall, 2001).

Initially, SE was conceptualised as a challenge to neoliberal market reforms and the new public management that dismantled state institutions and facilitated privatisation (Hood, 1995; Osborne, 2006). Local socialism developed based on co-operative SE strategies to preserve collective forms of action against the growing political culture of individual legal rights (Chandler, 2008). As the neoliberal turn in capitalism grew stronger (Teasdale, 2012), the conceptual alignment between a 'solidarity economy' and 'social enterprise' became obscured. In some places, the link was so compromised that scholars (erroneously) believed SE was a produce of neoliberalism (see Ganz, Kay & Spicer, 2018). We offer a counter view that all SEs make some contribution to the SSE. Firstly, many explicitly organise through solidarity action 'amongst' members - through member-ownership/control in co-operatives and associations. Secondly, in those not organised as co-operatives, solidarity is expressed as action 'with' or 'for' a beneficiary group. Lastly, within civil society, SEs support action to create spaces for citizens to develop a 'good' society (Edwards, 2004).

Co-operatives, in particular, are integral to the SSE on the basis of the movement's formal commitment to solidarity (Cheney, Davis and Reser, 2015). The Mondragon Co-operative Corporation has four explicit solidarity strategies; 1) wage solidarity that limits pay differentials between managers and production workers (Oakeshott, 1978); 2) inter-cooperation in secondary co-operatives to enable profit/loss sharing amongst primary co-operatives (Author 1 and Author 2, 2015); 3) labour movement solidarity through base pay

aligned to trade union rates (Whyte and Whyte, 1991), and; 4) solidarity with host communities through explicit funding for education, welfare, local employment and social projects (Gallego-Bono & Chaves-Avila, 2016).

Over time, the co-operative origins SEs' solidarity principles became obscured by a US-dominated discourse on 'earned income' and 'innovation' (Dees, 1998; Alvord et al., 2004). The long-term effect has been to reassert neoliberal doctrine based on social businesses working with charitable foundations and/or market institutions to advance social entrepreneurship (Teasdale, 2012; Somers, 2013; Ganz et al., 2018). The effect is evident today in new legal forms that institutionalise commitments to market-action with a social purpose and trading firms that use market-action to generate and reinvest philanthropic capital (Yunus, 2007). In addition to foundations directly owning a large number of SE subsidiaries (e.g. BRAC in Bangladesh), a plethora of legal forms have been created to support this approach: Low-Profit (L3C) and Public Benefit Corporations in the US (PBCs); Community Interest Companies (CICs) and Charitable Incorporated Organisations (CIOs) in the UK; Certified Non-Profits and Social Welfare Corporations in Japan; For-Benefit Companies in Italy; the spread of social-purpose company laws across EU nation states (Galera & Borzaga, 2009; Defourny & Nyssens, 2015; Czinkota et al. 2018; Author 1 & Author 2, 2019a; Author 2, 2018).

Beyond the Anglo-American discourse of venture-philanthropy, impact investing and social entrepreneurship (see Table 1), the language of social economy and solidarity has retained its place, particularly through co-operatives and mutual enterprises (CMEs) (Borzaga et al. 2020). Resistance to neoliberalism is further seen in Quebec, where Bouchard et al. (2015) claims that multi-stakeholder CMEs are the nucleus of the SSE. Utting et al. (2014:v) refers to the SSE's core defined by '*objectives and norms that prioritise social well-being, cooperation and solidarity*' and which bring producers and consumers into ventures where they take joint action with local citizens.

Table 1: Mapping the hybrid spectrum in relation to Polanyi's economics

<p>1. Charitable Trading Activities (CTAs) – Redistributive. New approaches to redistribution using platforms that enable new types of organisations that change property relations.</p>	<p>Redistributive actions seek to move resources from one setting to another in accordance with pre-agreed political and social priorities. This logic is used by public authorities, charities and non-profits that raise funds from one source to redistribute them to others in support of public goods/services and/or public benefits.</p>
<p>2. Cooperative and Mutual Enterprises (CMEs) – Reciprocity. New approaches to <i>reciprocity</i> through platforms that generate solidarity between producers and consumers.</p>	<p>Reciprocity is grounded in the logic of mutual aid, whereby equitable contributions to, and drawings from, mutual funds generate both individual and collective benefits. Action is cultivated by the willingness of people with familial, kinship or community ties to proactively support mutual well-being (Oström et al. 1999; Restakis, 2010).</p>
<p>3. Socially Responsible Businesses (SRBs) – Market. New approaches to <i>market-trading</i> through platforms that support social action.</p>	<p>Some form of market exchange (not necessarily based on kinship, community ties or personal bonds) raises funds for social/environmental action. The market element preserves commodity production but pricing mechanisms are not necessarily inflated (by the seller) to maximise profits or reduced (by the buyer) to minimise losses (Coase, 1937).</p>

The alignment of the SSE and SE remains contested. Nevertheless, for this paper, we draw attention to the way our own theorisation of SE (Author 1 and Author 2, 2015, Author 2, 2018) has been empirically validated in a 55-country global study (see Defourny, Nyssens and Brolis, 2019). We propose a purposive sample of internet platforms which we identify as SEs based on Table 1.

Table 1 suggests how modes of economic exchange identified by Polanyi (2001 [1944]) as redistribution, reciprocity and market can be realised through internet platforms. We sought cases with diverse legal models (charities/non-profits [CTAs]; co-op/mutual enterprises [CMEs]; social companies/corporations [SRBs]) to avoid the pitfall of a state vs market debate (Nyssens, 2006, Author 2 and Author 1, 2018, Peredo and McLean, 2010).

To sum up, we argue there are two distinct faces in the digital economy. The first is capitalist and extractive, continuing to draw on neoliberal doctrine. The second is a post-capitalist commons, based on democratised control of the economy. We positioned the latter as CBPP by SEs in the SSE. We argued against the dominant state v market discourse by recognising SEs as generators of solidarity, aligned to (or deeply embedded in) the SSE, using member-driven and member-owned organisations to pursue social, mutual and solidarity principles using a range of legal identities. In the next section, we discuss Oström's design principles to establish an analytical lens for studying CBPP in internet platforms.

3. Oström's Arguments

Consistent with these arguments, the theory of the commons (Oström 1990, 2009; Oström et al., 1999) contests the public-private division of property by adding 'open' (unregulated) and 'group' (community) to 'public' (state) and 'private' (individual). In the mid-1970s, political and economic discourse shifted towards the public-private dichotomy after Hardin's (1968) 'tragedy of the commons' gained popularity. Hardin theorised that public and private property (ownership) were the *only* means of protecting finite resources from overuse (see Peredo *et al.*, 2018 for a critique). But if we consider Polanyi (1944), Hardin's work failed to account for fundamental properties in social systems, particularly values embedded in communities (found in 'group' property).

The rise of the third sector (as a concept) was helpful in elucidating how trusteeship is an alternative to property ownership (Monzon & Chaves, 2008). However, even this helpful advance did not distinguish property that has no identifiable owner (and is part of an indivisible commons) from property that is co-operatively managed by *groups* of owners. Oström's (2009) work revealed how communities govern the commons to assure their survival for current and future generations of users by practising sustainable development (Bruntland Report, 1987). Importantly, Oström challenged Hardin's assumption that only public and private ownership could combat self-interested individuals and prevent them exploiting natural resources for private gain (i.e. the tragedy of the commons). Intensive case study research conceptualised the evolution and management of common pool resources (CPRs) through collective action, identifying principles for local member-controlled organisations ('CPRIs'). Her findings identify limitations in Hardin's (1968) theory and overturn its hegemonic influence.

Oström rejected Hardin's thesis after finding that group ownership and polycentric governance (largely ignored in Hardin's work) are correlated with sustainable development (Bruntland, 1987; Oström *et al.*, 1999, Oström, 2009). This is consistent with early arguments for SE (in the 1970s) based on 'triple-bottom line' accounting (Elkington, 1978; Spreckley, 1981). Westall (2001) argued there is a 'fourth space' based on mutual benefit principles that builds on Oström's argument to recognise member ownership and group property as distinct and different to 'no ownership' (trusteeship), 'private ownership' (by individuals and firms) and 'public ownership' (by state authorities). Her critique of property types is implicit in current

theories of the SSE (Vieta, 2010; Sahakian and Dunand, 2014) with Gibson-Graham et al. (2013, 2016) outlining a connection to five dimensions of *commoning*: who can access; for how much; how is it cared for; who is responsible for caring, and; for whose benefit a commons is constituted. Bollier (2016:2) adds:

“More than a political philosophy or policy agenda, the commons is an active, living process. It is less a noun than a verb because it is primarily about the social practices of commoning – acts of mutual support, conflict, negotiation, communication and experimentation that are needed to create systems to manage shared resources”.

We now outline how Oström’s principles provide a framework for studying internet platforms as CPRI.

3.1 Oström’s Eight Principles – The Conceptual Framework

Table 2 – Applying Oström’s eight principles

Principle 1 (P1) Resource boundaries	The CPR has clearly specified boundaries; there are clear definitions of the resource and resource users (members responsible for creating and appropriating the resource). This principle is based on eradicating greed and over-grazing, or the misappropriation of efforts by those who have not contributed to the CPR. Without defining boundaries and appropriation rights, outsiders can destroy the resource by over-grazing.
Principle 2 (P2) Resource sustainability	The resource should be utilised now but protected for future generations. The appropriation rights and conditions ensure that appropriation rights (to use) are proportional to provider obligations (labour, materials and money) to sustain the resource. This principle relates to both financial and non-financial resources (time, place, technology) to protect the sustainability of the CPR. Rotations and rations are commonplace to secure the longevity and certainty of the CPR.
Principle 3 (P3) Knowledge management	Management arrangements: local appropriations rules/rights and modifications are decided, partially or wholly, by those with rights of appropriation. The principle relates to the local knowledge needed to manage CPRs. Modifications are guided by discussion between knowledge bearers and appropriators through on-going reflections on the CPR’s design and business models. The presence of good rules does not guarantee that they are adhered to, even by the rule makers themselves. Principles 4 to 7 are needed to secure this.
Principle 4 (P4) Institutional monitoring	Users monitor the CPR through democratic institutions and practices. Officials are accountable for monitoring use and reporting findings to resource users. Officials are either appointed to be accountable to appropriators and members, or are democratically chose by appropriators or members. The CPR is self-managing, without the interference of outside authorities.
Principle 5 (P5) Institutional sanctions	There are graduated sanctions. Appropriators who violate operational rules are assessed against graduated sanctions. Oström suggests there are many graduations, from small sanctions that give members confidence that keeping their side of the bargain will induce rulers to keep theirs. The compliance of each depends on the compliance of all. Punishing is costly to the punisher, whilst benefits are diffused across all members.
Principle 6 (P6) Conflict resolution	There are low-cost conflict resolution systems with sanctions linked to the extent of resource/rule violation. Misappropriation of the CPR through subversion and/or (mis)interpretation needs resolution mechanisms. Small sanctions are negotiated informally but these grow more formal with repeated violations.
Principle 7 (P7) Institutional independence	Authorities recognise appropriator rights to organise and devise their own institutions (which are not challenged by external government authorities whilst CPR rules operate within applicable legal systems). Appropriators can govern without interference.
Principle 8 (P8) Nested enterprises	For CPRs that are part of larger systems, appropriation, provision, monitoring, enforcement, conflict resolution and governance are organised in layers of nested enterprises. This is recognition that any CPR exists within a social and political system, potentially overlapping with multiple (other) CPRs that have different rules and contexts.

Oström’s principles (Table 2) enable researchers to examine the role of mutuality and reciprocity in managing and creating CPRI. She observed that sustainability is strengthened where: members have both rights and obligations to define their common resources, its boundaries and the rules of use (P1); financial and non-financial resources are in place to ensure its sustainable maintenance and optimisation (P2); members’ (appropriators) of the

CPRI utilise knowledge management to adapt it to context (P3); it is subject to principles of democratic accountability (P4); there are appropriate graduated sanctions that are equitable and respectful of members' rights and obligations to maintain it (P5); there are graduated, low cost conflict resolution mechanisms to maintain the CPR (P6); the CPRI recognises and maintains independence from outside interference in its governance or operations (P7) and; where the CPR is nested, it co-ordinates in networks with other CPRs and organisations in the social and political system (P8).

These principles foreground reciprocity in CMEs with a renewed recognition that different types of user can participate together in polycentric networks that accommodate their interests in democratic institutions. Oström argues that performance against each bottom line (social, economic, environmental) can become superior to both private corporations and state bodies when CPRs adopt these principles. In the digital economy, this translates into platform commoning: socially-owned infrastructures for open governance and sharing by autonomous institutions and individuals who co-operate for mutual benefit. The principles contribute to a post-capitalist discourse in which 'for-purpose' enterprises manage *and* generate CPRs (Kuhn, 1970; Oström, 1990; Parker et al., 2013; Author 1 and Author 2, 2019).

4. Methodology: Using Oström's Principles as an Analytical Lens

In our work, we adopt a realist ontology (cases exist in a meaningful way and can be investigated). However, the knowledge we create is inter-subjective, bound by the narratives and discourses in which we are embedded. Inter-subjective knowledge is generated from an interpretation of different actors' accounts of a field (Cunliffe, 2003) to build credible, coherent narratives whilst commenting on their embeddedness within broader academic, political and economic discourses (Johnson et al., 2006).

This set of assumptions not only aligns us with Bhaskar (1977) who assumed a multi-layered ontology and critical social science, but also with Oström (1990) herself, who rejected the rationality implicit in *homo economicus*. Her own theories developed from numerous case studies that enabled research teams to interpret the principles constructed for managing CPRs (Oström, 1990). Following Stake (1995) and Yin (2003), we investigate whether Oström's principles feature in internet platforms by developing case studies. We triangulated three sources of narratives using secondary textual data (artefacts on web-sites, academic studies and media reports) to build six cases studies (Appendix A). Firstly, we examined narratives of actors from each organisation's website to understand their purposes and objectives, products and services, and systems of governance. Secondly, we searched academic literature for peer-reviewed journal articles on their organisation, governance and approach to commoning (Appendix B). We found cross-disciplinary interest in journals on sociology, cultural geography, new media, marketing and communications, finance, political economy and information technology as well as business and management literatures. Table 3 shows studies for each case presented in section 5 to demonstrate the level of cross-disciplinary interest in them. Absent from these studies, however, is discussion of internet platforms as SEs or contributors to the SSE.

Although we built six cases, for reasons of space we present only three in detail (Kiva Foundation, Loomio Co-operative Ltd and KickStarter PBC). All were purposively selected in line with our sampling strategy (Table 1) based on evidence they had achieved trans-national influence and recognition. The results, necessarily, are interpretive and the value of our findings depend not on objectivity, which is not possible, but on the plausibility, authenticity and insightfulness of our interpretations and theoretical conclusions (Johnson et al., 2006; Grey and Willmott, 2015).

Table 3 – Academic studies on three presented cases

Organisation	Themes from the Literature	Subject discipline	Example Sources
Kiva	Micro-finance; co-creation; connector; strategy.	Business & Management	Armstrong, Ahsan & Sundaramurthy (2018)
	Micro-finance institutions; crowdfunding intermediaries; crowdlending.	Economics & Finance	Dorfleitner, Oswald & Röhe (2019)
	Micro-finance platforms; interest rates; field partners;	Marketing & Economics	Bollinger & Yao (2018)
	Micro-finance; Marketization of philanthropy; ideological friction; utopian ideologies; ‘working poor’.	Marketing	Bajde (2013)
	Micro-finance; Lenders; borrowers; investors; process;	Marketing	Galak, Small & Stephen (2011)
	Micro-finance; Economic and Political empowerment; democratisation; social capital;	Developing World	Barry (2012)
	Micro-finance; Loans; Kiva Fellows; borrowers; inequality; web 2.0.	Development Studies	Gajjala, Gajjala, Birzescu & Anarbaeva (2011)
	Micro-finance; marketization; for-profit micro-lending; neoliberalism.	Developing World	Campbell (2010)
	Micro-finance; business model.	Information Technology	Asgary & McNulty (2017)
Loomio	Open co-operativism; work; co-creation; commoning.	Industrial Relations	Pazaitis, Kostakis & Bauwens (2017)
	Labor theory; sharing economy; platform co-operatives; co-operative principles.	Sociology	Schneider (2018)
	P2P; communing; commons based peer production; valorising; capitalism.	Sociology	Bauwens & Pantazis (2018)
	Commoning; capitalism; P2P production; open co-operativism.	Political Economy	Papadimitropoulos (2018)
	Digital commons; power; platform co-operative; trade-offs in data control; technology.	Capitalism and Communications	Jackson & Kuehn (2016)
Kickstarter	Crowdfunding; public funding; neoliberalism; kickstarter; indiegogo.	New Media	Brabham (2017)
	Crowdfunding; fan-ancing; value; economics.	New Media	Hills (2015)
	Crowdfunding; civic benefit; community assests, ‘done to’ communities	Communications	Davies (2015)
	Crowdfunding; neoliberalism; media financing; political economy.	Communications	Heresco (2017)
	Crowdfunding; public funding; neoliberalism; arts funding; value.	Cultural Policy	Lennert van den Hoogen (2020)
	Crowdfunding; value; identity; anchor values.	Information Systems	Gleasure, Feller & Rift (2016)
	Crowdfunding; transparency; communality; co-production; co-creation.	Innovation	Gegenhuber & Naderer (2019)
	Crowdfunding; social capital; non-financial capital.	Business Studies	Macht & Chapman (2019)

Lastly, we searched the Nexis news database (which contains 2,500 publications) to obtain media reports on 'governance', 'social enterprise' and 'social economy' that mentioned the cases. This shed further light on aspects of their ownership, governance and salience in wider political debates. We reviewed 94 media articles including 3 on Kiva, 17 on Loomio and 20 on Kickstarter.

Using Oström's (1990) principles as our conceptual framework, we analysed findings iteratively, building tables to describe commoning activities in each case. We updated these with insights from our reading of academic studies and media reports. Case and cross-case analysis involved triangulation, evaluating whether each case implements (or does not implement) Ostrom's eight principles.

5. Cases of Common Pool Resource Institutions

In this section, we present three (of six) cases listed in Appendix A (Kiva, Loomio and Kickstarter) to illustrate how commoning practices were identified and how we inquired into the capacity of internet platforms to manage and generate CPRs. We deconstruct cases using Oström's principles then discuss the implications of our findings (Table 4).

5.1 Kiva

Kiva is known in the micro-finance industry as a lender to micro-enterprises at the 'bottom of the pyramid' (BOP) that struggle to access funds from traditional lenders. Crowdlending enables individual investors to pool resources without intermediation by a traditional financial institution so that they reach the 'enterprising and working poor' (Bajde, 2014; Dorfleitner, Oswald and Röhe, 2019). Web 2.0/3.0 services have fuelled the industry's growth (350% between 2007-2012) by bringing down interest rates and increasing repayment rates. Combined with respect for democracy, civil agency and trust in local networks, low default rates of 2% become commonplace (Barry, 2012; Bollinger and Yao, 2018).

However, micro-finance has critics. Low interest loans in micro-finance are not ubiquitous and Bajde (2013) questions the marketisation of philanthropy, while Campbell (2010) argues that 'no-one was ever liberated by being placed in debt'. There is evidence that some lenders charge high interest rates, preying on the very people micro-finance was originally set up to lift out of poverty (Barry, 2012). Nonetheless, there are now over 10,000 micro-finance institutions (MFIs) worldwide lending over \$7.5 billion (Armstrong, et al, 2018).

Kiva Foundation (kiva.org) was established in 2005. In terms of P1, Kiva offers a mutual finance CPR to alleviate poverty through crowdfunding. Anyone anywhere with \$25 can become a Kiva investor. Anyone anywhere can become a micro-borrower with no joining fee. However, as Armstrong *et al.*, (2018), Bajde (2013) and Barry (2012) highlight, Kiva is not an MFI itself. It links investors, MFIs and micro-borrowers by acting as an intermediary.

The boundaries of the CPR are set through the platform that connects individuals and groups of investors to MFI field partners and micro-borrowers (BOP entrepreneurs). Kiva contracts with MFIs to act as a vehicle that supports investments in local entrepreneurs. Whilst this ostensibly presents Kiva as a technology expert working with MFIs who are micro-finance experts, Asgary and McNulty (2017) argue that the arrangements are presented ambiguously. Bajde (2013) also points out that Kiva loses control of the loan once it is transferred to partner MFIs.

Whilst investors can extract their capital, Kiva is sustained (P2) by those that reinvest returns into the common pool (Armstrong *et al.*, 2018) and become long-term suppliers of social finance. Kiva pro-actively supports this by creating *communities* of investors through support for teams who compete to lend the most. MFIs, the most criticised link in the Kiva system, sustain themselves through interest charges to cover operational costs. This averages between 34-38% (Asgary and McNulty, 2017; Bollinger and Yao, 2018).

Nevertheless, they also report the 'Return on Assets' is -0.67%, indicating an overall loss on Kiva loans as they vet micro-borrowers prior to listing them and carry the risk of loan defaults (Armstrong *et al.*, 2018). Kiva is sustained through grants, donations and trading income from corporate programs, utilising a network of volunteers in corporate offices and MFI field partners to provide essential services (Armstrong *et al.*, 2018). At the time of writing, \$1.26bn has been raised and lent by 1.8m lenders to 3.4m borrowers through 300 field partners.

Local knowledge is available through MFIs (P3). This is harnessed and presented to crowdfunding investors. Interestingly, Kiva's Board of (non-executive) Directors are mainly drawn from leading technology firms in the Silicon Valley, to harness and create access to cutting edge technology and knowledge (Armstrong *et al.*, 2018). Monitoring (P4) is achieved by publishing performance data online. MFIs are monitored through their contractual obligation to link investor loans to individual entrepreneurs (Barry, 2012). Two principles (P5 on sanctions, P6 on conflict resolution) are covered by Kiva's 'Terms of Use', which includes binding arbitration for rule violations and disputes under Californian Law. P7 is secured through Kiva's registration as a 501(c)(3) non-profit organisation in the USA, based in San Francisco with regional offices in Bangkok, Nairobi and Portland, promoting self-governance without interference from other organisations and governments.

Finally, on P8, Kiva MFIs are nested CPR enterprises comprising SEs, other non-profit organisations and microfinance institutions within local communities. They sit within the wider Kiva.org infrastructure which includes Kiva Friends, Kiva Zip and Kiva Labs.

5.2 Loomio

Loomio Co-operative Ltd (loomio.coop) was established in New Zealand in 2012 by activists in the Occupy movement engaged in peer-to-peer (P2P) software development. In one way, the main resource (P1) is defined by the development team who operate as a global network and digital labour force comprising paid co-op worker members and contractors, volunteers and users (Pazaitis *et al.*, 2017). On P3 and P4, Loomio operates according to principles of transparency, sustainability, democratic self-governance, open-book accounting, open supply chains and co-budgeting (Papadimitropoulos, 2018). Knowledge (P3) is managed by worker members and a part-elected board who publish a members' handbook online. Loomio.coop has a mixed board (implying a solidarity co-op, rather than pure worker co-op).

Loomio.coop is nested inside the Enspiral network (P8), a trans-local and trans-national coalition of enterprises for mutual benefit (P2) (Bauwens *et al.*, 2017). Enspiral operates networks for technology teaching and has a Charitable Foundation with over 300 contributors that protects the infrastructure as a commons and promotes cross-pollination within the Enspiral Network (Pazaitis *et al.*, 2017; Bauwens and Pantazis, 2018). The CPR is sustained (P2) by donations, contracts and product subscriptions. Consultancy price bands include 'free' for community groups and fee-charging to co-operatives, civic authorities and private sector users. Loomio.coop (like Kickstarter) has resisted financial 'datafication' through a policy of not selling user data for profit (Jackson and Kuehn, 2016).

Loomio.coop's primary product is software (Loomio.org) - a tool for democratic discussion and decision-making that enables any organised group to interact through conversation threads, proposals and inclusive voting methods (Jackson and Kuehn, 2016). Resource users subscribe to either free or paid levels of service, and there is an open source option to recognise developers' who freely gave their time (P2). Loomio groups are created by resource users who become a nominated coordinator. They monitor their own group's activities, violations and conflicts (P6 and P7). Each coordinator decides their own approach, subject to the features available to them through the software and their subscription. In short, appropriators govern new group activities without interference from either members of

Loomio.coop or other organisations and governments (P7), thereby propagating Loomio's organisational philosophy and management practices through product use.

5.3 Kickstarter

Kickstarter (kickstarter.com) was established in 2009. Its boundaries (P1) are defined by the projects the platform supports. Resource users are artists, musicians, filmmakers, designers - initially embedded in punk's DIY entrepreneurial culture (Hesmondhalgh, 1997; Drakopoulou, 2011) attracted to Kickstarter's mission 'to bring creative projects to life through rewards-based crowdfunding'. Any backer, artist or innovator can join to contribute or raise funds for new projects. The service is sustained (P2) by taking fees from successful campaigns (5% Kickstarter fee and 3-5% payment processing fees). By October 2019, 17 million backers across all continents had pledged \$4.6 billion to 171,357 projects.

Knowledge (P3) is managed by 146 staff. Half work on coding the website; half work to build the community. Kickstarter enforces project rules at the point of creation and transparently reports the support achieved for each project (P4). Each project must have a tangible outcome (e.g. album, film, product). Charity fundraising and speculative equity investments are barred. Kickstarter's Charter outlines rules and disseminates them using a 'Creator Handbook' and community guidelines (P5). An integrity team monitors violations and manages conflicts (P5 and P6).

Autonomy (P7) was achieved through incorporation as a Public Benefit Corporation (PBC or B-Corp), with a head office in New York City, USA, allowing appropriators to govern without undue interference from other organisations and governments. Unlike Loomio and Kiva, Kickstarter is less nested (P8), operating alongside Knight AmDoc Patron Fund (a program of the John and James Knight Foundation to support non-fiction filmmakers and media projects) and Pinewood Atlanta Studios.

6. Discussion

A summary of the CBPP in each case is presented in Table 4. The overarching institutional context is the availability of Web 2.0/3.0 services – all cases used them to build product-service offers. These are overlaid onto other institutional contexts: micro-finance (Kiva); Occupy movement activism (Loomio); performing arts/punk culture (Kickstarter). Notably, Kiva (a foundation) secured corporate funding and support whilst Loomio and Kickstarter grew from small (crowdfunded) beginnings organically in line with growth in their resource user base. Web 2.0/3.0 reduces institutional constraints by lowering the cost of market entry, particularly when Open Source software is used. Kickstarter include in their PBC charter a commitment to open source for a 'more creative and equitable world', whilst Loomio go further by offering their main software in an open source version.

As Kiva promotes (and is partly sustained by) charitable activities and philanthropic trading, we frame it as a CTA-type SE. It illustrates how redistribution can be achieved through philanthropic support mechanisms for mutuality in financial services, underpinned by a charitable foundation legal structure. In Kiva, \$2.5m is raised *each day* through the web platform to support projects listed by MFIs. It attracts greater footfall to community projects through Kiva Friends, Kiva Zap and Kiva Labs. However, the money placed in Kiva is a commons only to the extent that micro-investors leave it in the system and reallocate it new projects (see Kiva Friends for how collaborations and participatory democracy play out). Members can withdraw their capital contribution from the commons.

Table 4 – Mapping selected cases against CPRI Principles

New approaches to:	Redistribution (CTAs) Kiva Foundation (Kiva.org)	Reciprocity (CMEs) Loomio Co-op Ltd (Loomio.coop / Loomio.org)	Market trading (SRBs) Kickstarter PBC (kickstarter.com)
Principle 1 Resource Boundaries	Mission: to alleviate poverty by connecting lenders and borrowers (entrepreneurs and field partners) through a web-platform.	Mission: to create safe, secure, searchable websites for democratic discussion and decision-making.	Mission: To bring creative projects to life through rewards-based crowdfunding.
Principle 2 Resource Sustainability	MFIs sustained by \$1bn investment from 1.8m lenders (\$25 minimum) to 3.4m borrowers, 300 field sites (Oct 2019). Kiva sustained by grants/CSR programmes.	Income from education and consultancy and open source software. Price bands for users, from free to fee, targeting community groups, co-operatives and civic authorities.	Any artist/innovator can join to raise funds for projects, subject to a 5% Kickstarter fee and 3-5% for payment processing (if successful).
Principle 3 Knowledge Management	Field partners approve and post projects to Kiva.org for lenders to choose which to support. Investor groups collaborate to support projects of their choice.	Management rules decided by worker members and a part-elected board (min. 40% elected). The members' handbook is published online.	Open platform, subject to sharing rewards with contributors (not equity). Transparency, trust and honesty are stated values, but members not formally part of the governance system.
Principle 4 Institutional Monitoring	Performance impact statistics published online.	Part-elected board runs Loomio itself (Loomio.coop). Each Loomio group (on Loomio.org) has one or more nominated coordinators. Users can join Loomio's own online group to participate in development.	Impact information is published daily. At time of writing, \$4.6bn pledged to 171,357 projects by 17 million people.
Principle 5 Institutional Sanctions	Covered in 'Terms of Use', which includes binding arbitration for disputes under Californian Law.	Members handbook makes no mention of sanctions. This is replaced by series of non-defensive, non-violent resolution methods, and details of mediation processes.	146 people (half designers, half community facing). 'Creator Handbook' with terms of service. Integrity team enforces.
Principle 6 Conflict Resolution	(No detailed information available)	On policy, through democratic voting in Loomio's own Loomio.org group. On relationship, through mediation principles, an escalation pyramid and process map).	An integrity team monitors violations and manages conflicts, with the power to suspend users judged to abuse the system.
Principle 7 Institution Independence	501(c)(3) US non-profit status, protects mission and autonomous governance.	Worker-led co-op constituted as a New Zealand Co-operative Company, operating as a solidarity co-op with multi-stakeholder board.	PBC, Certified Public Benefit Corporation, US, guided by the Kickstarter Charter, enable pursuit of social goals in place of profit maximisation.
Principle 8 Nested Enterprises	Connect lenders, borrowers, entrepreneurs and field partners using Kiva Labs, Kiva Friends. MFIs of localised SEs, non-profits and micro-finance institutions.	Part of the Enspiral Network, which also operates a Charitable Foundation to support campaigners, communities and businesses.	In collaboration with Knight AmDoc Patron Fund, supported by the John and James Knight Foundation and Pinewood Atlanta Studios.

This combined philanthropic and mutual mindset is true also of Loomio which operates as a CME-type SE. Loomio is part of a network of 'open co-operativism' within Enspiral (Pazaitis *et al.*, 2017) and has been characterised both as platform co-operativism (Schneider, 2018) and new co-operativism (Vieta, 2010; Ridley-Duff, 2019). Their CBPP is described by Pazaitis *et al.* (2017) as a new logic in collaboration in which networks of people inaugurate a new model of value creation. Value in this instance is through sustaining social reproduction and recognition of the social and emotional dimensions of product value (Bauwens and Pantazis, 2018).

As Jackson and Kuehn (2016) state, Loomio's open source model puts resources back into the commons under user control for sustainable replenishment. This form of open source production allows developers (programmers and coders) and users to become joint contributors to operational and organisational structures, with power to alter fundamental aspects of the commons as 'prosumers'.

Loomio's multi-stakeholder governance involving both producers (entrepreneurs), scholars and users is presented as 'peer production' that changes power relations by Jackson and Kuehn (2016) and Schneider (2018). As the former state:

"Unlike proprietary production networks, Loomio does not retain the rights to user modifications, dictate the terms of user developments or exclude users from making decisions that impact upon the site's evolution or use. So, while Loomio users certainly take up the labour of the site's evolution, we argue this labour is not valorized through a Marxian model of exploitation and alienation".

Furthermore, in contrast to Kiva, Loomio highlight their commitment to democratic membership and inclusive decision-making through active use of the Cooperative Marque². The opaqueness of governance processes at Kiva is juxtaposed to the open documentation on Loomio's operations and multi-stakeholder board. Paradoxically, Loomio initially raised funds using a crowdfunding site, and later raised patient capital from social investors in South Korea. This demonstrates the potential inter-dependence of all approaches in building a vibrant SSE.

Pazaitis *et al.* (2017) draw attention to Loomio's social dimension, suggesting that Loomio's technology is secondary to its interpersonal/inter-community relations in which trust between its workers and investors provide an over-arching ecosystem that deepens the process of commoning. Loomio's connection to other cases demonstrates the 'circulation of the commons', subverting hierarchy by 'connecting eco-social, labour and networked commons to reinforce and enable one another' (De Peuter and Dyer-Withford, 2010: 45; Jackson and Kuehn, 2016). Not only did Loomio use crowdfunding technologies, similar to Kickstarter, it published material under Creative Commons (Case 4). Similarly, the FairShares Association (Case 5) uses Loomio for governance (Case 2) and publishes books, diagnostic tools and course curricula using Creative Commons licensing (Case 4).

Another contrast between Kiva (and Kickstarter) and Loomio is decision-making based on formalised one-member, one-vote principles in General Meetings. Whilst all cases create commons resources through their products, Loomio's open source software (and Creative Commons operations guide) show a greater commitment to CBPP and the SSE than found in Kiva or Kickstarter. Therefore, the boundaries of CPRs in CMEs may be different to those apparent in CTAs (Cases 1 and 4) and SBRs (Cases 3 and 6). This finding is supported by a comparison between Case 5 (FairShares) and Change.org (Case 6). The former integrates

² See <http://identity.coop> for information on the Cooperative Marque.

mediation for dispute resolution as a constitutional commitment, but Change.org handles this only through a complaints procedure.

Like many commercial platforms, Loomio has graduated fees to control access to products on its own servers. It differs, however, in offering its primary product as an open source version to install on other servers (placing it in a similar category to the Moodle education platform). As a nested organisation, the commons contribution of Loomio is developed by (and available to) members of Enspiral. Pazaitis *et al.* (2017) claim this distribution of power is achieved through an appropriate mix of process and technology, with an unusually strong emphasis on culture, team building and communication, not carefully designed legal arrangements.

Kickstarter Inc. present as a socially responsible business (an SRB-type SE) on the basis of incorporation as a public benefit corporation (PBC) that brings products to market. Mutual benefits are evident in relationship building activities. As charity fundraising projects and equity investments are barred, all projects catalyse direct mutual relations between producers and users based on non-financial (product-based) rewards. Moreover, the output of a Kickstarter project is a product that supports the 'real economy', countering trends towards casino capitalism (Strange, 2015).

Brabham (2017) and Davies (2015) outline that crowdfunding has led to new social arrangements, giving a 'voice' to civil society in 'democratised' arts funding. Kickstarter has a role as an innovative tool financing small or risky artistic products that corporates and governments will not support. In this sense, crowdfunding empowers communities and disrupts elitism via do-it-yourself government (Davies, 2015), breaking reliance on large patrons (Lennert van Der Hoogen, 2020). Yet, caution is warranted. The flip side is de-funding of public arts programs and state withdrawal from riskier product development initiatives. Kickstarter project outputs do not necessarily contribute to a common pool resource. Unlike public goods over which citizens retain a claim, Kickstarter fuels the creation of private goods. From this perspective, crowdfunding can contribute to new forms of consumerism.

Kickstarter campaigns only support the SSE (and commoning) when they create public goods, promote community building, education and regeneration. The literature highlights this paradox of non-participatory inequality (in outcomes/surpluses) despite crowdfunding's perceived participatory nature and inclusivity. It could create a new 'digital-divide', particularly where there are variable levels of digital literacy and disposable income. Davies (2015) retells the story of well-supported campaigns in the Global South that did not make their investment level ('Pimp My Carroca' in Brazil to brighten up recycling carts) despite substantial small donation support. In the Global North, projects may meet targets with only a few supporters (such as BikeWalkKC in Kansas City, which received corporate support for a bike rental service). However, our investigation shows that small artists, such as a band seeking funding for their first album, and for gaming projects, Kickstarter can circumvent bureaucratic processes and lengthy (grant) applications to fill a space abandoned by debt financiers and angel investors (usually filled by friends and family). Gleasure and Feller (2016) state how consumers are engaging and shaping the design of products at the ideas stage, changing the traditional consumer-producer relationship. Fans can effectively commission, in ways previously unimaginable, the performing arts projects and products they want by voting with their wallets (Gegenhuber and Naderer, 2019). Heresco (2016) refers to this as 'fan-ancing', recognising how this leverages and builds on existing social capital and emotional attachments (Hills, 2015; Macht and Chapman, 2019). He argues that this radical free-market liberalism is insidious as it asks citizens to participate in their own expropriation. Notions of common good are eclipsed by new forms of consumerist individualism and market populism. He goes on to state (p.44):

“...it would arguably be even more pernicious, as the ostensibly democratic character of crowdfunding (a pretence not usually assumed by ad-supported media) would naturalize the form and content of media production under a populist banner. This would effectively obscure the class relationships that drive content behind the veil of the communitarian will. In this neo-patronage model, benefactors with disposable income contribute to a superficially democratic media system in which the importance of money/capital as a social relationship is occluded.”

Nevertheless, the legal frameworks chosen by Kickstarter (Case 3) and Change.org (Case 6) enable both platform builders and resource users to prioritise mission and impact over financial returns. Member participation is promoted by offering technology free at the point of use. Importantly, as the platform does not encourage dependence on charities, foundations, governments or private institutional investors, its ideological leanings tilt towards the SSE.

6.1 Cases as Part of a Wider Ecosystem

Our three examples are certainly not isolated cases. Wikipedia is a much-studied example that operates at scale. It has matured as part of the SSE through its commons-based approach to knowledge creation and governance. Wikipedia uses Creative Commons (Case 4) to license its articles. The scale of support is evidenced by annual reports³ that track a three-fold increase in donations to pay for core costs (up from two million in 2012-13, rising to six million in 2016-17). Editors add articles at the rate of 5 million a year (Wikimedia Foundation, 2014), now visited 15bn times *per month* (twice for every person on the planet).

In the field of knowledge production, Wikipedia's CBPP has influenced universities to create an SE (IS4OA CIC) that promotes open access to research. In April 2018, 3,001,707 academic articles (up from 2,197,368 in July 2015) were available from 11,146 journals⁴. In turn, the UK government has responded. It now only provides public funds to universities who public their research through open access platforms.⁵

Kickstarter is not an isolated SRB example either. In October 2019, Kickstarter rival Indiegogo reported 15 million visitors *per month*, with 800,000 funded projects and 9 million backers in 235 countries. Whilst Indiegogo and Kickstarter provide 'rewards' rather than 'returns' to funders, other platforms go beyond philanthropic engagement to offer both loans and equity. Funding Circle in the UK reported 9 million backers lending £7.5bn to 72,000 businesses through its platform.⁶ Similarly, Zopa UK reported 60,000 lenders providing £4.5bn in peer-to-peer loans to 470,000 household borrowers.⁷ All these organisations (Kiva, Kickstarter, Indiegogo, Funding Circle and Zopa) operationalise Oström's design principles to advance a mutual approach to assembling the funds needed by non-state SEs, private firms and households.

Each case in Appendix A demonstrates how the *infrastructure* of the SSE is developing by adopting Oström's CPR design principles, creating co-operative cultures in

³ https://wikimediafoundation.org/wiki/Annual_Report, accessed 6th April 2018.

⁴ Data retrieved from <https://doaj.org/about> on 20th June 2016.

⁵ See "Policy for open access in the post-2014 Research Excellence Framework" at <http://www.hefce.ac.uk/pubs/year/2014/201407/>.

⁶ Data found at <https://www.fundingcircle.com/uk/statistics/> on 14th October 2019.

⁷ www.zopa.com/invest on 14th October 2019.

loosely bounded (nested) networks of practice. Each, in their own way, challenges the neoliberal discourse on social entrepreneurship (Ganz *et al.*, 2018) by showing how SEs can manage *and* generate CPRs. For example, by raising \$2.5m a day without paying any interest, Kiva (Case 1) challenges the assumption that money raising for private and cooperative ventures requires a financial return to investors. The speed at which Loomio's (Case 2) software has been taken-up not only accelerates the normalisation of co-operative democracy but also challenges the idea that efficiency depends on management hierarchies. By creating a 'punk culture' funding system for artists and creative projects, Kickstarter (Case 3) challenges the notion that only the 'great and good' or professional investors can fund them. By creating a licensing system for sharing IP, Creative Commons (Case 4) challenges the idea that the transfer of property rights by labour to capital is necessary for both to make a living. Similarly, by showcasing and offering IP that advances polycentric ownership, governance and management (Oström, 2009), the FairShares Association (Case 5) challenges the unitary boards and top-down governance embraced by codes of corporate governance. Lastly, by facilitating direct democracy, Change.org (Case 6) challenges the 'democratic deficit' of parliamentary democracy.

Irrespective of legal form, credible implementations of Oström's design principles are found in all our cases, particularly the facilitation of direct producer-user relationships without private sector or government intermediaries regulating interactions. Furthermore, in some cases (Cases 2 and 5) there is a propensity to 'go beyond' Oström's recommendations through the use of mediation in place of graduated sanctions. On P5, impact is reported publicly (and automatically) in Cases 1, 3, 4 and 6, whilst 2 and 5 support multi-stakeholder democracy through open source products and Creative Commons licencing.

To summarise, the cases suggest the alternative economy of the SSE is indeed moving 'beyond the fringe' (Parker *et al.*, 2013; Utting, 2015). Commoning activities transform institutional logics for allocating finance, time and effort with economic choices presented as a mix of redistribution, reciprocity and market exchange. This transition is facilitated by the use of internet platforms that operationalise CPRIs to facilitate mutual aid for community benefit (Scholz, 2016).

The future that Westall (2001) envisaged - a 'fourth space' for people in the SSE to innovate in member-driven/owned enterprises – is now a global trend. However, in framing our conclusions, we draw attention to our research question. This was not *whether* a shift was occurring, but *how the rise of internet platforms shapes commoning*. To establish this, we selected three of our six cases to present in detail and used Oström's (1990) CPR design principles as a conceptual framework to gain insights into CBPP. We deconstructed their business models to flesh out emerging practices in internet platforms to highlight how the SSE might evolve in the future.

7. Conclusions

The rise of internet platforms is expressed by the diversity of arrangements capable of producing CPRIs. Kiva, Loomio and Kickstarter all self-identify using the language and values of SEs. This establishes a theoretical connection between commoning as a process and SE as a field of study. Moreover, we have triangulated accounts, studies and media reports to establish that platform commoning can reshape power relations to promote the participation producers and consumers (prosumers) in governance. Additionally, the legal and cultural norms adopted by each CRPI affects (and perhaps signals) their commitment to the SSE.

The rise shows how platform commoning is contributing to new ways of working in the SSE - new institutions for advancing UN SDGs (Oström, 2009; Laville, 2010). CBPP draws inspiration from mixing Polanyi's economies of redistribution, reciprocity and market exchange, challenging the hegemony of market-based extensions of the state to provide

public goods. Concurrently, CBPP challenges the privatisation of the products of human labour and counters capital accumulation for private (rather than common) benefit. Each case offered one or more insights into how CBPP might replace neo-liberal doctrine with commoning platforms that facilitate co-operation for mutual benefit.

The criticisms found in the literature regarding Kiva (Case 1) and Kickstarter (Case 3) could be mitigated through design strategies adopted by solidarity co-operatives (Cases 2 and 5). The vision on offer is a multiplicity of ways for people creating and managing CPRs that serve members' social, cultural and economic needs without subordinating these values to the logics of (financial) capital accumulation.

The paper offers strong support for Utting's argument that the SSE's alternative economy is 'beyond the fringe' and we now need public policy support for *collective* entrepreneurship to address the changing nature of enterprise brought about by Web 2.0/3.0 services. As more and more knowledge matures in CPRs, we expect future generations will not be faced with a choice between 'public' and 'private' sector approaches to enterprise development. Instead, they will create new choices for constituting CPRs as CTAs, CMEs and SRBs. This justifies new research programmes to investigate how the boundaries of CPRs are affected by social, legal and technological choices. Moreover, further research is required to provide insights into the impact of community-based, co-operatively led, transparently governed, collaborative and inclusive enterprises on the delivery of UN SDGs through the SSE.

A key contribution of this paper is to show that commoning within the SSE can be advanced by SEs that create and manage CPRs using:

- **New approaches to redistribution** through platforms that enable charitable trading activities with changed property relations (CTAs);
- **New approaches to reciprocity** through platforms that enable co-operative and mutual enterprises (CMEs) to generate solidarity between producers and consumers;
- **New market-based trading activities** through platforms offered by socially responsible businesses (SRBs) to support social action.

Oström's principles are not tied to a single legal form. They can be operationalised (to varying degrees) through non-profit associations, co-operatives, co-operative companies, public benefit corporations and social purpose companies. As a result, this topic warrants further exploration and we call for further research that broadens the base of case examples based on primary data, following the example of Hudon and Meyer (2016). In response to Bollier (2016), we build the case for research that seeks to evaluate SEs as CPRs, and further inquire into their connection to sustainable entrepreneurship and UN SDGs. Finally, we call for more researchers to adopt a Polanyian approach, to understanding the SSE as a substantive economy in which CBPP is advanced through novel combinations of redistribution, reciprocity and market exchange.

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Appendix A – The Rationale for the Six Cases

This appendix summarises the rationale for the cases on which this study was based. Cases presented in this paper are marked with an asterisk (*).

1) *KIVA.ORG (CTA) alleviates poverty by connecting lenders (field partners) and borrowers (entrepreneurs) through an online technology platform. It has a global network of field partners in which administrators act as resource managers and borrowers act as resource users. A range of social media and academic commentary was available, but we found limited press comment on their governance systems.

2) *LOOMIO.COOP (CME) offers a technology platform (Loomio.org) for 'safe, secure, searchable websites for democratic discussions and decision-making'. It has both free and fee-paying products and even before its first full release had secured over 30,000 users worldwide. Loomio has generated interest both inside and outside academia, and its social media strategy has made it popular within the SSE as well as political movements.

3) *KICKSTARTER (SRB) supports creative projects through online rewards-based crowdfunding. Resource users are artists, musicians, filmmakers, designers and other creative types. Since 2009, the service has attracted 16 million backers from every continent in the world, created \$4.116 billion pledged, with 157,860 projects funded (as at February 2019). This has made it a much discussed case with both press and academic reports.

4) CREATIVECOMMONS.ORG (CTA) offers digital licences through a copyright service that builds the commons and facilitates the legal sharing and distribution of knowledge. Notably, Wikipedia uses Creative Commons for all its articles. Over 1 billion articles and works are now available worldwide, and a global network of 289 community members across 60 countries has stimulated academic and some press interest.

5) FAIRSHARES.COOP (CME) is a project and web-based association that openly supports the creation of solidarity enterprises by offering them Creative Commons IP. There are now 15 FairShares Labs in five countries creating social enterprises using a web-platform (fairsharesplatform.eu), online tools and curricula (see fsi.coop). We found a series of studies and evidence of impact in 18 countries, but few press reports.

6) CHANGE.ORG (SRB) is an online platform that empowers people so they can 'create the change that they want to see'. Resource users are global. By February 2019, around 260 million people had supported a Change.org campaign. Studies and press reports comment on the mixed impact of Change.org, generating a 'pro-democracy' commentary initially later criticised as a way to facilitate new forms of censorship.

Appendix B – Literature Search for All Six Cases

Organisation	Author/s	Subject discipline	Themes
Kiva	Armstrong, Ahsan & Sundaramurthy (2018)	Business & Management	Micro-finance; co-creation; connector; strategy.
	Asgary & McNulty (2017)	Information Technology	SWOT; micro-finance; business model; mis-sold people-to-people.
	Bajde (2013)	Marketing	Marketization of philanthropy; ideological friction; utopian ideologies; 'working poor'.
	Barry (2012)	Developing World	Economic and Political empowerment; microfinance; democratisation; social capital.
	Bollinger & Yao (2018)	Marketing & Economics	Micro-finance platforms; interest rates; field partners.
	Campbell (2010)	Developing World	Micro-finance; marketization; for-profit micro-lending; neoliberalism.
	Dorflleitner, Oswald & Röhe (2019)	Economics & Finance	Micro-finance institutions; crowdfunding intermediaries; crowdlending.
	Gajjala, Gajjala, Birzescu & Anarbaeva (2011)	Development Studies	Loans; Kiva Fellows; borrowers; inequality; web 2.0.
	Galak, Small & Stephen (2011)	Marketing	Lenders; borrowers; investors; process.
Creative Commons	Bazen, Bouvard & Zimmermann (2015)	Information Economics	Sharing economy; piracy; IP; copyright; free-riders; artists.
	Dobusch & Kapeller (2018)	Strategy	Crowdfunding; crowds or communities?; strategy making; open strategy.
	Dobusch, Lang & Quack (2017)	Policy	Sharing economy; stewardship; feedback processes; governance.
Loomio	Pazaitis, Kostakis & Bauwens (2017)	Industrial Relations	Open co-operativism; work; co-creation; commoning.
	Schneider (2018)	Sociology	Labor theory; sharing economy; platform co-operatives; co-operative principles.
	Papadimitropoulos (2018)	Political Economy	Commoning; capitalism; P2P production; open co-operativism.
	Jackson & Kuehn (2016)	Capitalism and Communications	Digital commons; power; platform co-operative; trade-offs in data control; technology.
	Bauwens & Pantazis (2018)	Sociology	P2P; commoning; commons based peer production; valorising; capitalism.
FairShares Association	Ridley-Duff (2015)	Business & Management	New co-operativism, solidarity economy, rationale for a FairShares Model.
	Boeger (2017)	Law	Counter-movements, social activism, applying the FairShares Model.
	Ridley-Duff (2017)	Law and Entrepreneurship	FairShares company case studies, incorporation, innovation, entrepreneurship.
	Levaillan et al. (2018)	Corporate Governance	Counter-movements, for-purpose companies, application of the FairShares Model.
	Morgan (2018)	Law	Platform co-ops, legal innovation, application of the FairShares Model.
	Ridley-Duff and Bull (2019)	Business & Management	Solidarity co-ops, communitarian pluralism in SE informing the FairShares Model.
	Ridley-Duff and Wren (2019)	Business & Management	Sustainable development, social enterprise, application of the FairShares Model.

Organisation	Author/s	Subject discipline	Themes
	Boyd and Reardon (2020)	Organisation Development	Adaptive organisations, FairShares commons, commons-based companies.
Kickstarter	Brabham (2017)	New Media	Crowdfunding; public funding; neoliberalism; kickstarter; indiegogo.
	Davies (2015)	Communications	Crowdfunding; civic benefit; community assets, 'done to' communities.
	Gegenhuber & Naderer (2019)	Innovation	Crowdfunding; transparency; communality; co-production; co-creation.
	Gleasure, Feller & Rift (2016)	Information Systems	Crowdfunding; value; identity; anchor values.
	Heresco (2017)	Communications	Crowdfunding; neoliberalism; media financing; political economy.
	Hills (2015)	New Media	Crowdfunding; fan-ancing; value; economics.
	Macht & Chapman (2019)	Business Studies	Crowdfunding; social capital; non-financial capital.
	Lennert van den Hoogen (2020)	Cultural Policy	Crowdfunding; public funding; neoliberalism; arts funding; value.
Change.org	Blasio & Sorice (2019)	Communications, Digital, Social Media	Digital communication; e-democracy; clicktivism; digital juries; active citizenship.
	Chen, Deng, Kwak, Elnoshokaty & Wu (2019)	Information Systems	e-petitions; e-politics; e-government; clicktivism: morality.
	Gastil & Richards (2017)	Political Science	Digital democracy; civic technology; online platforms.
	Halpin, Vromen, Vaughan & Raissi (2018)	Political Science	Online activism; clicktivism; e-petitions; e-petition analysis.
	Huang, Suh, Hill & Hsieh (2015)	Computer Science	Online activism; clicktivism; e-petitions; user behaviour.
	Minocher (2019)	New Media, Communications, Society	Consumer activists; clicktivism; slacktivism; power; technology; challenging corporations.