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To cite this article: Thomas Gegenhuber & Johanna Mair (2024) Open social innovation: taking stock and moving forward*, Industry and Innovation, 31:1, 130-157, DOI: [10.1080/13662716.2023.2271863](https://doi.org/10.1080/13662716.2023.2271863)

To link to this article: <https://doi.org/10.1080/13662716.2023.2271863>



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Published online: 27 Nov 2023.



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RESEARCH ARTICLE



Open social innovation: taking stock and moving forward*

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ABSTRACT

Open forms of organising innovation bear great potential to address societal challenges, such as the climate crisis. Existing approaches to open social innovation (OSI) draw on a corporate and organisation-centric open innovation model as a blueprint for addressing social and ecological problems. However, such problems are ‘wicked’ and ‘complex’ in nature and thus require concerted efforts from a diverse set of stakeholders, including businesses, government agencies, non-profits and communities. Based on a review of the open-, user- and social-innovation literature, this essay traces the evolution from an organisation-centric view (OSI 1.0) to a multi-stakeholder, cross-sectoral perspective (OSI 2.0). More specifically, we understand OSI as a concerted effort undertaken by multiple stakeholders from various sectors throughout the social innovation process, from diagnosing societal challenges, to developing ideas for how to solve problems, creating solutions, effectively scaling solutions and generating impact. We sharpen the terminology for OSI 2.0 and specify design dimensions for the effective orchestration of collaboration and coordination, and outline key areas for future research. Our objective is to foster dialogue between open- and user-innovation and social-innovation research.

KEYWORDS

Open social innovation; grand challenges; user innovation

JEL CLASSIFICATION

O35; O36

1. Introduction

Management concepts are influenced by the needs, interests and conditions of a specific time period. Chesbrough (2003) introduced the term ‘open innovation’, which highlighted the importance of knowledge and innovation capabilities in enabling companies to maintain a competitive edge in an increasingly interconnected and specialised world, noting that these capabilities are imperative for firms to stay ahead of their competition. Large corporations cannot rely solely on internal knowledge for innovation, which means that they must integrate relevant external knowledge and monetise unused knowledge to external actors (Allan and Tucci 2012, Bogers and West 2012, Bogers et al. 2017, Chesbrough 2006, Jeppesen and Lakhani 2010).

Over the past decade, companies have discovered that having a competitive advantage is not enough to ensure success and growth. Meanwhile, management scholars have

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*Submission for Industry & Innovation Special Issue on Grand Innovation Challenges.

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started paying more attention to how to integrate innovation and economic activity in efforts to address ‘grand challenges’; i.e. complex, systemic, societal problems such as climate change, increasing inequality or declining public services (George et al. 2016; for a generative review see Seelos, Mair, and Traeger 2022). In line with the shift towards devoting greater attention to social and ecological problems,¹ Chesbrough and Di Minin (2014) revisited the open innovation concept and outlined how non-profit and public sector organisations can utilise open forms of organising to develop solutions for social and ecological problems. This includes social innovation, which seeks to address social needs through new products, services, structures and policies (Cajaiba-Santana 2014, Mulgan 2006). More recently, Bogers et al. (2020) elaborated on how open innovation can assist companies in addressing ecological issues (see also McGahan et al. 2020). Ambitions such as achieving net zero carbon emissions and establishing an inclusive digital society require collective efforts and open formats in which corporations are pushed to move beyond their established strategic and innovation repertoire (Montresor and Vezzani 2023, Pinkse et al. 2024).

Despite the focus on social and ecological issues in the field of open innovation research, most current attempts have taken an organisation-centric approach, viewing the organisation as functioning within an open system. This perspective follows the tradition of second-mandate research in organisational studies (Mair and Seelos 2021).² Such a perspective, however, obscures the complexity inherent in grand challenges, which cannot be decoupled from the social system that gives rise to and recreates them. Thus, to effectively address grand challenges, organised, open social innovation (OSI) efforts must intervene and affect change in social systems (Mair and Seelos 2021). Such interventions must transect various societal sectors and jurisdictions and require the concerted efforts by multiple actors to address social and ecological challenges while recognising their systemic and complex nature (Mair and Seelos 2021, Pache, Fayard, and Galo 2022, Tracey and Stott 2017).

Indeed, recent developments reflect the need to adopt a multi- and cross-sectoral stakeholder perspective on OSI. Consider the example of the OSI initiative ‘#WirVsVirus’ (English: ‘#WeVsVirus’) that emerged in Germany in response to the COVID-19 pandemic (Mair and Gegenhuber 2021): After collecting relevant challenges from all societal sectors, the online #WirVsVirus hackathon brought together 28,000 people, producing 1,500 ideas. A six-month follow-up support programme helped 150 teams to develop and test their ideas further, and provided networking opportunities to establish collaborations with potential scaling partners. Throughout the entire social innovation process, multiple stakeholders of different sectors (public sector, private sector, civil society) participated, emphasising the relevance of all sectors in addressing social problems.

#WirVsVirus and other OSI initiatives (Bertello, Bogers, and De Bernardi 2021, Fayard 2023, Mair et al. 2022, Porter, Tuertscher, and Huysman 2020) open new avenues for critically examining OSI, prompting us to explore the evolution from an organisation-centric perspective (OSI 1.0) to a new approach (OSI 2.0) that is characterised by the

¹To ensure brevity, we will throughout the paper sometimes solely use the term social problems.

²The second mandate in organisational research examines how relations between the environment and organisations affect an organisation’s performance (Mair and Seelos 2021). We recognise that societal challenges include social and ecological problems. For the sake of brevity, we use the term ‘social problems’ to refer to both.

concerted efforts of multiple stakeholders from various sectors throughout the social innovation process, from diagnosing societal challenges, to developing ideas for how to solve problems, creating solutions, effectively scaling solutions and generating impact (i.e. making progress towards alleviating the problem). Recognising the crucial role that collaboration and coordination serve in fostering successful cross-sectoral organising (Pache, Fayard, and Galo 2022), our investigation also extends to critical design aspects that guide cross-sectoral and multi-stakeholder organisation within OSI. We use ‘effective’ to imply that these design choices significantly influence an OSI initiative’s capacity to address societal challenges.

We offer two contributions to the literature: First, we respond to recent calls in the open and user innovation literature to explore open innovation practices at a broader societal level and beyond the individual firm by tracing the evolution from an organisation-centric view (OSI 1.0) to OSI as a cross-sectoral and multi-stakeholder phenomenon (Ahn et al. 2019, Bertello, De Bernardi, and Ricciardi 2023, Bogers et al. 2017, Dahlander, Gann, and Wallin 2021, Rayna and Striukova 2019, Randhawa, Wilden, and West 2019). Second, we facilitate conversations and cross-fertilisation between open and user innovation research and research on social innovation. The siloing of conversations within these literature streams prevents mutual learning. Therefore, we conduct a review to synthesise insights from these literature streams. Based on this review and our perspective on OSI, we put forward design dimensions outlining critical decisions for orchestrators to achieve effective collaboration (type of cross-sectoral participation architecture and participation dynamics) and coordination (type of search, space and time) in cross-sectoral and multi-stakeholder OSI initiatives. Additionally, we delineate issues for future research for each.

We begin by reviewing relevant literature exploring open forms of innovation for solving social problems. Next, we present our interpretation of OSI and provide a terminology and a basis for understanding OSI as a cross-sectoral and multi-stakeholder phenomenon. The subsequent section synthesises the information from the two previous sections, delving into the design dimensions and outlining areas for future research. We close the essay with a brief conclusion.

2. Open forms of organising social innovation

In this section, we review the intellectual antecedents of OSI: on the one hand, open and user innovation; on the other: social innovation research from an organisation theory perspective (see Table 1 for an overview). While the literature often conflates open and user innovation (e.g. using terms such as ‘distributed innovation’), we treat them as distinct concepts due to their differing assumptions and viewpoints (Bogers and West 2012). We also discuss how each of these streams addresses the issue of collaboration and coordination. We define ‘collaboration’ as the effort of multiple stakeholders from various sectors to jointly solve a problem, and ‘coordination’ as the steering, guiding, facilitating and aligning of these stakeholders (Bryson, Crosby, and Stone 2006, Gulati, Wohlgezogen, and Zhelyazkov 2012, Pache, Fayard, and Galo 2022). In our review, we pay attention to collaboration and coordination aspects that are particularly relevant for a cross-sectoral and multi-stakeholder perspective on

Table 1. Overview of research on open forms of organising social innovation.

	Open Innovation	User Innovation	Social Innovation
Core concepts	Strategically managing outside-in and inside-out knowledge flows along the corporate idea funnel (from research, development to the market) for pecuniary and non-pecuniary reasons	User and user innovators driven by self-interest and concern create, share, and diffuse new solutions (user innovation paradigm). Producers (i.e. corporations) may adopt and commercialize such innovation (producer innovation paradigm)	Social innovation as an outcome and as a process (from innovating to scale to create impact). Conceptualizing social problems as fundamentally different from technical problems
Perspective on openness	Organization-centric open systems perspective	Actors outside formal organizations as sources of innovation	Actors need to open up and collaborate within and across sectors (multi-stakeholder and cross-sectoral perspective)
Example	Open Covid Pledge firms offered free IP licenses to kickstart new collaborations to address the Covid pandemic	NightScout community developing and sharing open-source technology solutions to help people with Type 1 diabetes	Gram Vikas started the Rural Health and Environment Program (RHEP) in India, to improve drinking water access and address inequality. Including relevant stakeholders critical for success
Collaboration	- Complementary advantage of sectoral collaborations - Competitive and cooperative formats	- Complementary advantage of sectoral collaborations - Focus on cooperation	- Cross-sectoral collaboration as vehicle for collective action - Focus on cooperation and its barriers
Coordination	- Command-and-control broadcast mode and platforms and communities - Virtual space makes it easier to aggregate and process stakeholders' contributions, physical space matters as well - Mismatch between project-based nature of many OSI-initiatives and time needed to scale them	- Engage and empower-mode in communities - Highlighting potential of virtual space, but physical space often key for creation of new innovations - Interest in ephemeral and enduring forms of organising social innovation	- Engaging and empowering stakeholders in cross-sectoral collaborations - Virtual and physical spaces as key to achieve a common goal - Temporal orientation of an open social innovation shapes impact potential
Exemplary sources	Bertello et al. (2023); Bogers et al. (2020); Chesbrough (2003); Chesbrough & Bogers (2014); Chesbrough and Di Minin (2014); Hilgers and Ihl (2010); McGahan et al. (2020)	Jeppesen (2021); Rauch & Ansari, 2022; Oliveira (2012); Oliveira and Cunha (2021); von Hippel (2005), (2017)	Cajaiba-Santana (2014); Gray and Purdy (2018); Logue and Grimes (2019); Mair et al. (2016); van Wijk et al. (2018); Seelos and Mair (2020)

OSI in which a large number of stakeholders voluntarily (i.e. through self-selection) join an open call to action. Key considerations for collaboration are how to structure the participation and interaction dynamics of the stakeholders. From a coordination viewpoint, it matters how actors search for solutions, the space in which these actors meet and how time shapes their activities.

2.1. Open innovation

At the core of Chesbrough's (2006) open innovation model is the concept of an idea funnel that guides the innovation process from research and development to bringing

new products and services to the market. In contrast to a closed innovation paradigm, Chesbrough (2003, 2006) emphasises that gaining knowledge from external sources is as important as internal knowledge; e.g. an organisation engages in technology insourcing by broadcasting a call to action to external actors and then integrating viable ideas into its business model (Afuah and Tucci 2012), assuming it has sufficient absorptive capacities and can prevent the not-invented-here syndrome (e.g. Keinz, Hienerth, and Lettl 2012). A firm can also leverage inside-out knowledge flows by licencing IP to other firms in other markets or creating technology spin-offs to explore new markets (Dahlander and Gann 2010).

Nearly a decade later, Chesbrough and Di Minin (2014, 170) advanced the concept of OSI, defining it as ‘the application of either inbound or outbound innovation strategies, along with innovation in the associated business model of the organisation, to social challenges’. Using a stylised social innovation process model of Nesta and the Young Foundation, Chesbrough and Di Minin (2014) suggest that OSI is beneficial for developing prototypes, maintaining innovative activities and scaling solutions. To illustrate their argument, they analyse outside-in and inside-out open innovation practices used by two NGO examples (Emergency, Ashoka) and one public administration example (City of Birmingham).

More recent work has sought to develop OSI further: Ahn et al. (2019) argue that the ability of open innovation initiatives to bring stakeholders together from different disciplines and societal sectors has the potential to deliver high-quality social innovations in the form of solutions to social problems. McGahan et al. (2020) argue that given the numerous grand challenges we face as a society, (for-profit) organisations can use open innovation to stimulate social innovation and associated CSR activities. In a variation on that argument, Bogers et al. (2020) examine the potential for open innovation to be used to develop more sustainable and socially responsible solutions. One branch of open innovation research focuses solely on the public sector and explores how openness facilitated through formats such as contests or civic hackathons assists in improving public administration (Lathrop and Ruma 2010, Linders 2012, Noveck 2009, Mergel 2015, Schmidhuber, Hilgers, and Randhawa 2021, Yuan & Gasco-Hernandez, 2021).³

Research on open innovation ‘turning social’ has illustrated ‘collaborations’ within one or across multiple (usually two) sectors. One example of collaboration within a single sector is NGOs (civil society) using hackathons to motivate citizens (civil society) to contribute software to drive social change (Gama et al. 2023). Examples of cross-sector collaboration include the platform *meinlinz.at* (English: ‘mylinz.at’), which the city of Linz, Austria launched in 2015 to establish a channel for regular interaction between local government (public sector) and citizens (civil society); i.e. to actively encourage residents to express their ideas, needs and expectations regarding various local government topics, such as urban planning and maintenance (Schmidhuber et al. 2019). However, in expanding open innovation to address social and ecological problems, the literature has confined itself to an open-systems and organisation-centric view; i.e. a view in which an organisation situated in one sector opens up to other stakeholders in the

³Also a few social innovation researchers picked up the idea of open innovation and explored how NGOs and governments can use openness to fuel innovation efforts (Martins, Monteiro, and de Souza Bermejo 2015, Santoro, Ferraris, and Vrontis 2018).

same sector or to stakeholders from other sectors who contribute to that organisation's innovation efforts.

In the examples mentioned above, stakeholders combine their efforts to address one or more social problem(s); nevertheless, the participation dynamics amongst those stakeholders may be competitive. Contests with extrinsic incentives (e.g. monetary prizes) focus on finding the best solution by rewarding those who present the best performance (Chandra, Shang, and Mair 2021, Felin, Lakhani, and Tushman 2017, Morgan and Wang 2010, Randhawa, Wilden, and West 2019). Certainly, there are also more cooperative open innovation formats (e.g. consultations) allowing for productive conversations and knowledge building (Faraj et al. 2011; Hutter et al. 2011; Mergel and Desouza 2013).

In terms of 'coordination', searching for potential solutions occurs either through a command-and-control mode of broadcasting the open call to many stakeholders and collecting submissions, or through platforms connecting various stakeholders to achieve social good within predefined categories or online communities (Chesbrough and Di Minin 2014, Felin and Zenger 2014, Kohler and Chesbrough 2019). Hence, it is unsurprising that this line of literature sees promise in facilitating stakeholder action in the virtual space because of the ease of aggregating and processing stakeholders' contributions (Randhawa, Wilden, and West 2019, Sims et al. 2019). However, the literature also presents examples in which stakeholders work on solutions in a face-to-face setting (Ahn et al. 2019). Considering the aspect of time, the literature reveals a mismatch between bringing stakeholders to work on innovative ideas within a short period, and the time, resources and capabilities needed to turn an idea into a scalable solution. For example, in civic hackathons, there is little empirical evidence of whether the adoption or support of innovative ideas happens after a hackathon (Johnson and Robinson 2014, Robinson and Johnson 2016, Yuan & Gasco-Hernandez, 2021).

2.2. User innovation

The open and user innovation literatures share common assumptions such as emphasising openness as vital for innovation processes. However, von Hippel's (2005, 2017) work has a different focus: undervalued actors, outsiders or 'hidden champions' at the periphery and outside the boundaries of formal organisations as vital sources for developing and scaling innovations. Within the user innovation paradigm, user innovators and lead users, who are driven by self-interest, concerned about solving a specific problem or simply enjoy creative problem-solving, engage in innovative efforts to develop new solutions from software, to sports equipment, to healthcare applications. Typically, these user innovation communities engage in peer-to-peer and free sharing of product designs to assist each other in problem-solving and the diffusion of new solutions (Hienerth and Lettl 2011, West & Lakhani, 2008, Stock, Oliveira, and Von Hippel 2015, von Hippel, 2017).

The literature on user innovation highlights numerous instances in the healthcare sector demonstrating how applying user innovation principles can effectively address social problems. Von Hippel starts his book, *Free Innovation* (2017), with the example of NightScout, a community of user innovators who develop new solutions for children with diabetes who are not provided for by the private sector. Over time, the community

has turned into a foundation that supports ‘the creation of open source technology projects that enhance the lives of people with Type 1 Diabetes and those who love them’ (NightScout Foundation 2023).

Oliveira (2012) was the first to introduce to the user innovation literature the idea of patients as user innovators in the healthcare domain by creating the Patient Innovation platform connecting user innovators with other healthcare sector stakeholders (Patient Innovation 2021). Similarly, DeMonaco et al. (2018) show how user innovation enabled peer-to-peer innovation in the treatment of Crohn’s disease. Oliveira and Cunha (2021) report on the Patient Innovation platform and how this platform contributed to tackling the COVID-19 crisis. Rauch and Ansari (2022) document the mission drift of the patient innovation platform (Oliveira 2012), evolving from an academic research project into a project that contributes to social change; see also Ritala (2023) for a review of how the Patient Innovation platform structures collective action in the healthcare sector. User innovation research also addresses other complex societal challenges. For example, more recent work studies how users form social movements and how these establish novel practices and solutions to address climate crisis challenges (e.g. vegan communities popularising new diets; Jeppesen 2021).⁴

In contrast to Chesbrough, who uses a corporate perspective to inquire how corporations can extract value from external stakeholders (Bogers and West 2012, Dahlander, Gann, and Wallin 2021, Shaikh and Randhawa 2022), von Hippel’s (2005, 2017) starting point is civil society: user innovators or communities are an essential source for social innovation. Consider what this means for ‘collaboration’: user innovators create the impetus for social change and may subsequently engage with private or public sector organisations, thereby nurturing collaboration across sectors. When these organisations grasp the advantages of a user innovation, they can leverage the user-generated knowledge and allocate their resources to professionalise and scale it. Alternatively, user innovators may transition to the private sector, establishing their own entrepreneurial organisations to effectively commercialise and distribute the user innovation (von Hippel, 2005; Baldwin & von Hippel, 2011). In the user innovation literature, there is a notable emphasis on cooperative interactions among the various stakeholders (Bogers and West 2012; Borner et al. 2023). According to Von Hippel (2011), user innovators are primarily driven by intrinsic motivations, seeking to solve problems or derive benefits from a commercialised innovation that holds significant use value. As a result, user innovators actively participate in the open exchange of knowledge and place less emphasis on capturing value through withholding knowledge (von Hippel, 2011; von Hippel, 2017, Shah and Tripsas 2020).

User innovators and lead users typically adopt an ‘engage-and-empower’ mode to ‘coordinate’ their search for solutions. These actors flourish in social structures such as communities or platforms which allow for rich interactions, enable practices such as sharing designs, offer forums for exchanging problems, make it possible to ask for help and build on each other’s contributions, and facilitate spreading the word about novel solutions through word of mouth (Dahlander and Frederiksen 2011; Shah 2006; West and Lakhani, 2008; von Hippel, 2017). Along the same lines as the open innovation literature,

⁴This argument resonates with work at the intersection of organisation theory and social movement exploring how social movements are drivers of market change and innovation, for instance, by developing new categories (Schneiberg and Lounsbury 2008).

the user innovation literature underscores the advantages of stakeholders interacting online, allowing for rapid knowledge creation and sharing (Von Hippel and Von Krogh, 2003; Frederiksen and Jeppesen, 2006; von Hippel, 2017). At the same time, physical spaces matter as well for innovating; e.g. local maker spaces experimenting with novel technological solutions and then sharing their insights (Arroyo et al., 2021; for other examples, see Franke and Shah 2003; Schulte-Römer 2018). By drawing on organisation theories, the literature begins to explore how the temporal dimension affects coordination in user-driven innovation; e.g. Lifshitz-Assaf et al. (2020) study how users can produce viable designs in time-compressed formats such as hackathons, but there is lack of research on what happens to such designs after the hackathon (Bertello, Bogers, and De Bernardi 2021).

2.3. *Social innovation and organisation theory*

Social innovation addresses social needs through collective and goal-directed action weaving novel and valuable practices, products, services or organisational forms into the societal fabric (Cajaiba-Santana 2014, Mulgan 2006, Hargadon and Douglas 2001, Vermeulen et al. 2007). Such a perspective reflects an understanding of social innovation as an outcome. A complementary perspective, and one we adopt in this essay, considers social innovation as a process (Seelos and Mair 2020) focusing on how organised actors address societal challenges and work towards solutions by innovating and scaling. Linking innovation and scaling as two distinct organisational processes is critical to understand how impact (progress on solving a social problem) is generated (Seelos and Mair 2017). A process view on social innovation also helps to reveal and examine the challenges as a solution develops from prototyping to scaling. In this process, innovators cope and reduce the uncertainty inherent in creating something new by learning (about the problem and the solution) and increasing their competencies (Seelos and Mair 2017).

Social innovation scholarship emphasises that social problems often resemble ‘wicked problems’ and are characterised by a high degree of uncertainty, complexity, evaluative ambiguity and dynamic changes (Sterman 2001, Ferraro, Etzion, and Gehman 2015, Rittel and Webber 1973). Rittel and Webber (1973) characterise these issues as different from ‘technical problems,’ where an optimal solution can be discerned; e.g. NASA’s efficient use of crowdsourcing to pursue a superior method for measuring solar radiation (cf. Jeppesen and Lakhani 2010, Dahlander, Gann, and Wallin 2021). In contrast, wicked problems are inherently ambiguous, and both the problem and the potential ‘solution’ are subject to social interpretation and political negotiation. Suggested ‘solutions’ might only prove effective temporarily and, in the worst case, could amplify the problem instead of resolving it (Lawrence, Dover, and Gallagher 2014, Rittel and Webber 1973, Tracey and Stott 2017).⁵ Furthermore, social innovators face the daunting task of liberating themselves from the confines of the prevailing institutional context while simultaneously endeavouring to distil an innovative solution, often against resistance from established actors due to conflicting norms, values, interests or path dependencies (Van Wijk et al. 2018). Consider the example of Gram Vikas, an NGO renowned for its water and

⁵In this paper, we refer to the term ‘solution’ as the ongoing and continuous effort to alleviate a social problem. Such attempts necessitate continual revision; thus, acquiring an in-depth understanding of the social problem is pivotal for creating meaningful impact (Seelos and Mair 2017).

sanitation programme in rural Indian villages, but which uses water sanitation as a ‘Trojan Horse’ to address inequality in these communities (Mair, Wolf, and Seelos 2016). According to Mair et al., (2016, 2023), scaffolding is the key mechanism at work in this case; i.e. an approach that mobilises ‘institutional, social, organisational, and economic resources’, stabilises ‘emerging interaction patterns’ and ‘conceal[s] goals that may not be openly desired by those impacted by the transformation’.

Regarding ‘collaboration’, research underscores the need to involve multiple stakeholders from various sectors to address societal problems. Studies have explored multi-stakeholder and cross-sectoral networks and alliances (e.g. Gray and Purdy 2018, Najam 2000, Pache, Fayard, and Galo 2022, Nicholls and Murdock 2012, Selsky and Parker 2005). This emphasises that the process of social innovation must account for the interdependencies among different sectors (public, private, etc.) and diverse types of actors in order to drive social change through collective and coordinated action (Kornberger 2022, Mair, Wolf, and Seelos 2016, Van Wijk et al. 2018, Tracey and Stott 2017). Researchers have also focused on new organisational forms that reconcile conflicting sectoral logics; e.g. social entrepreneurs operating hybrid organisations that strive to balance social and economic goals (Mair and Martí 2006, Battilana and Lee 2014); and platform organisations leveraging the advantages of digital organisation (such as reaching target groups and funders, and algorithmic management) to alleviate social issues (Mair and Rathert 2019, Logue and Grimes 2019). For instance, Logue and Grimes (2019) examined how a civic crowdfunding platform established an institutional infrastructure that bridged the gap between various stakeholders.

Overall, the literature posits that stakeholders collaborate once they align on a shared goal and trust one another. However, this is easier said than done, as significant barriers to cooperation often arise, such as conflicting norms, values, interests and power dynamics. An example can be seen in the conflicts between an NGO and a for-profit corporation within a cross-sectoral alliance (Pache, Fayard, and Galo 2022).

In the realm of ‘coordination’, the literature highlights the interactions among stakeholders within the organisational forms mentioned previously, stressing the need for facilitating communication and fostering joint learning (Pache, Fayard, and Galo 2022, Seelos and Mair 2020). Such spaces consist of formal and informal structures stabilising social relations and enabling channelling of multiple actors towards achieving a common goal (Haug 2013, Morris 2000, McAdam 1996). Building on an understanding of social innovation as a process (Seelos and Mair 2020), the literature is increasingly interested in the temporal aspect of coordination and investigates how the temporal orientation of a social innovation initiative shapes the impact potential (Manning and Vavilov 2023, Van Wijk et al. 2018). For instance, Manning and Vavilov (2023) argue that a social innovation project of shorter duration enhances the likelihood of developing more novel innovations and allows stakeholders to be less bound by their sectoral conventions. However, such a project-based approach often confronts the challenge of embedding and scaling an innovation after the project concludes.

We conclude this review with the core insight that the open and user innovation literature has laid a solid foundation for implementing openness in social innovation. At the same time, the social innovation literature reminds us that social problems differ from technical innovation problems. This underscores the need to transition from an organisation-centric perspective of OSI to one that encompasses a cross-sectoral and

multi-stakeholder perspective. We now turn to our framework and terminology of OSI based on our studies of the OSI initiatives #WirVsVirus (Mair and Gegenhuber 2021, Gegenhuber et al. 2023) and UpdateDeutschland (English: 'UpdateGermany') (Mair et al. 2023) and related work of colleagues (e.g. Bertello, Bogers, and De Bernardi 2021, Fayard 2023, Porter, Tuertscher, and Huysman 2020). After establishing our viewpoint on OSI, we synthesise the insights from this review to elaborate on key design dimensions shaping effective collaboration and coordination.

3. OSI 2.0: a cross-sectoral and multi-stakeholder understanding of OSI

Our understanding of OSI aims to move from an organisation-centric view (OSI 1.0) to a new view (OSI 2.0) which highlights joint activities of multiple stakeholders from various sectors as essential to addressing social problems. More specifically, we understand OSI as the result of concerted efforts by multiple stakeholders from various sectors throughout the entire social innovation process, from diagnosing societal challenges, to developing ideas for how to solve problems, creating solutions, effectively scaling solutions and generating impact (i.e. making progress on alleviating the problem) (Mair and Gegenhuber 2021). This definition emphasises the cross-sectoral and multi-stakeholder character of OSI, which mobilises stakeholders from two or more societal sectors, such as citizen innovators, public sector representatives, foundations, science, private sector and others (McGahan et al. 2020, Ahn et al. 2019, Hilgers and Ihl 2010, von Hippel, 2005). The premise is that bringing together actors from various societal sectors increases the capabilities to address complex social problems (e.g. Gray and Purdy 2018, Ferraro, Etzion, and Gehman 2015).

The open call to action is a centrepiece of OSI. Our understanding of OSI builds on the open and user innovation literature and incorporates the insight that ideas, potential solutions to social problems, and actors interested in solving them exist within a context (e.g. a field or system) but are unevenly distributed or remain idle. An open call allows for scanning the problem-solution space for unexpected ideas (Chesbrough 2006, Jeppesen and Lakhani 2010, von Hippel, 2017). More importantly, it mobilises 'idle' actors, including tapping into their attention, capabilities, networks and resources (Bauer and Gegenhuber 2015), to engage the social innovation process, as well as to deeply engage with the problem, develop prototypes and explore how to generate an impact.⁶

OSI is a multi-faceted phenomenon. In this essay we unpack two aspects in more detail: First, we will explain the 'who' in OSI by clarifying the term 'OSI initiative' and describing the types of stakeholders involved. We then elaborate on the OSI process and the idea funnel to provide an understanding of 'how' an orchestrator shapes these stakeholders' participation throughout the social innovation process.

We refer to an OSI initiative as an organised OSI process bound in space and time, which includes activities such as issuing a call to action, mobilising actors to participate, establishing a space where stakeholders can meet and curating submissions (Mair and Gegenhuber 2021). Examples of OSI initiatives are the aforementioned #WirVsVirus, the

⁶Once prospective participants receive and understand the call, they choose whether they want to act upon it. This self-selection means that the participation decision occurs voluntarily, which is the foundation for distributed agency in OSI. This also implies that a call to action must resonate with a prospective participant's concerns, interests or identities (Bauer and Gegenhuber 2015, Benford and Snow 2000, Lounsbury and Glynn 2019, von Hippel, 2017).

follow-up initiative UpdateGermany (Mair et al. 2023), the European hackathon and associated efforts to scale ideas (Bertello, Bogers, and De Bernardi 2021), the Patient Innovation platform (Oliveira and Cunha 2021) or the OceanChallenge (Porter, Tuertscher, and Huysman 2020). A common trait of all these examples is their mobilisation of multiple stakeholders from various sectors coalescing around an effort to solve one or more social problems. If an OSI initiative addresses multiple social problems in multiple domains simultaneously (e.g. healthcare, education), it effectively establishes an ‘interstitial’ arena in which actors from multiple issue fields come together (Furnari 2014, Heimstädt and Reischauer 2019).

To ensure effective collaboration and coordination, an OSI initiative requires an organiser, which we call an ‘orchestrator’. The orchestrator can be a single organisation, alliance or collective of multiple organisations (Porter, Tuertscher, and Huysman 2020, Mair et al. 2023) and is an organisational actor that has the capabilities and networks to effectively organise openness; e.g. issuing and disseminating a call to action and translating between various stakeholders. In the case of UpdateDeutschland, the German Federal Government tasked ProjectTogether as the orchestrator to bring various stakeholders together to tackle problems identified by public administrations across Germany. The idea of an orchestrator is undoubtedly related to concepts such as innovation intermediaries in the open innovation literature (e.g. Howells 2006, Jeppesen and Lakhani 2010). However, an orchestrator of an OSI initiative not only brokers knowledge or matches partners, but instead facilitates distributed agency and concerted action (Mair et al. 2023).

An OSI initiative can seek to produce novel ideas or match stakeholders having problems with other stakeholders working on corresponding solutions. Stakeholders have a ‘stake’ in solving a social problem and thus participate in the process and work on solutions as ‘teams’ or ‘participants’. Teams can recruit members from one or more societal sectors. In the case of UpdateDeutschland, we observed how some local administrations essentially became members of civil society teams by embracing their role as lead users (Mair et al. 2023). We concur with the insights of the user innovation literature that identity, concern and interest in solving a social problem are the primary reasons for stakeholders to participate.⁷ At first glance, this implies that monetary issues are less important to participants. Our engagement with OSI, however, suggests that financial resources matter, particularly to participants in civil society as a means of recognition and as a resource enabling them to participate in an OSI initiative (Mair et al. 2021, Mair et al. 2022).

‘Supporters’ are those stakeholders who do not actively work in a team but provide the crucial flow of resources (such as funding) to teams and their ideas throughout the social innovation process. In the case of #WirVsVirus, public institutions and private foundations supported the OSI initiative and mobilised the teams by funding the orchestrator and granting stipends to a limited number of teams.

⁷From the perspective of teams, an OSI initiative provides an opportunity to attract support to make an impact in a specific context. For example, some teams participated in #WirVsVirus to address a problem in the context of German healthcare and hoped that their participation would increase their chances to make an impact.

‘Stakeholders-at-large’ may be the beneficiaries of a solution (e.g. clients), antagonists (e.g. existing solution providers who fear to be replaced by a new one) and evaluators (e.g. media) (Gegenhuber et al. 2023).

In sum, multiple types of stakeholders participate in an OSI initiative. We now turn to the ‘how’ these stakeholders engage throughout the social innovation process. To do so we adopt the perspective of the orchestrator and focus on decisions that shape the social innovation process, and thus, the idea funnel (see Mair and Gegenhuber 2021; Figure 1 provides an overview).

The first phase of an OSI process is mobilising, through which the orchestrator rallies other stakeholders by specifying the call to action, disseminating the call and engaging in expectation setting. During the second phase, bundling, the orchestrator establishes a space for participants and supporters to (co-)create, develop, exchange and assemble ideas. In the third phase, curation, the orchestrator assists in filtering out unsuitable solutions and organising support for promising solutions. The fourth phase, scaling, is devoted to ensuring resources flow to teams and assisting teams in identifying possible scaling pathways (Mair et al. 2023). In all of these phases, a variety of stakeholders from various sectors can play an essential role. For example, during the mobilisation phase of #WirVsVirus, the orchestrators collected 1,900 pandemic-related challenges submitted by public administrators, civil society organisations and businesses, which cross-sectoral teams subsequently worked on in the bundling phase.

The idea funnel in OSI shares with the open innovation literature the premise that open problem-solving approaches create many ideas, but only a few of these are novel and feasible enough to make an impact (Terwiesch and Ulrich 2009). However, identifying which idea or team has impact potential is a task associated with a high

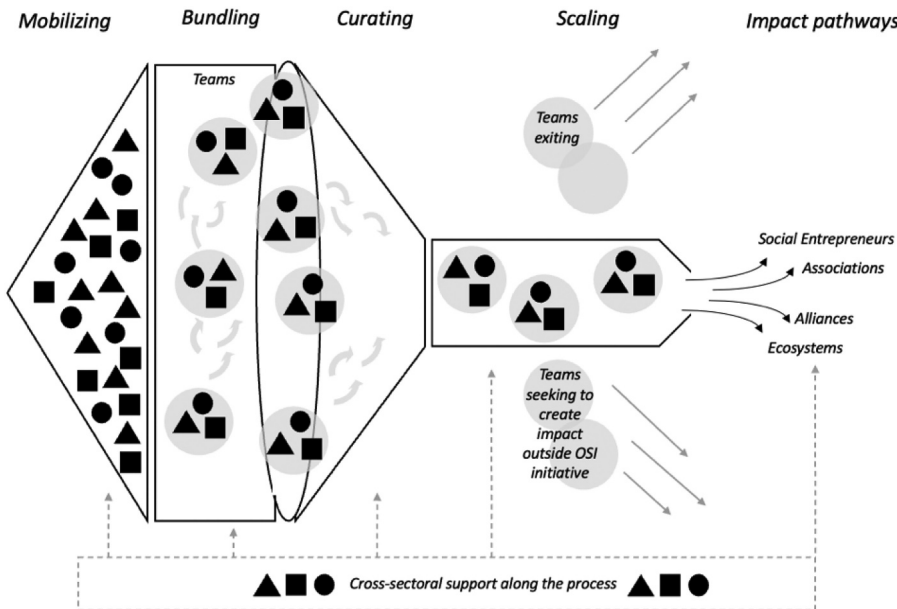


Figure 1. Open social innovation process of an OSI initiative (adapted from Mair and Gegenhuber 2021).

degree of uncertainty; even for venture capitalists deciding whether start-ups solve a technical problem, it is hard to pick winners early (Baum and Silverman 2004, Gifford 1997). The teams themselves also struggle to discern the quality of their own idea and often stop too early or quit too late when working on social problems (Seelos and Mair 2016). Moreover, any OSI initiative likely has only limited resources to support teams. Hence, an orchestrator must not only elicit participation but also engage in the OSI process of curating which ideas continue to be pursued and which are filtered out (Diriker, Porter, and Tuertscher 2023, Dobusch and Dobusch 2019, Mair and Gegenhuber 2021).

However, in contrast to Chesbrough's idea funnel, which is managed and controlled by one organisation, a key characteristic of the idea funnel in an OSI process is its open-ended character. This has two implications: Firstly, OSI processes can generate a variety of impact pathways. Teams may initiate a social enterprise, establish collaborations with governmental agencies or businesses, forge alliances and come together to establish or alter ecosystems (Mair et al. 2021, Mair et al. 2023, Scheidgen et al. 2021). This perspective shifts the focus from an organisation-centric view of integrating a solution towards a view which sees multiple actors exploring and negotiating the most effective route to create impact. In this broader perspective, the possibility of a government adopting an idea originating from civil society is merely one among many alternatives. Secondly, distributed agency in open social innovation enables teams to create impact even after they have exited or been filtered out of an OSI initiative. This also means that the decentralised approach also imposes limitations on an orchestrator's ability to make definitive selection decisions. In the case of #WirVsVirus, some teams that were not chosen for the follow-up support programme continued their innovation journey and successfully achieved impact beyond the scope of the OSI initiative. In the end, the stakeholders-at-large in the context in which the teams seek to generate impact play a pivotal role in evaluating the worthiness of a particular social innovation.

4. Designing collaboration and coordination in open social innovation

Having established our perspective of OSI 2.0 in the previous section, we now turn to how orchestrators can achieve effective collaboration and coordination in an OSI initiative. Adopting a multi-stakeholder and cross-sectoral perspective on OSI has implications for how OSI initiatives are designed. Bringing together the insights of our literature review with our perspective on OSI 2.0, we identify five design dimensions enabling an orchestrator to effectively shape collaboration and coordination (see Figure 2 for an overview). Each of the design dimensions requires decision-making by the orchestrator and involves potential trade-offs. We outline these trade-offs and discuss their implications for future research.

4.1. Collaboration

In response to an open call, multiple stakeholders exercise distributed agency and voluntarily come together (i.e. through self-selection), aiming to collaboratively address a complex social problem. To achieve this goal effectively, the orchestrator must make

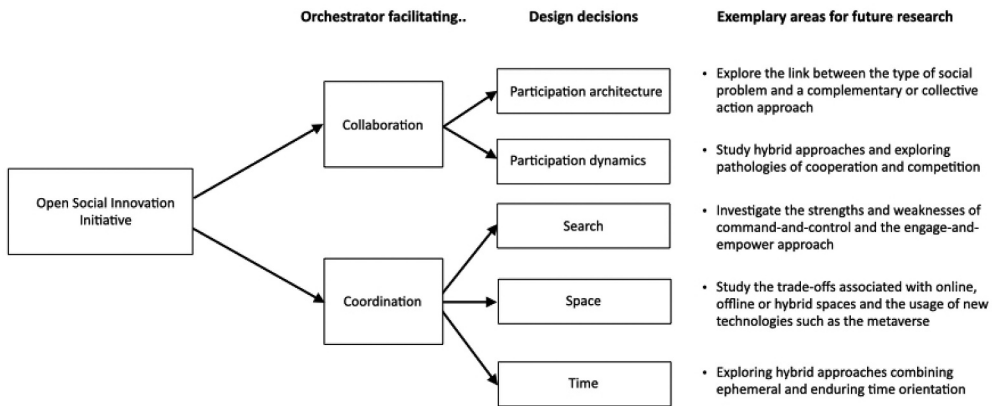


Figure 2. Orchestrator design decisions shaping collaboration and coordination in OSI initiatives.

crucial decisions regarding how and why these stakeholders should collaborate. Consequently, we identify two design dimensions: cross-sectoral participation architecture and participation dynamics. The cross-sectoral participation architecture establishes a fundamental orientation for all stakeholders' involvement (Ferraro, Etzion, and Gehman 2015; cf. West & O'Mahony, 2008), while the participation dynamics define the character of relationships among teams (Hutter et al. 2011).

4.1.1. Participation architecture

The cross sectoral participation architecture can either favour realising comparative sectoral advantages or achieving collective action.⁸

With few exceptions (Jeppesen 2021; Ritala, 2023), the open and user innovation literature implicitly assumes that integrating diverse stakeholders from various sectors facilitates leveraging complementary sectoral advantages. This premise hinges on the idea that each sector (private, public, NGO) has specific strengths (e.g. civil society can move rapidly in times of crisis) and weaknesses (e.g. civil society solutions may not be sustainable in the long term due to resource limitations). By promoting cross-sectoral collaboration, the weaknesses of one sector can be offset by the strengths of another. For example, although the government may demonstrate slower responsiveness during crises, it has the resources to provide long-term support or integrate solutions from civil society (Danner-Schröder and Müller-Seitz 2020, Coston 1998, Najam 2000).

Applying this logic to OSI, an open call to action can identify a niche solution championed by social entrepreneurs, citizen innovators or non-profit organisations. Encouraging collaboration across societal sectors allows stakeholders to rally support for scaling niche solutions; e.g. foundations, philanthropists or government

⁸The institutional context of an OSI initiative matters for the cross-sectoral interaction architecture. A context can be a field, industry or system. Ultimately, the context defines the rules of the game; i.e. the norms, values, practices, roles, rituals and beliefs with regard to 'how things are done' within that context. Context shapes the cross-sectoral interaction architecture in essential ways. Consider the issue of jurisdiction (i.e. what kind of actors feel or are perceived responsible for addressing certain social problems). Indeed, the jurisdictions for solving social problems in a liberal market economy such as the United States differ from those of a coordinated market economy such as Germany (Hall and Soskice 2001).

bodies can provide the necessary resources to scale up solutions and thus assist in creating substantial impact (Mair and Gegenhuber 2021, Geels and Schot 2007). By focusing on complementary sectoral advantages, stakeholders can adhere more or less to their respective sector's established rules of the game. Adherence to sectoral roles reduces to some degree the effort required to manage boundaries and facilitate collaboration across sectors (Pache, Fayard, and Galo 2022), while still allowing complementary sectoral advantages to be leveraged. However, Mair and Gegenhuber (2021) suggest going beyond merely leveraging complementary sectoral advantages, emphasising the need to foster collective action among participating stakeholders. This entails achieving joint outcomes through collaboration that transcends pre-defined sectoral boundaries and roles. For instance, Mair et al. (2023) illustrated how, in the open social initiative UpdateGermany, governmental actors and foundations essentially became part of civil society teams, contributing to innovative solutions. This blurred traditional sectoral roles and fostered the formation of 'unexpected and unlikely alliances'. Achieving collective action in cross-sectoral collaborations necessitates moving beyond established sectoral norms, consequently increasing the need for boundary management efforts (Pache, Fayard, and Galo 2022).

We propose that facilitating collective action through cross-sectoral OSI initiatives presents a compelling topic for future exploration. Insights derived from organisation theory/social innovation, including studies on cross-sectoral collaborations or social movements, could potentially enrich open and user innovation research. Moreover, it is critical to ascertain the specific types of problems that can be efficiently resolved using a complementary sectoral advantage approach and determine the conditions under which an OSI initiative could genuinely encourage collective action across societal sectors.

4.1.2. Participation dynamics

Participation dynamics shape the relationship among teams and participants. Based on our review, we identify two modes affecting how teams interact: cooperation and competition (Hutter et al. 2011, Felin, Lakhani, and Tushman 2017).

The principle of cooperation underscores the potential advantages teams can gain when they assist one another. This collaborative approach not only deepens the understanding of the problem but also enables peer-to-peer evaluation. Cooperative practices may encompass knowledge sharing, mutual network access, peer-to-peer feedback and the development of shared resources. For instance, the #WirVsVirus support programme prompted teams addressing similar challenges to unite their efforts. Furthermore, the programme advocated for the creation of open-source software, thus enabling teams to leverage each other's technological solutions (Gegenhuber et al. 2023, Mair et al. 2021). On the other hand, competition motivates teams to enhance their offerings and maintain high performance in pursuit of limited resources (e.g. funding), opportunities or recognition. While competition might initially seem counterproductive in the context of OSI, it can be useful; e.g. comparing teams' approaches to a similar social problem allows an orchestrator and other stakeholders to discern the most effective solution.

Future research needs to devote greater attention to the barriers to cooperation in OSI and their negative effects, such as freeriding or failed merging of teams. We also need to

understand more about the circumstances under which excessive competition inhibits information sharing, fosters secrecy and potentially leads to an overemphasis on winning at the cost of adequately addressing the social problem (which may alienate other teams from participating in OSI or other social initiatives). Researchers agree that cooperation and competition are not mutually exclusive (Grandori and Furnari 2008, Hutter et al. 2011, Jung et al. 2022, Mair and Gegenhuber 2021). Consequently, there is a need for deeper insights into how orchestrators deploy hybrid designs that effectively combine and balance cooperative and competitive elements within OSI initiatives.

4.2. Coordination

Once an OSI initiative has established its participation architecture and dynamics, it faces the challenge of effectively guiding and steering the participants. Given the nature of distributed agency, the orchestrator cannot simply direct these stakeholders on what to do and how to do it. To address this, we highlight three design dimensions essential for ensuring effectiveness in OSI processes: search, space and time. These dimensions enable the orchestrator to provide meaningful guidance to the stakeholders, allowing them to work together towards a joint goal (Afuah & Tucci, 2012; Haug 2013; Manning and Vavilov 2023).

4.2.1. Search

‘Search’ pertains to guiding the participants’ in-depth exploration of the problem and identifying potential avenues for creating a solution. Based on the review, we discern two approaches by which orchestrators can steer and guide distributed agency during the search process: the centralised, ‘command-and-control’ approach and the decentralised, ‘engage-and-empower’ approach.

Under the command-and-control approach, the orchestrator calls upon various stakeholders to find solutions for one or more social problems and collects submissions from those stakeholders who respond to the call (Afuah & Tucci, 2012; Hilgers and Ihl 2010). Based on this collection, a popular vote or a jury selects the most viable approaches, which receive recognition or a prize. Although it is an open form of organising, we call it ‘command-and-control’ because the orchestrator exerts the most control over the entire process. The aforementioned example of meinlinz.at is typical of a command-and-control approach, which often goes hand-in-hand with an organisation-centric view of OSI (Schmidhuber et al. 2019). The public administration collects and evaluates ideas and implements those deemed valuable and feasible. The engage-and-empower approach builds on user communities and digital/social mission platforms research (von Hippel, 2017, Mair and Rathert 2019, Logue and Grimes 2019). In this mode, the call broadly defines the problem and mobilises interested stakeholders. Once enlisted, participants issue sub-calls or respond to calls from others. This mode allows to match participants according to their problems, solutions, interests or concerns and iteratively explore the problem-solution space.⁹

⁹Please note that some social mission platforms, such as crowdfunding platforms or market-based transaction platforms, heavily structure the interactions amongst participants (e.g. Blackburn, Ritala, and Keränen 2022). Nevertheless, platform-organising logic facilitating an N:N interaction is in principle well suited to facilitating an engage-and-empower mode.

Recent debates in the open innovation literature have cast doubt on the effectiveness of the command-and-control approach in addressing societal challenges. Critics contend that the creative process necessitates the refinement and redefinition of problems (Zaggl et al., 2023), an idea that also finds support in social innovation research (Seelos and Mair 2020). However, we urge caution against dismissing the command-and-control approach and instead advocate for a more thorough investigation of its potential merits. For instance, an orchestrator could strategically employ this approach to celebrate existing solutions, thereby potentially expediting their widespread adoption and dissemination. Conversely, the engage-and-empower approach is considered more conducive to facilitating an open-ended creative process as it offers ample opportunities for problem redefinition, fosters distributed and collaborative learning, and proves particularly effective in navigating complex problems (Seelos and Mair, 2020). However, a comprehensive understanding of the strengths and weaknesses of this model requires further research. Moreover, greater attention should be devoted to exploring potential hybrid designs. For instance, an OSI initiative could initially adopt a command-and-control model to identify high-potential teams and subsequently transition to an engage-and-empower approach to delve deeper into the problem with the selected teams.

4.2.2. *Space*

Our literature review revealed that all three research streams emphasise the importance of space for OSI initiatives. ‘Space’ encapsulates two broad categories: virtual and physical. Each has its unique characteristics and brings a different set of possibilities and constraints.

Virtual space in OSI encompasses online community forums, platforms and other environments (e.g. online collaboration tools like Zoom, Slack or Discord) that bring people together, irrespective of their geographical location. Many virtual OSI initiatives emerged in response to the COVID pandemic, such as the online hackathons #WirVsVirus and #EUvsVirus (Bertello, Bogers, and De Bernardi 2021, Faraj, Jarvenpaa, and Majchrzak 2011, Gkeredakis, Lifshitz-Assaf, and Barrett 2021, von Hippel, 2017, Mair and Gegenhuber 2021). On the other hand, physical space presents opportunities for rich, multi-sensory interaction. It allows for incorporating tangible elements in the design process, such as user-centric design thinking methods (e.g. using Lego blocks to visualise and experience user journeys; Stephens and Boland 2015). This tangibility and physical interaction can engender a deeper understanding of the problem and foster innovative solutions (Bauer and Eagan 2008).

The choice between virtual and physical spaces entails clear trade-offs (Reischauer and Mair 2018) which require future research. Virtual space is, under certain conditions, more inclusive, because individuals who may feel uncomfortable or unable to participate in face-to-face interactions can engage in dialogue and contribute their insights (Cheng et al. 2019). Virtual space can cater to preferences for asynchronous interaction, allowing individuals to participate in the OSI process at their own pace. However, the potential of virtual space is not without its limitations: digital divide, or disparities in access to and use of digital technologies across different populations, cannot be ignored (Lythreitis, Singh, and El-Kassar 2022). Indeed, Mair et al. (2022) demonstrate in the case of UpdateDeutschland that although this OSI initiative was able to attract participants from across Germany, most of the participants were recruited from metropolitan areas

and from the former West German states. Virtual interactions are also problematic for public administration stakeholders because those stakeholders cannot use tools such as Google Drive or Zoom due to data protection policies. In contrast, physical space allows for interactions that virtual spaces often cannot (yet) replicate. However, physical space is bound by logistical constraints, such as geographical location, infrastructure and accessibility, which may limit participation. To what extent immersive online ‘metaverse’ spaces can effectively serve as substitutes for physical space remains to be seen (see Jacobides et al., 2024, for a reflection of the development of the metaverse).

We also suggest further exploration of the relationship between hybrid spaces and types of problems (Fayard 2012). For example, an OSI initiative may use virtual space to network and connect relevant stakeholders of a specific geographical context and, in the next step, convene those actors in a physical space to dive deeper into a localised problem.

4.2.3. Time

An OSI initiative also imparts a temporal structure, including deadlines, meetings and networking sessions, which guides participants’ social innovation process and the roles of supporters throughout this process. The social innovation literature also underscores that the element of time in an OSI initiative steers participants’ actions and their potential for impact (Fayard *forthcoming*; Hilbolling et al. 2022; Manning and Vavilov 2023; Van Wijk et al. 2018; see also Wenzel et al., 2020). Consequently, we differentiate between ephemeral and enduring OSI initiatives (Manning and Vavilov 2023).

An OSI initiative is considered ‘ephemeral’ if it is project-based by nature, extending over several months or sometimes a year or more; e.g. an OSI initiative in the form of a hackathon followed by a six-month support programme. The ephemeral, project-based approach offers the advantage of creating an environment conducive to generating novel solutions outside the restrictions of sectoral norms (Mair and Gegenhuber 2021, Manning and Vavilov 2023). Conversely, an OSI initiative is deemed ‘enduring’ if it spans multiple years and is a core activity of one or more actors. An enduring OSI initiative aims to cultivate a supportive community and knowledge repository. A prime example of an enduring approach is the OSI initiative Patient Innovation (Oliveira and Cunha 2021). Patient innovation facilitates the exchange of patient-invented medical solutions, enabling various stakeholders like patient innovators, patient associations, hospitals, healthcare professionals and businesses to interact and connect. Consistent with the user innovation paradigm, this platform helps patient-created solutions fill unmet market needs by being adopted, tested and potentially scaled by involving new actors (Oliveira 2012, Oliveira and Cunha 2021; Rauch & Ansari, 2021). The project is enduring because it is an ever-expanding platform and community that has existed for over nine years at the time of writing. The general call to action encourages user innovators to share their solutions and connect them with other stakeholders.

The temporal aspect of OSI requires further research. One observation suggests that the ephemeral approach might overlook the time, resources and capabilities required to transform an idea into a scalable solution (Johnson and Robinson 2014). An ephemeral initiative may also be a mismatch with key stakeholders who operate on longer timeframes (e.g. public administration stakeholders cannot keep up with the speed of an ephemeral initiative). A competing hypothesis is that OSI could successfully jumpstart

a team's efforts, allowing them to continue their growth independently and leverage the resources of the OSI initiative even after its conclusion (e.g. by gaining legitimacy from their successful participation in the initiative). As a result, we concur with the literature's call for more attention to what happens in the aftermath of ephemeral initiatives (Bertello, Bogers, and De Bernardi 2021, Manning and Vavilov 2023, Johnson and Robinson 2014).

Enduring initiatives also warrant further investigation. A potential drawback of such initiatives could be their difficulty in consistently mobilising actors and maintaining sufficient momentum. After all, social structures predicated on voluntary participation and self-selection face the challenge of keeping participants engaged and continuously refreshing their user base due to fluid membership (Faraj, Jarvenpaa, and Majchrzak 2011, Franzoni and Sauermann 2013, Stjerne, Wenzel, and Svejnova 2022). In this regard, future research could explore the effects of a hybrid approach. For example, Patient Innovation appears to supplement its enduring approach with ephemeral initiatives (such as multi-stakeholder accelerator programmes) to mobilise participants and rejuvenate its community (Patient Innovation 2023).

5. Conclusion

In this essay, we explored OSI as a cross-sectoral and multi-stakeholder phenomenon to move beyond the organisation-centric perspective (OSI 1.0) towards a new view (OSI 2.0) that focuses the intersection of various societal sectors and jurisdictions and the orchestration of concerted action from multiple actors within initiatives that seek to solve social problems. We see this essay as a starting point for further conversations between open and user innovation researchers, on the one hand, and social innovation and organisation theorists, on the other.

One area for future research concerns the five design dimensions guiding effective collaboration and coordination in OSI initiatives. We suggest that these design dimensions encompass fundamental decisions and trade-offs worth and recommend particular attention to hybrid configurations (e.g. combining competition and cooperation, or virtual and physical space throughout the OSI process) and their consequences. We need longitudinal and comparative research designs that are also attentive to the institutional context to better understand why certain decisions may lead to effective collaboration and coordination in the case of one OSI initiative but may be detrimental to making an impact in another. Certainly, qualitative, quantitative and mixed-methods approaches are well suited for such an endeavour. We want to highlight the approach of learning partnerships (Mair et al. 2023): This approach builds on the idea of engaged scholarship (Hoffman 2021, Van de and Andrew 2018), emphasising researchers' deep engagement with a phenomenon over prolonged time and seeking to foster mutual learning among all actors involved.

While the OSI design dimensions we identify are particularly relevant, they do not constitute an exhaustive list. Prior research has identified multiple mechanisms to enable cross-sectoral participation in small-number settings; e.g. a handful of organisations establishing a more-or-less formal collaboration (Castañer and Oliveira 2020, Gulati, Wohlgezogen, and Zhelyazkov 2012, Pache, Fayard, and Galo 2022). Consequently, we invite future endeavours to explore aspects such how to balance power, ensure accountability and manage openness and closeness and their impact on

inclusion and exclusion, or the struggle to make legitimate decisions in such a distributed setting (Diriker, Porter, and Tuertscher 2023, Dobusch and Dobusch 2019, Dobusch and Dobusch 2022, Gegenhuber et al. 2023). For example (Pinkse and Marino 2024), argue that corporate open innovation initiatives towards addressing ecological issues may merely be used to ceremonially conform to institutional pressures (e.g. greenwashing) without advancing substantial transformation. From an accountability perspective, we suggest research should critically observe OSI phenomena and dissect how actors deploy governance mechanisms to enable or prevent such practices.

We anticipate a rise in OSI initiatives embracing collective action, also due to the adoption of mission-driven innovation policies by governments (Mazzucato 2016, Van der Loos, Frenken, and Hekkert 2024). For instance, a government may aim to address a specific mission and, in doing so, could stimulate an OSI initiative that mobilises stakeholders from various sectors. These stakeholders would then convene around this mission, forming ‘unexpected alliances’ to collaborate on innovative solutions. The exploration of these new solutions could, in turn, inform government policies, potentially leading to changes in regulations or laws to further support such solutions. Whether and how this sectoral interplay creates the desired impact deserves attention.

Relatedly, we also invite research to further revisit the premises of OSI. In our conceptualisation of OSI, we argue each societal sector has its role in addressing social problems. As such, we counter the critique that the social innovation literature focuses too heavily on private entrepreneurial actors at the expense of neglecting the role of sound government policies and professional administrative action (Avelino et al. 2019, Schubert 2017). Nevertheless, the composition of actors involved in OSI raises substantive issues such as the costs associated with boundary management and efficiently managing collaboration and coordination (Pache, Fayard, and Galo 2022): OSI consumes considerable time and resources due to the high actor variety it entails. Its open model is also characterised by high uncertainty as to who participates and what they do. Consequently, we need to critically investigate OSI’s boundary conditions in terms of both effectiveness and efficiency. For example, for some problems an actor with considerable size and power may engage in unilateral action, which may cause other actors to follow suit without incurring high coordination costs. Other problems may require bringing a small number of designated actors together. In sum, we encourage further research on OSI to better understand its potential for addressing systemic challenges that our societies currently face.

Acknowledgement

We thank the members of the Research on Open Social Innovation (ROSI) group. The productive discussions in our meetings greatly inspired us. We are grateful to Alessandra Perri and Vera Rocha for their editorial guidance. Moreover, we express our gratitude to the Volkswagen foundation for their support [grant number 99,209] and the Ludwig Boltzmann Gesellschaft - Open Innovation in Science Center.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by the Ludwig Boltzmann Gesellschaft [OIS Center Funding]; Volkswagen Foundation [99209].

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