

Realising the value of open innovation in policy making: Equipping entrepreneurs for valuation work

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Abstract: Open innovation succeeds when it forms productive collaborations that cross organisational, disciplinary and practice boundaries. Success can, however, be hidden from stakeholders if the means to articulate value in novel, entrepreneurial open innovation work do not exist. We present collaborative design research tackling this challenge with the Cabinet Office Open Innovation Team (OIT) within UK Government. Drawing on the findings of an ethnographic study we show how ‘open innovation’ and ‘entrepreneurial’ theories were used in practice to characterise the need for valuing the OIT’s work. Using participatory design and co-design theory and methods we describe a multi-disciplinary intervention with the OIT, equipping them to collectively visualise their practice and to co-design new tools to support new and evolving valuation activities. We offer insights for collaborative design in open innovation settings and discuss the potential for co-designed tools to enable valuation in entrepreneurial practice.

Keywords: Open innovation, Entrepreneurship, Valuation, Co-design, Tools

1. Introduction

New and experimental entrepreneurial activities, whether they are to begin new independent ventures or to promote and reconfigure organisational change and practice in larger and more complex institutions, often struggle to gain legitimacy as their identity and the value of the entrepreneurship unfolds (Fisher, Kotha & Lahiri, 2016). In open innovation settings the entrepreneurial activity is framed as bringing multiple forms of distributed expertise together across organisational boundaries (Chesbrough, 2006). The openness of these contexts to diverse norms, languages, knowledge systems and practices (Clarke, 2008) makes identifying and articulating the emergent value of entrepreneurial activity especially challenging. Value that is produced through entrepreneurial work in open innovation settings is apt to be in new territory, distributed across collaborative relationships, and perceived very differently by different stakeholders. The connective, front-end work of open innovation entrepreneurs often gets dismissed as leg work, background work or groundwork, yet such work is central to understanding the unique value of entrepreneurial work, and why it is worth investing in (cf. Stark, 2011). Without shared standards and practices surrounding

what is recognised and valuable and how to show it, actors responsible for managing these process cannot be held to account, and creating persuasive cases for continued collective investments can become impossible. This shapes and limits the potential for entrepreneurial innovation, particular across organisational and disciplinary boundaries.

In this paper we argue that there is an opportunity to enhance and enable entrepreneurial open innovation initiatives through *valuation work*; a form of activity designed to equip entrepreneurs engaging in open innovation with practical understanding and resources to articulate the value of their work to others. To succeed, valuation work must draw from the situated and embodied knowledge of entrepreneurial practitioners and use this to shape the development of new practices. Critical forms of value in entrepreneurial activity can only be understood within the expert practice of the entrepreneurial team. Making this value visible is not a matter of external measurement or evaluation, but instead of equipping an entrepreneurial team with new resources, practices and languages that make recognising and articulating value a fruitful element of their ongoing practice.

We present interdisciplinary research that bridges the traditions of Management and Collaborative Design, to intervene in the work of an entrepreneurial open innovation team. Through ethnography, this paper explains how 'open innovation' and 'entrepreneurial' theories are used in practice (Mason et al. 2017) to identify and characterise the need for valuation work within the practice of an open innovation team, then problematise this transformation in practice. We describe an interventional co-design initiative to collaboratively equip them for current and future valuation work. We describe the configuration of this collaborative initiative, the co-design tools and methods used, and the material and practice outcomes it produced. We offer a discussion of the methodologies used in the research and their relationship with the valuation capabilities of the team before and after the project. From this we draw out preliminary insights for researchers seeking to enable valuation in entrepreneurial practice, and discuss the ability of collaborative design approaches to help entrepreneurial practitioners see and transform their practices. The structure of the research design also permits us to offer discussion on interdisciplinary working across research disciplines (management and design) and practice domains (management, design and policy making).

2. Understanding the Context: Open Innovation in Policy Making

The context for our research is the Open Innovation Team (OIT) within the UK Government Cabinet Office. The OIT is a new initiative responding to calls for government to capitalise on academic research and expertise, combined with an increase in the importance of demonstrable impact from the research of UK Higher Education institutions. The OIT was formed in 2016 with funding from four UK universities as a small, dynamic team to promote, scaffold and facilitate deep collaborative relations between policy-makers and academics in a three year experiment. In return for financial support, four universities were offered a package to support academics and students understanding the policy-making processes in government. Importantly, the activities of the team were explicitly open to any academic, from any university in the UK. The purpose of the team was to identify the key academics that could have a valuable impact on key policy-making initiatives across the UK Government.

The team consists of three permanent staff and six rotating PhD interns (each staying three to six months). They work to identify opportunities for OIT interventions, enrol departments in finding appropriate academic-policy collaborations, and mobilise officials and academics into specific, framed and timely engagements. This is challenging work that requires an entrepreneurial approach

from team members, crossing fluidly between desk-based research, identifying collaborators, finding opportunities, negotiating involvement and configuring collaborative working.

Open Innovation theory in practice

In April 2017, two of the authors (Mason and Ford) were invited to the Cabinet Office to present findings from their study of open innovation in a bioscience catalyst (see Mason, et al. 2017; Mason et al. 2018) and to explore opportunities to use these insights to inform the practices of the newly established OIT. The authors presented *open innovation* as the organisation, configuration and management of resources through which the innovation process happens, and making use of Chesbrough's (2003) definition as 'the purposive inflows and outflows of knowledge to accelerate innovation, and expand the markets for external use of innovation, respectively'. Though open innovation was originally developed in large technology-driven organisations, two features gave it particular relevance for the OIT. First, in traditional open innovation settings and in this governmental setting, no one group or organisation has a monopoly on ideas, requiring that every organisation engage extensively with external knowledge embedded in markets, networks and other key communities (cf. Chesbrough, 2006). Second, in open innovation theory, changes in a setting often acted as a catalyst for organisational change. Here post-2008 austerity measures called for public sector innovation in service provision, organisational practices and processes to leverage productivity and value. Many policy reforms and change initiatives are founded on exactly such conceptualisation, yet success remains elusive and challenging (see for example, Le Grand, 1991, 2006).

Subsequently Mason and Ford negotiated access for an ethnographic study of the OIT as they sought to support the OIT in re-situating and re-understanding technology-driven open innovation practices in a public service context. The objective was to uncover what was becoming valuable as an open innovation activity; to understand what mattered and what counted in this setting, in terms of mobilising distributed and fragmented knowledge across organisational and institutional boundaries to bring about both policy-making practices and organisational change. The ongoing ethnographic work began in June 2017, comprising 56 interviews with OIT members, six weeks shadowing key OIT members, and a further 37 interviews with officials and academics working with the OIT. Working abductively between their emergent observations and understandings, and the literature brought the authors to the entrepreneurship literature (cf. Garud et al. 2014).

Extra and Intra Institutional Entrepreneurship

Entrepreneurship has been most widely explored in extra-institutional contexts, where spin-offs or start-ups (cf. Vanaelst et al., 2006) are created outside of any formal institutional setting, where the entrepreneur is the business owner. In these contexts entrepreneurship has been understood as the discovery, evaluation and exploitation of goods and services (Eckhardt & Shane, 2003). Intra-institutional entrepreneurship (Garud, Hardy & Maguire, 2007), also referred to as corporate entrepreneurship (Zahra, 1991) recognises that entrepreneurial activity also occurs within organisations, defined as 'those activities that enhance a company's ability to innovate, take risk, and seize opportunities in its markets.' (Zarah, 1991: 259). These definitions were relevant in this work because they directed attention to certain kinds of *intra-institutional entrepreneurial* activities intending to drive institutional and cultural change, in the case of the OIT, through changes in practice within the government and across academic and government departmental organisational boundaries. *Intrapreneurship* was used as a dynamic concept adopting an underpinning ontology of 'becoming' in an unfolding process of experimentation and change (Garud, Hardy & Maguire, 2007).

The ethnographic work captured the ambiguity and uncertainty of the OIT's actions (cf. Garud & Van de Ven, 1992) through thick descriptions produced from shadowing activities, recording how members of the OIT re-searched and re-assembled the resources at hand, reconfiguring bricolages to deal with the challenges and opportunities that they encountered in enrolling officials, analysts and academics into specific policy-making efforts (cf. Baker & Nelson 2005). As a part of the ongoing work, authors Mason and Ford worked with the OIT to help them articulate and represent the emergent service 'offerings' so that they could enrol more academics and officials in their innovative policy-making initiatives (see Figure 1). However, in most of the observed cases, policy-making initiatives were owned by relatively senior officials in UK Government departments (rather than the OIT), meaning that these offerings were usually welcomed but were rarely acted upon due to time and resource constraints. Nevertheless, the OIT were 'very busy' and by the end of the pilot phase of their project had organised 58 Whitehall events, 46 academic collaborations, over 500 academic engagements and had intervened directly in 27 policy projects.

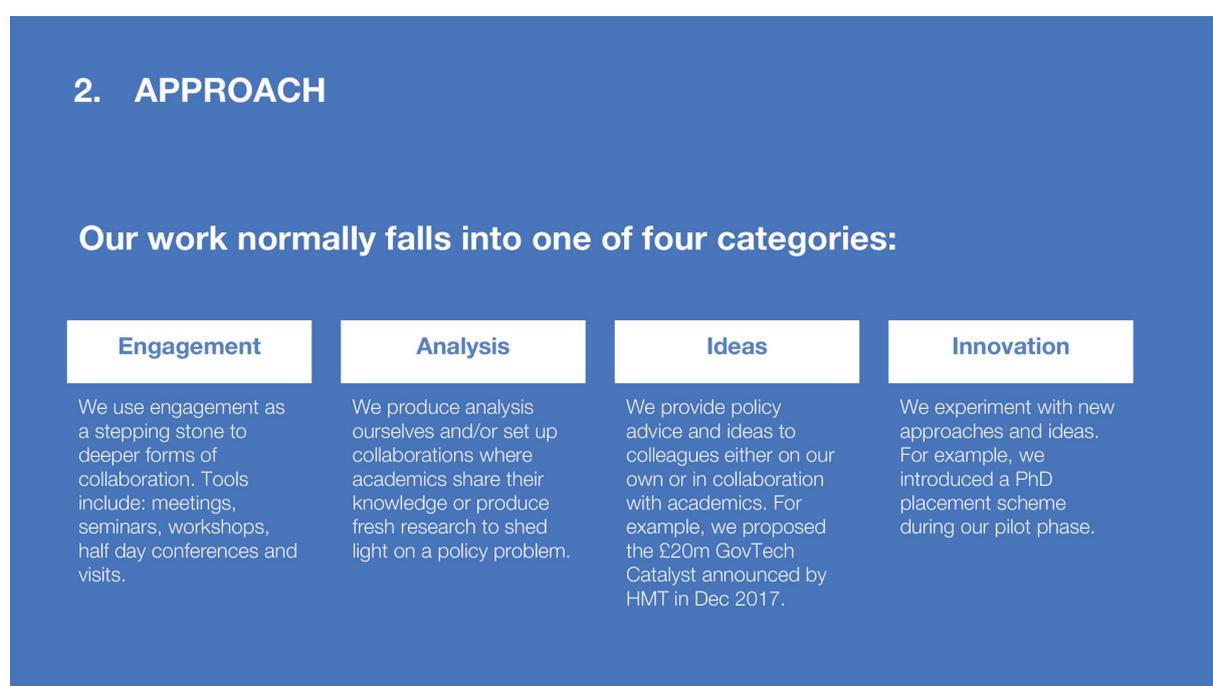


Figure 1. Output from a collaborative effort between Mason and the OIT to represent the emerging offering of the OIT

Over the duration of the ethnographic work, and despite multiple interviews, authors Mason and Ford had struggled to both identify and articulate the practical work that underpinned the OIT's offerings. They wanted to know where the different forms of work were situated, with whom, and with what materials they were performed. The ethnography had produced stories of particular interventions in fragmented forms, yet the OIT had achieved considerable success. Mason and Ford concluded that successfully articulating the value of the team was central to establishing the ongoing identity and legitimacy of the OIT, a goal frustrated by the diversity in team member's experience and understanding, and the divergent interests and needs of the external organisations and individuals they engaged. A second key observation from the ethnography was the dynamic nature of value the OIT created; there was a continuous process of 'becoming' assumed by the OIT, in terms of the changing team members, unfolding understandings of how government departments and academics might work together, and in emergent articulations of value. Working abductively between the literature and their empirical setting, Mason and Ford's analysis became increasingly focused on the 'calculative practices' (Miller, 2001: 379) that the OIT were performing (sometimes

with Mason and Ford's involvement) in an effort to work out what was valuable in the team's work, how to categorise and legitimise these forms of value as credible and accountable achievements of the OIT's work.

Value in intrapreneurship is widely recognised as problematic (Zahra, 1991). This is exacerbated when value propositions of a team are located across the different instances of a process of open innovation (Laursen & Slater, 2006). The understanding and practices that enable valuation become critical for those involved in entrepreneurial activity, specifically, in defining the value of the open innovation initiatives. Mason and Ford approached Whitham and Pérez to explore how design approaches might be able to produce, make visible or bring to hand fragmented articulations of value. We adopted a new interventional modality for the research, to investigate the role that tools might play in equipping the OIT to develop a new ontology of value and deploy it in their ongoing open innovation activities.

3. Collaborative design to enable valuation work

Our understanding of the valuation challenge the OIT faced turned on two interrelated challenges, (1) identifying where and how the entrepreneurial value was produced by the activity of the team, and (2) developing appropriate practices through which the team could articulate this value. The abstract goal of adopting new valuation practices was supported by the OIT leadership, yet bringing about real changes in the team's practice required new situated understanding within the team and new resources (conceptual and material) for use in their practice. Further, our understanding of valuation work required that changes in the team's practice would support ongoing and continuous valuation activity: There was no fixed solution to their valuation challenges, they would need to engage in new valuation work as their entrepreneurial activity engaged them with new stakeholders, policy areas and collaborative opportunities.

The challenge of understanding and transforming situated practices is represented within an extensive Design literature. Drawing on Participatory Design (PD) and co-design perspectives and methods, we configured an interdisciplinary collaboration between Management researchers, Design researchers and OIT members. Foundational work in PD directly addresses the challenge of understanding and transforming practice through collaboration, engaging with the expert knowledge of practitioners (Bjerknes et al. 1987; Ehn, 1988). The methods of PD can facilitate mutual learning between collaborators, and provide means of working that do not privilege the language and knowledge of the designer over that of the practitioner (Bratteteig et al., 2013). The focus of PD research on creating tools was particularly relevant as our intent was to collaboratively develop new resources and understandings to support the OIT in continuously transforming their practice (Ehn & Kyng, 1985; Ehn, 1988). Contemporary articulations of PD highlight the persistent infrastructural effects that collaborative design can have on practice after the involvement of designers and researchers ends (Björgvinsson 2008; Björgvinsson, Ehn & Hillgren, 2012). Artefacts produced during the 'design time' of a project may be appropriated and adapted during subsequent 'use time' well after the interventional contribution of designers ends (Redström, 2008; Bannon & Ehn, 2012).

Co-design tools and methods are relevant also to the design challenges and opportunities encountered in this work, offering ways of creatively and collaboratively engaging non-designers in describing problems and proposing solutions (Sanders & Stappers, 2008; Brant et al. 2013). In contrast with PD, co-design approaches place less emphasis on professional expertise (Steen, 2011), but provide means to simultaneously engage members of a team with heterogeneous backgrounds and disciplinary perspectives. Workshops figure prominently in both PD and co-design practice, and

in this research context offered a common conceptual and practical frame for collaboration across the researchers and OIT.

Conceptualising a valuation practice intervention

Through the theoretical lenses of PD the limited change in the OIT practice brought about through the ethnographic research phase can be readily explained. The new valuation work the OIT sought to undertake could be described abstractly, but the content of this work would need to be distributed unevenly across the expert, situated knowledge of team members. The recommendations from the ethnographic research were expressed in the theoretical language of Management research (in particular Management Practices, Open Innovation, Entrepreneurship and Valuation Studies). OIT members had practical expertise as open innovation entrepreneurs, and collectively functioned well as an entrepreneurial team, but their individual situated knowledge and practices were sufficiently diverse to make a collective change in practice difficult to imagine and bring about. We believed the team needed shared conceptualisations of the value in their work, shared resources to structure new valuation practices and the means to continuously develop these practices. PD approaches offered relevant conceptual and practical resources; a concern for the situated expertise and language of participants, and in creating infrastructures with ongoing relevance to practice.

Drawing on the 'tools perspective' articulated in PD literature (Ehn, 1988; Ehn, 1993; Steen, 2015) we conceptualised an interventional phase of this research in terms of *equipping* the OIT to bring about change in their practice. Using generalised co-design tools (e.g. Sanders et al., 2010) we structured a collaborative process to unpack and represent the expert practice of OIT team members, facilitating reflection sensitised by key theoretical understandings from Open Innovation, Management Practices and Entrepreneurship literature. This process would facilitate mutual learning between members of the OIT and the researchers, and crucially would build up new practices and reflective language amongst OIT members. Through facilitated co-design workshops the team would collectively experiment with expressing, representing and reflecting on their work, learning about the value in their work, but also the means of doing this together. Learning to show and share practice as infrastructuring; building new practice capabilities within the team (Sanders et al., 2010; Bjögvinsson, Ehn & Hillgren, 2012).

We also set out to equip the OIT by co-designing new tools with them. Here the focus was not on what the researchers could achieve collaboratively with the OIT, but on equipment to support the team's ongoing and continuous valuation work after the intervention. As in foundational PD tool design projects, we sought to create tools that fitted with the existing language and practices of the team (Ehn, 1988), while directing and accelerating the integration of valuation work in everyday practice. The theoretical emphasis here was on empowering new, creative uses of tools that are owned and respected by the team (Steen, 2015). The OIT's structure resulted in a high turnover of staff, making it critical to collaboratively materialise elements of nascent valuation practices in tools and resources that could pass between team members and help re-create valuation work practices.

Collaborative Design Activities

A collaborative design intervention was staged across three workshops (see Figure 2) in July 2018 nearby to the OIT's normal site of work in Westminster, London, UK. The authors collaborated intensively to design these events, combining expertise in workshop facilitation and tool design with context-specific understandings of the OIT's valuation challenges. We conducted interviews with team members in advance of the workshops to help refine the intervention design and build investment in the process.

	Workshop 1	Workshop 2	Workshop 3	Post-intervention
Facilitation Intent	<ul style="list-style-type: none"> • Mapping historical practice • Visualising diversity in team practices • Building visualisation and reflective capability 	<ul style="list-style-type: none"> • Discursive analysis of mapped practice • Identifying critical exchanges between stakeholders • Enabling in-depth reflection 	<ul style="list-style-type: none"> • Introducing and adapting the prototype framework • Mapping course of action • Finding indicators 	
Tools	<div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Individual Perspectives Tool</div> <div style="border: 1px solid black; padding: 2px; margin-bottom: 5px;">Timeline Skeleton Tool</div> <div style="border: 1px solid black; padding: 2px;">Timeline Lenses Tools People, Artefacts, Insights</div>	<div style="border: 1px solid black; padding: 2px; margin-top: 10px;">Exchanges Tool</div>	<div style="border: 1px solid black; padding: 2px; background-color: #e0f0ff; margin-top: 10px;">Prototype Framework Tools</div>	<div style="border: 1px solid black; padding: 2px; margin-top: 10px;">Courses of Action Tool</div>
Key Collaborative Findings	<ul style="list-style-type: none"> • Complexity of team practice • Readiness of the team to use visualisation tools 	<ul style="list-style-type: none"> • Specialised language of the team • Stakeholders relationship types and modalities • Value judgements made in practice 	<ul style="list-style-type: none"> • Non-linear open innovation practices • Potential new indicators for team success 	<ul style="list-style-type: none"> • Utility of framework tool in team practice • New value propositions for the team • New personnel requirements

Figure 2. Collaborative design intervention structure

The workshop series format was chosen to allow for reflection and action on the part of the authors and OIT members. The first two workshops were conducted on consecutive days, with a third workshop four weeks later. These timings required that the first and second workshops were planned in advance, but gave the authors almost a full month for reflection and data analysis to inform the design of the final workshop. This flexibility helped us transition from using conventional co-design tools and approaches in workshops one and two, to co-designing tools across the second and third workshops. We also introduced flexibility in to the structure of each workshop by preparing tools which could be deployed in different ways in response to participant’s abilities and preferences.

Workshop1: Mapping practice

Our key aim for the first workshop was to enable the OIT to reflect on their own expert practice. To this end we invited both existing and former OIT members to the event, and facilitated a process of collaborative visualisation to build a large-scale timeline of the team’s work over a historical 12 month period. Our approach was informed by the proven role visualisation techniques can play in supporting strategy definition, meeting facilitation and internal communication (Bresciani & Eppler, 2013). We knew the OIT regularly used whiteboards in their meetings, giving us confidence that we could engage team members with representing ideas this way.

To begin we introduced an *Individual Perspectives* tool, inviting each participant to visualise the entire team’s work. Sharing these perspectives helped to make visible differences and similarities in team members’ understanding of their collective work, and laid practical groundwork for further visualisation activities. We explicitly shifted the focus from representing ideal, abstract practice to capturing the actual, concrete activity of the team. We introduced a *Timeline Skeleton* tool, inviting team members to collectively map the intents that had underpinned their activity across two historical projects. Participants arranged these ‘intents’ on a large wall (approximately 8x2m) to form

two parallel timelines of team activity over a 12-month period (Figure 3). This activity brought a collective sense of achievement, both in having constructed the representation, and seeing the volume of parallel activity they had undertaken as a team.



Figure 3. Collaborative visualisation of past team activity in the first workshop

We then introduced three *Timeline Lens* tools to collaboratively add detail to the timeline representation from specific theoretical perspectives: people, artefacts and insights. These categories were selected based on earlier empirical and theoretical research to prompt participants to identify the people they interacted with (eg. academics, practitioners, policy makers), the materials they produced or used in their work (e.g. emails, reports, search, books, etc.) and the key insights that shaped their open innovation practice. Participants used each lens tool in series, adding layer stickers, graphic and written annotation on the timeline. The completed timeline supported fruitful reflective discussion on the work of the team, and importantly had been produced through visualisation techniques that the team had deployed themselves and felt some ownership of.

Workshop 2: Interrogating practice and value

The second workshop took place the day after the first in the same venue, but with only senior members of the OIT. Our key aim was to use the timeline representation created in the first workshop to support detailed discursive reflections on the team's practice. Using the timeline as a structuring device, we asked individual team members to narratively describe particular open innovation initiatives in detail, inviting researchers and OIT members to seek additional detail through questioning. This approach allowed the authors to draw out fresh insights, and for OIT members to share details of their expert practice with one another. To further enhance reflection we introduced an *Exchange Tool*, applied to the timeline by participants to identify critical exchanges between individuals and organisations and the perceived value judgements that underpinned specific projects.

With a smaller number of participants and a common conceptual framework in place, the second workshop could take on a more fluid, discursive modality in comparison with the first. At the end of the workshop the authors shared their own reflections and discussed collaboratively designing new tools with the OIT. This discussion revealed the immediate value of visualisation and reflection for the participants, and their willingness to experiment with visualisation tools in future practice.

Preparation for Workshop 3

After the two workshops, the research team analysed the data gathered in recordings, images, observations and notes to synthesise them and make sense (Kolko, 2010) of the language used by the team in critical stages of the OIT’s work. These were distinctly non-linear, moving bi-directionally between ‘front-end’ scoping activities, background desk research and directed engagements with potential collaborators. From this insight we developed a prototypical high-level framework that could be used to visually map instances of the team’s practice. The prototype framework represents the operations of the OIT in bringing two groups together (i.e policy makers and academics) to collaborate in policy-making processes, and is intended to reference linear representations of open innovation processes (following a funnel-like visual metaphor) and the reality of the team’s non-linear working practices that form collaborative bridges between groups (Figure 4). This representation was shared with the OIT leadership for feedback prior to the third workshop.

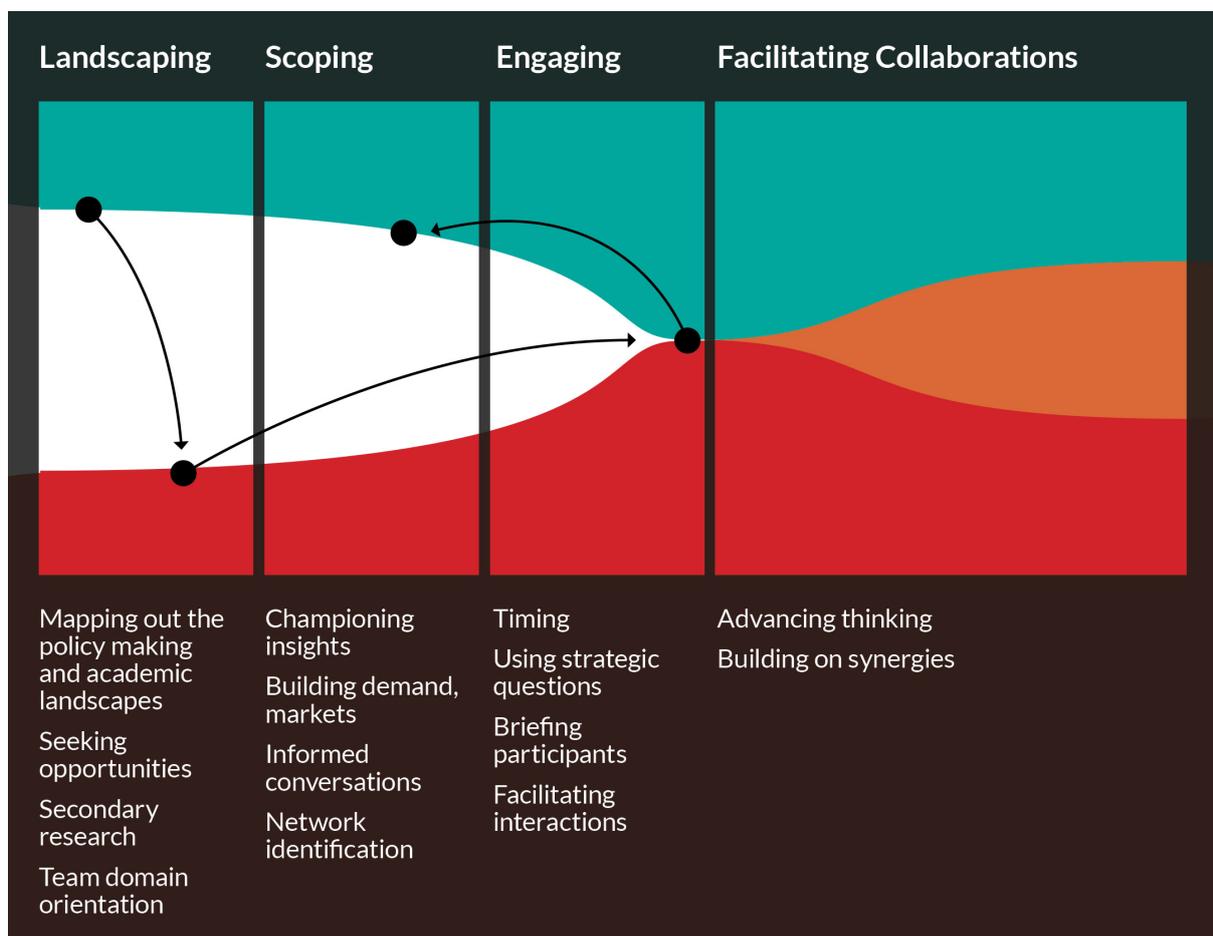


Figure 4. Prototype framework tool with an example course of action annotation

Workshop 3: Experimenting with new valuation practices

The third and final workshop of the collaborative intervention brought together senior OIT staff with researchers to experiment with new ways of describing the work of the OIT, and in turn building capacity for new valuation dialogues and approaches. We introduced the prototype framework to participants, explaining the language proposed and how the non-linear work of the team might be represented using it. After initial discussion of the prototype framework we introduced a *Courses of Action* tool that invited participants to adapt the structure and language used in the prototype framework, then map the key actions and events that punctuated particular initiatives within their

own open innovation work. This produced visual narratives of individual team member's work, crossing back and forth across the phases of the prototype framework (Figure 4). The visual representations proved effective as a reflective tool for past action and as an analytical tool that could be used to identify practice-based indicators of success. The workshop concluded with an open discussion of value identification and value articulation in the team's work and the handover of tool materials to the team.

4. Outcomes

Follow up interviews with OIT members identified immediate and ongoing impacts from this research. As a result of the visualisation and reflection activities in the first and second workshops, OIT leadership re-framed their 'competency framework' used in recruitment and training, foregrounding the entrepreneurial and network-forming skills needed in team members. Reflection on the workshops by OIT members highlighted persistent outcomes as a result of seeing first time "how things work" within their practice, allowing them to understand and attach new language to the unique role and capabilities of the team.

The prototype framework tool co-designed with the authors has been put to work by the team in slide packs and presentations reaching out to academic and policy-making audiences. Here the framework has proved useful as a means to explain the work of the team to others, and has been adapted by the team to also describe the process of connecting together government departments with one another. The team have broadened the scope of their work, seeking to offer open innovation services and consultancy to foreign governments, and are using the framework tool to support these dialogues. Further, OIT members report drawing on the visualisation and facilitation approaches deployed in the design intervention in their subsequent engagement work, shifting from fixed engagement structures and processes to more flexible, co-productive approaches to new conversations as they seek common fertile ground with potential partners. As an outcome of the project we developed generalised versions of the co-design tools used in the design intervention and made them available freely online (see www.lancaster.ac.uk/openingvaluation).

5. Discussion

The outcomes of this research for the OIT show the potential of collaborative design to equip open innovation entrepreneurs for valuation work. Sustaining open innovation initiatives requires proactive work to make valuable activities that may otherwise be incommensurable to the 'calculative practices' of funders and potential collaborators (Miller, 2001:379). Bringing together diverse values, understandings and expectations is what makes open innovation initiatives so rich in collaborative potential, but can also frustrate attempts to produce shared standards and conceptions of value. Our research revealed how within an organisation such as the OIT, the diversity that characterises open innovation extended into understandings and practices of the team itself. Initiating novel, powerful collaborations means bringing together groups and individuals who have not worked together before, requiring that the open innovation practitioner adapt their understanding to connect with potential partners. Successful open innovation and entrepreneurial practice is characterised by a dependence on the situated knowledge and capabilities of the practitioner (cf. Mason et al., 2018), but the fragmented understanding and practice in the OIT made it very difficult to conceptualise or prescribe new valuation practices.

In configuring the collaborative design intervention we recognised the fundamental limitations of our ability as researchers to transform the team's practice. The collaborative design approach used in this project enabled the team to collectively connect their expert practice together to represent the overarching practice of the team, equipping them to increase and communicate the value of their innovation processes. We positioned the limited design resource available for the intervention as a catalyst for reflection by the team and for constructive work to experiment with and materialise new components of practice.

The success to date of our approach points to wider potential to equip practitioners of open innovation and entrepreneurship through collaborative visualisation of their practice and the co-design of new specialised tools. We believe that the potential of this approach turns on equipping practitioners to see and to change their practice both within the intensively-resourced context of a collaborative design workshop and subsequently in their everyday work. For open innovation challenges such as the development of new valuation work capabilities, this approach can give practitioners and teams with a heavy reliance on situated, practical knowledge a route to draw on their knowledge and audition new practice.

As a case of multi-disciplinary research, this project offers an example of a productive synergy between the descriptive insights of ethnography, the theoretical understanding of management research and the interventional methods of collaborative design. During the project the researchers invested significant time in developing a shared understanding of each other's perspectives, allowing insights and possibilities to cross between disciplinary contexts. Key insights relating to the research context were successfully translated from the theoretical language of Management Practices in to the material and processual forms of the collaborative design intervention. We found that presenting theoretical perspectives as co-design tools (such as the *Timeline Lenses* tool) made them accessible and usable to OIT members in a way that verbal and written theoretical analysis had not. Visualisation proved a key common ground, linking together understandings within the research team and those of the OIT.

6. Conclusions

In this paper we have described a collaborative design initiative focussed on equipping the OIT to collaboratively visualise and analyse their practice, leading to persistent change in the team's (1) conceptualisation of their work, (2) articulation of value in their work to others, (3) engagement practices, and (4) recruitment practices. Drawing on ethnographic research, the authors realised that a shared understanding of the OIT's current practice and value did not exist, and only OIT members had the knowledge to produce it. Through collaborative design workshops the team gained a new perspective on their collective expertise, the complexity of their work, and their unique capabilities within UK Government. By co-designing specialised tools the team gained new resources (material and conceptual) to articulate the structure and value of their work. The new practices these outcomes lead to did not need to be actively adopted by the team, instead they were co-produced by the team with ongoing connectivity to their existing practice.

The initiative reveals the potential for collaborative design approaches to equip entrepreneurs to perform valuation work, and for ethnographic and theoretical insights from management research to inform and enhance such approaches. The research shows the potential of co-design methods to connect distributed and fragmented expert practice in entrepreneurial open innovation teams, and to catalyse reflection and materialise new resources for practice that can enable new valuation work. The ongoing impact on the practice of the OIT suggests the potential of co-designing tools for

practice with entrepreneurs and open innovation practitioners, an area we intend to address in future work with the OIT and in new open innovation contexts.

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