Designing temporary digital organizations for complex problem solving

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Complex problems vary from 'grand challenges' and 'wicked problems', to organizational challenges without a simple solution. They are ambiguous and open-ended, requiring specialized and multi-disciplinary knowledge. Specialized knowledge is by nature path-dependent and dispersed, and usually there is no spare capacity available. As organizations lack the required knowledge and slack resources to tackle such complex problems, researchers have called for new organizational forms, that would be more fit to tackle societal grand challenges (Ferraro et al. 2015, George et al. 2016).

Organization design can be seen as a problem-solving system for collective action needed to tackle grand challenges (Bauman et al. (2021). Its focus is on how organizations can align for environmental demands (Lawrence & Lorsch, 1967). It is increasingly interested in the ecosystems, communities, and the management of distributed innovation in dynamic ecosystems (Baldwin, 2012; Bauman 2019). IT and fast developing digital solutions have become an important part of the organizing design (Zammuto, 2007; Burton, 2012; Puranam et al. 2014) first by lowering the information costs in dispersed knowledge production (Kogut & Zander, 1992; Grant & Baden-Fuller, 2004). Second, digital platforms afford action and generate new practices for interaction (Leonardi, 2013; Menz et al. 2021).

This paper explores how temporary digital organizations can be designed for solving complex problems. It integrates design elements from temporary organizations (Goodman & Goodman, 1976; Lundin & Söderlund, 1995; Bakker, 2010), online knowledge communities (Faraj et al. 2016) and temporary teams (Ancona et al. 2021; Wageman et al. 2012) into temporary digital organization. In this paper the temporary digital organization is defined as "a facilitated generative space for cross-boundary actors' engagement in knowledge integration for collaborative innovation".

Research context

Fast expert teams (FET) organizing goal is to solve complex and open-ended tasks through engaging diverse and specialized experts across professional, organizational, and sectoral boundaries for collaborative innovation. For Fast expert teams vs. Covid-19 in 2020 the mission was stated explicitly as "Let's prevent Finland from paralysis". For Fast expert teams & hybrid work (FET2021) the goal was based on WORK2030 mission to "create world's best working life by 2030". Author was involved in designing and leading first one set up in March 2020 with 100 experts in Covid-19 crisis with a mission to prevent

Finland from paralysis, and second in non-crisis context in April 2021 to explore hybrid work with 80 work life experts. Experts were invited to join pro bono and part-time for four weeks to the digital community and temporary teams working with specific sub-tasks. Rich data was collected (interviews, focus groups, recorded meetings, meeting memos, drawings, textual and visual digital artifacts from the collaboration platform) for research use. Based on these experiences a third temporary digital organization was set up in spring 2022 for three weeks with 80 experts to work with regional strategy. This was organized and led by experts and facilitators participating in earlier initiatives. Author has documented the past experiences, including some smaller initiatives, for practitioner workbook available online: https://online.flippingbook.com/view/705096259/

Insights from designing Fast expert teams

In the following FET is analyzed based on Puranam et al. (2014) typology of the universal problems in organizing, i.e., how the integration of effort and division of labor is designed. First, we explore the integration of effort (Figure 1).

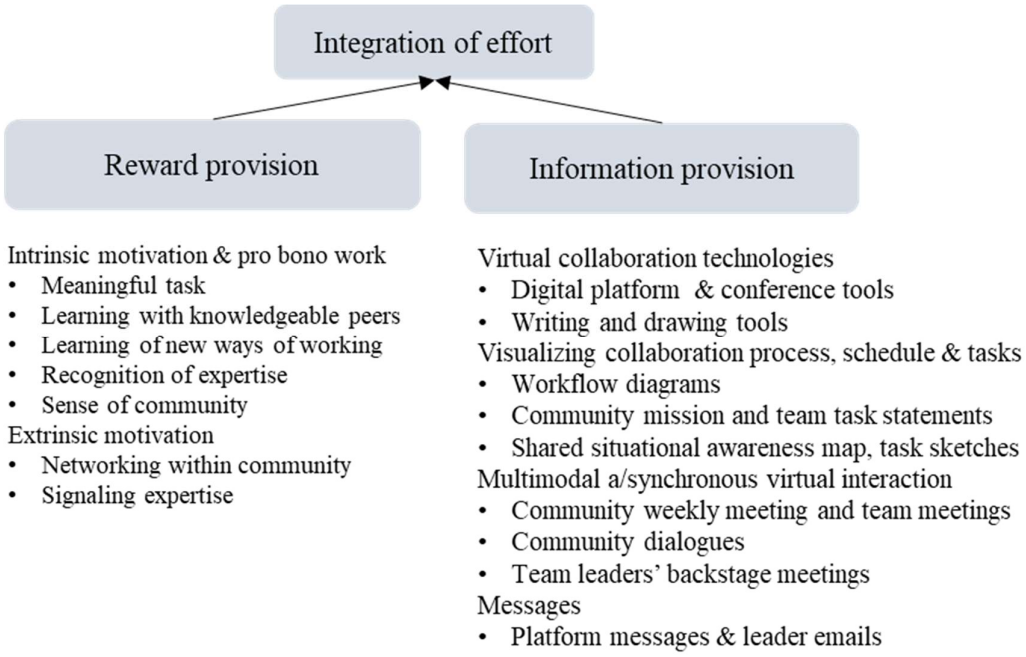

Figure 1. Integration of effort in Fast expert teams

Integration of effort is accomplished by designing reward provision to motivate collaboration, and information provision to support the coordination (Puranam et al. 2014). *Reward provision* consists of a bundle of non-monetary benefits such as meaningful task, learning with knowledgeable peers, learning of new ways of working, and sense of belonging supporting intrinsic motivation. Extrinsic motivation is supported by an

opportunity to signal expertise and networking opportunities. *Information provision* uses IT and virtual collaboration technologies for connection, transparency, and visualization for designing dispersed temporal organizing. Short synchronous weekly online meetings, together with asynchronous conversation and shared digital artifacts afford information and situation awareness. Creating common ground is supported by community dialogues where peers share insights and experiences for others to join conversation before, during, and after the event. Multimodality (written text, visuals, videoconferencing), asynchronous collaboration, and mindful use of synchronous time are the guiding principles in creating the rich and temporally flexible communication. Next, we describe the division of labor (Figure 2).

Division of labor refers to the breakdown of the organization's goals into contributory tasks, and the allocation of these tasks to individual members within the organization (Puranam et al. 2014, 165).

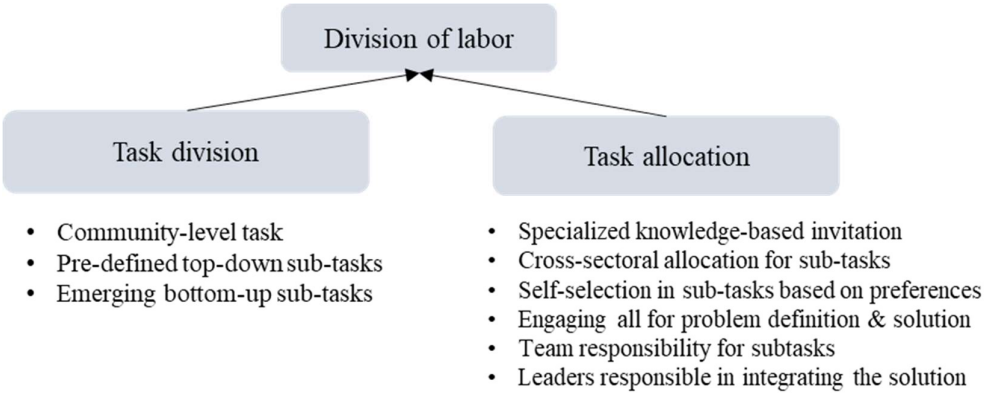

Figure 2. Division of labor in Fast expert teams

Task division consists of the community-level main task that is divided into subtasks from top, or they emerge bottom-up. Main task and subtasks are open-ended and evolving in the task/problem definition process making the knowledge architect (Baldwin, 2010) role in composing the final concept critical. *Task allocation* is based on specialized knowledge, and invitation to the community. Leaders foresee that teams are composed across borders, otherwise participants can self-select into subtask teams. Community and team leaders engage all from problem definition until conceptualizing the solution, yet they have the authority and responsibility of the final solution.

Leadership is non-hierarchical and shared. Collaboration process design emerges based on community and team leaders' co-design. Decision-making is carried in a distributed and situated manner. Teams are given freedom to design their way of working. Team leaders work as pairs and communicate at the digital "backstage" with other leaders to adjust collaboration process dynamically.

Conclusion

Fast expert teams is an example of designing temporary digital organizations for solving complex problems based on multi-disciplinary knowledge and multi-sectoral expertise. It has been applied in fast cross-sectoral organizing for Covid-19 crisis and hybrid work at national level, strategy implementation at regional level, and solving product-market fit at internationalizing company level (Fiol et al. 2015). Is Fast expert teams a new organizational form? Based on initiative outcomes and feedback FET initiatives have been successful (de Silva 2022), but whether it is a new form of organizing (Puranam, 2014), and how well the different design elements fit together, is a question to be explored in further research. One of the critical issues for its sustainability is how it can coexist with the formal "home" organizations, and whether they have the cultural, structural and process readiness for fruitful coexistence.

Based on lessons learned the participating individuals, organizations, and society can benefit from FET in various way. Echoing Bernacchio et al (2022), at best solving complex problems collaboratively could create new opportunities and practices for societal good, excellent organizational products and services, as well as flourishing human lives.

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