

Transitioning to smart eco-systems: the importance of intermediaries in *scaling-up* social innovations

Our research analyses mechanisms and actors allowing the upscaling of creative and entrepreneurial initiatives to contribute at the transition to smart cities and smart territories. The dynamics that those actors and mechanisms enable (or not) between the micro- and the macro-level are often presented through the concept of middleground. We compare the different approaches provided in the literature and make a link with the context in which they seem to apply. Our study hopes to contribute to a better understanding of the scaling-up process, with the ambition to provide useful knowledge for social (societal) innovators to develop conscious strategies in order to make their contribution more powerful and for decision-makers to design more effective supports and tools for these innovations.

‘Game-changing events’ (Haxeltine, 2013), as climate change, aging and poverty, are shaping the society we live in. In this context, traditional economic and policy-making solutions seem to struggle in addressing the biggest challenges of our time (Murray et al., 2010). Transformative innovations in services, but also in processes and organisational rules, must be designed, in order to facilitate and organise the transition to smarter eco-systems. To favour the emergence of creative solutions, governments have developed innovation policies focusing on creativity based on the controversial contribution of Florida’s (2002). However the mechanisms to scale up creative initiatives in order to reach transitions to the needed societal changes are unclear. Similarly, an interesting debate is developing on the scaling-up processes of social innovation with the objective to better understand the transformative process of the ecosystem. Nicholls and Murdocks (cited in Shockley, 2012) consider social innovation as the next major change in the modern history following the technological-economic waves. Social innovation has been mainly a practice-led field but a rich literature has been flourishing recently.

In their anatomy of the creative city, Cohendet et al. (2010) propose an answer to this question through three interconnected layers: the underground, the middleground and the upperground. At the individual level, the underground gathers creative, cultural and artistic activities taking place in an informal environment. The upperground represents the city eco-system made of institutions, companies, etc. Because of their very different dynamics and culture, these two layers rarely interact. The third layer, the middleground, is made of communities that connect creative ideas from the underground to the upperground and its financing capacities and support (Cohendet and al., 2009).

Furthermore, Moore and Westley (2011) suggest that societies, as human-ecological systems, are complex systems that have to innovate to be resilient. They use network theory and resilience theory to propose an adaptive cycle scheme. They also develop the concept of the system entrepreneur, who is in charge of crossing the scales to lead the innovation from the micro- to macro-scale.

Another contribution, from Murray and al. (2010), describes a six-steps process that leads ideas from micro- to macro-scale: (1) prompts, inspirations and diagnoses, (2) proposals and ideas, (3) prototyping and pilots, (4) sustaining, (5) scaling and diffusion, (6) systemic change. This process is not linear and includes feedback loops (Murray and al., 2010). The dynamics of this process is also based on intermediaries that link ideas, people and resources. They can take various forms such as networks, individuals or organisations.

For their part, Wheatley and Frieze (2006) develop the concept of emergence; they consider that transformations are brought through local efforts connected through networks that become communities of practice and create a new system of influence.

In his theory of social change, the sociologist Tarde explains the spread of an innovation from a micro perspective (Howaldt and al. 2013). He focuses on the importance of inventions, of which imitation creates a change phenomenon. Imitation implies variation, which creates innovations and a social learning process (Howaldt and al. 2013).

On their part, Christensen et al. (2006) introduce the concept of catalytic innovations, as a subset of the disruptive innovations. Their specificity is that they are meant to produce social change, often at a large scale. In this theory, the innovation goes from the micro-level to the macro-level because it is good enough for the majority of users and it is cheaper, thus more accessible and attractive to an important group of people. This high number of potential users has the power to create a systemic social change by adapting their practice to the new proposition. In this case, the intermediary is the user himself by his engagement in the development and the replication of the innovation. Transformational stakeholder's engagement (Birkinshaw and al., 2011) is fundamental to reach transformative change.

This short literature review demonstrates that scaling-up process is crucial to the transition challenge. To face this challenge, intermediaries (middleground, system entrepreneur, imitators, users) seem to be keys. Our research aims at analysing those intermediaries, their roles and the dynamics they enable (or not) between the micro- and the macro-level through the concept of middleground, taking into account the context in which those mechanisms seem to apply successfully or not.

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