



Government-affiliated intermediary organisations as actors in system-level transitions



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ABSTRACT

The article draws from two theoretical fields, innovation intermediation and sustainability transitions, to examine the role of government-affiliated intermediary organisations in system-level transitions. The role of intermediaries working between actors – producers and users, entrepreneurs and adopters, idea generators and funders – has seldom been specifically addressed in the transitions literature. Thus, the role of intermediary organisations in enacting change in socio-technical regimes, particularly of intermediaries falling between traditional public sector and private sector actors, is of interest in this article. Empirical analyses of two Finnish organisations, Sitra and Motiva, show that government-affiliated intermediaries are likely to engage in strategic niche management processes in diverse ways, each organisation having its own distinct characteristics. The analysis also points out that to get from niches to transition, sustained systemic intermediaries are crucial in articulating new visions and expectations. Government-affiliated intermediaries may make an important contribution to sustainability transitions by initiating and managing new policy or market processes and by acting as an impartial contact point or voice for new networks of actors. While independence from public administration is likely to facilitate networking, too neutral a stance or limited temporal engagement may reduce the transition-facilitating effects.

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1. Introduction

Interaction, joint activities and problem solving between varieties of actors are crucial to create innovation-facilitating socio-technical transitions¹ towards environmental sustainability. Intermediaries working between actors – producers and users, entrepreneurs and adopters, idea generators and funders – have a role to play in bringing actors together and facilitating joint activities. Indeed, intermediaries have been argued to be frequently engaged in emerging technological and scientific developments (Boon et al., 2011). Yet intermediary organisations as part of sustainability transitions, particularly in the energy regime, have been little studied. Studies of innovation intermediaries have largely focused on agriculture (Klerkx and Leeuwis, 2009; van Lente et al.,

2003) and health sectors (Boon et al., 2011) and, even then, rarely from the transitions perspective.

Literature on socio-technical transitions acknowledges that actors and agency are important in the creation of ‘niche innovations’ and regime transitions (e.g. Geels, 2012; Jørgensen, 2012). However, the explicit role of intermediaries working between actors is seldom addressed (cf. Hargreaves et al., 2013). Indeed, van Lente et al. (2003) argue that ‘systemic intermediaries’ are important in long-term and complex changes, including transitions to sustainability. Thus, the potential roles of intermediary organisations in enacting change in socio-technical regimes are of interest. The article draws from two theoretical fields, innovation intermediation and sustainability transitions, to provide novel insights on the role of intermediaries in transitions.

Literature on intermediaries is most established in the context of innovation intermediaries (e.g. Howells, 2006; Klerkx and Leeuwis, 2009; Stewart and Hyysalo, 2008). They have been defined as “actors who create spaces and opportunities for appropriation and generation of emerging technical or cultural products by others who might be described as developers and users” (Stewart and Hyysalo, 2008, p. 296). A range of organisations, such as consultants, brokers, agencies, innovation centres and science parks, and roles have been identified to belong to this group (Bessant and Rush, 1995; Boon

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¹ Socio-technical transitions are described as fundamental change in socio-technical regimes (the ‘deep structures’ of dominant socio-technical systems (Geels, 2011)), incorporating not only technological change but also changes in user practices and institutional structures, resulting in new modes of production and consumption (Markard et al., 2012).

et al., 2011; Howells, 2006).² Intermediaries have been described to range in their reach over the production-supply-use chain (from short to long) and the breadth of content (from thin to fat), the latter referring to the range of products and services (Stewart and Hyysalo, 2008).

Due to limited interests of private actors to act as catalysts for sustainability transitions (e.g. Turnheim and Geels, 2012), this article particularly focuses on *government-affiliated* intermediary organisations, such as quasi-autonomous government agencies, government-owned companies or government-initiated foundations, as they fall between traditional public and private sector actors. They provide an alternative or complement to traditional policy instruments but yet differ from business-based intermediaries, whose actions are typically determined by profit.

Combining the above literatures, the article addresses two research questions: (1) what kind of roles may government-affiliated intermediary organisations take regarding socio-technical transitions, particularly strategic niche management, and (2) what aspects of intermediation appear particularly important for sustainability transitions based on the empirical findings? The article creates a novel analytical framework to examine and compare two government-affiliated intermediaries in Finland, Sitra and Motiva, and their activities regarding energy system transitions. The potential influence of government-affiliated intermediaries on system transitions is more tentatively explored.

The article is organised as follows. Section 2 summarises previous literature on innovation intermediaries, examines transitions literature from an intermediary perspective and presents the analytical framework. Empirical cases and data are presented in Section 3, followed by findings in Section 4. Section 5 discusses the findings and Section 6 concludes the article.

2. Intermediaries and transitions

2.1. Literature on innovation intermediaries

Broadly, literature on intermediaries linked to energy transitions can be grouped into articles dealing with innovation intermediaries (Bessant and Rush, 1995; Boon et al., 2011; Howells, 2006; Klerkx and Leeuwis, 2009; Stewart and Hyysalo, 2008), energy intermediaries (Backhaus, 2010; Hodson et al., 2009; Rochrach, 2009), and cities as intermediaries in urban transitions (Hodson and Marvin, 2010; Perry and May, 2010). Intermediary organisations' role in sustainable system transitions has only been identified in a few instances (e.g. Klerkx and Leeuwis, 2009; van Lente et al., 2003).

Innovation intermediaries have been fairly widely discussed in the context of science and technology studies. A variety of activities, or roles, have been identified, that can shortly be grouped into facilitating, configuring and brokering (Stewart and Hyysalo, 2008). The several potential roles of innovation intermediaries include articulation of needs and requirements; identification, generation, combination and dissemination of knowledge; identification, selection, management and allocation of financial and human resources; (neutral) arbitration and brokering; facilitating learning and collaboration within networks of actors; prototyping and piloting; technology assessment and evaluation; accreditation and standard setting; investment appraisal and business planning, and; training, education and communication (Bessant and Rush, 1995; Howells,

2006; Klerkx and Leeuwis, 2009; Stewart and Hyysalo, 2008). Some of these roles relate well to functions and processes identified important for the creation of new niches (Schot and Geels, 2008; van der Laak et al., 2007) or technological innovation systems (Suurs and Hekkert, 2009) supporting transitions, although the connection has not previously been made. Often innovation intermediaries are described as seeking neutrality and credibility in the eyes of those they intermediate between, while there are also issues that may compromise this neutrality (Klerkx and Leeuwis, 2009). Moreover, intermediary organisations have been described as hybrid and boundary crossing (Boon et al., 2011), and, therefore, may have the capability to cross or even destabilise socio-technical regimes. Their temporal extent is rarely discussed.

In the literature review, only four articles were found, in which intermediaries have been explicitly mentioned in connection to socio-technical transitions. van Lente et al. (2003) discuss systemic intermediaries that are important for transitions and differentiate them from more traditional intermediaries. They define systemic intermediaries to have the following roles: demand articulation and strategy development, alignment of actors and possibilities, identification and mobilisation of actors, organising discourse and seeking for consensus, management of complex and long-term innovative projects, creating conditions for learning by doing and using, and feeding actors with tailor-made information (van Lente et al., 2003). Klerkx and Leeuwis (2009) recognise 'systemic intermediaries for the support of innovation at higher system level' as one type of innovation broker in Dutch agriculture. Hodson and Marvin (2010) explicate a need for new intermediary organisations to coordinate urban and socio-technical transitions, and see intermediary organisations set up to intervene in existing systems as a central part of new governance forms. Backhaus (2010) sees the role of intermediaries as bottom-up policy implementers that can also support the establishment of new actor networks and articulation of interests to bring about change. Only van Lente et al. (2003) and, very recently, Hargreaves et al. (2013) address intermediaries in connection to transition theories.

2.2. Intermediaries perspective on transitions research

Studies on sustainability transitions highlight difficulties in destabilising existing, non-sustainable socio-technical systems and in niche innovation breaking into mainstream (e.g. Markard and Truffer, 2006; Raven and Geels, 2010). The extensively developed *multi-level perspective*, one of the key aspects of transitions research, argues that interplay between three different levels – niche, regime and landscape – is needed (Geels, 2005). Yet it is rather obscure about what concretely needs to happen. A typology of transition pathways (Geels, 2011; Geels and Schot, 2007) somewhat concretises transition by listing actors and events but does not recognise intermediaries as among the main actors, though the creation of new networks, often crucial for transition, is certain to require some intermediation. In effect, intermediation potentially contributes to transitions through disturbing existing structures, practices and behaviours from two levels: (1) niche creation and (2) regime (de)stabilisation.

In the multi-level perspective, the emergence of new, alternative niches in 'protected spaces' against mainstream selection environments has been viewed necessary to spur changes that would later enable wider systemic transition towards environmental sustainability (e.g. Geels, 2005; Raven, 2006). Although much attention has been paid to niche protection since the late 1990s (Kemp et al., 1998; Markard et al., 2012), the role of intermediaries in niche development has been little studied (Hargreaves et al., 2013). Many studies examining niche-level energy-related processes have shown that boundary-crossing innovative actors, new networks and learning across boundaries are important (e.g.

² The intermediary nature of organisations varies in that not all activities of a specific organisation necessarily relate to intermediation. Here, intermediary organisations are perceived as organisations having a high focus on and/or high proportion of activities related to intermediation.

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