An organisational perspective on the cluster paradox: Exploring how members of a cluster manage the tension between continuity and renewal

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ABSTRACT

Clusters face what has been referred to as a 'cluster paradox'; a situation in which a collective identity breeds cohesion and efficiency in inter-organisational collaboration, yet it hinders the variety needed to adapt to disruptive change and prevent lock-in situations. Accordingly, a recurring theme in the literature on cluster evolution and cluster life-cycles is the need for constant renewal to allow clusters to adapt to a changing environment. However, how individual firms enact a process of cluster renewal and consider possible response options is not well understood. Using a French energy cluster as empirical setting, this paper investigates individual members' enactment of the renewal in terms of how it could affect their current position, both structurally and relationally, and to what extent members felt that they had agency to steer the process to safeguard their position. The findings show that members' enactment of the proposed change does not only depend on the perceived impact of cluster renewal on the member itself but also on the impact the renewal might have on other members in the firm's network. The analysis also suggests that cluster renewal leads to a leadership vacuum where it is not clear who, if anyone, will lead the renewal process.

1. Introduction

A common assumption in the cluster literature is that a shared vision is what binds members of a cluster together (Morosini, 2004; Pitelis, 2012). If cluster members have a common understanding of the main objectives of the cluster, it creates a collective identity in terms of what the cluster stands for and how outsiders see it (Beebe et al., 2013; Staber, 2010; Staber and Sautter, 2011). A shared vision is considered an important boundary condition for clusters to function (Pitelis, 2012) because it stimulates the inter-organisational relations between members; these, in turn, facilitate the materialisation of economic benefits deriving from geographical proximity, such as spatially bounded knowledge spillovers (Maskell, 2001; Morosini, 2004; Suire and Vicente, 2014). However, the downside of a strong collective identity is that it might create too much uniformity in a cluster (Staber and Sautter, 2011). If all cluster members think alike, they might turn a blind eye to disruptive change in the external environment that requires the cluster to adapt and move in new directions (Grabher, 1993; Martin and Sunley, 2011). Consequently, a cluster could suffer from a lock-in and move into decline (Martin and Sunley, 2006; Østergaard and Park, 2015).

Clusters face what has been referred to as a 'cluster paradox', that is, a situation in which a collective identity and homogeneity breed cohesion between members and efficiency in inter-organisational collaboration, yet hinder the variety needed to adapt to disruptive change and prevent lock-in situations (Menzel and Fornahl, 2009; Tichy, 2001). Accordingly, a recurring theme in the literature on cluster evolution and cluster life-cycles is the need for constant renewal, allowing clusters to adapt to a changing environment (Baglieri et al., 2012; Martin and Sunley, 2011; Menzel and Fornahl, 2009; Nooteboom, 2006; Suire and Vicente, 2014). While this literature shed light onto how clusters as a whole deal with the cluster paradox, it partly overlooks how individual members deal with the tension between continuity and renewal. Cluster renewal might be beneficial for the longevity and resilience of the cluster (Suire and Vicente, 2014), but it may lead to tensions between individual cluster members. Existing members might, for example, resent a change in cluster dynamics from bringing in new members, as this could marginalise their role. Individual members might not consider what is beneficial for sustaining the cluster as being favourable for them. Cluster renewal aimed at preventing lock-ins might thus lead to inter-organisational conflict because it shakes up various balances within the cluster, such as between large incumbents (so-called anchor

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tenants) and small firms (Aharonson et al., 2007; Baglieri et al., 2012; Hervás-Oliver and Albors-Garrigos, 2014); between cooperation and competition (Newlands, 2003); or between the creation of fundamental research and applied knowledge (Suire and Vicente, 2014).

This paper investigates how individual members of a cluster deal with the tensions arising from the countervailing pressures for continuity and renewal that may emerge in a cluster. Conceptually, we use an enactment lens which emphasises that organisations construct their own meaning of changes in their environment based on preconceptions and, in so doing, try to align such changes with their preconceptions (Weick, 1988; Weick et al., 2005). Accordingly, we examine how members' preconceptions of cluster identity and internal relations affect their perception of a proposed renewal and how this enactment process informs their consideration of potential responses to the renewal. Since cluster renewal might be advantageous for some but not for their collaborating partners, our analysis focuses on the way in which members enact cluster renewal while knowing that it affects their own structural and relational position in the cluster as well as that of others. In this context, structural position refers to members being at the core or at the periphery of the cluster (Suire and Vicente, 2014), while relational position denotes the nature of the relationship between members, that is, whether they have cooperative and trusting relationships or relatively more competitive and contentious relationships (Newlands, 2003).

To analyse how cluster members deal with the countervailing pressures for continuity and renewal, we conducted an in-depth case study of an energy cluster. Several public and private organisations set up the cluster as part of a government initiative, but a recent change in government policy put pressure on the cluster to renew itself. More specifically, the government tried to push the cluster to change its focus along the knowledge value chain (Suire and Vicente, 2014). While the focus used to be on collaborative R&D projects with the aim of producing fundamental knowledge, the government wants the cluster to shift towards encouraging commercialisation and producing applied knowledge instead. The proposed change has increased tensions between members because it questions the cluster's identity, initially built around cooperative projects for fundamental knowledge creation. With our analysis, we show how cluster members' enactment of cluster renewal not only depends on the perceived impact on their own structural and relational position in the cluster, but also on that of other members. Moreover, we show that cluster renewal can lead to a leadership vacuum when the current anchor tenants are not the ones initiating the renewal process. With these findings, we contribute to the debates on cluster evolution and life-cycles as well as cluster leadership.

2. The cluster paradox and sources of inter-organisational conflict

2.1. The paradoxical nature of clusters

From a cluster life-cycle perspective, a cluster both needs to create continuity so that members can successfully cooperate based on mutual trust and to seek renewal in order to adapt to the external environment and avoid a lock-in (Menzel and Fornahl, 2009; Staber and Sautter, 2011; Tichy, 2001). The need for continuity and change means that a cluster should be both homogeneous and heterogeneous to maintain success and build resilience over time, even if being both is not possible all at once (Menzel and Fornahl, 2009; Suire and Vicente, 2014). This 'cluster paradox' draws attention to the ambiguous relationship between stability and change which concerns the chance of an organisational entity to prosper and survive (Farjoun, 2010). A high degree of homogeneity creates stability, which helps a cluster to function well through strategic cohesion, connectedness, social interaction, cooperation, and a common knowledge pool (Menzel and Fornahl, 2009; Staber and Sautter, 2011; Suire and Vicente, 2014). The risk, however, is that the homogeneity, which is generating benefits in the short run, becomes detrimental for the cluster in the long run as it leads to inertia.

Too much stability and cohesion could lead a cluster to become locked into a technological trajectory (Martin and Sunley, 2006). Therefore, a need for heterogeneity has been advocated, because it facilitates change. While heterogeneity might lead to more conflict and disagreement between members, it also breeds creativity, needed to renew a cluster and stay abreast with changes in the environment (Baglieri et al., 2012; Suire and Vicente, 2014).

While the need for cluster renewal is generally acknowledged (Baglieri et al., 2012; Suire and Vicente, 2014), clusters suffer from inertia for two closely related reasons. First, renewal tends to imply a change in a cluster's purpose or direction – i.e., a change in identity (Beebe et al., 2013; Staber, 2010; Staber and Sautter, 2011) – and, second, it involves breaking up old and forming new collaborations – i.e., a change in the relations between members (Martin and Sunley, 2003; Menzel and Fornahl, 2009). While changing a cluster's identity and nature of relations may be possible over time, it tends to be a lengthy process and might therefore form a constraint for cluster renewal in the short run. Due to these sources of inertia, the cluster paradox manifests itself in two different underlying but related paradoxes: a *paradox of identity* (Staber and Sautter, 2011) and a *paradox of embeddedness* (Uzzi, 1997).

Cluster identity is "the shared understanding of the basic industrial, technological, social and institutional features of a cluster" (Staber and Sautter, 2011, p. 1350). A strong identity is paradoxical because it both adds to a cluster's success and forms a source of inertia. A strong identity allows members to benefit from their geographical proximity through mutual learning (Maskell, 2001; Staber, 2010) and exploiting technological synergies (Menzel and Fornahl, 2009). If members do not have a shared understanding of the cluster, there might be too much cognitive distance between them. As a result, they will not be able to profit from one another's knowledge creation and technological expertise, because they lack the absorptive capacity to translate outside knowledge into meaningful internal knowledge (Nooteboom et al., 2007). A strong identity also improves a cluster's reputation and is status-enhancing (Beebe et al., 2013; Staber and Sautter, 2011). However, it might lead to inertia, because it is based on a taken-for-granted understanding about a cluster's main purpose. As Staber and Sautter (2011: 1350) argued, "cluster identity may require a certain degree of fluidity, especially under environmental conditions that threaten the well-being of clusters." Hence, while a cluster's identity may change over time, it is complex to adjust it swiftly in response to environmental change (Staber and Sautter, 2011).

In a cluster, embeddedness refers to the social relations that facilitate the economic activities that members develop from being part of a cluster (Granovetter, 1985). As Granovetter (1985: 490) stated, embeddedness emphasises 'the role of concrete personal relations and structures (or "networks") of such relations in generating trust and discouraging malfeasance.' However, a cluster tends to suffer from a 'paradox of embeddedness', that is, '[t]he same processes by which embeddedness creates a requisite fit with the current environment can paradoxically reduce an organisation's ability to adapt' (Uzzi, 1997: 57). Strong relations can lead to a limited variety of views in a cluster which hinders the collective to adapt to disruptions (Grabher, 1993). Clusters with deeply embedded members run the risk of being locked-in into specific technologies and the same network of collaborating partners (Martin and Sunley, 2003; Menzel and Fornahl, 2009). Strong relations between members might be at odds with external developments, when these require finding new partners instead (Eisingerich et al., 2010). As Grabher (1993) explained, an important reason that Germany's Ruhr cluster declined in the 1970s was a strong interdependence between coal, iron, and steel firms. While firms were able to adapt to others in the cluster, they failed to adapt to changes in the environment. In a cluster, embeddedness is particularly risky when members depend on a core organisation that might lose its core position, or when the social aspects of the relations become more important than the economic rationale of being part of the cluster (Uzzi, 1997).