Small Business Clustering:  
Accessing Knowledge through Local Networks  

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Over the last decade there has been considerable interest and activity in clustering and the concomitant link to regional development. In the world economy small and medium enterprises (SMEs) are now recognised as playing a pivotal role in regional economic sustainability and growth, yet there is relatively little research that examines SME clustering processes, and in particular the nature of knowledge creation in local/regional SME networks. This paper discusses the topic of small business clustering and local network knowledge transfer. It outlines some of the key literature on clustering within a regional development context and discusses the implications on industry and place vis-à-vis regional cluster learning, knowledge creation and innovation. To illustrate SME clustering and knowledge transfer issues, the paper briefly highlights three regional Australian small business clustering studies. The paper concludes with some future directions for SME clustering in terms of policy, industry and place.
and ascribes enduring competitive advantage in a global economy to local knowledge, relationships and motivation that cannot be duplicated by global partnering (Porter, 1998). Critical to Porter’s analysis of clusters are the dynamic effects created by interaction of industry and place (Porter, 2003). His theory on successful local cluster development in a global economy depends on four main factors: (1) context for firm strategy and rivalry inside the cluster, e.g., competition and collaboration put pressure on productivity; (2) demand conditions, e.g., level of sophistication and demand of consumers; (3) related and supporting industries, e.g., the supporting suppliers and ancillary industry; and (4) factor conditions, e.g., availability of infrastructure, skills and capital (Porter, 2000). Factor conditions support the development of the cluster. Thus, in Porter’s model the interaction between these factors or the competition and consumer pressure leads to pressure on productivity and hence to innovation, in which both location and place are potentially important. Although Porter’s model has been influential in the operational aspects of (mature) clusters, it is weak in terms of SME clustering processes.

Clustering is partly determined by industry. McKinsey and Co (2000) suggest that intelligent capital intensifies with geographic proximity. Industry type influences knowledge dynamics through the impact on intelligent capital, specialised labour, ‘industry’ knowledge and customised product. Whilst both industry and geography are necessary elements, neither is sufficient on its own; one factor might dominate or, each factor might operate effectively only in the presence of the other (McRae-Williams, Lowe & Taylor, 2004). In this paper it is suggested that industry plays a key role as knowledge is embedded within industry.

Clustering is also partly determined by knowledge diffusion, which relies on two critical factors: (1) geographic proximity and (2) social structure (Enright 2001). Rosenfeld (1997) distinguishes clustering activities by the intensity of social infrastructure and firm interaction, firmly placing social capital and trust as the basis of collaboration, information and knowledge flows in regional clusters. Swann et al (1998) similarly positions relational capital at the core of cluster strength and as the foundation of its knowledge base. Porter actually suggests that there is a gap in the cluster literature around social structures (Porter 1998) which may be more important for SMEs than the existence of a mature cluster. This paper hence focuses on social structures and knowledge transfer in a clustering context.

So why do small firms cluster? As scholars such as Keeble & Wilkinson (2000), Storper (1997) and others point out, transaction cost savings alone is insufficient to explain the growth and persistence of clusters. One explanation is that large firms internalise much of the lateral, horizontal and vertical scope of a cluster. They are able to do so because they have economies of scale. SMEs are limited in their access to specialised resources and intelligent capital. Taylor and McRae-Williams (2005) posit that clustering simulates large firm behaviour, e.g., when small firms are not in a position to internalise externalities through economies of scale, they cluster to access resources, to reduce costs, to compete with larger firms, and to innovate. In other words, by networking and sharing knowledge, small firms are able to compete for and access specialised resources and information systems as well as internalise competencies and assets that typically are internalised by large firms with economies of scale (Taylor & McRae-Williams, 2005). Clustering hence provides SMEs benefits that would be unavailable or be available at a greater cost to non-clustering members. While value-added and activities such as R&D, access to a global client base and advanced business services/production are clearly major contributing factors for small business clustering, the need for access to localised explicit and tacit knowledge networks has proven to be a central driver for clustering (Keeble, 2000).
Regional Clustering and Local Networks

The growing influence of information and communication technologies (ICT) as the critical factor in shaping modernity and the distribution of economic advantage is relevant to regional development as it directly impacts on interactions between local and global forces. For SMEs, local networks represent a complementary response to insecurity arising from development and use of new technologies. The drive for SMEs to collaborate reduces uncertainties in the global economy and is a means of supplementing and complementing limited resources (Doloreux, 2004). Small business network structures underpin the growth and sustainability of clustering.

Typically, firms and individual actors are embedded in a variety of formal and informal professional, social and intellectual exchange networks (Granovetter, 1973). The extent and importance of these networks usually relate to firms' and actors' horizontal and vertical relationships, network culture and strategic complementarity. The knowledge and social capital a person accumulates through networking is highly personal, tacit knowledge, and considered a valuable asset (Nonaka & Takeuchi, 1995). High levels of networking creates trust which in turn creates embeddedness, strong ties and dependable behaviour, enabling open exchange of knowledge and ideas across cluster a domain, which in turn fosters high levels of localised collective learning, competitive advantage and innovation (Capello, 1999; Keeble & Wilkinson, 2000).

Learning and Knowledge Creation

The concept of collective learning lies at the base of the innovative and creative milieu theory, whereby the presence of common knowledge goes beyond the individual firm yet remains within the boundaries of the milieu or, as the case may be, cluster domain (Cumbers, Mackinnon, & Chapman, 2002). Collective learning is generally defined in the literature as “a social process of knowledge accumulation”, whereby knowledge creation through interaction and continuity provides an important vehicle for the transfer of knowledge over time (Capello, 1999, p.720-721).

Turning ourselves into collective communities of learning is, however, not an easy task (Brown & Duguid, 2000). Collective learning and knowledge creation are spiralling processes of interaction fusing explicit and tacit knowledge (Nonaka & Konno, 1998). Interaction creates new knowledge when actors bring their knowledge to a shared space, which Nonaka and Konno (1998) refer to as ba. This space can be physical, mental, virtual, or a combination thereof. The socialisation, externalisation, combination and internalisation (SECI) cycle, which represent the four characteristics of ba space as described in the SECI model, provide the knowledge creation platform. Regardless of the environment, “to participate in ba means to get involved and transcend one’s own limited perspective or boundary” (Nonaka & Konno, 1998, 47). Von Krogh et al (2000) emphasise the need for an enabling context for learning and knowledge sharing, based on the ba concept, where participants set and change their own boundaries of learning. Research indicates that embedded regionally networks can act as learning constructs (Braun & Billard, 2002; Keeble & Wilkinson, 2000).

While we have some understanding of enabling learning constructs, little is known about what type of relational knowledge is generated at what stage of the SME clustering process. Large firms are able to access specialised knowledge because they are large enough to internalise knowledge. SMEs, to the contrary, are limited by their access to specialised knowledge. They can, however, compete with larger firms by accessing specialised knowledge through clustering. Based on the Swann et al (1998) virtuous clustering model, which positions relational capital at the core of cluster strength, the authors propose that SME knowledge exchange is a cyclical process, with different types of knowledge being exchanged at different points of cluster maturity. In other words, a certain amount
of codified data and information has been captured by the system, which is augmented by new entrants, which leads to increased institutional knowledge, which in turn creates more tacit knowledge and attracts new resources (and entrants). The model cycles upward (indicating growth) as the steps are repeated (Figure 1).

Figure 1: Relational Capital Cycle

Knowledge becomes more important with geographic proximity and cluster membership, whereby a distinction is made between access to data captured in a common system versus access to data captured in an information system; data which is part of institutional knowledge; and data which has become tacit knowledge. Data captured in a common system is accessible by and to all (e.g., using a search engine on the Internet). To access and understand data captured within a specific information system (or in an industry context), geographic proximity is desirable, if not necessary. Knowledge might for example be obtained through industry association membership. Institutional capital is highly location and boundary specific (you have to be there to be ‘in the know’), while tacit knowledge is embedded within the local system, industry or community. To access tacit knowledge proximity is required, e.g., the very reason why SME clustering membership is important. Three regional Australian case studies provide some initial insights into these relational capital propositions.

A regional tourism network study in the Grampians tourism region of Victoria found both place and industry had an impact on SME knowledge exchange. In this example, geographically dispersed tourism SMEs felt disconnected from the network, displayed a low level of interfirm trust, and showed little interest in clustering. This resulted in latent clustering behaviour, whereby some data and information was traded, but no tacit knowledge was exchanged. Without
exogenous pressure on endogenous network relationships, regional industry actors shaped their individual futures in isolation (Braun, 2004).

The latter study result is in sharp contrast with a clustering study in the grains industry conducted in the geographic vicinity of the tourism region. In assessing the extent and infrastructure of the grains industry in the region, the study found that regional agricultural actors maintained close communication ties, displayed a high level of trust, and were committed to exchanging tacit knowledge for cluster growth purposes. As a result, value was created for both the performance of the cluster and for the end user of the product (Lowe & Berrisford, 2002).

In the third case study the level of interaction or complementarity between two co-located industries — wine and tourism — was assessed. The wine and tourism industries within the Western Victoria region share a number of common attributes such as geographic co-location and economic, social and natural resource assets. In some cases the industries compete for land, capital and skilled labour. However, they also have significant demand and supply side complementarities that create better conditions for the development and performance of both industries. In this study it was evident that wine clustering actors were inclined to exchange knowledge with each other and with the tourism industry, but the reverse was not the case (McRae-Williams, 2004). This research confirms the knowledge sharing findings of the aforementioned tourism study, raising important questions about the role of industry and place on clustering and knowledge transfer activities.

In the three case studies, relational capital resulted in either strong or weak regional ties with implicit clustering implications. All cases show that relational resources can be purposely used to encourage and enhance regional clustering success. These case studies also raise questions about SME understanding of the possible implications of operating in isolation versus through place and industry in terms of long-term impact on a region’s global visibility and strategic opportunities.

**Future Directions**

The authors have raised questions surrounding relational capital and introduced a cyclical model to indicate what type of relational knowledge is generated at what stage of the SME clustering process. Based on the Swann et al (1998) virtuous clustering model, which positions relational capital at the core of cluster strength, the authors propose that SMEs exchange different types of knowledge — ranging from data, to information, to knowledge, to tacit knowledge — and that these types of knowledge interactions occur at specific points in the clustering process.

The case studies suggest that SME behaviour impacts on knowledge creation and knowledge transfer, which in turn has implications for both industry as well as place. Conversely, SME knowledge creation is determined directly by industry and by place.

What are the implications for cluster policy in different industries and different places? This paper has highlighted that some places and some industries may cluster better than others. Clustering policies often overlook this important fact. If place and industry do play differential roles, clustering policies should allow for place and industry differentiation. Furthermore, since clusters are critical for SMEs in terms of access to resources and knowledge, general policies directed towards SMEs should always include clustering aspects. While such policies cannot capture tacit knowledge or compel network actors to exchange knowledge, they can enhance clustering processes and help to capture knowledge through the fostering of institutional capital.

In considering some of the critical factors of regional SME clustering in the context of geographic concentration and access to knowledge, it is essential to recognise the need for learning constructs and support to build network capacity to learn and change. It is also of import to consider that different mechanism may be needed which reflect the particularly clustering...
characteristics of an industry type or the geographic location. In building knowledge creation networks, it is also useful to consider the role of technology itself. Computer-based collaborative learning environments now form an integral part of the larger context of economic collaboration and hence merit further attention to optimise the values and principles of regional SME clustering and collaborative learning.

**References**


