Creative Clusters: A New Era for SMEs?

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Abstract

Objectives
The paper illustrates how the characteristics of industry clusters are revived in a new era for SME networks. It explores how a succession of industry shocks - increased global competition, recession and reduced policy support - have stimulated an innovative response in creative SMEs. The paper goes on to investigate the clustering experience of a small group of creative entrepreneurs in pursuing networked activities, with a view to identifying lessons that can be learnt to support other business-led, emergent clusters.

Prior Work
Geographical industry clustering provides district advantages of pooled resources, proximity to suppliers and markets, knowledge sharing and cultural exchange (Saxenian, 1994; Piore and Sabel, 1984; Reid et al, 2008). Within a cluster, the SME's capacity to innovate is linked to co-opetition, supportive infrastructure, vertical and horizontal interdependencies (Porter, 1998; Doeringer and Terkla, 1995) and Rosenfeld's 'associative economy' (2005:5). Saxenian and Hsu (2001) illustrate how district externalities spillover across borders, while Aage and Belussi (2008) find that innovative clusters obtain competitive advantage from external-to-the-district influences.

Approach
The research is based on a single case study of 3 micro-enterprises from Nottingham, UK, and their international collaborators. Compiled from observations, interviews and documentary analysis, the case tracks the progress of the group over eighteen months. The SMEs are embedded in a cluster of designer-maker entrepreneurs, emergent from Nottingham's traditional textiles manufacturing sector.

Results
The results build on Saxenian and Hsu (2001) and Aage and Belussi (2008) findings in which SMEs benefit from internal district externalities while also looking outside of the cluster in a process of mutual knowledge sharing. Successive industry shocks appear to have fostered collaboration and innovation (after Deoringer et al, 2009) stimulating a cycle of knowledge spill-overs that further cluster advantages. Competitive advantage is observed in the initiating firms, other SMEs within their cluster networks, associated institutions and an extended, international network of SMEs.

Implications
The results reveal the opportunity for SMEs to embrace more innovative approaches to collaboration, although not without risk. Further research advocates a broader field of enquiry, and longitudinal analysis of the success and potential advantages of such cases.

Value
The paper revives the debate on clustering by SMEs, providing a rich source of data to enhance the provision of business support and knowledge transfer activities in what Enright (2001) terms 'wannabe clusters'. After Saxenian and Hsu (2001) collaborative networks have the potential to create competitive advantage for SMEs and rejuvenate traditional industry clusters.

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Introduction

In the early 2000's, industry clusters were considered very topical, although our experience in the UK's East Midlands was that clustering activity was often policy-led and focused around failing traditional industries. At best, the clustering experience resulted in managed decline of these traditional industries, exemplified by textiles and clothing and the automotive industry. Since then, the political agenda has moved away from industry clusters, and the various sectors have fared rather differently - but with signs of stability or growth even in very specific subsectors of the textile industry such as technical textiles and fast fashion. Furthermore, there are signs that - after the demise of policy-led, facilitated cluster groups – SMEs are continuing to exhibit signs of clustering behaviours. The research, therefore, follows the progress of a small group of creative industries micro-enterprises from the Nottingham area who have developed their own concept of network based activity that mirrors many of the behaviours associated with industry clusters.

The paper, therefore sets out to illustrate how the characteristics of industry clusters are revived in a new era for SME networks. It explores how a succession of industry shocks - increased global competition, recession and reduced policy support - have stimulated an innovative response in creative SMEs. In contrast to prior work, the paper also investigates the experience of small firms when undertaking cluster-like activity.

Prior Work

In economics literature, the cluster model refers to groups or networks of SMEs sharing geographic proximity and a culture of collaboration. Some of these characteristics are integral to understanding the industry's reaction to recent developments in markets, supply and technology. Geographical industry clustering provides district advantages of pooled resources, proximity to suppliers and markets, knowledge sharing and cultural exchange (Saxenian, 1994; Piore and Sabel, 1984; Reid et al, 2008). There is a resurgence in industry cluster studies triggered by interest in emerging economies, increasing interest in information sharing and knowledge transfer; and the enduring debate on localisation – globalisation (Lee and Wilhelm, 2009). Bozarth et al, 2007, relate to the redefinition of traditional industrial clusters, and Demitriadis and Koh (2005) explain the importance of skills and technologies for exchanging information, especially with external actors. Popp (2000) suggests that intermediaries perform a valuable role in filtering and disseminating information and keeping the supply chain 'close' to the market, comparable to what Aage and Belussi (2008) refer to as an open-source model of market knowledge and design.

Marshall (1890) suggested that industrial districts (later more widely known as clusters) develop where a combination of factors exist, including a pool of resources, such as labour; proximity to customers and suppliers to ease transaction costs and logistics, and sharing of knowledge about products, processes and markets. More recent work refers to network interdependencies among industry sectors, cultural exchange and professional relationships that promote knowledge spill-overs between firms (Chinitz, 1961; Saxenian, 1994; Reid et al, 2008). Rosenfeld's definition of an industrial cluster builds on the concept popularised by Porter in the 1990s.

> *"A geographically bounded concentration of interdependent businesses with active channels for business transactions, dialogue, and communications, and that collectively shares common opportunities and threats" (Rosenfeld 1997:10)*

Porter's concept of the cluster proposes an industry cluster consisting of a geographical collection of industrial firms with shared or similar (local) markets or *demand* conditions, supply or *factor* conditions of materials, components and labour, a culture of healthy competition matched by dynamics of co-operation and a supportive infrastructure including policy, institutional support for skills and R&D and logistics. Industry clusters contribute to competitiveness and local economic development through the local agglomeration of economic benefits, referred to as externalities. These include reduced transportation and transaction costs facilitated by close proximity. Common needs result in shared infrastructural resources, industry training provision, specialist universities, logistics and sympathetic financial institutions. The co-location of similarly focused firms fosters collaboration, and enhances the individual firms' capacity to innovate and compete through mobility of labour, sharing of knowledge and the competition with other local firms or "*co-opetition*" (Porter 1998). Such vertical and horizontal networks and the resulting business-based interdependencies are referred to by Rosenfeld as the 'associative economy' (2005:5). Doeringer and Terkla (1995) prefer to explore the characteristics of inter-industry clusters – such as textile-apparel, or creative industries in this example, arguing that it is necessary to consider different industries to uncover the full factor and network conditions.

While, some clusters focus around a single innovative large company that gains agglomeration economies by developing a network of local suppliers, more dynamic industry clusters are developed by SMEs with common market or supply networks, developing shared buying or sales activities that lead to more complex and open horizontal and vertical interactions (Rosenfeld, 1997). Clustered SMEs, collaborating in this way often service niche markets that are simply too small to be attractive to large, more efficient firms (Piore and Sabel, 1984). According to Rosenfeld (1997) the essence of this interaction helps clusters to achieve benefits beyond the capability of individual or small groups of firms:

> *"A **cluster** is represented by a local production system that is embedded in a local social system. Each affects the ability of a **cluster** to produce synergy. The most effective **clusters**, which are animated or 'working', are relatively complete systems with specialized support and considerable social capital (Rosenfeld 1997:22)*

Rigby and Essletzbichler (1997) find that geographical differentiation between clusters is fuelled by the varying ways that technological innovations are interpreted, adopted and communicated in specific locations. More recently, Saxenian and Hsu (2001) find that clusters provide a safe environment for innovative risk taking, fostering a succession of innovations. They find that district[1] success is dynamic rather than static, districts or clusters rejuvenated by new start firms. Furthermore, and in contrast to other studies of clustering, they illustrate how knowledge transfer can spill over from one cluster to another, even in different countries, exemplified by the relationship between Silicon valley and Taiwan.

In contrast, other clusters exhibit global sourcing as an attribute of the breakdown of the factor conditions .(Bozarth et al, 1998, Carbonara et al, 2002). SMEs left behind as cluster delocalise can add value through innovation and transaction economies fostered through the production chains and social ecology of clusters. This is seen in supply chain clusters built up around specialised niche suppliers developed across broad industry groups (Doeringer and Terkla, 1995) and with common, but segmented, end-markets (Christopher, 2005). Proximity therefore supports the development of relationships, problem solving, and flexibility, and facilitates speed to market. The exchange of labour between firms suggests that knowledge, particularly of the market, is shared, promoting innovation. There is also some evidence of transfer of knowledge between clusters with fashion designers showing some mobility between large firms in Nottingham and SMEs in Leicester (Oxborrow and Brindley, 2010).

Doeringer et al (2009) identify the lack of understanding of the way that firms operate and its effect on the development of industry clusters. Their research suggests that industry shocks (for example reduced trade restrictions with China) cause firms to change their behaviour from the historical traditions built up within clusters. They find that this leads to upskilling for niche markets; process innovations for faster response, and product and process innovations leading to completely new markets. These developments contribute to re-invention of the cluster model, whereby cluster externalities appear more important to the small firms left behind than they ever were to the large firms that off-shored production, a move that itself promotes anti-clustering behaviour (Holweg et al 2011). Researching Italian districts Aage and Belussi (2008), found that the concept of 'fashion' is considered especially relevant in the knowledge sharing context of industry clusters. Cluster firms, it is found, use a multiplicity of sources including institutional resources and 'internal-to-the-district and external-to-the-district' experts. This enables firms to acquire knowledge for the prediction of trends, conceptual design, selection and sampling of new collections, through what Aage and Belussi refer to as a 'district laboratory' (2008:487) thus reducing the risk of 'not knowing' what the market wants.

While Carbonara et al, (2002) describe clusters stages as formation, development or maturity, Rosenfeld (1997) outlines four types of cluster according to the level of development and objective drivers. These include:

- self-aware clusters, working and 'overachieving,'
- latent clusters which underachieve and full potential is not realised
- 'wannabe' clusters with potential: "the aspiring group of firms that may lack the necessary political power, critical mass, or comparative (to total local employment) concentration to be noticed. Rosenfeld 1997:
- policy clusters, where attempts to create infrastructure are expected to yield clustering behaviour and cluster externalities. This was exemplified by early 2000's UK regional policy, such as attempts to create one all-inclusive regional textile and clothing cluster in the East Midlands region (EMDA, 2001).

[1] For the purpose of this paper, the industrial district is termed the location of a geographical concentration of firms, whereas the industry cluster describes the behaviours and characteristics of the firms co-located within the geographical area.

In summary, industry clusters prove to be dynamic, changing to meet different internal and external challenges. Within a cluster, the SME's capacity to innovate is therefore linked to co-opetition, a supportive infrastructure, vertical and horizontal interdependencies (Porter, 1998; Doeringer and Terkla, 1995) and Rosenfeld's 'associative economy' (2005:5). Saxenian and Hsu (2001) illustrate how district externalities spillover across borders, while Aage and Belussi (2008) find that innovative clusters obtain competitive advantage from external-to-the-district influences. External factors, although providing some obstacles to cluster success are found by Saxenian and Hsu 2001 to promote dynamism in clusters, expand the knowledge bank and stimulate innovation and competitiveness.

Most research on clustering relates to the development of the cluster as an entity, rather than focusing on the experience of the SME participant within the cluster as it undergoes transition.

Approach

The research is based on a single case study of 3 micro-enterprises from Nottingham, UK, their international collaborators, extended network of similar creative and some of the support institutions that surround them. Compiled from observations, interviews and documentary analysis, the case tracks the progress of the group over eighteen months. The SMEs are embedded in a cluster of designer-maker entrepreneurs, emergent from Nottingham's traditional textiles manufacturing sector.

Voss et al (2002) advocate the use of case studies for theory development and theory testing - because case studies can account for both the physical and human aspects of organisations. Voss et al argue that case based research helps to understand *how* and *why* questions (also in Yin, 2003), and has validity with potential users. In SME focused case research, the lack of availability of multi-site research is compensated by involving a number of SMEs within the case example to provide consistency and contrast, therefore supporting confidence in the validity and robustness of the findings (Yin, 2009; Eisenhardt, 1989). The approach of using multiple small cases is also a pragmatic solution to the issue of limited access and scope of information to small businesses, already described as 'hard to reach (Cassells and Lewis 2011) and provides a grounding from which to develop a more reliable analysis (Eisenhardt, 1989). A case study methodology enables the researcher to utilise multiple methods in a single research study (Scholz & Tietje, 2002; Yin 2009), and a variety of qualitative methods are used here to support the exploratory nature of the research.

The context for the case is a group of beneficiaries who in 2011 approached the European (ERDF) funded knowledge transfer project, Future Factory, which aims to support SMEs from the UK East Midlands to become more sustainable. The SMEs in this case are from the creative industries and are self-selecting, based on their participation in a specific project and willingness to contribute to the study. The unit of analysis (Jankowicz, 2000) in this case is the network or cluster of SMEs, rather than the individual businesses. They are all early stage micro-businesses, with an ambition to expand into new market areas. The research is longitudinal, and based on a multi-method approach in line with Yin's proposed portfolio of data gathering methods, including semi-structured interviews, observation, documentary evidence and two focus groups spanning a period of 18 months. Interviews were conducted with two of the project instigators, offering opportunity for exploration and probing of the data (Saunders et al, 2003), while enabling the researcher to keep to a negotiated theme. These were conducted individually and face to face, at one of the respondents' premises, using a schedule of questions, and have been repeated intermittently during the project's lifetime. Participant observation of meetings between the instigators and, at different times, support organisations and potential new SME participants has been used as research evidence, in combination with data gathered from emails and the project online 'blog'. Focus groups have been undertaken initially with the original creative participants from both Nottingham and Karlsruhe, and more recently an extended group of six of the ten SMEs who participated in a second outward mission thus enabling the group to share views and surface key themes (Saunders et al, 2003). Limitations of bias are noted, since the participant observer is part of the Future Factory team. Future Factory provided resources to support the inward mission of German designers and also hosted meetings to enable the participants to share knowledge of the market and plan for their mission. However, these meetings were led by the participants themselves and external facilitators, therefore reducing any potential conflict of interest.

A number of participants have contributed to the study. These include creative industry micro-enterprises from the Nottingham area - designers and makers of ceramics, lace and textiles and jewellery – participants in a delegation of 10 SMEs who exhibited at the Eunique arts and crafts fair in Karsruhe, Germany in 2012. Also contributing were two designers from Karlsruhe and a representative of one of the supportive institutions from the Nottingham area. Data from the many discussions, observations, documents and interviews has been collated and coded according to key themes emerging in the contemporary literature (King, 2004). A summary of key findings is identified below.

Limitations, validity and rigour

Accepted good practice (Stuart et al; 2002, Yin,; 2009; Eisenhardt, 1989) identifies four key aspects of validity and reliability: construct, internal and external validity, and reliability, each of which are addressed here. Construct validity relates to the appropriateness of the measures or constructs explored in view of the concepts being studied In this research verification was sought by seeking SME approval of the individual case studies. Internal validity ensures that similar findings are replicated from different aspects of the research (Stuart et al 2002), in this case the variety of data collection methods. External validity enables researchers to generalise findings beyond the case study context: "With case research, generalization is from each case to a broader theory not from samples to populations." (Stuart et al, 2002:430). Comparing to like-minded and dissimilar literature (Eisenhardt, 1989) helps to support analytical generalisation. Recordings of the interviews have been transcribed and notes from these and participant observation retained in a case study databank (Saunders et al, 2003). A limitation noted is that the researcher is a member of the project team, and known to some of the respondents. However, this has supported access to a hard-to-reach group, has provoked a detailed level of discussion that can only be considered advantageous, and has enhanced the opportunity for longitudinal engagement.

Results

Our story starts in early 2011, when a number of support institutions (University, local authority, UK Trade and Investment (export support) and a dedicated craft-based industry association were invited to discuss how a delegation of small design entrepreneurs could gain support for their planned trip to Karlsruhe, Germany to exhibit at a prestigious trade show. The three designers had, when researching the exhibition, realised that Nottingham and Karlsruhe were twinned cities and that this may represent an opportunity to not only gain support to visit the show, but also to develop longer term links, specifically with like-minded designer makers from the Karlsruhe area.

Since then, the trio attracted resources from the industry association, Arts Council England and 'pro-bono' support from the university and local authority to attend the exhibition; select and host a delegation of three German designers - mounting a collective exhibition; gain a funding contribution to broaden their network to 10 designers who exhibited in Germany in 2012; and plan a repeat of the reciprocal visit. The group have also generated significant media attention for their collaboration, started to work with one of Nottingham's Further Education establishments as mentors to would-be creative entrepreneurs and one of the group has even launched a joint product range with one of her German counterparts. Short profiles of some of the main players, and contributors to the research are listed in table 1.

Table 1: A selection of the main participants in the activity

Entrepreneur[2]	Business activity	Activities undertaken	Role in network
Amy	Industry Association	Participation in cultural visit	Contributed funding and organisational support
Ellie	Fashion accessories, design and retail	Two overseas exhibitions, local exhibition, host to overseas visitor	Founding member of group, and distribution for some members
Carol	Lace	Two overseas exhibitions, local exhibition, host to overseas visitor	Founding member of group, weblog host
Maisie	Ceramics items	Second overseas exhibition	New start business; overseas national
Tessa	Ceramic panels	Second overseas exhibition	Established business, organised logistics, some overseas experience
Maddy	Jewellery	Second overseas exhibition	Established business, no previous overseas experience
Sue	Clay/ textile figures	Second overseas exhibition	New start artist/ craft; no previous overseas experience
Laurie	Ceramic tiles	Second overseas exhibition	Established business, no previous overseas experience
Andrea	Silver jewellery	Both Karsruhe exhibitions, visit to Nottingham and other	Established German silversmith. Joint product with

[2] Names are disguised to protect anonymity

		meetings	Carol
Kat	Conceptual artist	Both Karsruhe exhibitions, visit to Nottingham	Long established German artist/ craft; open studio for UK designers in Karlsruhe

During the experience, a number of discussion have yielded a rich insight into the experience and behaviour of the group of entrepreneurs. These are coded into themes that emerge in the literature: knowledge spill-over, co-opetition, externak influence, market factors and support infrastructure, all of which are exemplified below.

Knowledge spill-over

The process has generated a number of opportunities for knowledge spill-over, for example between the founding group members, between this group and the newcomers to the enlarged group, from the UK to German designers and vice-versa, from the support organisations to the entrepreneurs and even from the established businesses to design students. Examples of this are clearly evident in the data. Formal exchange of knowledge was facilitated by UKTI providing knowledge of culture, markets, and even language, prior to the overseas mission. As confirmed by Sue: "*the language and culture day really helped*". Similarly, an organised workshop session was facilitated by the university during the inward mission of German designers to enable other designers, students and tutors to learn about their experiences of working in a different environment.

But perhaps the more interesting examples of knowledge being shared are those which have taken place spontaneously as the project has progressed. For example German designer Andrea admitted that just being invited to speak about her business in the UK had encouraged her to rethink certain aspects of her business and address issues with packaging and production. Similarly conceptual artist Kat clearly inspired some of the less experienced UK designers when she opened her studio to them on their visit to Germany. The consensus was summed up by Maddy who commented "*I really was inspired by Kat - I would love to spend more time with her*" a comment that received a general murmur of agreement at the focus group. From observing the group's progress it is also evident that there had been some exchange of knowledge to the second group of new designers of what to expect from the exhibition, the market in Germany and how to prepare and display products and edit collections. Laurie explained how she had "*decided to plan [her] display before arriving*", edited the collection, "*I had to cut it down for the small space*" and developed tiles based on "*contrasting images of Nottingham's Goosefair and a vintage Pfaff sewing machine from, well near, Karlsruhe!*".

However, from the focus group it also became clear that although the nature of the knowledge spill-over may at times be spontaneous, the circumstances under which it tends to occur are far from ad-hoc. During the session it became clear that the exchange of experiences of individuals under discussion were largely unknown to the majority of the group, and it appeared that such exchanges had mainly happened during the organised or facilitated meetings, even though the group had spent almost a week travelling together. Indeed, on some occasions the support requested of the local organisations had been to facilitate such planned events. This did mean that not all of the delegates felt fully prepared, and most commented that more knowledge of the market and potential contacts would have been helpful. For example Maddy admitted *"I was asked [by the exhibition organisers] not to take the vintage recycled range, but on reflection think I should have taken it anyway. I am sure it would have been more accessible*."

Co-opetition

From the convivial atmosphere when the group were together, it would be possible to think that all was harmonious and that these were natural collaborators, rather than competitors. The general consensus from the group was that the joint mission had been enhanced because of the collaboration. Comments such as "The team approach of 10-12 was a real high" (Carol) or "*I was grateful for the help both of the team and the exhibition staff*" (Tessa). Ellie confirmed the potential added value of the collaboration "*We made a huge impact all lined up…. It gives them [customers] confidence that we had come back and bigger*". However, one of the party did suggest that "*it was great to have back up and work together, my creative well-being is refreshed, though to be honest I was really nervous about travelling as a group*."

The reason for this reservation became apparent during individual interviews with some participants. Issues over the sources of inspiration, getting acknowledged and the threat of individuals taking over specific ideas and claiming them as their own were raised. It was also of note that this sensitivity extended across product sub-sectors and applied as much to design concepts, such as modern twists on legacy products, as to the actual products themselves. That said, signs of competitiveness were much stronger outside of the group. Maddy, who had the least commercial success observed that "*something like 50% of the exhibitors were jewellers and others didn't sell either*".

For practical reasons, as well as commercial competition, the balance between joint activities and the interests of individual businesses was challenged. The founding members of the group acknowledged that future activity needed to be more evenly resourced. Ellie revealed "*From the twinning activities I found real enjoyment and creative well-being from the exhibitions and the tour, but it was exhausting. I was too tired by the show and it affected my business decisions.*" Similar issues have emerged since the mission with regard to the collective web presence, which largely falls to Carol to organise, and there was some concern that activities to offer reciprocal mentoring to design students would become another drain on limited resources.

External influence

Perhaps what makes this activity stand out from other collective marketing missions is the aspect of reciprocity with German contemporaries. The group deliberately set out to ensure that both the original group and the extended network would be able to maximise their experience and the impact of attempting to sell their products overseas or test them in a new market. But this was the most obvious of a series of motivations. More aspirational was to find inspiration for new product ranges, develop niche opportunities to be able to 'attach' these to different markets, trading on the twin city and industrial legacy concept, and ultimately to find collaborators from outside the network, but within the influence of an extended support infrastructure. To this end, during the first mission, the team established contact with the local authority in Karslruhe, using this contact to "put out a call" for German designers interested in a visit to Nottingham. A short-list of four was compiled, of which three participated in the reciprocal visit.

This experience, originally aimed at bringing influence into the network from the German designers, has turned into a two-way exchange. Andrea, one of the visitors was able to visit one of few remaining UK lace factories and a lace archive collection. From the samples she returned with a new range of silver lace jewellery has been developed, based on Carol's machined made lace. This is now on sale in Germany. While this is the only example of true collaborative design so far, it is clear that others have plans to develop interesting and inspirational relationship. Perhaps more achievable is the influence arising from the cultural exchange in Karlsruhe. Ellie referred several times to her sense of "*creative well-being*" and Carol claimed "*it was good to feel part of a collaborative knowledge community*" following the visit to several cultural attractions. However, this wasn't all plain sailing. When visiting the UK, the German designers complained of a lack of time, and the UK exhibitors in Germany similarly suggested that they would, with hindsight, have extended their trip to have more time for such inspiring visits. Resource constraints and conflicting priorities may limit this aim. Their visit has, however, inspired future activity and Laurie for one is planning access to an image archive in Karlsruhe facilitated by the relationships developed during the visit.

Market conditions

One of the main characteristics that unites the group is their targeting of the specific luxury gifts/ crafts market, manifest through the catchment of the Eunique show which attracts both trade and personal customers. Indeed, Eunique is a selective exhibition, so only those businesses deemed relevant to its target market are able to exhibit. In the UK too, there is some similarity in both routes to market and customer base, and one of the businesses does already retail on behalf of some of the other participants. There are two considerations that emerge from the research however: the sense of competition within the market and the lack of prepared knowledge of the market, in-spite of the collaborative approach.

With reference to the second point, the focus group delegates all agreed that they would in future try to generate contacts prior to visiting, research the market more fully and edit their collections and price points to fit the market better. Maisie, who had treated the experience simply as a market research activity, had realised the need to improve the functionality of her erstwhile purely decorative product. The fact that this was a learning experience was echoed by Laurie who concluded "*I didn't price properly, so I put my prices up on the third day and it worked*". One issue that all agreed on was the benefit of keeping in touch with any contacts gained during the visit, and using these for future publicity.

However, there is no such positive solution to the issue of competition within the market more generally. The businesses are at different stages, and those more established are justifiably protective of their status. One of the motivations for businesses to get involved in this type of activity appears to be the difficult UK trading conditions during the period. The general rule would appear to be collaboration rules in external markets, but competition predominates closer to home.

Support and infrastructure

An essential element of cluster behaviour is the advantage of a supportive infrastructure. It is interesting to observe, that after several years of policy-led cluster activity in which the researcher was closely involved, this

initiative has been very much industry led, by a group of SMEs who appear well-versed in the support available, and proficient in accessing it. However, the level of institutional support available has declined in recent years and this has had a profound impact on the extent to which help, even for the most convincing projects, is available. In the early stages the founding team proposed a series of knowledge sharing activities to Arts Council England and, perhaps against the odds, were awarded a small grant to underwrite some of the networking activities. Other subsidies have followed, usually small amounts of funding for specific spheres of activity. It is of interest to note that, by exploiting the city twinning theme the group have not only accessed a new network of support in the German city authorities, but also inadvertently contributed to the re-invigoration of Nottingham's formal twinning strategy with Karlsruhe, which is now seen as a growing market opportunity for a much wider range of local firms. After all, as one of the designers commented "*from the conversations I had with customers it is just luck that we are twinned with an affluent area!*".

Discussion

It is clear that the cluster in this context, perhaps unconventionally, is based on horizontal networks and common market conditions, rather than common industry and supply. The groups behaviour has rapidly moved beyond a shared marketing activity to foster new products, new capabilities, and product collaboration. This has been effectively an inspirational/ cultural journey that exhibits clear signs of Rosenfeld's (2005) associative economy in terms of the exchange of knowledge, collective access to resources, and links to external influences, all of which have gained momentum as a result of the collective action.

The value of knowledge spillovers is evident in various ways which include both product and practical preparation for the international showcase event. Furthermore there are signs of collaborative products emerging, both within the group (for example in the lace products and ceramic tiles influenced by others' experience), and external collaboration between the Nottingham and Karlsruhe designers. There are also some signs that practical knowledge of the market has been shared, although none of the group claim adequate awareness in this field. What has been effectively shared, however, is understanding of the opportunity to promote products based on association with the traditions and legacy of the local industry, and even the association between the cities. Not only does this reflect the concept of Piore and Sabel (1984), upheld by Christopher (2005) that SME clustering is effective in niche markets, but there is further evidence of a cumulative confidence developing among the group that is reflected in the marketing activity.

However, there is not always evidence of knowledge sharing happening spontaneously. During the focus group participants were surprised by some of their collaborators contribution to the discussion. With hindsight it is evident that this kind of exchange has been facilitated by the infrastructural interventions that have taken place at intervals during the planning phase, emphasising the importance of this investment in social capital (Rosenfeld, 1997) and intimating that support institutions may take on Popp's (2000) role as intermediary in horizontal networks. Exchange of knowledge is perhaps not the priority of the individual businesses themselves, and there are clearly aspects of competition that prevail in line with Porter's concept of co-opetition (1998). Indeed the research suggests that some individuals could achieve faster short-term success independently. One refers to "playing the long game" and highlights the trade-off between creative benefits and direct business benefits, a strategy perhaps resonant of the innovative risk taking highlighted by Saxenian and Hsu (2001).

The importance of external spill-overs in the cluster concept are well-represented by the research. In line with Saxenian and Hsu (2001) there is an element of external spill-over into the Karlsruhe design community, which incidentally displays historical differentiation in line with that observed by Rigby and Essletzbichler (1997). Further-more there is ample evidence of Aage and Belussi's 'district laboratory' in which SMEs use internal and external influences to understand markets and shape the design and selection of product ranges to enhance responsiveness to market needs. Along with the emergence of new start businesses, this has helped to demonstrate Saxenian and Hsu's cluster dynamism (2001) which acts as a catalyst to further activity. There is evidence that the group have had some influence on the local authority's approach to international trade strategy. The council's former chief executive wrote: *"… when the two cities signed the cultural agreement in 2010, we had hoped it would enable the exchange of ideas and experience. The …. project is just what we had hoped would emerge. I am proud that we have encouraged three creative women to take the cultural agreement and turn it into a reality …. It is a credit to their initiative and various talents that they have achieved so much in a short space of time."* Since then a more proactive strategy has been adopted.

A point of interest to note is that relationships with the support infrastructure are two-way. Mutuality is manifest in the emerging relationship with a local FE college, where the network have become involved in support for future generations of creative talent, in return for sampling and financial resources. This is an aspect of Aage and Belussi's (2008) district laboratory that has been overlooked by other researchers, but which

demonstrates how the impact of clustering behaviour can extend beyond individual influence. It also exemplifies the importance of understanding the dynamics within clusters, in line with Doeringer et al (2009).

It would be hard to link the motivation to act not directly attributable to industry shock proposed by Doeringer et al (2009), although there has been a rapid decline of the city's traditional manufacturing sectors and several of the creative businesses concerned are clearly profoundly influenced by Nottingham's industrial legacy. However, the climate within which their businesses have been established are outside of the intensive policy era of cluster support of the early 2000's. What emerges, is the likelihood that a longer term shift in collective knowledge and shared expectations has helped these emerging SMEs to think more openly about collaboration; foster lasting relationships with institutions (perhaps where they originally studied); be proactive in terms of developing new approaches to doing business and then proactively seeking support rather than reacting to the support network on offer. The supportive infrastructure itself has reacted by allocating scarce resources in return for initiative, from which the businesses have developed a 'portfolio' approach, "cutting their coat" according to the cloth available.

It must be acknowledged that the case study exhibits clustering behaviour, and it is not claimed that this is a cluster 'per se'. The activities discussed focus on a specific marketing activity, although this has snowballed into a much wider exchange of experience than one trade-show would suggest. We can therefore question whether this is a network of businesses or a cluster. From Rosenfeld's categorisation, the aspects of competition and collected vision apply, but the cluster lacks the scale to attract specialised services and it is not clear that additional demand is generated. However, outside of the case study, there are other 'SME-led' initiatives that support the creative industries generally and the smaller group of designer-makers specifically. These range from the successful Confetti Media Group, host of Antenna – a local networking hub to a series of design 'conversations', shared retail outlets, pop-up shop initiatives. Most tend to lack dynamism, are poorly resourced and often short lived. Even Antenna has historically lacked the 'external influence' so much a part of this activity. A range of support activities are also present, perhaps the best resourced ones offered by the universities and colleges, while small targeted industry associations do exist – at least one a hang-over from the City's legacy of textiles production. That said, the purpose of the paper is to observe the clustering behaviours of the small group of firms, rather than to explore the progress of the cluster as a whole.

Table 2. Networks or clusters?

Networks	**Clusters**
Networks allow firms access to specialized services at lower cost	Clusters attract needed specialized services to a region
Networks have restricted membership	Clusters have open 'membership'
Networks are based on contractual agreements	Clusters are based on social values that foster trust and encourage reciprocity
Networks make it easier for more firms to engage in complex business	Clusters generate demand for more firms with similar and related capabilities
Networks are based on cooperation	Clusters take both cooperation and competition
Networks have common business goals	Clusters have collective visions

Adapted from Rosenfeld, 1997: 10

In summary, the results build on Saxenian and Hsu (2001) and Aage and Belussi (2008) findings in which SMEs benefit from internal district externalities while also looking beyond their cluster in a process of mutual knowledge sharing. Successive industry shocks appear to have influenced the behaviour of the SMEs and the response of the supportive infrastructure, rather than directly having fostered collaboration and innovation (after Doeringer et al, 2009). Nevertheless, the result has still stimulated a cycle of knowledge spill-overs that further cluster advantages within the group. Competitive advantage is subsequently observed in the initiating firms, other SMEs within their cluster networks, associated institutions and an extended, international network of SMEs.

Conclusions:

The paper revives the debate on clustering by SMEs, providing a rich source of data to enhance the provision of business support and knowledge transfer activities in what Rosenfeld (1997) terms 'wannabe clusters'. After Saxenian and Hsu (2001) collaborative networks have the potential to create competitive advantage for SMEs and rejuvenate traditional industry clusters. While in the contemporary context external influences can inspire and facilitate innovation (after Aage and Belussi 2008). But the results also reveal that the opportunity for SMEs to embrace more innovative approaches to collaboration, is not without risk and there is a need to trade-off the advantages of working collaboratively with some potential for an increase in local

competitiveness – either by enhancing the capability of rivals or straining internal resources. The findings reveal that in a new era for SME networks, some characteristics of industry clusters are revived – particularly the dynamism of emerging firms, benefits of knowledge spill-over and collaboration, and the importance of looking outward and accepting external influence to the district laboratory.

There is a lack of direct evidence that industry shocks of increased global competition and recession have stimulated an innovative response in creative SMEs, although it is likely that there has been a longitudinal and indirect effect in this way. It is more probably that the shock of reduced policy and infrastructural support has influenced the way in which SMEs engage with institutions, which in itself may have contributed to a collective and creative dynamism.

In contrast to prior work the paper focuses on the experiences of a group of SMEs involved in collaborative activities, and it is evident that their journey to achieve clustering behaviour is neither straightforward or without the potential for conflict (internal or between firms). Lack of resource is a major challenge in the current context, and while this may in turn provoke innovation, it can also sap creative energy and create a downward spiralling of resources. Rosenfeld (1997) stresses the importance for policy makers to really understand how clusters work and firms interact, proposing investment in mechanisms that support social capital, encourage cluster members to take the lead and facilitate exchange between clusters to prevent introversion – all resonant with the findings presented. The success of this activity to date, whereas others have failed or fallen under the radar, is testament to the benefits and challenges of a small group of collaborative, clustered and creative entrepreneurs, and as such is perceived to be of value to entrepreneurs and business support organisations as well as academics.

Further research advocates a broader field of enquiry, exploring issues within the wider creative industries or designer/ maker cluster and potentially in other locations or comparable small-firm led industries. It is likely that similar case studies exist in other contexts which would be valuable for comparative research. There is also opportunity to extend the longitudinal analysis of this case and others, and in particular evaluate any real measures of success and competitive advantage that emerge in the course of time.

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