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REGIONAL CLUSTERS IN THE ICT SECTOR: A DUAL
PERSPECTIVE**

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MOTIVATIONS AND OUTCOMES OF ENGAGING IN REGIONAL CLUSTERS IN THE ICT SECTOR: A DUAL PERSPECTIVE

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Abstract

This paper presents the findings of recent empirical-based research into the experiences of entrepreneurs and intermediaries engaged in cluster building activities in the information and communication technologies (ICT) sector in Northwest England. The research takes a dual perspective by interviewing both entrepreneurs and intermediaries from a range of agencies and Higher Education Institutions (HEIs). Previous work with high-tech firms has shown that it is through social relations, interactions and networks that entrepreneurship is carried out (Anderson et al. 2007). Our empirical study is based on 14 semi-structured interviews that recorded the interactions and experiences of actors actively involved in building regional clusters. Key findings can be divided into three main themes, namely: i) motivations for organizing / attending regional networking meetings; ii) outcomes of these meetings; iii) the role of sector-specific cluster meetings in supporting networking and entrepreneurship. The use of cluster building activities as a means of supporting regional economic development is widespread. The study demonstrates how cluster building activities can act as a mechanism for supporting regional economic development, but highlights the need for both entrepreneurs and intermediaries to more clearly understand each others' differing motivations and expectations, as well as the multiple reasons for participating in cluster building activities.

Keywords: Regional clusters, Regional development, Entrepreneurs, SMEs

Introduction

In recent years governments throughout the world have been strongly encouraging the development of clusters. While many industries tend to cluster spatially, due to resource requirements and/or historical accident, clusters can also include firms working in similar or related technologies with an infrastructure of institutions and social relationships that provide resources but which promote the interests of the whole cluster (Boschma 1999; Feldman et al. 2005). The drive towards cluster formation has tended to occur because many governments aspire to achieve the conditions and economic success of Silicon Valley (BIS 2010; EC 2008; Feldman et al 2005; NGA 2002). While the majority are unsuccessful, clusters are perceived as a way of ensuring productivity and can be a factor in increasing performance of regions in national and international markets (Collinson 2000; Koh et al. 2005).

Frequently, a key aspect of the strategy of many governments is to use clusters not only as a mechanism for nurturing the kind of socio-economic environment which might provide the opportunity for entrepreneurs to flourish but, perhaps more specifically, to use them as a way for entrepreneurs to build dynamic informal networks with other types of organizations (Maillat 1995; Collinson 2000). One reason for this interest in networks is the increasingly relevant role networks are perceived to play in business start-up, growth and development. Indeed, previous work with high-tech firms has shown that it is through social relations, interactions and networks that entrepreneurship is actually carried out (Anderson et al. 2007). However, such a strategy and approach towards clusters does bring into question the extent to which networks can actually be influenced, encouraged and/or configured by those involved in their development and if this can be achieved for the purposes of regional economic development (Collinson 2000). After all, it is commonly accepted that the development of networks and the social capital which resides within a network involves a social process, but these are aspects which to a large extent are socially constituted, rely on social cohesion and social interaction (Collinson 2000; Jack and Anderson 2002; Jack 2005; Parilli 2009).

As a consequence of these perceptions, there does seem to be a need for more work which looks directly at clusters to identify if they can actually play a role in supporting the development of networks for entrepreneurship. This means not only looking at the motivations and outcomes of networking activity, what goes on within networks to support entrepreneurial activity and the business development process but also if clusters are an appropriate environment in which networks can flourish and be built to support the entrepreneurial process. Essentially, by looking at these issues a broader understanding about why and how networks emerge to support business development but also what actually goes on within emerging networks might be gained (Larson and Starr 1993; Uzzi 1997; Hite and Hesterly 2001; Lockett et al. 2008).

The purpose of this paper is to broaden understanding about clusters, networks and entrepreneurship. We achieve this by presenting the findings of a recent empirical research project which considered the motivations, outcomes and experiences of entrepreneurs and intermediaries engaged in cluster building activities in the ICT sector in Northwest England. The initial objective of these cluster groups was to provide a forum for networking and to bring 'like minded' individuals (intermediaries and entrepreneurs) involved in the ICT sector together. More specifically we deal with the questions: *What are the motivations and outcomes for entrepreneurs of engaging in cluster building activities? And, how do clusters play a role in developing networks for entrepreneurship?*

The research takes a deliberately dual perspective, by interviewing both entrepreneurs in small ICT firms and intermediaries from a range of local and regional government agencies and Higher Education Institutions (HEIs). Our empirical study is based on 14 semi-structured interviews that recorded the interactions and experiences of both entrepreneurs and a range of intermediaries actively involved in regional cluster groups.

The contribution of this work is that it demonstrates the use of cluster building activities as a means of supporting regional economic development. It also highlights the emerging role of HEIs, or more specifically specialist units within them, in cluster building, particularly as a means of facilitating knowledge transfer with small firms. In terms of entrepreneurship, this paper broadens understanding about the role of networks and the motivations and outcomes for entrepreneurs of engaging in these types of activities.

The paper is organised in the following way. To begin, the literature relating to clusters, social networks and social capital is considered. Following this the methodology used to operationalise the research questions and background material about the industry and cluster on which the empirical study is based are considered. Thereafter, the findings from this study are discussed. Finally, conclusions, recommendations and some direction for future scholarly inquiry are provided.

Clusters, social networks and entrepreneurship

Since the 1970s many countries have established clusters, science parks and/or technology districts as a mechanism to develop and encourage new “engines of growth” (Koh et al. 2005). The constant search to boost economic growth and development and better position regions in global markets has ultimately meant that clusters are seen as extremely important, a prerequisite for regional economic growth and an important mechanism for the global competitiveness, if not survival, of entrepreneurial businesses within the wider global economy (Galbraith and De Noble 1992; Collinson 2000; Watts et al. 2006; Parrilli 2009). Take the European Union (EU) as an example. Here regional economic development policies place considerable emphasis on either the creation of new clusters or the strengthening of established clusters (Watts et al. 2006). This interest and perception has led to a dramatic increase in the mechanisms, tools and resources used by policymakers to encourage entrepreneurship through cluster building activities (Collinson 2000). Science parks, for example, are promoted as a way of facilitating technology transfer and regional development because there is a perception that they lead to fast-growing, geographically clustered firms within industries (Tan 2006).

As the drive towards creating and encouraging cluster development has occurred, a growing body of research has been forming pointing to the economic benefits of geographic clustering (Al-Laham and Souitaris 2008). Basically, the idea behind clustering is that it is believed to provide a vehicle to bring together business support and drive technology transfer in a way that encourages the creation, growth and development of innovation-led, high-growth, knowledge based businesses (Koh et al. 2005). The degree to which a firm is tied into cluster activities may well influence the performance of that firm, its growth and development, the cluster and even that region (Watts et al. 2006). The support for clusters has arisen because firms located within geographic clusters are seen to exhibit higher innovation performance, rates of growth and survival than firms that are not (Gilbert et al. 2008). Moreover, from the perspective of the business, establishing relationships with local government, universities or trade associations to increase knowledge has been said to result in substantial rewards for firms and the new venture (Gilbert et al. 2008). The extent and nature of links between customers, suppliers and competitors is also perceived to determine a cluster's advantages in terms of industrial structure (Tan 2006). Given the combination of perceived benefits of clustering it is not really too surprising that their creation and development has been given the support it has.

Previous work has identified potential avenues for future research and key areas for further investigation, the main ones being the effects and implications of cluster and network embeddedness (Al-Laham and Souitaris 2008); the relationship between clusters and performance (Gilbert et al. 2008); indirect and social aspects (Bollingtoft and Ulhoi 2005); and, the learning behaviours of cluster new ventures, how these differ from other new ventures and the networking activities of entrepreneurs engaged in clusters (Collinson 2000). Themes running through potential research areas are networks, ties and how the cluster might impact on networking for entrepreneurship. However, an issue that arises is that due to the nature of their environment, policy makers, and those given the task of driving regional economic development forward, are often looking for hard, fast economic indicators in the form of financial facts and figures. As a consequence there is a lack of understanding and appreciation that it is social processes that often underlie entrepreneurial activity (Collinson 2000; Jack and Anderson 2002). And, while such bodies play an important, often critical role, the kind of socio-economic environment in which entrepreneurs flourish and grow and the type of dynamic informal networks that support entrepreneurship are too often ignored (Maillat 1995; Collinson 2000). We are frequently reminded of the success of Silicon Valley as something to aspire to but what is often overlooked is the intangible social and cultural characteristics that bind and cement the businesses in that region together (Collinson 2000). Networks and the activity of networking, for example, involve a social process which takes place over time; it is a process of identifying common interests, gaining knowledge and experience of other individuals and building

trust (Jack 2005; Anderson et al 2008). It has also been suggested that to really explore networks and how they might impact on entrepreneurship requires more qualitative and exploratory research (Hoang and Antoncic 2005; Jack 2010; Slotte-Kock and Coviello 2010). This goes against the hard fast results too often required by policymakers and outwith the comfort zones of many of those involved in making policy decisions.

A further issue is that when it comes to cluster formation, entrepreneurs really are a “spark” (Feldman et al. 2005). In furthering individual interests, entrepreneurs often act collectively to “shape local environments by building institutions that further the interests of their emerging industry” (Feldman et al. 2005: 130). As agents of change, entrepreneurs “draw on existing resources in the local environment and, in turn, add new resources to that environment that others can draw on” (Feldman et al. 2005: 130). However, this role and how entrepreneurs actually interact with and shape their environment has largely been ignored in models of economic regional development (Appold 2000; Boschma and Lambooy 1999). Instead, economic success and the sustainability of entrepreneur catalysed clusters are seen to rely on the policy environment and the ability of the growing resource base to adapt (Feldman et al. 2005). Again this implies that understanding the social mechanisms and processes that support entrepreneurship are largely overlooked by those driving policy forward, especially the networks in which entrepreneurs are increasingly seen to be embedded.

Social networks and entrepreneurship

Interest in networks has really increased since the 1990's when a number of researchers started to look at the link between networks and entrepreneurship (Hansen 1995; Chell and Baines 2000; Jack et al. 2008). Essentially, the work carried out has shown that networks are really critical to entrepreneurship (Casson and Della Guista 2007) as they extend the potential resource base of the entrepreneur (Aldrich and Zimmer 1986; Birley 1985; Carsrud and Johnson 1989; Johannisson and Peterson 1984; Johannisson et al. 1994); act as a source of information (Steier and Greenwood 1995); improve the possibilities of success (Brüderl and Preisendörfer 1998; Jack and Anderson 2002; Johannisson 1986; 1987; Ostgaard and Birley 1994); and, of course, venture survival (Arocena 1984; Brüderl and Preisendörfer 1998; Huggins 2000; Szarka 1990). Since the relevance of networks seems to be fairly consistent it is probably not that surprising that entrepreneurship is progressively being perceived as a process socially embedded in network structures (Aldrich et al. 1987; Aldrich and Zimmer 1986; Jack and Anderson 2002; Johannisson 1988).

An entrepreneur's network has been described as a "learning habitat from which to gain understanding about opportunities and resources" (Bowey and Eaton 2007). So, to be successful it can be anticipated that entrepreneurs should look to build networks of relationships as these seem to constitute an extremely valuable resource for entrepreneurial activities (Nahapiet and Ghoshal 1998; Anderson and Jack 2002; Davidsson and Honig 2003; Batjargal and Liu 2004). But, perhaps more importantly, entrepreneurs should not just look to build any "type" of network relationship but instead those from which they can learn and that allow them to generate the right resources and opportunities at the right time for their venture. So, it is not just the relationship that is important for entrepreneurship. It is also what goes on within that relationship and what that relationship can bring to the entrepreneurial venture; the consequences and outcomes from having that relationship and contact. After all, ties that form a network structure can have a significant impact on resources and opportunities (Jack 2005). So, it is perhaps not too surprising that maintaining and developing social relations has been found to be key for both nascent and serial entrepreneurs (Davidsson and Honig 2003).

In terms of relationship "type" most work that considers networks has tended to focus on the benefits of being connected to a network that is structured but also diverse, as it is felt that heterogeneity brings benefits, particularly in terms of connections to other social systems (Coleman 1990; Ibarra 1993). Essentially, connections to other social systems would seem to be a key aspect of networking. After all, people are embedded in social situations so entrepreneurs should be able to take advantage of the wider social relations in which their ties are embedded (Kim and Aldrich 2005). Take strong ties as an example, while these can be instrumental for business activity and used extensively to provide knowledge and information, they can also maintain, extend and enhance business and personal reputations in and beyond the immediate social context (Jack 2005).

To broaden understanding about networks it is important to understand the interactions of network members, their motivations for interacting and the consequences and outcomes of their actions. While Borgatti and Foster (2003) argued that the outcome of networking represents the bulk of network research, few have considered this in relation to motivations and consequences. Individual and collective social networks, ties and structures help the individual get access to information and know-how (Bollingtoft and Ulhoi 2005). Aspects related to networks, such as social capital, have been associated with enhanced business, knowledge acquisition and exploitation and innovation performance (Cooke and Wills 1999; Yli-Renko et al. 1998; Yli-Renko et al. 2001) and are thought to be especially important for early stage organisations (Shane and Stuart 2002; Davidsson and Honig 2003). However, it is the patterns of association that are important, particularly for

entrepreneurs in early stages (Liao and Welsch 2005). So, “who you know” may well be an important asset and have an extensive impact on the entrepreneur and his/her activities.

Clusters and networks for entrepreneurship

Within a similar context to that of clusters, it has been argued that entrepreneurs might benefit from being more aware of the role and importance of social networks during the process of establishing a new venture (Bollingtoft and Ulhoi 2005). Networking is seen to be a desirable activity for entrepreneurial firms as it leads to competitive advantage and ultimately increased performance (Madill et al. 2004). Evidence has suggested that the social relationships of entrepreneurs and where the firm is located can contribute to survival (Stearns et al. 1995). Ultimately this means that clustering could have a huge impact on entrepreneurial activity and the performance of a firm. Close proximity or co-location in HEIs can also impact positively on networking activities (Lockett et al. 2009). The design and nature of such contexts may encourage people to actively network with other organisations through various activities and in a variety of ways (Bollingtoft and Ulhoi 2005). However, according to the findings of Perry (2007), networks should only be joined if there is a definite benefit to the business. Entrepreneurs and managers of hi-tech firms are clearly dependent and draw on specific kinds of networks that bring relevant knowledge and expertise (Collinson 2000). This implies that entrepreneurs have to be strategic in their investment of time and commitment in network groups, and cluster participation is seen to be more of a commitment than belonging to an industry association (Perry 2007). Hence, clusters may not necessarily be the win-win opportunity for all participants as we are led to believe (Perry 2007). Moreover, there seems to be an implication that by “joining” a cluster an entrepreneur is immediately part of a social network but because social networks rely on aspects that are related to the social context and are developed over time, they can be difficult to build and maintain (Bollingtoft and Ulhoi 2005).

So, there is a dilemma in that on the one hand there is a push towards the creation and strengthening of clusters as a mechanism for creating and fostering entrepreneurship and to provide a socio-economic environment in which networks for entrepreneurship can thrive and flourish. There is also a perception that entrepreneurs should make contact with others, interact with others and, ultimately, network with others but also that they should draw on and “use” the aspects that reside within those networks. Like previous work in a similar type of context, we would argue first that to understand economic-driven contractual relationships, social aspects also need to be taken into account and second that individuals work together more effectively and efficiently when they know, trust and identify with each other (Bollingtoft and Ulhoi 2005 referring to the work of Bolino et al. 2002). After all, the networks in which entrepreneurs are immersed involve a social process which takes

place over time and requires social interaction, social cohesion and the building of social trust. It is against this background that this study is set. To address the issues raised we deal with the questions, *What are the motivations and outcomes for entrepreneurship of engaging in cluster building activities? And, how do clusters play a role in developing networks for entrepreneurship?*

Methodology

Given that entrepreneurship is a social process with economic outcomes, hard econometric studies on which government and policy makers often rely are unlikely to provide the kind of knowledge and understanding about the types of issues we are concerned with here and provide the ability to explore social processes (Collinson 2000; Jack 2010). Social networks are mostly informal in character and largely consist of exchanges of knowledge that have value but which are difficult to quantify, at least in a rational economic fashion (Collinson 2000). Moreover, previous work has argued for a policy approach that includes aspects related to the social context – such as social cohesion – as being a way forward (Parilli 2006). Studies on business incubators have been criticised for being descriptive and atheoretical in approach with interpretive methodology being offered as a more robust way to recognise and understand social interaction and the socially constructed nature of social reality (Bollingtoft and Ulhoi 2005). This is supported by a request by Mhill et al (2004) that future work in this area takes a more qualitative approach aimed at developing a more detailed and deeper understanding of the nature and value of linkages to others.

The context

Cluster group building activities have become increasingly strategic in nature. With HEIs, university departments, chambers of commerce, and multiple government agencies, including regional development agencies, county-level economic partnerships, local councils and city councils (intermediaries) investing resources in their formation and development. Interestingly, whilst the cluster groups comprise mainly small firms their formation has been largely instigated by these intermediaries.

The research is based on the experiences of both intermediaries and entrepreneurs both organizing and attending ICT specific cluster group meetings, which had been set up by the regional and local development agencies and HEIs. Each ICT cluster group had a separate steering committee, which included local rather than regional stakeholders. Whilst intermediaries were clearly evident in the cluster groups they were promoted as being small firm focused and in most cases meetings were chaired by entrepreneurs. The groups were in various stages of development with the intermediaries

considering the roll out of similar cluster groups within neighbouring areas. The research was thus conducted at a timely stage in their development.

Data collection

The data comprise a series of 14 in-depth interviews, conducted in September 2007. The interviewees have been categorised by their primary role: 5 managers in HEIs or agencies (Intermediaries) and 9 small ICT firm owner-managers (Entrepreneurs) (Table 1).

Insert Table 1 about here

The interviewees were selected as being representative of the role within their respective organisations. Potential interviewees were approached, by email, by the authors requesting their participation in the study. All the individuals approached agreed to be interviewed. Interviews were conducted by telephone, using interview guidelines (Table 2).

Insert Table 2 about here

To provide continuity an independent interviewer conducted all the interviews. All interviews were digitally recorded and transcribed. Like other work in a similar area (Neergard and Ulhoi 2006), a strength of this study is that respondents were willing and prepared to talk openly about their experiences. This impacted on the depth and type of material we were able to collect through interviews.

Data analysis

An inductive approach was used to identify emerging themes from the data (Denzin and Lincoln 1994; Silverman 2001). The key themes presented in this paper emerged through the analyses and through discussions amongst the three authors. In order to preserve their anonymity intermediaries (I) and entrepreneurs (E) are identified by type (I or E) and uniquely by order of appearance in the text in the following section.

Findings

The findings have been categorised into two areas. The first area looks at the motivations of the entrepreneurs attending the networking events and links directly to questions on the need to organize and attend regional sector-specific networking meetings. The second area looks at the consequences, or outcomes, of the meetings. Based on the entrepreneur's reasons for attending and whether (or

how) these expectations have been met through the meetings. The findings are then summarised together with a discussion on how clusters played a role in developing networks for entrepreneurship.

Motivations for organizing / attending regional networking events

Intermediaries

The main purpose of the cluster networking meetings was to support economic development in the region through engaging with more local businesses; particularly businesses operating in high-growth sectors. As one interviewee stated: ‘one of the key targets of the regional development agency [is] to...look at sectors of the economy that can create higher value jobs, jobs that command higher earnings, [which] tend to be ones where people have specific expertise’ [I1]

Intermediaries had conducted their own research into the needs of these sectors and identified the development of networks as being a fundamental component of growth [I1]. The development of networking clusters was driven by the intermediaries, yet the format and agenda would be led by the needs of entrepreneurs: ‘...we are not trying to push the private sector companies down a road of [increasing growth]. The private sector leads it and the public sector will support it. It [growth] is not something that we are trying to prescribe it is something that we hope will kind of come out of it anyway in terms of how the companies develop and hopefully the sector develops’ [I2]

The creation of networking groups thus fits into the wider strategy of bringing together businesses within specific sectors and creating so called ‘clusters’ for knowledge sharing. The networking events are, however, just one avenue to achieving sector-specific growth: ‘...it is not just a case of setting up networks it is a case of looking at what sort of support that sector needs. Networking might be a part of that, but are there other issues, much broader issues, that aren’t addressed simply by creating networks. The networks provide a conduit perhaps to other types of support and activity around cluster development’ [I1]. These ‘other’ types of support services had included the development of office space occupied by businesses within specific sectors and the promotion of the development agency’s support services amongst a broader range of regional businesses.

Entrepreneurs

When entrepreneurs were asked about their reasons for joining the network group, few were able to articulate a clear answer. They were unsure about the reasons why these groups had been set up and many attended simply to ‘test the water’. As one entrepreneur stated, ‘I asked this question early on and never did get a clear answer to what is the purpose of the ICT cluster. I couldn’t tell you what it is [even] now’ [E1]. Despite this, through the course of the interviews it became clear that there were

four underlying motivations for attending the events: a) generating new sales leads, b) building new alliances, c) participating in knowledge transfer (technological and managerial knowledge) and d) discussing day-to-day issues of running a small business. For many it was a combination of these motives, for example: 'I would get involved in these purely to develop my business: [firstly] from a technical perspective to learn new ideas, or [secondly] from the business development perspective to find business opportunities, or thirdly to develop alliances with other companies that may have skills that we don't' [E2]

Development of their business through these avenues was one of the key priorities, echoing the findings of Perry (2007), 'I do believe in networking as a vehicle...but I have to ask myself the ultimate question, how is this going to help [my company]? And you know, is it going to bring in revenue? This is my highest objective' [E1].

For some, this was achieved primarily through the presentations and thus their attendance depended on the relevance to their business. This obviously created a challenge for the organizers, as one intermediary stated, '...if the topic and the presentations are of interest to them then they turn up, if it is not they probably don't come that month' [I3]. For others, however, the motivation was not business development per se, but an opportunity to discuss everyday issues in their business, for example: 'one of the guys that had just started a business said he never realised how lonely it was starting your own business... we had all been through it and if you have got that supporting network of other companies that have been through or are going through it you know you are not on your own' [E3]; 'If it is there just to let us just gather and have a chat about what is going on that is good enough for me. It is nice to have what I call 'whinge clubs' because when you run a business [it's nice] to speak to like-minded people' [E4]

Outcomes of organizing / attending networking events

Intermediaries

For the intermediaries, outcomes were linked to the way they had engaged with more entrepreneurs from the local area. In particular how they had been able to make an increasing number of entrepreneurs aware of their services. The intermediaries described the meetings as a 'conduit' [I4] for meeting new companies, and as one intermediary stated: 'it does bring businesses out of the wood work that we weren't aware of previously and still probably wouldn't be aware of if it hadn't been for that network...it has had the effect of making us much more aware of the wider range of businesses in the sector' [I1].

The University also saw it as an opportunity for academics to showcase new developments, find potential investors or people wishing to engage with the university. It also made more entrepreneurs aware of the work of the University. In addition the public sector agencies had also found it helpful for promoting their own support services, including the sector-specific office space: ‘from our point of view some of the benefits have been just getting businesses through the door of [office space] because we want to promote that building and increase tenancies and ashamedly that is one of the advantages for us doing it’ [I1]

At the time of the research, which was four months after the start of the cluster meetings, the intermediaries had not yet formally measured any outcomes from the meetings. Although there were signs of progress, it was evidently difficult to measure tangible ‘outcomes’: ‘a lot of people every meeting are exchanging business cards and I am conscious of things being done it is just a shame that we can’t capture them...there is an awful lot of networking being done and people are ending up doing business together’ [I5]. Intermediaries were under pressure to understand the outcomes and how they related to business growth [I1]; additionally, this information could also be used to promote the clusters further [I1].

Entrepreneurs

The outcomes for entrepreneurs were more complex. Similar to their motivations, entrepreneurs also struggled to articulate what they had achieved through the group meetings and many were unsure on what the advantages had been. One of the key positive outcomes had been the creation of a space to meet other businesses in the same sector, particularly sharing new ideas following the presentations and being able to chat about the everyday issues of their businesses. Many, however, saw the single sector focus as disadvantageous. There was an air of frustration in the development of sales leads and the formation of alliances which had led to some disappointment. These five findings are explored in this section and appropriate quotations from entrepreneurs are used to illustrate each of them. The development of trust was also a key theme which emerged and this is discussed in the final section here.

i) Articulating outcomes. When asked about what they had gained through the networking meetings, entrepreneurs struggled to pinpoint tangible outcomes. As one entrepreneur answered: ‘That is a very good question. In a commercial sense probably nothing. From a sort of sharing similar sort of issues I guess it is quite important when you run a business to seeing other people having the same sorts of problems...I think we are all trying to work towards something of mutual benefit. Nobody is sure what that is....it doesn’t help in that everybody who is a member probably wants something out of it

but doesn't know what they want out of it' [E4]. On a similar line, others stated how they found the meetings interesting and beneficial, but didn't quite know why: '...they are not what I imagined...I do enjoy it and I find interesting things there but I couldn't put my finger on quite what it is. It is just a gathering and a meeting and some are better than others' [E5].

ii) Advantages of same-sector regional meetings. Bringing together businesses from the ICT sector was seen as an advantage as they can draw on their sector-specific knowledge (Collinson, 2000): 'the whole spirit of it being a group for people that work in ICT really appealed to me...I like the idea of chatting with people in similar businesses and sharing war stories or just camaraderie, sharing ideas, frustrations...' [E6]. Additionally, the presentations had sparked new ideas and new opportunities: 'I find it particularly refreshing to see some of the research stuff going on at the university and that gets your mind thinking as to commercial problems that have you have seen that can be solved...you can actually see the opportunities in the market and you can see where different academics are taking things and then that starts to generate ideas about how you can bring those things together' [E7]

It had also been beneficial in the way the presentations were driven by the needs of the entrepreneurs. For example, an entrepreneur requested a presentation on software licensing and another cluster member, with extensive experience in that area, was able to step in and provide a presentation [I3]. Finally, many found the informal elements of the meetings helpful, particularly for socialising with companies who were operating in the same area: '...there is a social element which is quite nice...it is just nice to see them again. Although we do compete there are definite differences in our businesses and we cross each other's paths because of the market' [E2]

iii) Disadvantages of same-sector cluster meetings. There were reservations about the advantages of same-sector meetings as it limited network heterogeneity (Coleman, 1990; Ibarra, 1993). It was seen by some as limiting the potential for the generation of new sales because they had an established client base and their clients operated within very different sectors. The same was the case for potential collaborations. Others too were concerned that they were sharing ideas with companies who could potentially be their direct competitors. This was described by one entrepreneur as the 'double edged sword' [E2] of networking.

One entrepreneur had recognised an opportunity to attend other sector-specific meetings where he would get a chance to meet potential clients: '[this networking meeting] is doing okay it is not perfect...I am starting to link the ICT cluster into the different markets...for instance a tourism cluster, an association of all the landlords or landladies, ...there might be specific solutions that we

can apply to them right across the board that will improve their business. So that is the next thing, tying in to vertical clusters or vertical markets or other regional clusters' [E3]

iv) The development of trust within the network. A common theme was the notion of trust. Many entrepreneurs talked about the need to develop trust with other individuals and businesses. This was illustrated when they were asked where they would turn to for help in the event of problems or issues in their business. None of the entrepreneurs mentioned other cluster group members; they all stated individuals whom they had known for some time which in many cases were advisors from public sector agencies. Perhaps the reason for this is that the networking meetings were fairly new and greater levels of trust amongst members had not yet had chance to develop. As one intermediary stated, 'it's all part of a process of building trust and confidence in each other to the point where they may well work together to do business' [I1]. Yet trust takes time to develop (Jack 2005; Anderson et al., 2008), as one entrepreneur stated, '...[it] is really important that there is trust and that comes with working with people for years rather than just meeting someone from the cluster' [E4]. For one entrepreneur, however, working with companies from the same sector in the same region created an affinity amongst those people and he was able to put names to faces which for him created a sense of trust [E1].

v) Disappointments. There was some disappointment in that leads had not been generated during the course of the networking meetings. One entrepreneur in particular had expected more cross-selling of services, particularly since an opportunity for the services that his company offers arose, yet he was never consulted by the other group member: 'the last meeting I went to I was a little disappointed quite simply because I had been meeting these people all the way through this group and one of them had commissioned a video which is something that I do and while I don't expect to automatically get a commission from these people, but I would think at least they would talk to me about it...I don't expect to get the work as a matter of course but I would have expected the person involved might at least have spoken to me' [E5]

Analysis and Interpretation

The research reported here demonstrates that for intermediaries, the motivations to start the group came about through what were seen by policy makers and delivery groups as the "success" of other cluster networking events. Intermediaries are under pressure and "strongly encouraged" to establish clusters. This is clearly part of their remit. However, what is interesting about our respondents is that none of them mentioned the pressure aspect. Instead respondents discussed the need for the activity, regardless of the outcomes. Goals were driven by a hope and desire meetings would be successful

but also ambitions for growth in the sector. In many ways this activity was seen to offer the entrepreneurs an opportunity. Since opportunity is a critical condition for entrepreneurship, there seemed to be a belief that developing locational opportunities would have a positive impact on entrepreneurial activity within the sector (Feldman et al. 2005), thereby raising the profile, economic conditions and success of the region.

The main goal of the intermediaries was to create growth within particular sectors and networking had been identified as a key way of achieving this. This reflects the findings from other studies that have looked at similar issues (Maillat 1995; Collinson 2000; Huggins 2000). However, this study also demonstrates that intermediaries were not clear on how these goals would be achieved and as a consequence cluster networking events were very much run on a 'let's see what happens' basis. At times attendance was sporadic and few of the interviewees could articulate what the advantages of attendance had been for their business. For entrepreneurs it is clear that there are different motivations for attending: generating leads, building alliances or partnerships, acquiring information on new technologies or technology related issues, discussing the day-to-day issues of running a business. Yet it is difficult to satisfy all these motivations. Some interesting points emerge around these expectations. In terms of generating leads it is clearly evident that for some this, and being able to use the networks that existed within the cluster, is the main purpose of the cluster. This seems to be a very calculated approach and one which as is evident here does not build trust. In fact, quite the opposite seemed to occur, leading to distrust by others, caution about engaging and wariness about the role of the cluster. Although this particular cluster seemed able to deal with these aspects, in other situations this could lead to the breakdown of these types of activities. The data does suggest that entrepreneurs need to be educated about what the outcomes from cluster networking activities should be. However, we suspect that because entrepreneurs come to these activities cautious and wary and because they are often established by funding bodies, they are suspicious about the intentions and unsure of what to expect. Since a lot of entrepreneurs attend these meetings and are, initially anyway, unsure of what to expect they end up having their own motivations for attending and their own expectations. It might help if intermediaries are able to provide a clearer illustration, purpose and objective of the cluster network and what it is actually looking to achieve. This request reflects that of others who have looked at clusters and entrepreneurship and found that while it can be difficult to identify any specific help and assistance firms might need, especially those in early stages, the role of local agencies can also be unclear (Feldman et al. 2005).

While some individuals dip in and dip out of the network cluster – depending on what they can actually gain from it - there are key individuals who are strongly motivated to engage and build the

network. However, should these individuals leave the organisation then this could cause issues over sustainability of the network cluster. It is anticipated that this type of activity might be difficult to sustain in the long term. This is because the social capital and trust resides in the individuals who are part of the network, rather than the network itself (Anderson and Jack 2002; Anderson et al. 2007). If key individuals leave it is likely momentum will be lost.

What is particularly interesting from the work reported here is that the stage of the business seems to be important (Liao and Welsch 2005, Hite and Hesterly 2001; Uzzi 1997). Core members were those with more developed businesses. By comparison, it was those who were more early stage who tended to look on the cluster as a mechanism to generate sales and sales leads. This in many ways is what gives this type of activity a bad name. It also suggests a lack of understanding or naivety about the processes and mechanisms that lie behind these things, the etiquettes and engaging mechanisms. Entrepreneurs do tend to hesitate about joining these types of meetings (Jack et al. 2010). This is because there is a general perception that they are used to generate sales and tend to have a contrived feel to them. This presents difficulties for the development of social capital and the building of trust. Previous work has argued that earlier growth stage firms are more calculative and intentional in the development of their networks than others (Hite and Hesterly 2001). However, previous work has also argued that for those firms in early growth stages what is important is how they utilize their social ties to influence and shape the norms and practices of their networks and in turn develop trust and access to the support of others (Liao and Welsch 2005). While this format might seem to offer the opportunity to generate the relational social capital which is seen to be critical for earlier stage entrepreneurs (Liao and Welsch 2005), those respondents presented here who were in this stage did not necessarily display this ability, know how or understanding. This reflects a lack of understanding but also suggests a need to educate entrepreneurs about the role of clusters. It again reflects the need for those involved in driving clusters to be clear in terms of aims and objectives.

Interestingly, in their work Neergard and Ulhoi (2006) found that government agency may destroy existing cooperative arrangements. However, in the study reported here it seems that the government agency performed an important broker role (Aldrich 1989; Jack et al. 2010) by providing a meeting place for like minded individuals to come together, an interest in business development through the organisation of appropriate speakers and providing a forum for trying to facilitate networking. It is evident that while all presentations and discussions are not always applicable to everyone, these and the discussions around these are a way to find out about up-to-date technology and issues. However, this also creates a concern about the resources required to run the sessions, particularly finding and funding new speakers. The presentations become limited to the network of the cluster members. This

presents difficulties when it comes to identifying possible key speakers because if they lie outside the network then funding tends to be required. However, the nature of these network clusters tends to be that they are financially constrained. This is something that needs to be borne in mind.

In terms of alliances, the data demonstrates that this cluster offered limited scope. This might be due to the fact that those involved all worked in the same industry. Where there is evidence to demonstrate an example where an alliance did form this seems to be due to serendipity rather than intention. The data suggests that alliances did not happen due to the time cost involved in their development. Such activity requires trust and the building of trust can take time but entrepreneurs do not always have the time to engage in the developing of trust for such alliances especially as this is an activity with unknown consequences and outcomes. The time aspect is clearly an issue. Yet for new ventures especially, trust brings legitimacy and when it is lacking there is a greater risk of firm mortality (Akerlof 1970; Stinchcombe 1965; Sing et al. 1986). According to Smith and Lohrke (2008), when trust exists in a relationship individuals are more willing to provide knowledge and information (Tsai and Ghoshal 1998). Without some level of trust there is a danger that economic exchanges will fail (Smith and Lohrke 2008). However, this means that it is even more important for those in early stage firms to build and establish networks, ties and trusting relationships to others and that they should be supported to do so by good appropriate mechanisms through these activities.

Social processes underlie the building of trust and social capital but takes time to build and develop. Time is very important in terms of both generating leads through the cluster, developing alliances but also building trust. Related to this is the understanding that what is seen to differentiate entrepreneurs from the rest of society is their ability and capacity to create social capital (Liao and Welsch 2005). While this study is not specifically concerned with social capital, because of the aspects under investigation it cannot be ignored. Social capital includes many aspects related to the social context for instance social interaction, social ties, trusting relationships and value systems that facilitate action (Nahapiet and Ghoshal 1998; Liao and Welsch 2005). These aspects are not mutually exclusive but instead interrelated (Liao and Welsch 2005). What the findings demonstrate here is that in order for social capital to be created within these networks there has to be trust in the relationship and what the network can offer for entrepreneurial activity. Returning again to trust, it is now becoming accepted that as a concept it is difficult to measure empirically because it is influenced and affected by many factors (Neergard and Ulhoi 2006). As a consequence of the way these aspects are so interrelated, it is difficult to look at them in isolation. Yet, from the entrepreneurs perspective, it is social factors that they feel will make the cluster work; social trust, affinity and shared understanding, similar attitudes and being like minded.

Evidently, what is especially interesting about the data presented, and perhaps surprising, is that for day-to-day issues this cluster seems to work. This is because it provides a point of contact with individuals who are going through, or have gone through, something similar. This is supported by the informality that has been created primarily by the intermediaries. More early stage entrepreneurs feel comfortable to discuss issues because they feel they are in a supportive environment. However, this positive and constructive environment is something that needs to be maintained and sustained.

The following table summarises these points, linking the four different expected outcomes with the motivations for these outcomes and draws elements of the study together to demonstrate how they are achieved through the networking events (Table 3).

Insert Table 3 about here

Conclusion

The aim of this paper was to consider the questions: *What are the motivations and outcomes for entrepreneurs engaging in cluster building activities? And, how do clusters play a role in developing networks for entrepreneurship?* The research raises a number of both theoretical and practical issues. In this paper an empirical account has been provided of what actually happens between exchange relations, the motivations for participating in a cluster and the development of a network. The findings reported here support the work of others, that networking is a social process, albeit with economic outcomes (Jack et al. 2008; Jack 2005). This research has raised a number of interesting points and has demonstrated that cluster building activities can act as a mechanism for supporting regional economic development. Moreover, the findings demonstrate the emerging role of HEIs in cluster formation and building, particularly as a means of facilitating knowledge transfer with small firms. It could be argued that there is symbiotic relationship between the intermediaries and entrepreneurs with each tolerating the others differing needs in order to gain benefit.

The research presented extends our understanding about the motivations and consequences of engaging in cluster activities. The ICT sector is seen to represent a high opportunity technology with favourable market conditions and with demand it is attractive to investors (Feldman et al. 2005). Through key individual change agents the configuration of a cluster may be jointly determined to shape an industry and benefit a region (Feldman et al. 2005). While the findings reported here might be industry or indeed cluster specific, it would be interesting to learn more about the experiences of

other industries where this type of activity was taking place to see if the patterns identified have been replicated in anyway.

Policymakers and others do believe that because there is an economic potential of formal inter-firm networks they should be encouraged (Huggins 2000). While economic development policy is aimed at encouraging entrepreneurship, there is a problem in that policymakers look for hard fast indicators and quick results. However, the conditions associated with entrepreneurship develop over time (Feldman et al. 2005) and this is something that is clearly evident from this study and which needs to be taken into account by policymakers. It has been argued that policy should also support network development in order to optimize the flow of knowledge and resources within the region and at the same time stimulate firms to open up towards the international business reality – *knowledge focus* (Xavier Gellynck et al. 2007). This study introduces an additional motivation for policymakers to engage in regional cluster building activities, namely to promote support services to cluster members – *service focus*. Interestingly, since the original data collection one of the intermediaries has successfully used the ICT cluster to achieve unexpectedly high levels of adoption of a new innovation voucher initiative introduced within the region.

Like other work, this study also shows that policy driven initiatives can provide a trigger for new co-operations (Neergard and Ulhoi 2006). So, while there is room for policy initiatives like the one reported here, like others before this study demonstrates that policymakers need to work more directly with existing initiatives, build on these and support them (Neergard and Ulhoi 2006). However, in addition this work also shows that policymakers need to have a clearer understanding and appreciation of the entrepreneurial context, recognise the underlying social processes and mechanisms for entrepreneurship and grasp the reality that these things take time to develop. There is also a need to appreciate the importance key individual intermediaries can have on engagement, the actual process and the experience. In many ways, such individuals provide the motivating force and if no longer involved the affect could be quite significant.

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Table 1: Interviewee Characteristics

Type	Details
Intermediaries (I)	Director, University-based ICT research facility Business Development Officer, University-based ICT research facility Business Advisor, Business Link Economic Development Officer, City Council Strategy & Development Manager, County Economic Partnership Agency
Entrepreneurs (E)	Managing Director, Business systems provider. Founding cluster member Managing Director, Application service provider. Cluster member Managing Director, Software solutions provider. New cluster member Managing Director, Multimedia solutions provider. Founding cluster member Managing Director, Marketing solutions provider. Cluster member Managing Director, Marketing software solutions provider. Cluster member Managing Director, Software solutions provider. New cluster member Managing Director, Bespoke website solutions provider. Cluster member Managing Director, Connectivity solutions provider. Cluster member

Table 2: Framework for semi-structured interviews

Type	Details
Intermediaries	<ol style="list-style-type: none"> 1. Why are you involved in cluster building? 2. What were you hoping to gain and what have you actually gained? 3. Why do you think the companies are involved? 4. What are the alternatives?
Entrepreneurs	<ol style="list-style-type: none"> 1. Which cluster/s are you a member of and when did you join? 2. Why did you join? 3. What were you hoping to gain and what have you actually gained? 4. What interactions have you had with other members? 5. Are there alternative ways that you could interact? 6. Where did your best business idea come from in the last 12 months? 7. If you were faced with a major business problem or opportunity where would you go for advice and support?

Table 3: Summary of findings organized by key motivational themes

	Generating leads	Building alliances	Gathering information	Discussing day-to-day issues
Motivations	The primary goal of most entrepreneurs: to grow their business through referrals & cross-selling to other members.	Collaborating with others on larger contracts.	To find out about the latest technologies, management issues, etc.	Helpful for business owners who work by themselves.
How this is achieved through the meetings?	Indirectly & informally	Indirectly & informally	Formal presentations; links to university-run technology conferences	Informal socialising
Outcomes	<ul style="list-style-type: none"> - Limited known success from the cluster meetings: they all work in the same sector - Trust and confidence takes time - Some entrepreneurs disappointed because there are no real opportunities to sell to other cluster members 	<ul style="list-style-type: none"> - Seen as advantageous to work with regional businesses - Depends on the type of business - Difficult to develop in a short period of time because they are based on trust & many entrepreneurs join force with others they have known for some time - clusters are limited to sector-specific small businesses - to work with someone you usually need a track record 	<ul style="list-style-type: none"> - Very useful for creating ideas and starting conversations - Working with HEIs can provide information on 'leading edge' technologies - Learn from other cluster members - Topics can be driven by the entrepreneurs - Presentations not always applicable to everyone - Difficult to find new speakers and maintain interest amongst members - Need funding for 'big speakers' 	<ul style="list-style-type: none"> - Particularly advantageous for those in early stages - Able to meet people in similar situations - Some questioned whether meetings could be held in the pub - Problem that it may become a 'whinge shop' - Development of informal cliques