The Impact of Business Networking on the Transfer of Knowledge: Implications for the Diffusion of Innovations

Yvonne Brunetto & Rod Farr-Wharton

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Yvonne Brunetto & Rod Farr-Wharton

Faculty of Business
University of the Sunshine Coast
Fax: 61 (7) 54 301231
E-mail: rfarr@usc.edu.au

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Abstract

This paper examines the impact of networking on learning via the transfer of tacit knowledge and in turn, innovation diffusion for Australian regional SMEs. The findings suggest that Australian regional industry cluster/networks play an important role in facilitating “learning” via the transfer of tacit knowledge for SMEs. In turn, a small number of firms benefit from the diffusion of innovation. In contrast to past studies, this study identified minimal evidence of SMEs collaborating on joint supply-side or marketing opportunities.

The findings suggest that while SMEs do participate in Australian regional cluster/networks and knowledge is transferred amongst some members - innovation diffusion and transfer on the desired scale does not result. A number of reasons may be the cause for this; Australians may be less trusting in their approach to business, hence developing a culture that includes collaborative activities may require time. In addition, government policies based predominantly on traditional rational economic models may not be appropriate for growing SMEs. More research is required to understand their goals and the factors affecting their decision-making before developing policies aimed at assisting them.

1. Introduction

Traditionally, research suggested that a firm’s competitive advantage resulted from their “size or possession of assets” - today, the most important factors are “knowledge and technological skills and experience to create new products, processes and services” (Tidd, Bessant, & Pavitt, 2002, p.4). Historically the ability to firstly, develop an new idea and secondly, turn it into a productivity enhancing opportunity usually results in a firm achieving an advantage in the marketplace (Amabile, Conti, Coon, Lazenby, & Herron, 1996).
At a simple level, innovation refers to an advancement resulting from a new product (or advancement in the price or non-price factors such as design, customisations and services associated with the product), process and/or service. At a more complex level, Tidd et al., (2002, p.7) argue that innovations result from mechanisms such as “novelty in product or service or process, complexity, legal protection of intellectual property, timing and robust design that leads to strategic advantage”.

Innovative activity is crucial to the growth of firms – especially small to medium-sized enterprises (SMEs) (Shane & Venkataraman, 2000). According to Deroian (2002) geographically specific business networking or clustering activities can be beneficial for firms in facilitating the diffusion of innovations. Porter (2002) claims firms can gain a competitive advantage from factors inside the firm as well as external factors such as locational factors and level of cluster/alliance participation. Hence, the level of business networking can affect the ability of firms to gain useful knowledge and skills.

Some firms in some countries naturally cluster with other like-minded firms (Porter, 1998). However, within Australia and most European countries, business networking activities have required the assistance and support from strategic agents to encourage firms to engage in collaborative activities. Because governments are concerned with their firms’ productivity and in turn, their nations’ or regions’ competitiveness, many governments (both regional, state and federal) have initiated policies aimed at promoting ways of diffusing technology to firms (Enright & Roberts, 2001).

Within Australia, the 1999 “Shaping Australia’s Future: Innovation - Framework” (Department of Industry, Science & Resources, 1999) states that one of the main strategies for increasing competitiveness is by stimulating innovation via business networks and cluster development. Business networks are formed through some type of interconnection between businesses and other organisations within a common field of interest (Porter, 1998). Similarly, the OECD (1997) has suggested that the formation of functional industry clusters/networks is a prerequisite for innovative and leading-edge business activity because of the potential benefits associated with accelerated diffusion of technology and know-how. Past research by DETR (2000) suggests that collaboration between firms can enhance the economic development of a region, especially where institutional support is provided.
This paper uses a case study methodology to examine the impact of networking on firstly, learning by SME owner/managers, and secondly, innovation diffusion amongst SMEs within networks and industry clusters. These networks comprise predominantly small to medium-sized enterprises (SMEs) within regional Australia. The primary research question is:

\textit{What has been the impact of networking on firstly learning and secondly, innovation diffusion for Australian regional SMEs?}

The paper is in two parts. The first part identifies secondary research questions that emerge from reviews of relevant literature about clustering, social networking theory (and the role of strategic agents within them), and innovation diffusion. The second part examines findings in response to the research question.

2. Background

2.1. Australian Context

Compared with other OECD countries, Australian firms invest far less in research and development. According to a government report, Australian firms need to create a stronger innovative business culture, not because there is a lack of hidden innovation potential, instead, because there is a lack of culture in harnessing innovations so as to achieve increased competitiveness (Brunetto & Farr-Wharton, 2003). Moreover, not enough Australian firms undertake research and development (Prime Ministers Science, Engineering & Innovations Council (PMSEIC), 1999). For example, of Australian firms with 100 or more employees about 26% undertake some form of research and development and of businesses with less than 20 employees, 12% undertake some form of research and development (Australian Research Council (ARC), 2001).

Australia’s relatively low level of investment in research and development is explained by some authors as resulting from a lack of a critical mass of Australian firms that have created a culture of developing and harnessing innovation (Batterham & Miles, 2000; Marceau, 1999). In contrast, they argue that firms within other OECD countries such as the United States and Asian countries are already investing in innovation and the knowledge economy and there are strong innovative networks. Furthermore, Batterham and Miles (2000) argue that Australian firms will need to support training and research
far more so that they can better understand the importance of innovation and its role in achieving economic and social development.

Australian firms are mainly SMEs. DISR (1999) stated that of the businesses operating in the Australian business sector in 1998, 94% had less than 20 employees and only 6% had 20 or more employees. The Australian Bureau of Statistics (2001, p.1) defines a small business as one that is independently owned, operated and managed and employs less than 20 employees. A medium-sized business is one that employs between 20 and 200 people. The number of SMEs in Australia has at least trebled and their contribution to economic output has doubled since the 1980s. These statistics suggest that SMEs dominate the Australian economy (Barnes & Kennard, 2002).

2.2. Benefits of Clustering
Firms benefit when they collaborate and form industry clusters (Porter, 1998; Porter & Stern, 1999). Past research has identified the benefits of collaboration as knowledge diffusion and multiplier effects associated with agglomeration. The reason why firms benefit is because when firms get together, knowledge and skills accumulate and are dispersed amongst them (Enright & Roberts 2001, p.70).

In addition, firms can decide to collaborate and reduce their supply-side costs (from shared infrastructure, reduced transaction costs, and other localised externalities) and they can act on potential collective market opportunities (Enright & Roberts, 2001, p.68). The benefits emerge because it is easier for investors, researchers, government and private sector infrastructure (such as training institutions) and new firms to access. The combined impact is to promote innovative spin-offs, which in turn, provide the competitive edge for firms in a globalised market.

2.3. Innovation Diffusion
Learning in the context of the firm includes tacit, explicit, individual and social knowledge. These later three forms of knowledge can be codified in routines and operating procedures, but tacit knowledge, particularly related to complex tasks (interpretation of best practice innovation) is harder to capture. Tacit knowledge is the “know by doing” component of knowledge. Tacit knowledge is diffused through the deep socialisation of a "community of knowledge" in which members of the community (in
this case –industry cluster/networks) define a belief system and communication process. Socialisation requires that each member of the network extend his or her community membership for a very extended period of time, beyond the current situation (Von Krogh, Ichijo, & Nonaka, 2000).

Tacit knowledge diffusion, in requiring a social context, can only be passed on by close physical proximity when the work is being undertaken by, direct observation, imitation, experimentation and comparison and joint execution. Tacit knowledge will be shared by a combination of these processes (Mackenzie & Spinardi, 1995). Once tacit knowledge has been passed on from one network member to another, there is a greater opportunity for innovation diffusion.

Past research findings suggest that innovation diffusion occurs faster where a critical mass of firms (engaged in similar activities) locate in geographically close proximity (Baptista, 2000; Deroian, 2002; Eisenhardt & Tabrizi, 1995). Baptista (2000, p.516) argues that that is because the “density of sources of knowledge about such technologies is higher”.

Both Deroian (2002, p.836) and Baptista (2000) argue that whilst geographic proximity assists diffusion of innovations, it is the quality of the links between the different actors within a social network that determines the “level of influence” and that in turn, determines the ability of the innovation to spread. The secondary research question (SRQ1) that emerges from a review of the clustering and innovation diffusion literature is:

**SRQ1: How effective are networks in facilitating (1) the accumulation and diffusion of tacit knowledge and skills, (2) the collaboration of firms to reduce supply-side costs and (3) the collaboration of firms to act on market opportunities collectively?**

### 2.4. Social Network Theory

A business network is defined as two or more businesses that are connected in some way – via activities, actors and resources (Anderson, Hakansson, & Johanson, 1994; Buskins, 2002). In particular Anderson et al., (1994) argue that the primary function and benefits of the relationship is that firms can work together to achieve their mutual and sometimes individual goals. In addition, a secondary function is that over time the firms adjust their
processes to be more complementary to one another and in this way may achieve better quality outcomes.

In terms of the actors, the social network theory argues that the relationship that develops across the firm’s owners and/or managers in turn facilitates the sharing of information and/or the engagement of other activities (BarNir & Smith, 2002). However, entrepreneurs are only willing to share information once a relationship has been established. Moreover the strength of the bonds that develop in turn impact on the degree to which sharing of ideas can occur (Buskins, 2002).

The quality of the relationship between firms determines how successful an alliance or network or industry cluster can be. Olkkonen, Tikkanen, & Alajoutsijarvi (2000) argue that the better the interpersonal communication between firms, the greater the opportunities for the economic relationship to develop. In turn, according to BarNir and Smith (2002, p.219), the strength and importance of the social network affects the “four factors: information, support, credibility, and governance”. They argue that when networks form into associations (such as the “X Food and Beverage Network” or the “X Women Forum”), then a governance mechanism develops based on similar goals and aims and over time an image and credibility status becomes attached to the network. When these relationships are strong, SME owner/managers are more likely to identify and act on opportunities as well as provide emotional support to one another.

Within networks, past researchers have identified the importance of a “champion” in encouraging firms to join and participate within (Browning, Beyer, & Shetler, 1995; Olk & Elvira, 2001). According to Olk and Elvira (2001) collaboration between firms is essential to diffuse innovations/ideas in order to gain a strategic advantage, however the firms do not share ideas, people within firms do. They argue that the sharing of ideas/forming of alliances happens as a result of the interpersonal relationships that emerge amongst strategic agents within and outside firms. Hence, it is important to understand how strategic agents work in facilitating the diffusion of innovations.

The strategic agent could be an entrepreneur that others respect and in turn, emerges as the natural leader. The strategic agent could be the “opinion leader”, whose role is to promote an innovation using their established credibility and trustworthiness (Valente &
Davis, 1999). On the other hand, the strategic agent could be a government development field officer whose task it is to assist and support SME owner/managers to grow. These field officers operate within a number of countries assisting with the process of innovation diffusion in line with specific government policies.

The individual characteristics of the SMEs’ owner/manager can also affect the attitude of participants within networks. Romijn and Albaladejo (2000) argue that the way entrepreneurs act is in turn a reflection of the culture and strategy nurtured within the firm, which is affected by the level of education as well as their understanding of technological sophistication and acceptance of ongoing learning. They argue that the more educated the management of a firm, the greater the likelihood of the entire firm adopting a positive attitude towards learning. In terms of this study, it could be that the education level of SMEs’ owner/manager affects their decision to seek new information and skills. The secondary research questions that emerge from a review of the social network and related literature areas are:

SRQ2: What is the role and importance of government development field officers and other entrepreneurs to firms within the network?

SRQ3: Where do SME owner/managers get their ideas and relevant information from to use within their firms?

These secondary research questions are used to generate data that addresses the primary research questions.

3. Methodology

3.1. Introduction

This paper uses an empirical case study methodology to examine the impact of networking on innovation diffusion and subsequent learning within networks and industry clusters. This methodology is necessary because the impact of networking on innovation diffusion within the real world context is complex and appears to be influenced by a number of factors (Yin, 1989). It is therefore necessary to use multiple sources of evidence in order to establish a “chain of evidence” (Yin, 1989, p.42) using data collection from multiple sources together with analysis processes that are consistent with stated research protocol and practice.
Both qualitative and quantitative methods are used to gather information in response to the secondary research questions. The advantage of using both quantitative and qualitative research methods is that the former can be used to measure outcomes and the latter can provide a greater depth of understanding about “complex interactions, tacit processes, and often hidden beliefs and values” (Marshell & Rossman, 1989). Qualitative research methods are used to understand the impact of networking on innovation diffusion. Qualitative data about SME owners/managers was obtained using open-ended questions in a questionnaire and convergent interviewing (Perry & Jensen, 2001). This type of interviewing is used to design, conduct and analyse six in-depth phone interviews with targeted entrepreneurs identified as having reaped benefits from collaborating via joining a network or industry clustering. To this end, information was obtained using four processes:

1. Focus group of four entrepreneurs to identify important issues
2. A questionnaire was developed using themes emerging from the focus group and a review of relevant literature
3. Three open-ended questions on the questionnaire
4. Interviews with six entrepreneurs

3.2. Sampling

Purposeful sampling underpins all sampling decisions (Yin, 1989). The first step involved approaching the relevant state government department so as to gain access to information about which regions had government employees actively involved in developing and running networks and/or cluster groups. Five regions within the state were identified as actively fostering government-sponsored networks.

The decision was made to focus on three regions only, firstly because these regions have amongst the highest incidence of entrepreneurs in Australia and secondly because of time and cost restraints. The next step involved approaching networks set up by entrepreneurs and/or government in the three regions. The final step involved attending five Entrepreneurs Breakfasts/Network meetings so as to collect business cards to gain permission from relevant entrepreneurs to either interview and/or survey them. In each case, the number of entrepreneurs present at the Breakfast/Meeting was between fifteen and forty. The initial response rate was good with almost 75% of those present being prepared to be involved in the study. However, of the 110 questionnaires sent to
entrepreneurs, only 48 useable completed questionnaires were received. In addition, questionnaires were sent to government-initiated industry clusters within the three regions that agreed to be surveyed. Out of 75 questionnaires sent to cluster members, 23 useable completed questionnaires were received (Total sample=71). Moreover, six entrepreneurs were approached and interviewed in some depth. These entrepreneurs identified themselves as having benefits from collaborating with other firms in a cluster.

3.3. Instruments
A questionnaire was developed to reflect issues emerging in the focus group and a review of relevant literature. The questionnaire included three parts: a short demographic section; statements that asked respondents to indicate their degree of agreement (1=Strongly Agree through to 6=Strongly Disagree); and open-ended questions seeking a qualitative response.

4. Results
4.1. Demographics
In terms of the activities undertaken, the survey results suggest that:

- 36.8% of the sample were involved in food and beverage manufacturing,
- 9.9% were involved in business services,
- 7% were involved in training,
- 7% were involved in tourism, and the remaining
- 39.3% were spread throughout a range of sectors.

In terms of the length of time in business:

- 39.4% had been in business for longer than 10 years,
- 26.8% between 5 and 10 years,
- 31% between 2 and 5 years,
- With the remainder having been in business less than 2 years.

In terms of the number of employees:

- 18.3% of the entrepreneurs employed more than 50 employees,
- 16.9% employed between 20 and 50,
- 18.3% employed between 5 and 20 employees,
- 32.4% employed between 1 and 5, and
- 14% employed no employees.
In terms of the yearly turnover:

- 9.9% had a yearly turnover in excess of $1m,
- 43.7% had a yearly turnover between $1m and $500,000,
- 25.4% had a turnover between $100,000 and $500,000,
- 12.7% had a turnover between $50,000 and $100,000
- 9.9% had a turnover of less than $50,000pa.

Within the sample of network participants, 27.8% of entrepreneurs had joined a network set up by entrepreneur(s) and had had minimal contact with government field officers. In contrast, 72.2% had had some to significant levels of contact with government field officers.

4.2. Focus Group

Four entrepreneurs who attended a Network meeting were asked one question - “What are the benefits to belonging to this network?” The respondents all identified the “learning” role; each explaining how they had benefits from the sharing of information usually related to process problems that they were experiencing in their business. The issues were incorporated into the survey instrument.

4.3. Results from Quantitative Analysis

In order to gather data to respond to the first secondary research question – “How effective are networks in facilitating (1) the accumulation and diffusion of tacit knowledge and skills, (2) the collaboration of firms to reduce supply-side costs and (3) the collaboration of firms to act on market opportunities collectively?” a linear regression was used to examine the relationship between the dependent and independent variables. The results are summarised in Table 1, below (results from the statistical analysis are included in Appendix 1, Table A).
Table 1. The Relationship between Research Questions and Questions Used in the Questionnaire

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Variable name</th>
<th>Statements used in the survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRQ: How effective are networks in facilitating (1) the accumulation and tacit diffusion of knowledge and skills, (2) the collaboration of firms to reduce supply-side costs and (3) collaboration of firms to act on market opportunities collectively?”</td>
<td>Independent variable 1: ‘Diffusion of knowledge and skills’</td>
<td>The Industry Cluster/Network is a good place to get new ideas that will benefit my business</td>
</tr>
<tr>
<td></td>
<td>Independent variable 2: ‘Reduced Supply-side costs’</td>
<td>1. The benefits of cooperating with my suppliers outweigh the problems 2. The benefits of cooperation with competitors to buy raw materials outweigh the problems (e.g. Lower costs)</td>
</tr>
<tr>
<td></td>
<td>Independent variable 3: ‘Learning about Market Opportunities’</td>
<td>Belonging to an Industry Cluster/Network has benefited my business by presenting me with new markets</td>
</tr>
<tr>
<td></td>
<td>Dependent variable: Benefits from being in a network</td>
<td>Overall, there are benefits to being in a network/industry cluster</td>
</tr>
</tbody>
</table>

The findings suggest that there is a significant relationship between the independent variables (1. Diffusion of tacit knowledge and skills, 2. Reduced supply-side costs and 3. Learning about market opportunities) and the dependent variable (“Benefits from being in a network”) (\(F=8.056 \ p<.000, \ R^2= 65.5\%\)). The independent variables explained 65.5% of the dependent variable. An analysis of the regression in addition to the means for each variable suggests that ‘Diffusion of tacit knowledge and skills’ (b=.557) and ‘Learning about market opportunities’ (b=.459) were significant factors determining ‘Benefits from being in a network’.
4.4. Analysis of Qualitative Data

To gather information in response to the second secondary research question - What is the role and importance of government development field officers and other entrepreneurs to firms within the network?’ SME owner/managers were asked to answer the following question:

- How important is your relationship with other entrepreneurs? Explain

In response, all but three of the seventy-one SME owner/managers stated that their relationship with other entrepreneurs was “Important” to “Very Important”. The responses given were content-coded and categorised into five themes. The three most numerous themes emerging from the data about entrepreneurs were that they were a “Major source of important information”, “The mechanism for exchanging ideas” and the source of “Inspiration, mentoring and emotional support” (See Appendix 1, Table B).

To gather information in response to the second secondary research question that asked where SME owner/managers got their ideas from to use in their firms, a question was included in the survey and three lines were provided for the respondent to answer. The question was:

- Where do you get your ideas from to use in the business?

The responses given were content-coded and categorised into five themes (see Appendix 1, Table C). In particular, the first three themes – “Observation and networking of entrepreneurs in the same business (including industry conferences”, “Internet/business journals/Relevant business texts” and “Tacit knowledge and skills from other networking/industry cluster” members accounted for over three-quarters of all sources of ideas for these SME owner/managers. Attending network/industry cluster meeting provided over one-quarter of all ideas and tacit knowledge used by SME owner/managers. A typical response was:

“When an idea strikes, I firstly gather information about it from others in the business. I then check it out via the net. I then do some more research with others I trust and then I trial it and evaluate the progress all the way along. The key is to gather the info and then act on it”.

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Hence, industry cluster/networks provide an important avenue for diffusing knowledge and skills relevant for SME owners/managers.

4.5. Analysis of Interviews

To gather in-depth understanding in response to the primary research question examining the impact of networking on innovation diffusion, entrepreneurs were asked to describe their experience of participating within an industry cluster/network. The persons interviewed had all been in a network for at least eighteen months and in most cases had assisted with the formation of the group. The networks that they belonged to met monthly for either a breakfast or dinner meeting. The interviewees all agreed that they came to the meetings seeking information, knowledge and skills relevant to their industry in general (such as understanding new labeling laws) and their firm in particular (such as a better price on pallets). The industry-specific information was presented by the guest speaker (usually from a relevant government department or successful entrepreneur). The firm-specific information was obtained from other entrepreneurs within the network/industry cluster. Typical comments by SME owner/managers explaining what they got out of going to a network meeting were:

1. “It is my hour of motivation both from the speakers and from mixing with others in the network”

2. “When you network with like-minded people and use the mentoring system provided [by government business development officer and successful entrepreneurs in the network], new opportunities and ideas come about that can be implemented in your business”

3. As a relatively new player in the food industry, my focus [in attending network meetings] has been to gather information about better processing practices and marketing opportunities. My needs have been meet by stimulating discussion with some members about their business practices – I know I’ve learnt a lot that I previously didn’t know”.

The findings suggest that the network/industry cluster meetings provide SME owners/managers with a source of information although; the evidence of collaboration in supply-side or marketing activities (except for a small minority) is weak.
5. Discussion

This paper has examined the impact of networking on the transfer of tacit knowledge and in turn, innovation diffusion for Australian regional SMEs. The findings in response to the first secondary research question (that examines how effective networks are in facilitating (1) the accumulation and diffusion of tacit knowledge and skills, (2) the collaboration of firms to reduce supply-side costs and (3) the collaboration of firms to act on market opportunities collectively) suggests that Australian regional SMEs use networks predominantly to diffuse tacit knowledge and skills.

The findings from the interviews explained how the diffusion of information occurred. The findings suggest that a type of innovation diffusion occurs within networks at two levels.

Firstly, SME owner/managers indicated that they “learnt a lot” from the speakers that were invited to attend the meetings (usually government and related experts involved in exporting, labeling etc and other successful entrepreneurs that have succeeded in getting their products into specific export niches). These experiences facilitated formal learning by most SME owner/managers by explaining information such as export regulations, identifying key people within government departments responsible for organising Trade Fairs to specific countries and the intricacies involved in exporting. In turn, such information provided SME owner/managers with better procedures for processing or distributing their products/services.

A much smaller number of SME owner/managers indicated that they also “learnt a lot” from each other, however, only after a trusting relationship had developed. The informal learning occurs when SME owner/managers felt comfortable enough to share information that could help one another either to solve problems or gain a competitive advantage. For example, one SME was having difficulty getting his products into a large chain store. The traditional method of entry had constantly led to knock-backs for him. When explaining to another SME owner/manager about his frustration, he was surprised to learn that those firms that already had an established niche in the chain store used a different system, process and contact person to get their new products accepted. Once he knew the “informal” system, he also was successful in getting his products in to the chain store market.
Both the formal and informal learning experiences of SME owner/managers led to some of them learning new processes/ways of either making or selling their products/services. The tacit knowledge was diffused through the network/industry cluster meetings after members had developed a trusting relationship as argued by Von Krogh et al., (2000) and Mackenzie et al., (1995). In turn, some of them went further and implemented changes to their established processes within their firms. For this small number of SMEs, the learning processes were used to initiate a simple diffusion of innovation as described by Tidd et al., (2002). As such, the findings support Deroian (2002) and Baptista (2000) thesis that networking activities can be beneficial in facilitating the diffusion of ideas, which in turn can led to the diffusion of innovations - albeit, in only a limited number of cases.

However, these findings do not seem consistent with previous findings about the benefits of clustering in fostering new market and/or supply-side opportunities, as detailed by Porter (1998) and Porter and Stern (1999). This study has failed to confirm such activities within established Australian regional networks/industry clusters except for a small minority within a small number of the networks. Instead, the benefits for Australian SMEs collaborating with other firms came from learning and diffusing information within industry clusters/networks.

The findings from this study have a number of limitations. Firstly, the findings from this research are specific to SMEs within regions; and these characteristics may account for the difference in results compared with previous studies (Enright & Roberts, 2001; Porter, 1989; Porter & Stern, 1999). Secondly, the networks/clusters examined were relatively embryonic in that they had only been in existence for between one and three years and it may be unfair to compare the outcomes of these networks with the outcomes achieved by the famous Italian clusters that have developing successful networks over generations. Thirdly, this study examined the diffusion of ideas – not whether SMEs acted on the new learning to improve a process within their firm so as to achieve improved productivity. A further study is required to examine factors affecting SME manager/owners’ decision-making about whether to implement and how.
6. Conclusion

The findings from this study have added to the clustering/networking literature in that this study has identified the important “learning” role facilitated by industry cluster/networks in disseminating tacit knowledge. In addition, the findings provide finer resolution as to what activities do take place within regional Australian industry cluster/networks.

There are a number of implications from this research. Firstly, for those countries where clustering activities do not happen naturally (such as has been the European and Australian experience), there are a number of implications for governments in their attempts to encourage and support firms to collaborate with the aim of getting them to diffuse innovations so as to achieve real increases in productivity.

The findings from this research suggest that whilst SMEs do join Australian regional cluster/networks - innovation on a grand scale does not result and collaboration about marketing ventures occurs even less. A number of reasons may be the cause. Australians may be less trusting in their approach to business, hence developing a culture that includes collaborative activities may require time. In addition, government policies aimed at assisting firms to grow may be based on inaccurate models.

A strong message emerging from the qualitative data is that some of the SME manager/owners appear not to be interested in growing their business, and therefore will not act on information to grow their business, irrespective of what government or other entrepreneurial strategic agents do. Historically, Australian federal and state governments have made decisions based on the rational economic model that assumed all firms act in a rational economic manner (Rainey 1998). However, these models do not fully explain the behaviour of Australian SME owner/managers. More research into the goals of Australian SMEs and the factors that affect their decision-making are needed before developing policies that attempt to assist them to grow.
References


Hindle, K., & Rushworth, S. 2002, *GEM Yellow Pages Global Entrepreneurship*


PMSEIC. 1999, Prime Ministers Science, Engineering & Innoivations Council, Third Meeting - Agenda Item 4: Strengthening the Nexus between Science and its Applications, 25 June.


Valente, T., & Davis, R. 1999, Accelerating the Diffusion of Innovations Using Opinion


Appendix One

Table A. Results of Main Effects Linear Regression: Examining the Relationship between the Independent and Dependent Variables

Independent Variables: 1. Diffusion of tacit knowledge and skills; 2. Reduced supply-side costs; and 3. Learning about market opportunities.

Dependent Variable: “Benefits from being in a network”.

<table>
<thead>
<tr>
<th>Variables</th>
<th>SME owner/managers</th>
<th>Mean and Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>significant at .000; * significant at .05</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F=6.074 p&lt;.000 R² = 65.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diffusion of Knowledge and skills</td>
<td>.560**</td>
<td>M=2.0 SD=1.3</td>
</tr>
<tr>
<td>Reduced Supply-Side Costs:1</td>
<td>.168</td>
<td>M=2.689 SD=1.6</td>
</tr>
<tr>
<td>Reduced Supply-Side Costs:2</td>
<td>.046</td>
<td>M=3.95 SD=1.8</td>
</tr>
<tr>
<td>Learning about market opportunities</td>
<td>.459*</td>
<td>M=3.14 SD=1.8</td>
</tr>
<tr>
<td>Benefits from being in a network</td>
<td></td>
<td>M=2.06 SD=1.3</td>
</tr>
</tbody>
</table>

Table B. Emerging Themes in Responses to the Importance of Other Entrepreneurs for SMEs

<table>
<thead>
<tr>
<th>Emerging positive themes</th>
<th>Freq</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Major source of important information”</td>
<td>26 (36.6%)</td>
</tr>
<tr>
<td>“The mechanism for exchanging Ideas”</td>
<td>21 (29.6%)</td>
</tr>
<tr>
<td>“Inspiration, Mentoring and Emotional Support”</td>
<td>14 (19.7%)</td>
</tr>
<tr>
<td>Friendship</td>
<td>6 (8.4%)</td>
</tr>
<tr>
<td>No response</td>
<td>3 (4.2%)</td>
</tr>
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</table>

Table C. Emerging Themes in Responses to ‘Source of Ideas’ Used in Business

<table>
<thead>
<tr>
<th>Emerging positive themes</th>
<th>Freq</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation and networking of entrepreneurs in the same business (including industry conferences)</td>
<td>20 (28.2%)</td>
</tr>
<tr>
<td>Internet/Business journals/Relevant Business texts</td>
<td>17 (23.9%)</td>
</tr>
<tr>
<td>Knowledge and skills from other Networking/Industry Cluster SME owner/managers</td>
<td>17 (23.9%)</td>
</tr>
<tr>
<td>Own Creativity/Experience/Critical thinking/Gut feeling/Employees ideas</td>
<td>14 (19.7%)</td>
</tr>
<tr>
<td>No response</td>
<td>3 (4.2%)</td>
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