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## **Innovation Facilitation within a Regional Industry Cluster**

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### **ABSTRACT**

*Regional industry clusters have been promoted for several years as effective mechanisms to assist firms become more innovative and more competitive. But do they really achieve this goal, and more importantly, just how should an assessment of cluster performance in supporting and facilitating innovation within its members, be undertaken? In this paper we report on a study of a regional IT cluster in Western Sydney, Australia, develop some criteria for assessing the innovation facilitation performance of industry clusters, and discuss the cluster in relation to these criteria. We suggest that engagement with a cluster may enhance the innovation capacity of a firm, and the type of required innovation support varies significantly with the maturity and absorptive capacity of individual firms.*

**Keywords:** Industry clusters, Innovation, Performance measurement, Service industries, Absorptive Capacity

## BACKGROUND

Cooperative endeavours between firms and cluster initiatives continue to be popular with both industry and governments around the world. In this paper we define a *cluster* as a group of firms from the same or related industries normally located geographically near to each other (Bell, 2005). Firms may undertake formally or informally connected endeavours and resource sharing in order to deliver benefits by building on sources of competitive advantage – a resource-centric view. Participants may be regional communities or, occasionally, broader communities of practice, and commonly embrace networks and networking practices.

The term networking is commonly used in connection with clustering however we recognize some important differences between cluster initiatives and networking. Networking includes: (i) Personal *networking* to identify expertise, facilitate problem solving and expand ones sphere of influence is a longstanding business activity – an actor centric endeavour; and (ii) Networks – physical structures that facilitate flows of products or services, for example electricity grids or the internet, or (iii) activity-centric organizational structures that facilitate flows of knowledge, access to resources and access to markets. The latter may be technology enabled but commonly involves some form of personal networking. Membership may be open or closed. Cluster initiatives commonly include aspects of networking, but provide something additional generated by the regional proximity of the member firms.

Researchers at the University of Western Sydney Centre for Industry and Innovation Studies have been exploring best practice in the establishment and operation of multi-partner collaborations for some time. Strong links between innovative firms, and their tendency to collaborate have been observed (e.g. Basri, 2001). In this paper, drawing on the results of a recent study, we explore ways in which innovation practice in some Western Sydney IT firms has been enhanced through participation in a regional cluster initiative, the Western Sydney Information Technology Cluster (WSITC).

An OECD (2007) review of developments in regional cluster policy matters has noted that a particular initiative may be established in support of regional development policy, industry sector policy or innovation policy or some combination of them. The expectations from and measures of success associated with a particular cluster may be influenced by the dominant policy sponsor. In addition, enterprises participating in a cluster initiative may have different expectations and measures of success. This raises questions about how performance might be measured, which we will briefly discuss in an innovation policy context. Our Research Question for this paper is: “Do regional industry clusters really facilitate innovation, and if so, in what ways and under which circumstances?” Early research on cluster initiatives suggested that clusters should assist individual firm’s innovation performance due to agglomeration economies and enhanced social interaction and knowledge exchange (Porter, 1990; Porter, 1998; Harrison, 1994; Harrison et al, 1996). More recently,

researchers developing new approaches to measuring innovation at a national level have confirmed the importance of inter-firm collaboration by including “Alliances and Networks” as a key organisational capital input measure for innovation (Rose et al, 2009). We start with a general discussion of ways to characterise an industry cluster and assess its performance, then move on to consider the influence of cluster initiatives on member firms’ innovation practices. We do this by learning from a case study involving a member survey and focus groups plus some individual member interviews.

### **SOME PREVIOUS RESEARCH ON CLUSTER CHARACTERISATION**

An OECD study (2007) noted that the some attributes of a cluster depend on its origins. Some clusters have been market-driven, emerging from collections of regional firms that traditionally exchanged goods and services, from firms clustered around one or a few large firms, or from firms clustered around the satellite operations of multinational firms. There are also State-anchored clusters where small firms support a state facility such as a Military Base. These factors influence who feels a sense of ownership in a cluster program or initiative and how its success is judged. The issues of support and/or facilitation of a cluster are also very important to the performance of an individual cluster, especially when clusters involve high proportions of low maturity firms (Roberts and Enright, 2004).

Enright’s (2000) survey of more than 150 clusters indicated that local and regional governments were commonly involved (about 30% of cases), but within that group, around 30 to 50% of cases involved cluster-specific investments from the government body, although interestingly, it was found for around the same proportion of cases the government body had no associated cluster policy. Catalytic activities (bringing interested parties together), and directive or interventionist approaches were less frequently reported. The same survey also suggested performance was related to Cluster member capabilities and the maturity of their cooperative efforts, characterised as:

- *Working Clusters* were the most commonly reported, where a critical mass of local knowledge, expertise, personnel and resources may be combined to give an advantage compared with those outside the cluster.
- A significant number of *Latent Clusters* were observed in the survey. These have a critical mass of firms, but have not established the level of interaction and knowledge flows to truly benefit from co-location. The firms do not think of themselves as a cluster.
- *Potential Clusters* were also observed in significant numbers in the survey. They are like latent clusters, but have some gaps in inputs, services or information flows.
- *A few Policy-driven Clusters* were observed in the survey. These aim to build capability, critical mass and favourable conditions for organic development.
- A small number of ‘*Wishful Thinking*’ *Clusters* were observed in Enright’s survey (2000). These are policy driven clusters that not only lack critical mass, but lack any source of

advantage that might promote organic development.

Enright (2000) suggested that from anecdotal evidence available to him, both policy-driven and wishful thinking types were underreported in the survey. The observations above plus the work of Landry et al (2002) suggest that an attribute indicating cluster developmental status and participant firm maturity may be important in understanding the performance of a given cluster.

A Canadian study (Cassidy et al, 2005) primarily concerned with science-driven clusters put the individual firm and its performance in a central position, with influences from customers, competitors and supporting organisations plus a number of environmental factors. The argument is that outcomes are primarily driven by firm performance in its market context. Marceau (1999) made similar observations in connection with some Australian business network initiatives. The size and scope of participant organizations plus their expenditure on innovation influences the dominant nature of engagement (Cassidy et al, 2005; Enright, 2000; Laitinen, 2006). Regional factors such as natural resources may have some direct influence on outcomes, but most operating environment factors have an indirect influence on outcomes through the firm. From this point of view, benefits only accrue to the community supporting a cluster initiative if its member firms can accrue some competitive benefits. In the case of IT clusters, they may be direct generators of economic activity if they are technology producers, or they may have an effect by providing services that make their client firms more competitive. In both cases, the cluster members are the beneficiaries of the initiative, but in the IT services case, client firms are also regional beneficiaries. From the foregoing we observe that firm size and the nature of market linkages influence the dynamic within a particular cluster.

### **Assessing Cluster Performance**

It has been observed that measuring cluster performance may be problematic and that there is considerable variety in perceived success factors: “A cluster member is presumably more interested in the overall cluster’s competitive position than in the cost-effectiveness of a particular public policy action. A cluster initiative manager (facilitator) may be most interested in success at bringing actors together in joint activities and the development of stronger economic and social relationships. A politician may need to know how many jobs were created or how much the region’s economy has improved” (OECD, 2007). One could group these perspectives into two general categories, summarized as follows:

1. Cluster policy effectiveness – is the policy achieving what was intended and are there any spillover benefits. This might be achieved by considering the scale of operation, the nature of cluster evolution and the level of maturity in a particular case. Evans, Roth and Sturm (2004) suggest that goal-driven networks or clusters may use traditional economic performance measures, but those concerned with capability enhancement need to measure flows of intellectual capital.

2. Measures of impact related to a particular cluster – or, “Are we making a difference?” This can be difficult to assess in practice as a cluster initiative does not happen in isolation. It is one of many things that may have some influence on the participants. There are issues of proper attribution of cause and effect, and there may be a significant time lag between an input and a beneficial outcome.

Some researchers have considered cost-of-participation/benefits-of-participation tradeoffs from the perspective of participating firms (Beckett, 2005; Camarinha-Matos and Abreu, 2005) A Swedish study of cluster policy impact (IKED, 2004) suggests that “The task (of evaluation) is partly to measure the specific contribution of collaborative action as compared with the outcome that would have been observed in the absence of a clustering initiative, i.e. to measure *additionality*”.

This is an attempt to come “to terms with the nature of clustering and find ways to address economic outcomes more broadly” (op. cit), and thus to broaden the measuring of cluster effects – to measure “everything” added (additional outcome) by the support effort to the cluster (additional input), as compared to “no cluster”. Taken literally, methodology wise measuring this, would require using double-blind experiment, which we contend is not likely to succeed on such scale and in such complex context. Generally, the concept has been used in rationalizing public support for R&D, in order to find out whether public money stimulates new R&D or subsidizes what would have taken place anyway (Buisseret et al, 1995). For this purpose various economical measurement methods have been used. In this article we will use the term “additionality” for the additional impact on Cluster policy effectiveness and Measures of impact related to a particular cluster (the two items mentioned above) stemming from the cluster supporting effort.

In this context, we have proposed an approach that considers cluster operations as a business process that is lightly over-layed on normal business operations. The process has some sub-processes related to cluster administration and some related to firm performance, with attributes classified as inputs, outputs, rules/conditions of operation and resources to facilitate operation (Beckett, 2009). This view was developed to better understand the dynamics of cluster operations.

We have summarised our observations in Table 1 for the purposes of this paper to illustrate some cluster performance assessment criteria. Some performance criteria may be inferred from broad statistical data; however cluster performance can only be assessed in a practical way by talking to the stakeholders about each aspect, and this approach was taken in the case presented here.

*{Take in Table 1 here}*

## **Clusters facilitating innovation**

We would make two observations in relation to innovation within clusters:

- Firstly, it is primarily the capabilities and maturity level of cluster participants that determine what value they can extract from cluster participation.
- Secondly, that from an innovation perspective, individual firms may not participate in cluster activities on a continuous basis, but access additional external assistance as and when required. By way of example, Vohora et al, (2004) studied the evolution of nine university spinout companies over many years, observing “critical junctures” in their development where new capabilities had to be acquired. In between, individual enterprises may be focused on refining their internal capabilities. In addition, it is noted that different kinds of external assistance may also be required by an established firm at different stages in the evolution of an innovation (Inganas et al, 2006; Westerlund and Svahn, 2008).

This means that the nature of cluster member interaction, the role and impact of cluster managers/facilitators, and the importance of associate or support organisations (such as Universities, government agencies, consulting firms, etc.) may be dependent on the extent to which cluster activities are directed towards innovation, and the nature of the firms within the cluster. A cluster, comprising well established and capable firms may require less facilitation and support than a cluster comprised of developing firms. A cluster initiative that is intended to support more radical innovation is more likely to require significant levels of interaction with a diverse group of support organisations. This world view helps explain why some researchers have reported that supporting organisations have a minimal impact on the operations of a cluster (e.g. Enright, 2000) whilst others have observed a significant impact (e.g., Bramwell et al, 2008). Others have observed influence from personal networks rather than cluster activity as such (e.g. Romijn and Albaladejo, 2002)

Taking the perspective that the value of cluster participation is through some form of additionality (IKED, 2004), we propose an innovation facilitation assessment framework that considers the influence of extended networks of personal contacts, engagement with additional networks of activities, and access to additional networks of resources at generic stages in the evolution of an innovation.

### **THE WSITC CASE STUDY: DATA COLLECTION AND ANALYSIS**

Case study data used to investigate the research question was generated through: (i) direct involvement in cluster meetings and review of cluster related documentation; (ii) an online survey of active cluster members; (iii) interviews with cluster facilitators and members; and (iv) focus group activities. A brief benchmarking exercise was also undertaken. The cluster documentation and interviews with cluster facilitators were used to provide an historical overview and current description of the cluster

composition and activities.

The online survey was developed to provide an overview of cluster member views and was deployed via an email alert providing a link to the URL where the survey could be accessed. The survey could be accessed and saved and respondents could return to the survey to complete sections, however only one response per computer (IP address) was possible. The survey itself involved a total of 24 questions (a mix of closed and open-ended questions across the following broad areas:

- 1 In what aspects of the IT industry is your firm active? (3 questions)
- 2 Please describe your firm. (6 questions related to scale and scope)
- 3 Tell us how you benefit from your involvement with the WSITC. (5 questions)
- 4 What has been the impact of WSITC participation on your business? (4 questions)
- 5 Please give us your opinions about the desired future direction of the WSITC. (6 questions)

The survey was carried out in February and March 2009. The notification of the survey website was sent to 230 organisations and the on-line survey was open for two weeks only. Only one response was allowed per IP address. Forty-seven (47) usable responses were received, representing a 20% response rate. Analysis of the distribution of company size and sector distribution were similar to available information for the full population of cluster members, so the responding firms were considered to be reasonably representative of the entire cluster. Follow-up telephone interviews were held with eight cluster member firms of different sizes and periods of engagement to gain further insights into how cluster participation had helped them.

Two focus group meetings were held to consider options for the future; one with government sponsors and the other with industry cluster participants. Researchers were involved in both groups to set the scene and record observations. The sponsoring government department organised a broad cross-section of focus group participants they thought had a sufficient awareness of the cluster and its aspirations. The process also drew out perceptions of the relative strengths and weaknesses of the WSITC cluster.

Quantitative data from the survey were used to provide descriptive statistics for the cluster and the open ended survey responses were combined for different groupings of firms to provide more detail on the specific views of cluster members. Notes from the focus group sessions and telephone interviews were deconstructed using thematic analysis.

## **CASE STUDY FINDINGS**

The Western Sydney IT cluster (WSITC) has about 230 full members (still increasing by about 30 members each year) with a combined annual turnover of about \$A700m. The cluster also has around 100 associate members (mostly supporting organisations as mentioned above). Seventy (70)

percentage of the member firms are located inside of a 20km diameter circle focusing on the large Western Sydney suburb/city of Parramatta. Sixty (60) percentage of the member firms have less than five employees and turnovers less than AUD\$500,000. Larger firms (more than 50 employees and turnovers greater than \$10 million) comprise around 10% only of all members. About 60% own some form of intellectual property, and about one-third of all firms plan to grow over the next five years. There is some variety in member specializations (see Figure 1), but most are focused on IT service applications rather than new product/technology development common in many overseas IT clusters (Koski et al, 2002; Lucas et al, 2009). This IT service-focus has important implications when considering the innovation activities of cluster members.

{Take in Figure 1 here }

### **WSIT Cluster Characterisation**

In terms of the attributes described in Table 1, we find the following.

*Maturity* – the majority of the WSITC member firms are either still growing their core business or learning more about exporting. Member firms do not tend to be continuously engaged, participating more during growth periods. A “breeding network” (Camarinha-Matos and Afsarmanesh, 2004) that supports capability development and opportunity identification is well established, but there are relatively few cluster spinoff projects.

*Heterogeneous participants* – around 100 cluster associate member enterprises provide a variety of education, business, market and technology support services, and this helps the developing member firms. The member firm clientele is commonly spread over seven different market sectors. Balancing similarity / complementarity (Biggiero and Sammarra, 2001) and commonality/diversity (Dutton, 2008) seems to be an issue in establishing member group projects. Financial and governmental institutions are involved as associate members.

*Market access and competitiveness* – there is clear evidence of strong growth in export activity since the cluster was established, which suggests that some firms are globally competitive. But the smaller firms have difficulty in accessing larger government projects. Absorptive capacity (Cohen and Levinthal, 1990) is an issue for some member firms, due to both knowledge and resource limitations. The nature of knowledge shared was comprehensive on business and market matters, and limited on technological issues.

*Transactions* – considerable social capital and knowledge capital has been built. There is limited evidence of economic transactions between or in conjunction with member firms. Government funded housekeeping transaction management undertaken is appreciated by the members, and helps preserve a participation cost/benefit balance for growing member firms.

*Process* The cluster is achieving its original regional development objectives. A significant number of cluster events are held each year, but as noted earlier, there are few spinoff projects. About 60 % of the members attended two or three events in 2008, whilst the remainder did not attend. Regular e-

newsletters and website postings keep all members up to date.

*Inputs* There is a clear statement of industry development intentions (currently under review) that includes a statement on innovation, and some business opportunities are regularly identified for members.

*Outputs* In our member survey, about 30% of member firms reported revenue enhancement associated with the WSITC, but approximately double that reported other benefits to their business arising from participation. We interpret this as meaning that whilst some firms are getting direct benefits from the WSITC, the dominant benefit is an indirect one back in the firm's primary business ecosystem. There was clear evidence of member capability enhancement attributed to cluster participation, a significant number of jobs created, and some evidence of spillover benefits to cluster client firms.

*Rules/constraints* – There was evidence of alignment with government policy and of significant competitive market pressure that maintained a degree of operational tension.

*Resources* – members were satisfied with the cluster management resources, and many member and associate member firms were making inkind contributions (e.g., one established and maintains the WSITC website) but there are no cash contributions. Those member firms that had grown were prepared to “give something back”.

## **DISCUSSION**

The WSITC must be doing something right, as net membership is still growing, even though some members have left the cluster. Survey respondents all wanted the WSITC to continue. In this study we found evidence of employment growth and increasing participation in export markets. There is clear evidence of market-driven innovation activities. There are some “runs on the board”, positive outcomes reported by individual firms, but no satisfactory mechanism for keeping score overall and clearly identifying the nature of additionality provided.

What the WSITC does well that is appreciated by its members is:

- Helps members identify future options for their business using information provided in newsletters and at cluster meetings. This means there is a significant time lag between the delivery of the information and its impact.
- Supports emergent and growing businesses at transition points in their development, performing a kind of business incubator function that provides linkages to other support programs and expertise. This means that members seek different things from the cluster at different times, depending on the stage of growth and consolidation they are currently at.
- Facilitates the sharing of practical knowledge between members based on their own experience that is “ready for use” today, and the sharing of information about current forms of government and associate member support that is available.

The WSITC stimulates knowledge flows and social capital building in conjunction with associate members. Overseas researchers (Westerlund and Svahn, 2008) have found that this enhances innovation capacity in ICT firms. The predominant member offering is some bundling of IT product and service, but members may not develop the product themselves (although they may adapt it). This makes comparison with some other ICT clusters difficult as many such clusters are more focused on product development and production (see Figure 1). In terms of Enright's (2000) maturity-based classification, the WSITC would probably be described as a latent cluster. In terms of the activities of the cluster, we would characterise the WSITC as a "knowledge cluster" and this means it should be managed differently to those clusters where sharing access to unique physical assets is important. Figure 2 shows the survey responses to the question on learning from cluster activities. The strong focus on business knowledge and market opportunities reflects the early maturity of most firms as well as their service focus. Around 10% of respondents indicated no learning had been gained from the cluster (within the "Other" group).

{Take in Figure 2 here}

As discussed above a large percentage of cluster members are micro firms (<5 employees). Some that have grown beyond that size have indicated that the WSITC managers and other members/associate members have been very helpful at a number of transition points. The first transition is moving from a one or two person operation to a larger one, which means there are role changes and new business systems to be introduced. Assistance is available from local Business Enterprise Centres, but it may be difficult to find someone who has appropriate IT sector connections. Members advise that the WSITC plays a valued business incubation role at this first transition point. Advice more related to markets is required at the next growth stage. The WSITC staff put people in contact with members having relevant prior experience, and with associate members who may be able to help in some way in the interim, which has resulted in significant member value being placed on opportunities for personal networking. Figure 3 summarises the responses from member firms regarding connections generated through involvement in the WSITC. The high response rates for connections with business advisors and government support programs confirms the important role occupied by cluster associate members in extending the connections of cluster members into business improvement and innovation support agencies.

{Take in Figure 3 here}

Evidence collected during the study suggests that the dominant competitive strategy of those member firms that are growing is global excellence in a specialist niche. However, those firms that have achieved global competitiveness reported difficulty in finding someone to partner with locally in pursuing larger opportunities. This is consistent with the observations of Seifert and Eschenbaecher (2005) in connection with adaptive production collaboration where finding the right partner(s) was paramount, but does suggest the WSITC still has not reached its full potential.

The case study noted that members need different kinds of support at different stages in their growth cycle, and that there is a growing sophistication in the operations of some members and an increasing diversity of interests. Consistent with the observations of DeMartino et al (2006), anecdotal evidence suggested that the export-oriented firms were developing linkages outside the cluster, but these firms still valued participation to get alternative views of the world. One outcome of this is that some members have diametrically opposed views about what the focus and style of cluster meetings should be. Whilst established firms sought information on new technology and new business concepts from other industries, others felt that more opportunities for members to learn from each other would be appreciated. This finding confirms previous research (Santa et al, 2009) indicating that firms must align their operational effectiveness activities (such as process improvement) with their technology innovation activities (such as a new enterprise information system installation) in order to generate continuing competitive advantage. Thus depending on their maturity level, many firms will use knowledge and connections generated through cluster participation to improve operational effectiveness before considering technological innovations available through cluster initiatives. A number of mechanisms were suggested by respondents to accommodate these 'young' developing firms, such as: offering more short presentations by members on what they had learned in developing their business; more "pitch" sessions; more small-group personal networking opportunities; and some Q&A panel forums. In response to this, the WSITC managers have established a range of participation opportunities.

Both the benchmarking exercise and the member and government focus group observations suggested the need for more spinout projects centred on "focal firms". It was suggested that *"10 – 50 person firms are the key if they are ready to grow – provide them with help and cluster smaller firms around them."* The benchmarking exercise also highlighted the likely need for external facilitation and mentoring given the small size of the WSITC firms.

It was noted in the government focus group, that there are other programs that smaller groups of members (and nonmembers) are accessing, such as the Small Business Cluster Initiative. A starting point for this initiative is that there must be some industry "champions" and that the government will put provide small grants of up to 50% of costs. Participants are expected to make cash and in-kind contributions. This approach tends to ensure higher levels of commitment and engagement. During the telephone interviews members were asked if they would be prepared to make cash and in-kind contributions to spinout projects. The universal answer was yes, but with two main provisos – firstly that the project aligned with their strategic direction and secondly that it did not enhance a competitor's position or create a new competitor.

There is a recurring theme in the literature and in our case material of firms needing different kinds of help at different stages of evolution of their innovations and enterprises. Drawing on the practical

experience of 28 innovative companies, O'Connor (2009) has identified three distinctive breakthrough innovation stage competencies needed to deliver value:

- Discovery – the creation and identification of opportunities that may have a major impact in the marketplace and the skills to articulate their significance
- Incubation – experimenting with technology and business concepts/models simultaneously to arrive at a demonstrated model for a new business that can deliver value
- Acceleration to develop critical mass and compete with mature technologies / businesses to deliver value

We contend that the economic notion of *additionality* is woven through the literature on clusters, from Porter (1990) to recent deliberations by experienced cluster researchers (IKED, 2004), and that themes of personal networking, network activities and networks of resources recur. We combine these notions to provide a framework for identifying how participation in regional clusters may facilitate innovation.

{Take in Table 2 here }

There are a lot of things for a small individual firm to consider in Table 2, and we observed that finding time to participate was a potential barrier. However one firm interviewed made the comment “*Joining one network with extensive links and just going to the one set of meetings saves time*”. In a similar vein, those facilitating cluster operations need to be very well connected, and must make the time to establish appropriate connections.

In the case study presented in this paper, expanding personal contacts through cluster participation to help develop the firm’s capabilities and take ideas to broader markets seemed to be the main contribution to innovation. Support given to micro-firms helped them grow a sound business base, and help given to firms of greater employee numbers (SMEs) helped expand their businesses, but idea generation remained mostly within the firm. Some cluster activities helped to access broader markets and some access to knowledge repositories not normally available to small firms were provided. A sound “breeding environment” (Camarinha-Matos and Afsarmanesh, 2004) was established, but with very limited interaction with the regional science and technology research community, but meetings do make people think about future options. Some cluster participants pursuing a niche technological specialisation had to look outside of the cluster for appropriate linkages.

### **CONCLUDING REMARKS**

Our research question was “Do regional industry clusters really facilitate innovation, and if so, in what ways and under which circumstances?” Our conditional response is – yes, under some circumstances where additionality is both available to and accepted by participating firms. There may be opportunities to make contacts, participate in collaborative projects and access knowledge repositories and physical assets beyond those a firm could practically arrange itself. However the firm also has to have the absorptive capacity to understand what is on offer and be able to use it in support of its own innovation activities. Participation in cluster activities may also enhance a firm’s absorptive capacity

to some extent. Cluster participation may help at different stages of the innovation process – in seeking out new ideas, in helping to incubate ideas to make them practically useful, and in taking those ideas to market. Effective cluster activities for facilitating innovation will depend very much on the maturity level and capabilities of the members firms. Business systems support and knowledge contacts for systems improvement will be most effective for early stage (low maturity) firms, thus improving their ability to source and adapt relevant knowledge. While more mature firms with improved absorptive capacity will utilise opportunities for access to new technologies and product development opportunities for improved innovation performance.

Some possible practical implications of the study include:

- The outcome can help policy makers and cluster facilitators assessing clusters and provide “selling point” for politicians and for recruiting members to the cluster
- Facilitators may be more aware of targeting their offers (“segmentation” of the cluster) according to circumstances such as the maturity of members and their stage of development in the innovation process, and provide offers accordingly.
- Members may be able to see where they can gain extra benefit from participation.

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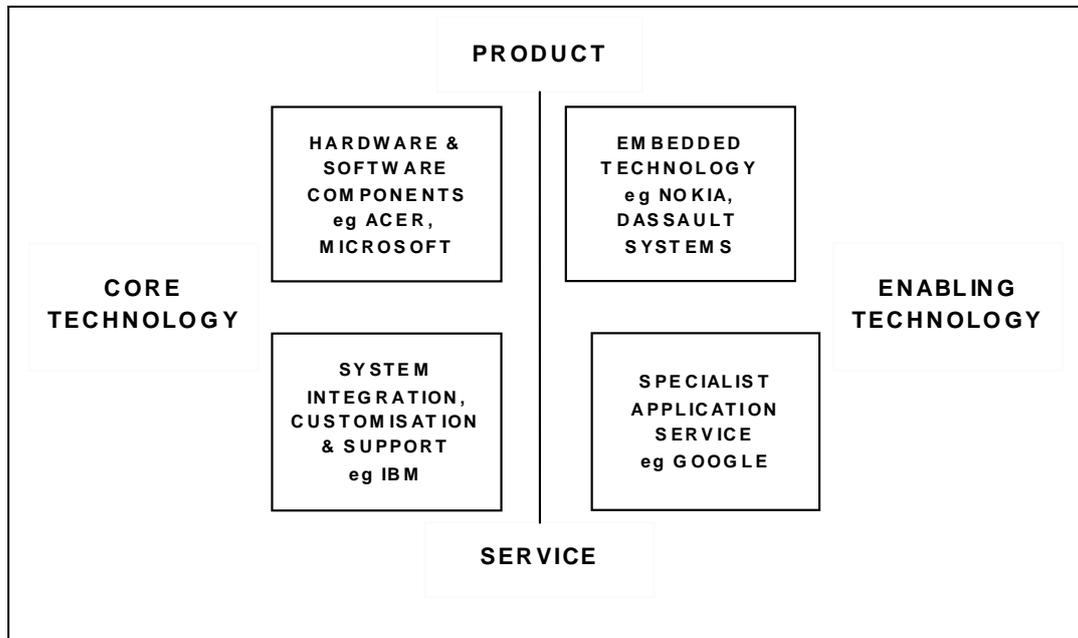
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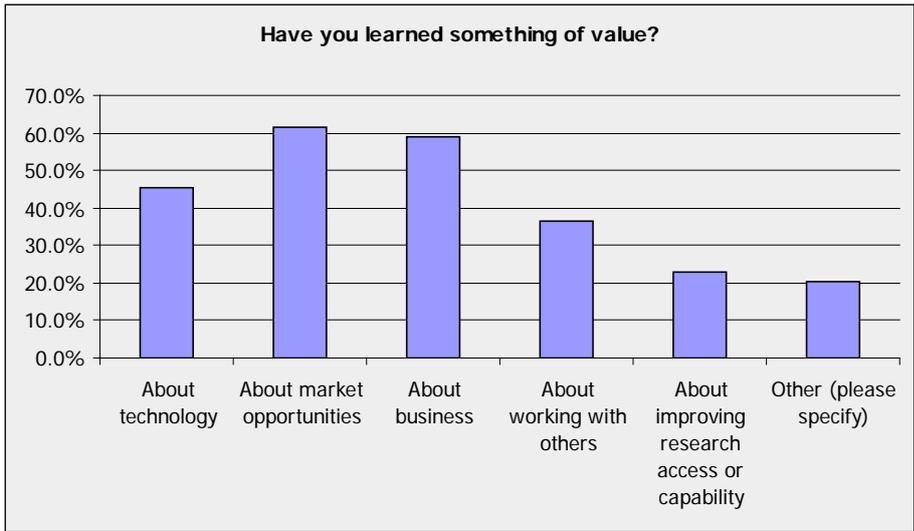
## TABLES AND FIGURES

Assessment Category	Cluster Stakeholder Perspective		
	Member: Competitive Position	Cluster Manager/ Facilitator: Relationship Building	Politician: Jobs and Economic Impact
<b>Policy Effectiveness</b>	<ul style="list-style-type: none"> <li>- Benefits outweigh cost and time involved in participation</li> <li>- Cluster Maturity level achieved</li> </ul>	<ul style="list-style-type: none"> <li>- Achievement of program intentions</li> <li>- Cluster maturity level achieved</li> </ul>	<ul style="list-style-type: none"> <li>- Achievement of policy intentions</li> <li>- Spill-over benefits evident</li> </ul>
<b>Cluster Impact</b>	<ul style="list-style-type: none"> <li>- Improved competitive position</li> <li>- Improved access to markets and infrastructure as indicated in member case examples</li> </ul>	<ul style="list-style-type: none"> <li>- The scale and type of membership</li> <li>- Social capital built and knowledge flows simulated as indicated by member surveys and personal networking</li> </ul>	<ul style="list-style-type: none"> <li>- Evidence of job growth from member surveys</li> <li>- Evidence of leverage from government investment in infrastructure as indicated in member case examples</li> </ul>

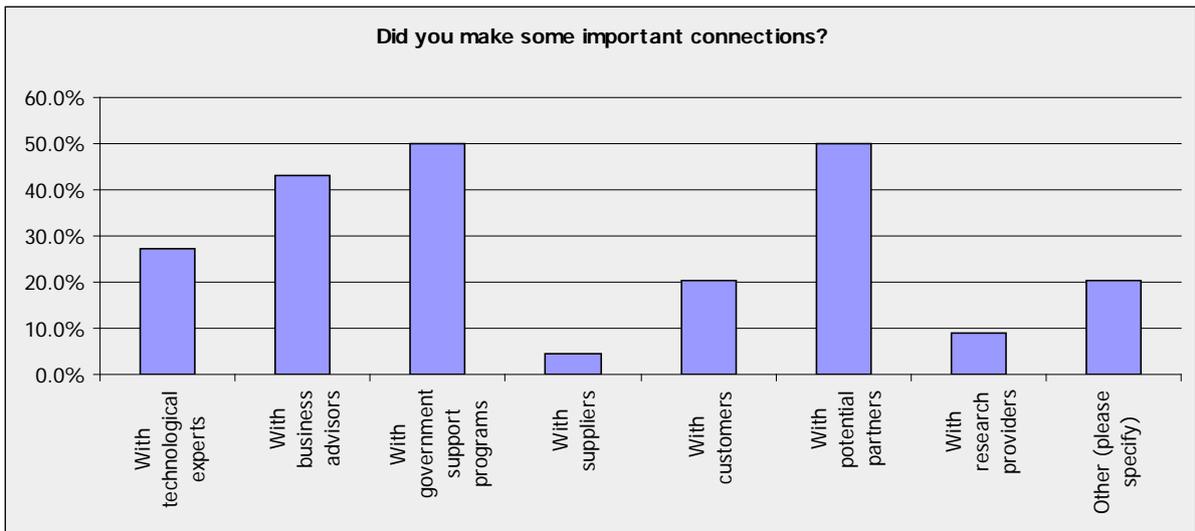
**Table 1 – Cluster Performance Assessment Criteria**



**Figure 1 Some IT Industry Innovation Domains**



**Figure 2 Member Responses to Learning within the Cluster**



**Figure 3 Connections Generated via the WSITC**

Stage of Development of an Innovation	Potential Sources of <i>Additionality</i> from Participation in a Regional Cluster		
	Networks of Actors	Networks of Activities	Networks of Resources
<b>Discover Opportunities</b>	Access to people sharing ideas	Events to identify opportunities	Improved access to knowledge repositories
<b>Incubate new Technology /</b>	People sharing experience in business and technology development	Collaborative technology and/or market research projects, formal mentoring	Identification of sources of finance to experiment, access to unique physical

<b>Business Concepts</b>		programs	infrastructure
<b>Accelerate to Extract Value</b>	People sharing supply chain and market access knowledge	Events to promote market engagement and the experience of exemplar firms	Identification of sources of finance for growth, access to complementary assets (Teece, 1986)

**Table 2 A Framework for Assessing a Cluster's Contribution to Innovation**