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Collaborative practice of competitors: an industry network perspective

Summary

Through employing a longitudinal case study methodology, we examined the collaborative practice of a strategic alliance network comprising industry members competing for scarce local resources and contracts. The network was instigated to address skill shortages, access strategic opportunities outside the region and build a Centre of Excellence. The network comprised direct and indirect competitors, and allied and supporting organisations. Our research objective was to investigate how individual and organisational social capital influence knowledge exchange and resource sharing, and create network social capital. The investigation was framed by four propositions generated from the literature.

Explanations of collaborative practices were revealed through mapping the spatial location of members in relation to discourse themes. Our findings indicated that network social capital was not pervasive but, rather, existed within the formal and informal structures and sub-structures of the network. Further, we found that individuals' and member organisations' social capital were critical at the network formation stage and in building engagement of network members. Although trust between engineering firms within the network developed through social engagement and underpinned the subsequent formation of a community of practice sub-structure, it was insufficient to drive the development of embedded, multi-layered relationships.

Introduction

“Networks are forms of social organization, which are more than the sum of the actors and their links” (Provan and Kenis 2008 p. 233). Many institutions have now adopted a network model of operation to share resources and build competitive capability (Powell, Koput and Smith-Doerr 1996; Shenkar and Li 1999; Lorenzoni and Lipparini 1999; Inkpen and Tsang 2005). Networks of organisations have been defined as a collection of ‘actors’ engaging in repeated exchanges with each other with the purpose of achieving collective goals (Oliver 2004 p. 153). Strategic alliance, industry based networks are negotiated in an ongoing process of communication and are not necessarily dependent upon market or formal structural control mechanisms (Hardy, Phillips and Lawrence 2003). Such networks exhibit relational as opposed to transactional ties, and generally do not incorporate an overarching interlocking directorate (Heracleous and Murray 2001; Mizruchi 1996). The primary advantage that these networks have over market forms is access to knowledge and other resources through collaborative behaviour (Grant and Baden-Fuller 2004). However, Inkpen and Tsang note that there are few studies that systematically examine the important role of social capital in accessing resources that build network performance.

Formal mechanisms for achieving network performance goals may be evidenced in each network member’s processes, performance management goals and policies that stimulate and support collaboration, while informal mechanisms such as social exchanges can generate trust, a key phenomenon underpinning cooperative behaviours with other network members (Morgan and Hunt 1994; Johnson, Anderson and Fornell, 1995; Gulati and Singh 1998; Gulati and Gargiulo 1999; Van Montfort, Masurel and Van Rijn, 2000; Reagans and McEvily 2003; Inkpen and Tsang 2005; Schulze 2007). Zahra, Ireland, and Hitt, 2000 also explain how intensive social interactions of organisational actors facilitate the development of joint initiatives. While these formal coordinating mechanisms are important, trust and social interaction have been argued to facilitate collaboration supporting the development of joint initiatives. However, key aspects associated with a regional, strategic alliance, industry network, such as network members vying for the same local contracts, seeking to outperform each other, competing for scarce, local resources and building competing market positions, are anticipated to impact negatively on collaboration practice.

Simultaneous cooperative and competitive practices between organizations (co-opetition) has been studied between organizational units, and also between organizations seeking to achieve, simultaneously, individual organisational goals and the collective growth goals of a business network (Tsai 2001; Hackney, Desousa and Irini 2008). However, most network research has focussed on cases that address structural and knowledge sharing properties between medium and large organizations, which exhibit complementarity in resources, and hence cooperative behaviour (Halinen and Moller 1999; Nassimbeni 1998). Many SME industry clusters/networks exhibit co-opetition (concurrent cooperation and competition), as networks are formed between organizations with complementary and as well as aligned resources, collectively seeking to advance regional performance and competitiveness, and in doing so, enhance their own organisation’s performance. How the tension between achieving ‘self’ and ‘network’ goals in a cooperative yet, at the same time, competitive environment shapes network structural properties and collaboration practice, warrants further investigation.

Through examining collaborative practice in network members our research objective was to investigate how individual and organisational social capital influence knowledge exchange and resource sharing, and create network social capital. It has been argued that understanding

changes in social capital will advance knowledge of the evolution of strategic alliance networks (Knoke 2009). The contribution of our research is located in social capital theory, and informed by theories of structuration and trust.

Literature Review

Many have investigated the competitive advantage and benefits of networks for their member organizations (Dyer and Nobeoka, 2000; Gupta and Govindarajan, 2000; Dyer and Hatch, 2004), with some describing performance as dependent on the ability of a network to leverage social capital that resides in its network of stakeholder relationships (Sawhney and Zabin 2002; Dyer and Hatch 2004; Reagans and McEvily 2003; Inkpen and Tsang 2005; Schulze 2007). This is particularly true of a regional strategic alliance, industry network established to expand regional potential. As organisations are moving towards network forms (an organisation is likely to be a member of several networks), the structuring and social capital of those networks becomes a critical dimension affecting network performance and network member performance (Batt 2008).

Several authors have proposed alternative bases for classifying networks (goals, governance – Provan and Kenis 2008; structure, learning and network performance objectives - Jarratt 2006). One network typology based on the extent of different positions of members on the value chain and the level of structuring of network governance identifies three types of networks: incorporate, strategic and industrial district (Inkpen and Tsang 2005). The network at the centre of this research is defined as strategic in that its formation was stimulated by government investment to facilitate knowledge sharing and co-development of services. It is comprised of members at the same and different positions on the value chain and those enhance performance of the value chain (Koka and Prescott 2002). Strategic alliance networks are generally non-hierarchical and unstable with dyadic ties determining social structures. Conflict can arise through cultural incompatibility and goal incongruence (Inkpen and Tsang 2005).

Structuration theory, embeddedness and social capital

Intra-organisational collaboration in networks is facilitated by structures that encourage interaction between members (Hedlund 1994). Seminal research by both Coleman (1988) and Burt (1992) addressing network connectivity and structural holes (connection gaps between members who provide overlapping information) has provided a foundation for understanding network properties such as power locus, dependency, control, commitment and trust between network partners and their impact on collaboration. While Coleman argued the importance of mutual connectedness (embeddedness) and network closure in supporting collaboration, Burt (1992) proposed that a firm can maximise its non-redundant knowledge exchanges by uncoupling network linkages to create structural holes. For example, if firms A and B are connected, then, firm C need only connect to A or B to access the same knowledge (Borgatti and Foster 2003). Both Adler and Kwon (2002) and Ahuja (2000) speak of network density (i.e high connectivity and embedded ties) and the absence of structural holes as fundamental to social capital, in enabling the pursuit of collective goals and defining performance outcomes. Walter, Lechner and Kellermans (2007) explain how denseness facilitates effective and efficient transfer of both explicit and tacit knowledge. “Explicit knowledge refers to information that can be easily communicated among individuals, whereas tacit knowledge such as skills, competence and talents is more difficult to directly communicate to someone else in a verbal or other symbolic form” (Huggins 2010 p.516). Research on the application of social networks to interorganisational form has generally focussed on the impact of

network structure (density, centrality, structural holes) on network performance (Casanueva, Gallego and Sancho 2013 p.441).

Social capital builds in dense or embedded network ties. Embeddedness is a term often employed in the academic literature, but rarely explained. Anderson, Hakansson and Johanson (1994) speak of connectedness (a dimension of embeddedness) as:

- a) delivering identity benefits beyond those specified;
- b) transportability of knowledge and solutions;
- c) complementarity leading to scale effects;
- d) indirect links to knowledge residing in partner institution's partners; and
- e) preparedness to solve problems cooperatively.

Havila and Salmi (2000) explain how network dyads (connection between two members) are "generators, recipients and transmitters of change in networks" (p. 106). Spanning each dyad, connections may be formed at multiple levels, from interaction at board/CEO level, to business unit and functional ties, or through jointly established new venture teams. These connection layers build embeddedness and facilitate collaboration. Embedded connections between dyads within the network contain social capital. As Inkpen and Tzang (2005 p 151) explain, "as time passes, trust between the firms may develop, and such trust, in addition to the formal tie between the firms, will also constitute a social capital resource." We posit that:

Proposition 1: Tension between achieving organisational and network strategic goals within a co-opetition network environment will create shifts in network structural properties as embedded ties and social capital strengthen between those whose goals are aligned with the strategic intent of the network.

Network social capital is defined as 'the sum of actual and potential resources embedded within, available through, and derived from the network of relationships possessed by a social unit' (Gold, Malhotra, and Segars, 2001p. 187), and developed through collaborative, trusting relationships (Coleman, 1988). Social capital a) emerges from changes in the relationships between individuals, b) facilitates action in network dyads (McFadyen and Cannella Jr. 2004; Reagans and McEvily 2003; Coleman, 1988) and c) integrates both physical and human capital (Nahapiet and Ghoshal 1998). Social capital holds the potential to generate new sources of value for future growth, and has been viewed as a strategic resource contributing to performance (Madhavan, Koka and Prescott 1998; Burt 1992). Learning related to new sources of value is intrinsically social and collective, requiring structures and routines (patterns of interactions) that facilitate joint contributions to enhance understanding of complex problems and support broad communication of that understanding (Teece, Pisano and Shuen 1997). Thus, networks in which there are high levels of inter-connectivity and social capital can draw on the network's intellectual capital, integrating knowledge to take advantage of emerging opportunities.

Social capital has been categorised as both individual and collective (organisational and network) assets (Adler and Kwon 2002; Inkpen and Tsang 2005; Casanueva, Gallego and Sancho 2013). Individual social capital in a business context is related to the network of personal contacts that have the potential to influence organisational performance (Adler and Kwon 2002; Inkpen and Tsang 2005; Knoke 2009). Organisational and network "social capital arises through work-related organizational roles, for example, coworkers, team members, managers, executives, and owners" within and across organisations and "combines both resources and network relationships" (Knoke 2009 p. 1694). Social capital "involves the actual or potential transfer of control over resources through the joint relations of two or

more actors” (p. 1692) and there is general agreement that social capital benefits the actors that possess it (Casanueva, Gallego and Sancho 2013). We posit that:

Proposition 2: In a co-opetition network environment, individual social capital will underpin member engagement in the strategic alliance network, while knowledge of each member’s organisational skills and capabilities will stimulate the formation of network sub-structures, which will collectively reflect the social capital of the network,

and

Proposition 3: In embedded network relationships social capital will be evidenced through both knowledge and operational exchanges.

Trust, collaboration and social capital

A business network has been defined as "a set of actors connected by a set of ties" (Borgatti and Foster 2003 p.992) characterised by "repetitive exchanges among semi-autonomous organisations that rely on trust and embedded social relationships to protect transactions and reduce their costs" (p. 995). Initially, assessment of trustworthiness is based on imperfect assumptions and perceptions, which makes trust initially extremely fragile (Kim et al., 2009).

Trust has been described as most important dimension of social capital, the glue binding network processes. The role of trust as a central element of collaborative behaviour is evidenced in a large body of work, including research on manufacturer-distributor relationships by Anderson (with Narus, 1984, 1990; with Weitz ,1992; with Håkansson and Johanson 1994; Håkansson and Ford, 2002; Jansson, Johanson, and Ramström, 2007), Morgan and Hunt’s (1994) commitment-trust theory in relationship marketing, the role of trust in successful exchange relationships (Dwyer, Schurr and Oh 1987; Moorman et al., 1993), and interrogation of relationship quality as trust, commitment and satisfaction (Walter et al., 2003).

The trust literature has been developed around conceptualisations of trust as a psychological phenomenon (i.e. a state of mind) and as an institution-based phenomenon existing within an advanced socio-economic system (Lewicki et al., 2006). Under this later perspective, trust is posited to develop as formal procedures and responsibilities protecting cognitive trust are eventually replaced by relational trust, which emerges as members experience relationship collaboration.

Rousseau et al. (1998 p.395) defined trust as: “a psychological state comprising the intentions to accept vulnerability based upon positive expectations of the intention or behaviour of another”. Trust is inextricably linked to situations characterised by uncertainty and the risk of dependence (Kramer, 1999). Risk arises as a consequence of the lack of knowledge about collaboration performance, the intangible nature of value, and another’s motives, skills and potential actions (Coulter and Coulter, 2003; Huynh et al., 2006; Kramer, 1999; McKnight et al., 1998). Uncertainty occurs as a consequence of the belief by a network member that another may behave in a way that will impact negatively on them (Fichman, 2003). Trust is important therefore particularly in collaboration between competitors as all engaged in the collaboration accept vulnerability, taking a ‘leap of faith’ as they depend on others to act benevolently.

Shared membership of a business network will normally result in regular interactions, with opportunities to reinforce trust perceptions (Brewer, 1981). Where collaborative work is planned, potential network partners will be assessed on characteristics of ability, judgment, character, cooperativeness and perceived benevolence (Morgan and Hunt 1994; Mayer, Davis and Schoorman, 1995). As interactions in the early stage network formation occur, trust of potential partners is reinforced as assessments about network partners' trust characteristics of credibility and integrity are made (Kramer, 1999).

Trust as a central element of social capital underpins collaborative practice as skills and knowledge of network members are integrated to address new opportunities (Karpen et al., 2012; Sánchez et al., 2010). The social structure and system of collaborative action (i.e. the web of interacting social forces defined by the nature of their interacting roles - Edvardsson et al., 2011, p. 330) underpin the integration of skills, knowledge and other resources comprising social capital. Cognitive trust and affective trust are established through assessing performance against calculated expectations, sharing ideas, discussing issues openly and constructively, developing emotional bonds and offering caring advice (Webber, 2008; Parayitam and Dooley, 2009; Sunikka et al., 2009). Affective trust differs from cognitive trust as it is grounded in socio-emotional processes i.e. emotional concern for partner's wellbeing, "empathy, rapport and self-disclosure" (Chua et al., 2008 p.436). Emotional processes strongly influence perception, and consequently behaviour (Brosch et al., 2010). Affective trust emerges as members enjoy the collaborative experiences, and ideas and feelings are shared (Swift and Hwang, 2013). But, attaining consistency of quality in collaboration practice is a complex matter since it has been established that trust within relationships is tenuous and subjective.

The dynamics of trust are evident in descriptions of trust loops and trust spirals. Vangen and Huxham (2003) offered a practice-oriented theory of a trust-building loop, in which trust builds incrementally, through exchange experience, into a virtuous circle. In contrast, Newell and Swan (2000 p. 1318-1319) in their interrogation of a university research network exhibiting low commitment, spoke of a downwards competence (cognitive) trust spiral "developing its own momentum" as a consequence of cognitive processing of outcomes following low trusting behaviour. We posit:

Proposition 4: In a co-opetition network environment, perceptions of benevolence, i.e. forbearance from opportunism will facilitate the emergence of social capital.

Research Method

"All research comes from and remains caught in a tangled web of practice, personal and theoretical agendas." (Barley 1990, p.220). The collaborative practice of a strategic alliance network was studied through a longitudinal case study. The authors initially established 'quasi' network membership, and credibility, integrity and benevolence with network members to observe interactions and avoid impacting on those interactions. Through attending regular network meetings over a six month period, trust was established with network members, which assured openness in the formal interviews of each network member of the case study and full participation by the entire network.

The information sought was embedded and complex, and the research objective, to investigate how individual and organisational social capital influence knowledge exchanges

and resource sharing and create network social capital directed a field-based approach. The longitudinal case study research approach provided a methodology to generate explanations 'grounded' in data, (Drumwright 1994) to focus on how the network was operating rather than on output measures (Richards and Richards 1991).

Relationships between actors within the network were foreground in the analysis (Halinen, Salmi and Havila 1999; Havila and Salmi 2000). The structure, strength and nature of the interrelatedness among network actors were studied from the perspective of embedded groups. Interviews were undertaken with each network member as well as a member who had exited the network.

Each interview lasted approximately one and a half hours and explored the dimensions presented in Appendix 1. Data were collected through tape recording and transcribed, categorising data on each transcription. Data categorisation was based on the dimensions contained in the propositions (individual, organizational and network social capital, benevolence, structure, sub-structures, structural change, embedded ties, knowledge exchanges, operational exchanges, social capital emergence). Categorized data were linked and developed into themes through employing NVivo, Leximancer and Excel. Themes were then compared to the prior established theoretical positions, then revisited, reviewed, and revised or rejected. Within NVivo, data from each respondent was examined within emergent themes, adjusting, and then examined for consistency with those cases categorised first (Dey 1993; Marshall and Rossman 1989). Leximancer is a computer-aided datamining package that provides systematic, semantic analysis of the interview data. The automatic taxonomy discovery provided a platform to interrogate the data, particularly the visual location of interviewees to the automated thematic taxonomy. These themes and their subsequent interrogation were compared to those themes emerging from the NVivo analysis. Network history mapping was analysed from staged data recorded on an Excel spreadsheet.

Case description

Local councils and a regional development agency devised a strategy to develop initiatives to address a regional shortage in skilled trades people, and stimulate regional economic growth. The development of a strategic alliance, industry network was central to that strategy. R11(network convener) was jointly funded by these bodies and assigned the task of instigating discussions with engineering industry participants and large employers in a related industry with a view to establishing the network. R1, R12 and R13 were invited to assist in this pre-network phase. R1 and R12 were both successful engineering firms. They were not direct competitors as they serviced different markets, but competed with each other and R13 for skilled trades people. R1 was linked to a number of networks and therefore had the ability to draw on social capital located in these adjacent networks. R1 had already developed relationships with R2 and R4, which were government funded agencies involved in skill development and placement. R13 was a major employer of skilled trades people, and remunerated these staff at a higher level than local engineering firms. R13 contracted work to local engineering firms as well as firms outside the region.

Invitations were sent to all engineering, aligned firms and engineering support organisations in the region, but only a few engineering firms and allied firms became members of the network (R3 and R6 represent engineering design services in the network). The balance of network membership comprised organisations responsible for skill education (R4) and placement (R2), a media representative to build brand awareness and facilitate communication about the network's activities (R5), and a government agency that oversees

Table 1: Network Participants

Network Member	Organisational Description	Network Social Capital Contributions
R11	Network Governance	Integrative role External networks and government agencies linkages
R1	Engineering firm	External network linkages Previous collaborations with a network member Implemented solutions to skills shortage Knowledge of lean manufacturing Engineering capability
R7	Engineering firm	Previous collaborations with a network members Engineering capability Knowledge of lean manufacturing External network linkages
R8	Engineering firm	Engineering capability Knowledge of lean manufacturing External network linkages
R10	Engineering firm	Engineering capability
R2	Skill education	Developed solutions to skills shortage External networks and government agencies linkages
R4	Placement of skilled workers	Developed solutions to skills shortage External networks and government agencies linkages
R3	Consulting engineering firm	Negative view of network No contribution to network social capital
R5	Local media	Communication of network engineering capability
R6	Engineering design service	Engineering design capability
R9	Government tendering agency	Identified network engineering project opportunities External networks and government agencies linkages
R12	Engineering subcontractor	No contribution Negative view of network Exited network
R13	Mining Corporation	External networks and government agencies linkages Contributed to skills shortage Engineering capability Exited network

major government infrastructure project tendering and management (R9). Table 1 identifies the network participants and their contribution towards network social capital. The network's key objectives were articulated in documentation as addressing regional skills shortages, facilitating joint tendering for projects, and developing a Centre of Excellence in the region.

Data Analysis

Data analysis was undertaken through entering interview data in NVivo, drawing together the data under nodes and generating themes to address the research question and related propositions. The theme taxonomy generated from the data using Leximancer provided additional insights to the interview data and the location of interviewees around themes.

Output of the Leximancer analysis is depicted in Figure 1:

1. **Work:** this theme captured individual work interests, including the day-to-day operation of their own personal worksite, issues regarding staff, and discussions regarding work practices of others.
2. **Business:** embraced broader discussions about the industry
3. **Group:** this theme is central to almost all of the interviewees and consists of operational network issues such as meetings, people, members, location and communication.
4. **The engineering network:** reflects big picture theme of the network as a whole, as it is perceived by outsiders, and how it is developing.
5. **Governance:** capturing the role of the network organiser and the processes for meeting and management of projects.

Data were interrogated to reveal explanations regarding the location of members in relation to those themes.

Research Findings

Proposition 1: Tension between achieving organisational and network strategic goals

Some members only sought to use the network as a mechanism for accessing local industry knowledge to benefit their own business (particularly R3 and R12) and did not seek to build collaborative, trusting relationships with other network members. These members had either joined because wanted to keep abreast of local industry development, or promote their business services. The network's goals and objectives had no relevance to them. Neither their individual nor organisational social capital contributed to network social capital.

Collaboration between network members occurred most prominently in the Engineering CEO cluster and was a function of their membership of the formal network structure, their social network, the community of practice they formed and embedded network sub-structures. Particularly in informal network gatherings engineering CEOs would discuss specific issues associated with their businesses such as upcoming jobs, idiosyncratic problems, resourcing issues, effect of government regulation and training issues. The engineering CEOs would use the other engineering network members as resourcing buffers so that in busy times, work was passed on to other companies to meet negotiated deadlines. During the interviews, the engineering CEOs were beginning to collaborate in joint bidding for large engineering projects, and sharing resources.

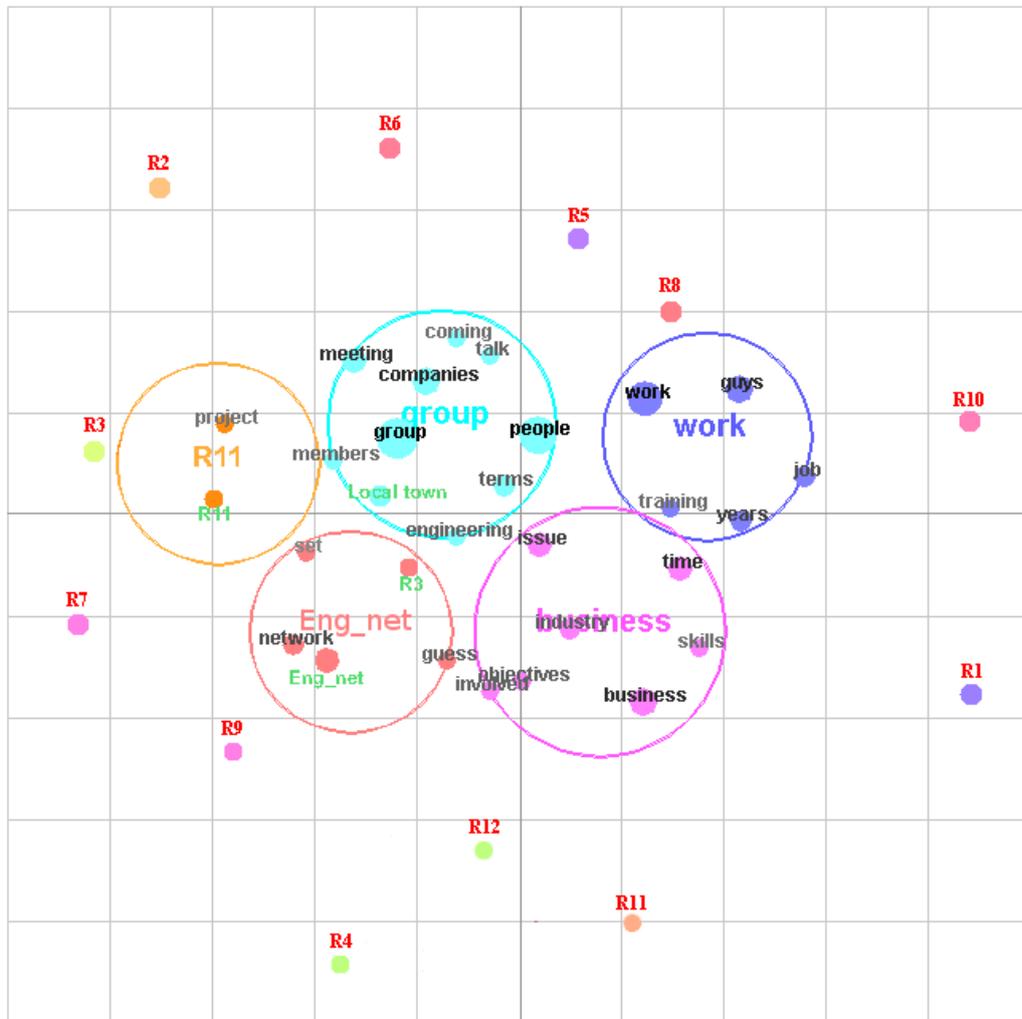
Interestingly, R1 and R10 who were in direct competition on most occasions were also the two companies within the network that collaborated most closely. The engineering CEOs

managed the collaborative/competitive tension in their relationship by adopting a diverse set of strategies and responses. There was tacit acknowledgement that ultimately they were competitors and that there would be times that direct competition would occur. However, the network whilst not obstructing the working of the market, had contributed towards taking some of the ruthlessness or harshness out of it. This is reflected in the following by R6:

“the other guys in there, basically, they would (be competitors) , in the commercial world, if this network wasn’t there, they’d be all attacking the same job, and all trying to cut throat the other guy off in it (laughs).”

Figure 1

Location of participants in relation to each other and the theme taxonomy



An interrogation of the associations that placed R7 adjacent to themes 4 and 5 revealed a discourse emphasis on network operational issues and a lack of engagement about connectivity with other network members. This individualistic orientation became more apparent as R1 and R10 continued to build embeddedness through connections at multiple

levels of their organisations. However, R7 channelled all contact with R1's and R10's organisations through himself. Although R7 was supportive of the strategic goals of the network, his commitment to his organisational goals constrained the development of network social capital. R7 was willing to engage in joint tenders for opportunities beyond the region with R1 and R10, but was unwilling to strengthen social capital through building embedded ties across multiple organisational levels with his tendering partners. This lack of contribution to the network project finally resulted in his exclusion from this collaborating sub-structure. R1 and R10 then included R6 in this process, adding engineering design services into projects in preference to expanding the scale of the foundation engineering competencies.

Thus, the data supports the proposition that tension between achieving organisational and network strategic goals within a co-opetition network environment will create shifts in network structural properties as embedded ties and social capital strengthen between those whose goals are aligned with the strategic intent of the network.

Proposition 2: Individual, organisational and network social capital

R1, 8, 10, 11 and 13 all leveraged their relationships with external bodies and networks (individual social capital) to enhance network social capital. Further, R10 and R1 both leveraged both their individual and organisational social capital to address the initial network goal of addressing regional skill shortages. In moving towards the network's goal of developing a Centre of Excellence, R10 leveraged both his individual and organisational social capital to address manufacturing efficiency in network members, and consequently enhance network capability.

Members located adjacent to themes 1 and 2 (R1 and R10) revealed a strong collaborative emphasis on network functioning and engineering industry solutions, and exhibited a collectivist orientation. *"I didn't come here to put somebody out of business. I came here to try and grow a business that was supportive of everybody else in the community. and I don't think anybody else had that.But now I think more and more of them are starting to get more of a community spirit about these things (R1)."* The contribution to network social capital generation of R1 and R10 was confirmed by R3:

.. the way that the meetings were actually run and conducted, and I think that formed the social structure around it, so that the ones who, and you can see them now, R10 and R1, who were very strong players within it, took a lot of the forum.

The four engineering manufacturing CEO members remaining in the network (R1, R7, R8, and R10) structured themselves into both a social network and a community of practice. At the conclusion of each formal network meeting, these engineering CEOs would gather informally. Here they would discuss both work and non-work related issues. Any work related issues were often only briefly mentioned and an agreement to follow up at a later time usually reached. In addition to these informal gatherings, dyads of engineering CEOs would meet at other times to resolve or discuss work related issues.

Instigation of the network was driven by three hierarchical strategic goals: to address skill shortages in the region, to leverage economic opportunities external to the region through member collaboration, and to develop a Centre of Engineering Excellence in the region. Developing strategies to address skills shortages involved a process of network members collaboratively working with the agencies (R2 and R4) to incrementally adjust education packages and develop placement strategies. Although not formally recognised as a network

sub-structure, the involvement of R1, R2, R4, R6, R7, R8 and R10 constituted a working party as they were all engaged in developing a regional solution to address the issue. Network social capital with respect to this initiative was located across network with R2 and R4 working collectively and individually with members to develop holistic and individually tailored solutions.

The data supported the proposition that individual social capital underpins member engagement in the strategic alliance network, particularly at the network formation stage. Knowledge of each member's organisational resources and capabilities stimulated the formation of network sub-structures, which collectively represented the social capital of the network. One network sub-structure (R's 1, 7 and 10 moving to R's 1, 6 and 10) represented the network social capital associated with leveraging external network opportunities, while the engineering manufacturing community of practice was located in the sub-structure (R1, R7, R8, and R10).

Proposition 3: Social capital and knowledge and operational exchanges

Following formal meetings a small group (R1, R7, R8, R10, R11, one of our research team and infrequently, additional network members) gathered to discuss issues of common interest in a strongly social environment. It was as a consequence of these informal discussions, and the exchange of in-depth knowledge of system enhancement and strategies employed that an embedded unit within the network formed. Collaboration in the form of joint investment of resources and benevolence were only observed in this embedded unit (R1, R7 and R10). Interestingly, the openness and collectivism of R1 and R10 facilitated the creation of a highly embedded network dyad. Linkages were formed directly cross middle management and sharing of human and physical resources occurred. Although R7 was included in joint tendering, the high level of embeddedness evidenced between R1 and R10 did not develop between R7 and his collaborative partners. As R7 contributed quite specialised engineering manufacturing skills and capabilities, there were a range of levels upon which deeper embedded links could have been formed, however, this did not occur.

Thus, while some members limited their network involvement to learning about local and regional industry issues and developments, attending formal meetings and displaying credibility and integrity through their discourse, others actively pursued collaboration as a mechanism to build new growth. In this latter group of embedded network relationships social capital was evidenced through both knowledge and operational exchanges.

Proposition 4: Benevolence and the emergence of social capital

Trust was as integrating theme in conversations of R1, R10, R11, R7 and R8, in descending order of importance. Not only was trust identified as being critical to the functioning of the network's relationships, it was also identified as being a fundamental driver for the successful operation of the business network itself: *"The relationships and trust that we're building up with each other and the understandings forged that we can get with each other, I think that's the first key driver."*(R7).

The credibility of network members in having the capability to address the skills shortage initiative was perceived by all to be high, but, there was also distrust of the major employer (R13). R13 was drawing apprentices that the engineering firms had trained for up to three years through the lure of significantly higher salaries. Over time R13's attendance of

meetings became infrequent and, when the company did send a representative, less senior managers were involved, with little or no evidence of collaboration with other network members.

Many of the network members acknowledged that it takes time to develop trust and that trust within a collaborative relationship requires a track record of credibility and benevolence. An example of this aspect was a newly arrived engineering CEO from a major city who initially continued to work with other engineering companies from that city in a supplier role. The CEO gradually moved work over to regional network members as trusting relationships developed (R10): *“I had come from (major city), so I continued to use the contacts that I'd had down there, and it was just a case of building that trust.”*

Discussions about the various operational challenges of their companies enabled the CEOs to recognise that others in the network had similar values and issues. Both the informal and formal aspects of the network meetings also contributed towards ensuring benevolence behaviour within this core group (R1, R7, R8 and R10). *“To do that (i.e. feel a bit relaxed and talk about what they're doing in their company) you have to build the trust. and know that they are not going to be undercut by the people around that table”* (R3)

and

“if we can work with people we know and trust, it just makes that operation so much easier, because you've got a level of transparency that means you're not always worried about the guy that's doing this work doing you over”(R10).

Data from the case study supported the conclusion that in a co-opetition network environment, perceptions of benevolence, i.e. forbearance from opportunism will facilitate the emergence of social capital.

Conclusion

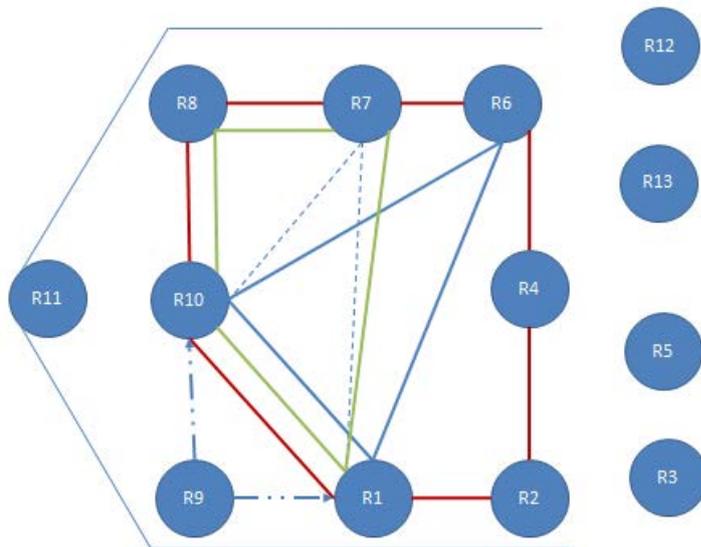
Our research objective was to investigate how individual and organisational social capital influence knowledge transfer and resource sharing, and create network social capital. This was investigated through a framework of four propositions and through employing a longitudinal case study approach.

The phenomenon of business competitors collaborating in a business network is a paradox. On the surface, it would be expected that a competitor would be reluctant to collaborate due to the fear of losing customers to another competitor or the risk of improving a competitor's operations. This mindset certainly existed when the business network was first formed.

Individual social capital of network members was the fundamental building block of the network. R11 represented the governance structure of the network, and leveraged his multiple network linkages, relevant individual relationships and relationships with government agencies to drive the formation of the network. However, the tension between organisational and network goals disengaged some members (R3, R12, R13). R3 remained a non-active member of the network, accessing that portion of network social capital available to all members, while R12 and R13 exited the network. Network social capital (Figure 2) was generated through sub-structures comprising a) the working party formed to address regional skills shortages (red lines indicate those participating), b) the community of engineering practice where network social capital was derived through the individual social capital of CEO's of engineering manufacturers (green lines) and the organisational social capital of R1,

and c) those collaborating to access opportunities external to the region (the dotted blue lines then replaced by the unbroken blue lines). R9 advised this latter substructure of relevant tenders available beyond the region. The social capital generated in the latter substructure was not accessible by other network members.

Figure 2: Network Social Capital



In the substructure of relationships that emerged between the engineering CEOs, a very personal connection occurred because they were amongst people with whom they could closely relate. This is a characteristic feature of communities of practice. These manufacturing engineers viewed each other as individuals who really understood the tribulations and stresses of their demanding positions. The value placed on the benefits of these social and community of practice interrelationships was high. This finding is consistent with work by Law (2008) who found that the emotional bonds between relationship participants lead to development of closer relationships (Law, 2008). Further, over time, the willingness of network members to consider other participant's best interest (benevolence) has been found to be assessed within the myriad of social and business processes that operationalise the relationship (Dimoka, 2010; McAllister et al., 2006).

Our key contributions to social capital theory lie in the relationship between network sub-structures and network social capital, the role of trust in forming embedded relationships that are rich in social capital, and the interconnectedness between individual, organisational and network social capital.

1. *Network members' engagement with other members and the development of network social capital was a function of their participating structure* i.e. the working party, the community of practice or the embedded sub-network collaborating on external opportunities. Each of these sub-structures defined social capital available to participating network members, although access of members to the social capital associated with tendering for external opportunities was restricted to those participating in the process. Prior research in business networks speaks of social capital as a network phenomenon. Our finding indicates that network social capital emerges within the formal and informal structures and substructures of the network.

2. *Trust is important but insufficient to support the emergence of social capital in trusting collaborative relationships.* The literature places trust as a core attribute of social capital. Our findings imply that personal attributes of openness and willingness to collaborate through sharing resources reflect a collectivist perspective which mediates the development of structures displaying embedded ties. In the presence of trust between organisation leaders, an individualistic, in-control, approach to business can create a barrier to developing connection embeddedness. On the other hand, a collectivist approach encourages close inter-organisational collaboration across multiple levels and operational resource sharing, deepening social capital.

Our findings align with those of Abrams, Cross, Lesser and Levin (2003) in confirming the importance of informal networks as a structure through which dimensions of trust that support collaboration can be developed. The discussions between those in this informal setting involved not only signalling the existence of social capital in the form of expertise within members or in aligned networks that could be leveraged to benefit network members, but also creating a sense of willingness to exchange knowledge. The evidence therefore suggests that although cognitive and benevolence trust are preconditions to forming collaborative network relationships, a collectivist as opposed to an individualistic approach to business engagement is required to achieve a multi-level embedded relationship.

3. *Individual social capital was critical for successful network formation, while knowledge of skills and capabilities of network members signalled the potential for network value creation.* Network social capital developed around strategic priorities identified within network governance structures. Network sub-structures emerged that defined the individual and organisational social capital available to address those strategic priorities. Network social capital emerged within these substructures, some of which had limited availability within the network. As social capital is only “able to generate value for whoever possesses it” (Casanueva, Gallego and Sancho 2013 p.442), network social capital with limited availability within the network constitutes a specialised form of network social capital.
4. *Although some in the network are direct competitors and therefore overlap in served markets, niche skills reflected the diversity of competitors and provide a platform for collaboration in times of economic growth.* Here the positive economic environment acts as an enabler for collaboration as organisations are not necessarily worried about competitive threats as a consequence of there being work for all. In fact, to benefit from times of economic growth market participants require economies of scale to successfully compete for larger projects, and are therefore willing to trade off smaller, less profitable projects to competitors with whom they are collaborating. Our findings are consistent with that of Tsai (2002) and Baum and Kom (1999) where intra-organisational units whose resources were more closely aligned demonstrated strong collaborative behaviour, while those with limited resource alignment, particularly those whose strategic imperatives were distinctly different from those of other units, demonstrated limited collaboration and social interaction.

Further research is encouraged to investigate how these findings might be challenged if the Australian economy contracts, where the competitive dimension of the inter-

organisational relationship is brought to the fore and benevolence might not be possible where organisational survival becomes the primary imperative.

References

- Abrams, L. C., R. Cross, E. Lesser, and D. Z. Levin (2003). Nurturing Interpersonal Trust in Knowledge-Sharing Networks, *Academy of Management Executive*, 17 (4), pp. 64-77.
- Adler, P., and S. Kwon (2002). Social capital: prospects for a new concept. *Academy of Management Review*, 27(1), pp. 17-40.
- Ahuja, G. (2000). Collaboration networks, structural holes, and innovation: a longitudinal study. *Administrative Science Quarterly*, 45(3), pp. 425-456.
- Anderson, E. M., and B. A. Weitz (1992). The use of pledges to build and sustain commitment in distribution channels, *Journal of Marketing Research*, 29(February), pp. 18-34.
- Anderson, J. C., and J. A. Narus (1984). A model of the distributor's perspective of distributor-manufacturer working relationships, *Journal of Marketing*, 48(4), pp. 62-74.
- Anderson J. C., and J. A., Narus (1990). A model of distributor firm and manufacturer firm working partnerships, *Journal of Marketing*, 54 (January), pp. 42 - 58.
- Anderson, J. C., H. Hakansson and J. Johanson (1994). Dyadic Business Relationships within a Business Network Context, *Journal of Marketing*, 58 (4), pp. 1-15.
- Barley, S. R. (1990). The alignment of technology and structure through roles and networks. *Administrative Science Quarterly*, 35 (1), pp. 61-103.
- Batt, P. J. (2008). Building social capital in networks, *Industrial Marketing Management*, 37 pp. 487-491.
- Baum, J. A. C. and H. J. Kom (1999). Dynamics of Dyadic Competitive Interaction, *Strategic Management Journal*, 20 (3) pp. 251-278.
- Borgatti, S. P. and P. C. Foster, (2003). The Network Paradigm in Organizational Research: A Review and Typology, *Journal of Management*, 29 (6), pp. 991-1013.
- Brewer, M. B. (1981). Ethnocentrism and its Role in Interpersonal Trust, In Brewer, M. B., and B. E. Collins (Eds.), *Scientific Inquiry and the Social Sciences*, Jossey-Bass: New York. pp. 345-359.
- Brosch, T., G. Pourtois, and D. Sander (2010), The perception and categorisation of emotional stimuli: A review, *Cognition and Emotion*, 24(3), pp. 377-400.
- Burt, R. S. (1992). *Structural Holes: The Social Structure of Competition*, Harvard University Press, Cambridge.
- Casanueva, C., A. Gallego, and M. Sancho (2013). Network resources and social capital in

- airline alliance portfolios, *Tourism Management*, 36, pp. 441-453.
- Chua, R.Y.J., P. Ingram and M. W. Morris (2008). From the head and the heart: Locating cognition- and affect-based trust in managers professional networks, *Academy of Management Journal*, 51(3) pp. 436-452.
- Coleman, J. S. (1988). Social capital in the creation of human capital, *American Journal of Sociology* 94, pp. S95-S120.
- Coulter, K.S., and R. A. Coulter, (2003).The effects of industry knowledge on the development of trust in service relationships, *International Journal of Research in Marketing*, 20(1) pp. 31-43.
- Dey, I. (1993). *Qualitative Data Analysis - a user friendly guide for social scientists*. Routledge.
- Dimoka, A. (2010). What does the brain tell us about trust and distrust? Evidence from a functional neuroimaging study, *MIS Quarterly*, 34(2), pp. 373-396.
- Drumwright, M. (1994). Socially Responsible Organizational Buying: Environmental Concern as a Noneconomic Buying Criterion, *Journal of Marketing*, 58 (July), pp. 1-19.
- Dwyer, F. R., Schurr, P. H., and Oh, S. (1987). Developing Buyer-Seller Relationships, *Journal of Marketing*, 51 (April), pp. 11-27.
- Dyer, J. H. and N. W. Hatch (2004). Human Capital and Learning as a Source of Sustainable Competitive Advantage, *Strategic Management Journal*, 25 (12), pp. 1155-1178.
- Dyer, J. H. and K. Nobeoka, (2000). Creating and managing a high-performance knowledge-sharing network: the Toyota case, *Strategic Management Journal*, 21, pp. 345-367.
- Edvardsson, B., B. Tronvoll and T. Gruber (2011). Expanding understanding of service exchange and value co-creation: a social construction approach, *Journal of the Academy of Marketing Science*, 39, pp. 327–339.
- Fichman, M. (2003). Straining towards trust: some constraints on studying trust in organizations, *Journal of Organizational Behavior*, 24, pp. 133–157.
- Gold, A. H., A. Malhotra, and A. H. Segars, (2001). Knowledgeable Management: an organizational capabilities perspective, *Journal of Management Information Systems*, 18 (1), pp. 185-214.
- Grant, R. M. and C. Baden-Fuller, (2004). A knowledge accessing theory of strategic alliances, *Journal of Management Studies*, 41 (1), pp. 61-84.
- Gulati, R. and M. Gargiulo (1999). Where do Interorganizational Networks Come From? *The American Journal of Sociology*, 104 (5), pp. 1439-1493.
- Gulati, R. and H. Singh (1998). The architecture of cooperation: managing coordination costs and appropriation concerns in strategic alliances, *Administrative Science Quarterly*, 43 (4), pp. 781-814.

- Gupta, A. K., and V. Govindarajan (2000). Knowledge Flows Within Multinational Corporations, *Strategic Management Journal*, 21 (4), pp 473-496.
- Hackney, R., K. C. de Sousa, and Z. Irani (2008). Constructing and Sustaining Competitive Interorganizational Knowledge Networks: An Analysis of Managerial Web-Based Facilitation, *Information Systems Management*, 25, pp. 356-363.
- Häkansson, H., and D. Ford (2002). How Should Companies Interact in Business Networks? *Industrial Marketing Management*, 55(2), pp. 13–139.
- Halinen, A., and K. K. Moller (1999). Business Relationships and Networks: Managerial Challenge of Network Era, *Industrial Marketing Management* 28 (5), pp. 413-427.
- Halinen, A., A. Salmi and V. Havila, (1999). From Dyadic Change to Changing Business Networks: An analytic Framework, *Journal of Management Studies*, 36 (6), pp. 779-794.
- Hardy, C., N. Phillips and T. B. Lawrence, (2003). Resources, knowledge and influence: The organizational effects of interorganizational collaboration, *Journal of Management Studies*, 40 (2), pp. 321-347.
- Havila, V. and A. Salmi, (2000). Spread of change in business networks: an empirical study of mergers and acquisitions in the graphic industry, *Journal of Strategic Marketing*, 8, pp 105-119.
- Hedlund, G. (1994). A model of knowledge management and the N-form corporation, *Strategic Management Journal*, 15, pp. 73-90.
- Heracleous, L. and J. Murray, (2001). Networks, Interlocking Directors and Strategy: towards a theoretical framework, *Asia Pacific Journal of Management*, 18 (2), pp. 137-160.
- Huggins, R. (2010). Network resources and knowledge alliances: Sociological perspectives on inter-firm networks as innovation facilitators, *International Journal of Sociology and Social Policy*, 30(9/10), pp.515 – 531.
- Huynh, T.D., N. R. Jennings and N. R. Shadbolt (2006). An integrated trust and reputation model for open multi-agent systems, *Autonomous Agents and Multi-Agent Systems*, 13(2), pp. 119-154.
- Inkpen, A. C. and E. W. K. Tsang (2005). Social Capital, Networks, and Knowledge Transfer, *Academy of Management Review*, 30 (1), pp.146-165.
- Jansson, H., M. Johanson and J. Ramström (2007). Institutions and Business Networks: A Comparative Analysis of the Chinese, Russian, and West European Markets, *Industrial Marketing Management*, 36(7), pp. 955-967
- Jarratt, D. (2006). Structuring for Network Success, *International Journal of Knowledge, Culture and Change Management*, 6(3), pp. 181-190.
- Johnson, M. D., E. Anderson and C. G. Fornell (1995). Rational and Adaptive Performance Expectations in a Customer Satisfaction Framework, *Journal of Consumer Research*, 21, pp. 695-707.

- Karpen, I. O., L. L. Bove and B. A. Lukas (2012). Linking Service-Dominant Logic and Strategic Business Practice: A Conceptual Model of a Service-Dominant Orientation, *Journal of Service Research*, 15(1), pp. 21-38.
- Kim P.H., K. T. Dirks and C. D. Cooper (2009). The repair of trust: A dynamic bilateral perspective and multilevel conceptualization, *Academy of Management Review*, 34(3), pp. 401-422.
- Knoke, D. (2009). Playing Well Together: Creating Corporate Social Capital in Strategic Alliance Networks, *American Behavioral Scientist*, 52(12), pp. 1690-1708
- Koka, B., and J. Prescott (2002). Strategic alliances as social capital: a multidimensional view. *Strategic Management Journal*, 23, pp. 795-816.
- Kramer, R. M. (1999). Trust and Distrust in Organizations: Emerging Perspectives and Enduring Questions, *Annual Review of Psychology*, 50, pp. 569-598.
- Law, M. (2008). Customer referral management: the implications of social networks, *The Service Industries Journal*, 28(5), pp. 669–683.
- Lewicki, R.J., E. C. Tomlinson and N. Gillespi (2006). Models of Interpersonal Trust Development: Theoretical Approaches, Empirical Evidence, and Future Directions, *Journal of Management*, 36, pp. 991-1022.
- Lorenzoni, G, and A. Lipparini (1999). The leveraging of interfirm relationships as a distinctive organizational capability: a longitudinal study, *Strategic Management Journal*, 20, pp. 317-338.
- Madhavan, R., B. R. Koka and J. E. Prescott (1998). Networks in Transition: How Industry Events (Re)Shape Interfirm Relationships, *Strategic Management Journal*, 19 (5), pp. 439-459.
- Marshall, C. and G. B. Rossman, (1989). *Designing Qualitative Research*. Sage: London.
- Mayer, R. C., J. H. Davis and F. D. Schoorman (1995). An integrative model of organisational trust, *Academy of Management Review*, 20 (3), pp. 709-734.
- McAllister, D.J. (1995). Affect- and Cognition-Based Trust as Foundations for Interpersonal Cooperation in Organizations. *The Academy of Management Journal*, 38(1), pp. 24-59.
- McFadyen, M. A. and A. A. Cannella Jr. (2004). Social capital and knowledge creation: Diminishing returns of the number and strength of exchange relationships, *Academy of Management Journal* 47 (5), pp. 735-746.
- McKnight, D. H., C. J. Kacmar V. and Choudhury (2004). Dispositional Trust and Distrust Distinctions in Predicting High and Low-Risk Internet Expert Advice Site Perceptions, *E-Service Journal*, 3(2), pp. 35-58.
- Mizruchi, M. S. (1996). What do Interlocks do? An analysis, critique, and assessment of research on interlocking directorates, *Annual Review of Sociology* 22, pp.271-298.

- Moorman, C., R. Déshpande and G. Zaltman (1993). Factors Affecting Trust in Market Research Relationships, *Journal of Marketing*, 57(1), pp. 81-101.
- Morgan, R. M. and S. D. Hunt (1994). The commitment-trust theory of relationship marketing, *Journal of Marketing*, (July), pp. 20-38.
- Nahapiet, J. and S. Ghoshal, (1998). Social capital, intellectual capital, and the organizational advantage, *Academy of Management Review*, 23 (2), pp. 242-266.
- Nassimbeni, G. (1998). Network structures and co-ordination mechanisms A taxonomy. *International Journal of Operations & Production Management*, 18 (6), pp. 538-554.
- Newell, S. and J. Swan (2000). Trust and inter-organizational networking, *Human Relations*, 53(10), pp. 1287-1328.
- Oliver, A. L. (2004) On the duality of competition and collaboration: network-based knowledge relations in the biotechnology industry, *Scandinavian Journal of Management*, 20, pp.151–171.
- Parayitam, S. and R. S. Dooley (2009). The interplay between cognitive and affective conflict and cognition- and affect-based trust in influencing decision outcomes, *Journal of Business Research*, 62, pp. 789–796.
- Powell, W., K. Koput, and L. Smith-Doerr (1996). Interorganizational Collaboration and the Locus of Innovation, *Administrative Science Quarterly*, 41(1), pp. 116-145
- Provan K. G. and P. Kenis (2008) Modes of Network Governance: Structure, Management, and Effectiveness, *Journal of Public Administration Research and Theory*, 8, pp. 229–252.
- Reagans, R. and B. McEvily. (2003). Network structure and knowledge transfer: The effects of cohesion and range, *Administrative Science Quarterly*, 48 (2), pp. 240-267.
- Richards, L. and T. Richards, (1991). *The Transformation of Qualitative Method in Fielding*, Nigel G., and Raymond M. Lee (editors) *Using Computers in Qualitative Research* Sage: London.
- Rousseau, D. M., S. B. Sitkin, R. S. Burt and C. Camerer (1998). Not So Different After All: A Cross-Discipline View of Trust, *Academy of Management Review*, 23(3), pp. 393-404.
- Sánchez, J.A., M. L. Vijande and J. A. T. Gutiérrez (2010). The Impact of Relational Variables on Value Creation in Buyer-Seller Business Relationships, *Journal of Business-to-Business Marketing*, 17(1), pp. 62–94.
- Sawhney, M. and J. Zabin, (2002). Managing and Measuring Relationship Equity in the Network Economy, *Journal of the Academy of Marketing Science*, 30 (4), pp. 313-333.
- Schulze W., (2007), Networks and strategic entrepreneurship: Comments on comparing alliance network Structure across industries: observations and explanations and strategic networks and entrepreneurial ventures, *Strategic Entrepreneurship Journal*, 1, pp. 229–231.

- Shenkar, O, and J. Li (1999). Knowledge search in international cooperative ventures, *Organization Science*, 10(2), pp. 134-143.
- Sunikka, A., L. Peura-Kapanen and A. Raijas (2010). Empirical investigation into the multi-faceted trust in the wealth management context, *International Journal of Bank Marketing*, 28(1), pp. 65-81.
- Swift, P. E., and A. Hwang (2013). The impact of affective and cognitive trust on knowledge sharing and organizational learning, *The Learning Organization*, 20(1), pp. 20-37.
- Teece, D. J., G. Pisano, and A. Shuen, (1997). Dynamic Capabilities and Strategic Management *Strategic Management Journal*, 18 (7), pp. 509-533.
- Tsai, W. (2001). Knowledge transfer in intra-organizational networks: Effects of network position and absorptive capacity on business unit innovation and performance, *Academy of Management Journal*, 44, pp. 996-1004.
- Tsai, W. (2002). Social Structure of Co-opetition Within a Multiunit Organization: Coordination, Competition, and Intra-organizational Knowledge Sharing, *Organization Science*, 13, pp. 179-190.
- Vangen, S. and C. Huxham (2003). Nurturing collaborative relations: Building trust in interorganizational collaboration, *The Journal of Applied Behavioral Science*, 39(1), pp. 5-3.
- Van Montfort, K., E. Masurel and I. Van Rijn (2000). Service Satisfaction: An Empirical Analysis of Consumer Satisfaction in Financial Services, *Service Industries Journal*, 20 (3), pp. 80-94.
- Walter, A., T. A. Müller, C. Helfert and T. Ritter (2003). Functions of industrial supplier relationships and their impact on relationship quality, *Industrial Marketing Management*, 32, 159– 169.
- Walter, J., C. Lechner and F. W. Kellermanns (2007). Knowledge transfer between and within alliance partners: Private versus collective benefits of social capital, *Journal of Business Research*, 60, pp. 698–710.
- Webber, S. S. (2008). Development of Cognitive and Affective Trust in Teams: A Longitudinal Study, *Small Group Research*, 39(6), pp. 746-769.
- Zahra, S., R. Ireland, and M. Hitt (2000). International expansion by new venture firms, *Academy of Management Journal*, 43 (5), 925-950.

Appendix 1: Interview guide

1. Network Objectives
 - a. Perceptions of current network performance objectives (short and long term)
 - b. Understanding of the contribution of network members to developing the social capital required to achieve those objectives?
2. Governance
 - a. Understanding of the network policies, processes and practices governing the network – how have these emerged?
 - b. Perceptions of policies, processes and practices in terms of how they might facilitate or inhibit collaboration
3. Structure
 - a. Discussion of current network structure
 - b. Seek views on consequences of the network structure
4. Interrelationships within the network and between adjacent networks
 - a. Describe interactions between individual members and groups within network and those in the network periphery (probe for separate meetings, working parties on specific projects i.e. structures that facilitate/inhibit knowledge exchange and integration)
 - b. Explore embedded units influencing the development and direction of the network
 - c. Explore links into other networks that are important for achieving performance objectives
5. Network history mapping
 - a. Recall the formation stage of the network and explore four areas above
 - b. Identify any other stage subsequent to formation of the network and prior to current stage and explore four areas above. Identify drivers of each stage.