UNIVERSITY OF SOUTHERN QUEENSLAND

BUSINESS NETWORKS WITHIN A REGIONAL INDUSTRIAL CLUSTER

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Abstract

Cooperative strategies are becoming increasingly relevant in coping with an increasingly dynamic and complex business environment. A concentration upon core competencies is made easier when businesses are able to cooperate with other specialist businesses with different core competencies. Cooperative strategies range from formal alliances reinforced by contracts through to informal networks based upon relationships cemented by trust. Some examples of the motivators of networks include working together to win or carry out a project, or learning. However, unless the network delivers mutual benefit, it is unlikely that the trust and relationships necessary to cement the network will eventuate. Interaction based upon mutual benefit is normally expected to result in strengthened relationships and trust, provided the experience was positive for all concerned.

This study explores a formal business networking group in a regional industrial cluster. The research question that emerges from this background is: **how does knowledge sharing emerge within a formal business networking group?** Knowledge is a common component across the research issues that support this research question. Exploring the type of alliance, network or cluster that the formal business networking group takes is the first research issue. The second research issue examines how members perceive benefits from networking and how members build and maintain relationships is the third research issue. How do members exchange knowledge is the fourth research issue and the role of the active members in integrating knowledge is the fifth research issue. The sixth and final research issues examine how important trust is to members.

A qualitative methodology based upon the analysis of case studies is used for this explorative study. Fourteen embedded case studies are used with each case being a small, large or medium sized member business. A literature review provided prior theory, which is combined with in depth pilot interviews to formulate an interview protocol. Primary data was collected by conducting a total of 24 interviews with owners or senior managers of the participating businesses.

In summary, the group is a formal business networking group that includes informal relationships between members. Benefits of membership include both intangible and tangible benefits. Relationships are built through community focused participation enabling interaction around issues, problems and domain similarity. Knowledge is exchanged primarily through relationship development and with active members acting as knowledge integrators. Trust is built over time through demonstrated dependability. Open and honest communications cements all aspects of this relationship-based formal business networking group.

The main contribution to theory was a confirmation that the literature based around cooperative strategies was applicable to a formal business networking group in a regional industrial cluster. It was confirmed that participation in networking group activities enabled the interaction required to build the relationships and trust necessary to exchange knowledge by way of rational discourse. A definition of a formal business networking group was developed and confirmed by members. Benefits of networking paraphrased from the literature are confirmed by members as are the indicators of trust. A formal business networking group model was also developed as a product of this research project.

The contribution to management practice include a number of education tools that can be used to improve the performance of the formal business networking group and the member businesses. The tables of the benefits of networking and indicators of trust developed for this research can be used as a discussion tool for learning within or outside the group. A better understanding of the knowledge exchange process may encourage interaction amongst members with a resultant strengthening of relationships, trust and knowledge. Finally, the formal business networking group process model is an educational tool that can be used as a discussion piece for members, industry groups or Government when reviewing the allocation of scarce resources. Whilst of interest academically, this study may assist industry groups, Government policy, business networking groups, and individual businesses in working towards outcomes that deliver increased productivity and a greater business knowledge base.

CERTIFICATION OF DISSERTATION

I certify that the ideas, experimental work, results, analyses, software and conclusions reported in this dissertation are entirely my own effort, except where otherwise acknowledged. I also certify that the work is original and has not been previously submitted for any other award, except where otherwise acknowledged.

…….. …….
Signature of Candidate Date

ENDORSEMENT

……... ……
Signature of Supervisor/s Date

…….. ……..

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Chapter 1. Introduction to the research study.

1.1 Introduction

Cooperation amongst businesses is increasingly recognised as a legitimate strategy to cope with an increasingly complex and dynamic market (Buttery & Buttery 1994). Networking is often associated with regional industrial clusters and the author postulates that whilst clusters and networking are complementary, members of a cluster do not necessarily cooperate or network. Research on clusters is based on theory indicating that businesses within a region can increasingly specialise around competencies over time in order to best meet competitive pressures (Best 2001; Porter 1996). However, whilst some members of a cluster may cooperate, other relationships within a cluster may be transactional in nature with parties striving to win the best outcome, regardless of the impact on other parties to the transaction (Jarillo 1993; Lipnack & Stamps 2000). Therefore this study will also investigate concepts such as networks and alliances.

Networks are a flexible form of relationships based upon trust and mutual benefit. Networks are not necessarily based around industry or business, the area of interest for this case study (Lipnack & Stamps 2000). Networks can be based around non-business areas such as social or interest groups but for the purpose of this study HunterNet, a formalised business-networking group within a regional industry cluster is analysed. Alliances are networks that are formalised to meet a market segment or a project (Child & Faulkner 1998). It is likely that alliances may result from within a formalised business-networking organisation, thus alliances will be part of the analysis.

HunterNet has four membership classes. Patrons are large organisations that support the network. Sponsors offer support and service provision to the network and the network members. General Members are small to medium business enterprises (SME) involved in the Hunter region engineering manufacturing and services sector. Associates are micro businesses involved in service provision or engineering. All HunterNet classes of membership have an opportunity to contribute to the network. The network is not exclusive but some exclusivity exists by default, as no two member organisations are identical. Membership is not static with new members joining, some existing members resigning and sometimes, rejoining. The ability to

contribute to the network in a trustworthy manner appears the main membership selection criteria.

Differences across HunterNet members include size, turnover, specialisation, and business practices. Some HunterNet businesses employ professional managers to represent shareholders interests whilst other businesses are managed by owners. Business size would normally result in a different internal focus by managers. Larger businesses can sometimes be slow to respond because of the necessity to delegate across functions and through different levels of supervision but normally have the advantage of greater access to resources. Smaller businesses on the other hand would normally have greater responsiveness and flexibility through shorter communication lines, but have the disadvantage of less access to resources (Jarillo 1993). The HunterNet positioning statement of 'the competitive edge in engineering' recognises the full business solution that can be offered by the diverse specialisations within HunterNet.

Within this study factors that affect the functioning of the network such as cooperation, competition and knowledge sharing are addressed. Cooperation has the potential to offer many benefits but cooperating with potential or actual competitors does involve some risk that needs to be taken into account, particularly if opportunistic behaviour is the norm. Knowledge sharing through relationships based upon trust binds a network together and enables risks to be balanced against potential reward. Cooperation, competition and conflict will be an influence on the network (Child & Faulkner 1998).

There are a number of key issues to be highlighted in this case study. The researcher proposes that HunterNet is a formalised business group focused on networking whose members may form alliances for projects or market segments on a need basis, and are part of the Hunter engineering cluster. The author postulates that because of the rational nature of business to business relationships, benefits are a key motivator for membership of a business-networking organisation and thus need to be analysed. The author proposes that a key part of HunterNet is the building and maintenance of relationships between members. Identifying how those relationships are built and maintained are therefore important to the case study. The author postulates that how

the membership makes knowledge explicit and shares knowledge is an important issue that needs to be analysed. The author proposes that knowledge integrators play an effective part in the knowledge sharing process within HunterNet, thus the concept of knowledge integrator is an issue worthy of research. The author makes the proposition that establishing, building and maintaining trust is central to HunterNet. The author further postulates knowledge sharing is central to all of the above issues.

1.2 Background to the study

1.2.1 Manufacturing in Australia

Australian manufacturing in the year ending 2001 was 12.8 % of the Australian economy and 13.1 % of the NSW economy but was second last in sector growth rate over many years. By comparison, property and business services was 12.4 % of the Australian economy and 14.3 % of the NSW economy with a much higher growth rate than manufacturing over a number of years. There are 31.3 % of manufacturing jobs located in NSW. Industry value added has increased 15.8 % over the past 5 years indicating a real increase in productivity. Exports account for 19.2 % of manufacturing sales with businesses employing 0-49 employees averaging 15.2 % of sales as exports. Businesses employing 50-99 persons averaged 14.7 % of sales as exports and businesses employing 100 or more averaged 20.7 % of export sales (Australian Bureau of Statistics 2003).

In the 1999—2000 year, Hunter manufacturing turned over almost $6 billion, out of the $74 billion NSW manufacturing base and the $231 billion Australian manufacturing base. This figure is larger than manufacturing in Tasmania, Northern Territory and Australian Capital Territory. Manufacturing turnover per capita was $10,298 in the Hunter and $12,065 for Australia (Hunter Valley Research Foundation 2002). A significant portion of NSW manufacturing is in the Sydney market, which is less than two hours by road from Newcastle.

The Hunter produces some 36 % of Australia's coal and 35 % of Australia's Aluminium (Hunter Valley Research Foundation 2003). Newcastle is the largest coal

port in the world and the largest export port in Australia. The above industries require maintenance and services, which are part of the HunterNet offer.

Since 1998, the Hunter manufacturing labour force has declined from 14.2 % to 12.7 % of the population whilst the Australian manufacturing workforce has declined from 12.8 % to 12.2 % of the population. The Hunter has 752 manufacturing companies with 0—4 employees, 448 manufacturing companies with 5—19 employees, 162 manufacturing companies with 20—99 employees and 44 manufacturing companies with 100 plus employees. Hunter unemployment is significantly above the national and state average and the participation rate is significantly lower than the national and state average (Hunter Valley Research Foundation 2003).

The HunterNet Cooperative is a ten year old industry group promoting member engineering businesses in the Hunter region of NSW, Australia. HunterNet members offer highly specialised and innovative engineering capabilities in information technology, mechanical and electrical engineering services, manufacturing, machining and electronics. Established and progressive member firms promise a commitment to quality certification and continued improvement with a focus on market and customer orientation through the sharing of information and resources (HunterNet 2003).

An examination of the development of the HunterNet Co-operative network could be used as a starting point for other business or regional groupings who wish to use networks as a means of concentrating on core competencies whilst maintaining flexibility, and increasing economies of scale and scope. The existing literature is used as a basis for comparison of the HunterNet Co-operative network.

1.2.2 Background to the HunterNet Co-operative network

The Hunter Region of NSW has a long history in engineering. Heavy industry and mining have long been serviced by independent engineering businesses. In the late 1980's, the Hunter engineering sector suffered a sharp downturn. Globalisation, coupled with economic and technological change, had heightened an existing

downward trend in engineering business available within the Hunter region (HunterNet 2002).

By 1990, most of the large infrastructure projects had reached completion and high interest rates resulted in new projects being put on hold. Large companies were also consolidating and looking to compare sourcing costs from outside the region. Rather than accepting what was available within the Hunter, criteria such as quality standard accreditation, cost, service and capability were used to assess local engineering businesses against competitors from outside the region (HunterNet 2002).

The founding HunterNet members realised that whilst they were good engineers, there were gaps in marketing and strategic understanding within their businesses. Understanding what the customer needed, developing new and existing capabilities that customers required, and letting the wider market know what Hunter engineering businesses were capable of were areas where skills needed to be developed. HunterNet was envisaged as a way of developing member skills and building awareness in the Australian and international markets of the capabilities the Hunter engineering industry had to offer (HunterNet 2002).

The vision and mission of HunterNet have a focus on community issues as well as issues that directly impact upon members. Programs such as ‘Make it in the Hunter’, ‘A Model for Action’, and ‘HunterNet Group Training’ as described in the glossary of terms are examples of the community aspect of the vision being actioned. These programs benefit the community as a whole with indirect flow on to HunterNet members as part of the community. The vision and mission also reflect the fact that members must work together to continually adapt to global and local change (HunterNet 2002).

HunterNet members have a combined turnover in excess of $550 million and employ in the order of 2500 people. Collaborating with a competitor for mutual benefit did result in initial tensions but time overcame these tensions. HunterNet members use trust and cooperation to match or better the efficiencies of a vertically integrated entity (HunterNet 2002).

HunterNet members believe that HunterNet has benefited their businesses by increasing opportunities for individual work through increased awareness of capabilities and through group tendering for projects (HunterNet 1999). The fact that HunterNet is still functioning after more than ten years when so many networking groups have failed indicate that HunterNet is a group worthy of research (HunterNet 2002).

Glossary of Terms

Term	Explanation
Make it in the Hunter	Is a program to identify and market the capabilities of Hunter Region based engineering related businesses
A Model for Action	A program to identify and implement initiatives to ensure a knowledge intensive manufacturing environment in the Hunter Region.
HunterNet Group Training	A group training company to manage the training process of apprentice and trainees for client firms
Knowledge integrator node	Individuals who promote the knowledge conversion and creation process by actively seek to draw out tacit knowledge from various sources and integrate that knowledge into internal and external groups or networks (Poh 2000).
Embedded Case Study	An embedded case study is a smaller case study embedded in the unit of analysis, the large case study (Perry & McPhail 1999).
Formal Business Networking Group	A formal group formed to facilitate the networking of independent members so that relationship building and relationship maintenance can take place with a view to delivering mutually beneficial community and business focused outcomes through working together.

1.2.3 Competition

HunterNet's focus on engineering and manufacturing appears to limit competition from other networks in the Hunter. Australian Business Ltd is represented in the region by the Newcastle and Hunter Chamber of Commerce. Australian Business offers networking events including membership briefings, speaker functions, trade shows and a concept called 'my business is your business' whereby two members combine to host an event for other members. Lobbying and services are also offered by Australian Business Ltd (Australian Business, 2002).

The Hunter Export Centre (HEC) offers members networking benefits such as the sharing of information, knowledge, market intelligence, contacts, resources and trade missions. The HEC intends for members to network so that alliances are possible…. 'thus engendering individual prosperity' (HEC web site, October 2002).

Huntertech offers full information technology (IT) cover through the collaboration of a consortium of Hunter IT companies. Whilst the aims of Huntertech appear similar to HunterNet, the two groups have a different industry segment focus and more likely complement each other than compete (Huntertech Website 2002).

1.3 Research problem and research issues based on the literature

There is an increase in the use of business networks in recent times (Bien; 1998; Buttery & Buttery 1994; Collin 1996; Philip 1997). A business network is defined by Buttery and Buttery (1994 p.17) as '…… two or more organisations involved in a relationship that maintains all participants as separate corporate entities to their mutual benefit', and has been likened to dancing or dating as opposed to marriage (Gorelick 1998; Wilkinson & Young 1994). A business network may be buyer-seller, franchising, benchmarking, joint-ventures — for economies of scope or scale, learning new skills or improving existing skills, manipulating the competitive structure of the market — or technological alliances. Networks may be of equals or have a dominant partner (Buttery & Buttery 1994).

Technology and change generally has been discontinuous resulting in the necessity for companies to continually innovate and adapt. Markets are increasingly becoming globalised and technology is helping companies to localise global products or brands resulting in increased competition. Networks are a method of gaining technological and marketing skills (Buttery & Buttery 1994).

There is a movement away from vertical integration because of the economic and technological development advantages of specialists (Gadde & Hakansson, 1994; Buttery & Buttery 1994). Where previously competition and opportunism were the normative focus of transactional type exchanges, the movement away from vertical integration has meant the focus now has to change to a collaborative style based upon relationships rather than transactions in order to successfully link activities (Buttery & Buttery 1994; Hakansson & Snehota 1990; Hakansson and Snehota 1992).

For networks to be successful there must be domain overlap (Buttery & Buttery 1994). Product or service similarities, clientele similarities, mode of operating, territory similarities, or time considerations reflecting opportunity is where domain overlap normally occur (Buttery & Buttery 1994; Reamer, 1997). Varying degrees of interdependence are pooled, sequential and reciprocal and at least one party has to recognise domain overlap for the networking process to begin (Buttery & Buttery 1994; Ford 1980; Hakansson & Johanson, 1992).

All participants must have something to offer if the network is to be a success. The more difficult a competency is to internalise, the longer it will remain an offer to the network, making the less tangible offers the more long term. Networks are not always successful in the long-term or short-term and should be left if no value can be extracted (Buttery & Buttery 1994; Ford 1980; Ford et al 1986).

Motivation to network may be triggered by internal or external factors and is often caused by rapid and sudden change (Buttery & Buttery 1994; Ford 1980). Culture and history impact on networks (Ford 1980; Wilkinson & Young, 1994). Different cultures are more open to networking and the history of networking success of the participants and others observed by participants will influence the culture and the attitude towards networking (Buttery & Buttery 1994; Ford 1980; Hakansson & Johanson; 1992). Organisations network, but it is the people within the organisations whom act out the relationship further reinforcing the impact of culture (Ford et al 1986). Network boundary issues need to be determined and the flow of information needs to be examined for what is acceptable to all partners. Information needs to flow for the network to function but the flow should not be uneven as opportunistic behaviour often leads to network breakdown. The network works best if skills complement each partner and reasonable criticism is accepted and acted upon so that improvements can benefit the network (Wilkinson & Young, 1994; Wilson & Jantrania 1995; Hakansson & Gadde, 1982).

Early in the network process, bonding must take place and continue if networks are to be a success (Buttery & Buttery 1994; Ford 1980). Boundary definition, mutual expectations reflected as objectives, rewards linked to the network success, trust, mutual respect for all stakeholders individual interests as well as network interests,

celebration of success and free exchange of legitimate information are listed as some of the areas that will help the organisations bond (Buttery & Buttery 1994; Wilson & Jantrania 1995). Bonds can be kept in place for future networks after network break-up provided all parties feel that benefit has been appropriately distributed (Buttery & Buttery 1994; Hakinsson & Snehota, 1992).

To maximise the benefit of a network individual businesses need to align the network in their individual strategy and the network strategy needs to complement the partners' strategies. The strategy must be implemented and be measured across the network by agreed measures (Buttery & Buttery 1994; Ford et al 1986). The strategy reflects the dynamics of the network internal and external environment so will not be static (Buttery & Buttery 1994; Wilson & Jantrania, 1995).

1.4 Problem definition.

The research question is: **how does knowledge sharing emerge in a formal business networking group?** The author postulates that knowledge is the common component in all the research issues regarding HunterNet, a formal business networking group.

The research issues flowing from the above literature are:

Research Issue 1: What type of alliance, network or cluster is HunterNet?
Research Issue 2: How do HunterNet members perceive benefits from networking?
Research issue 3: How do HunterNet members build and maintain relationships?
Research issues 4: How do HunterNet members exchange knowledge?
Research Issue 5: Are the active members of HunterNet knowledge integrators?
Research Issue 6: How important is trust to HunterNet members?

1.5 Research methodology.

The unit of analysis for the case study is the organisation, at one level HunterNet, and at the other the member businesses that make up HunterNet. It is the formal business networking group HunterNet that is being studied, not the engineering industry. Whilst it is true that individuals act out the relationship, it is assumed the individuals are representing the organisation (McPhail 1999; Yin 1994). The critical realism paradigm accepts that reality is imperfectly apprehendable, so is most suited

to a complex/dynamic business market with limited existing information. Business needs information to enable better-informed decision-making. The critical realism paradigm offers information that is comprehensible within the mental capacity of management, but without the false assumption that the 'correct' answer has been found (McPhail 1999).

Exploratory research is used because of the new and dynamic nature of the HunterNet network. A case study methodology is used because of the exploratory nature of the research and the critical realism paradigm used to determine the imperfectly apprehendable reality. Interviews and requests for documents are the primary means of collecting data for the case. The induction/deduction question is regarded as a continuum with prior research used to guide then compare the data collected from the case (Perry 1996). The research question is termed in the how/why of exploratory research, there is no behavioural control and the issue of business networks is contemporary, so a case study methodology is justified (Yin 1994).

There is one case at the HunterNet level made up of fourteen embedded cases, each embedded case being a HunterNet General Member or Patron (Yin 1994). Fourteen embedded cases are used to ensure maximum variation. The embedded cases are on the basis of replication logic rather than sampling logic. Purposive sampling is used with the embedded cases being of maximum variation (Perry 1994). Willingness to cooperate is also a determinant in the embedded cases. The people interviewed are staff holding senior positions in the Member Company. Owners are targeted if they play an active role in the business. Two interviews of approximately one-hour duration for each embedded case was the intention but in four cases, one interview per case study was possible (Yin 1994).

Pilot interviews of two senior HunterNet Officers take place in phase two of the research process. In phase four of the research process, documentation is sought from the interviewee organisations in regard to the business that they are involved in. Interviews took place with the interviewees — whose selection criteria is described above — with the aim of gathering data independent, contrary and complementary to

the documentation. The purpose of the interview is to gather data on the business networks of the organisation, not to influence the interviewee into saying what the researcher wants to hear (Yin 1994).

The case study protocol reminds the researcher of the business research issues previously mentioned, and through the preparation of the protocol, identify potential procedural problems (Yin 1994). Validity and reliability are addressed. Multiple sources of evidence, establishing a chain of evidence, and having key informants' review the draft case study report enhanced construct validity. The theoretical framework built from the literature, the pilot interviews, and the case analysis (including pattern analysis) enhances internal validity. Using replication logic in the research design and establishing the domain to which a study's findings can be generalised enhances external validity. Reliability is enhanced by the use of a case study protocol and by developing a case study database (McPhail 1999; Yin 1994).

The case study issues remind the researcher what information needs to be collected and there is a list of probable sources of data and the strategies to obtain the data for each question (Yin 1994). The interviewees are asked how and why the organisation developed relationships with the organisational policies and outcomes reinforcing or contradicting their arguments (Perry 1996).

Initially, two pilot interviews regarding HunterNet business networks are carried out as a means of gaining information, not as a pre-test. The pilot interviews are of two senior individuals who are willing to take part in the interviews and who are comfortable with being subjected to a less structured learning approach regarding business networks. The interviews cover substantive and methodological issues (Yin 1994). Interviews are used for continued learning based upon business network information attained from prior theory in the literature review. All information was re-examined in light of new literature, existing literature and conclusions from the interview process. The interviews uncovered methodological issues that improved the case study proper. This information was used as the basis for finalising the case design (Yin 1994).

A general strategy of basing analysis around the theoretical framework developed from the literature review is used (Yin 1994). Case analysis of every case is followed by cross-case analysis (Perry 1996; 1999). The purpose of the cross case analysis is replication and linking back to the theory generated in the literature review. The point of the replication analysis is to find patterns repeating, not to count numbers (Perry 1996; Yin 1994).

1.6 Limitations.

The study is exploratory so did not give explanatory level information. The purpose of the study is to discover more information on the formal business networking group HunterNet. If done properly, this case study will form part of a base that can be used to build explanatory research (Perry 1996).

Interviewees may be more guarded in their response than normal because of commercial sensitivities. To overcome this problem, the focus was on macro relationships rather than contractual detail.

The interviewees are giving their perception of organisational networks so some bias may occur. The use of multiple embedded cases combined with a focus on networks rather than the contractual details hopefully negated the effect of this bias. Further, the literature review, pilot interviews and documentation built the researcher's knowledge, alleviating but not eliminating the bias (Perry 1996; Yin 1994).

A researcher may have some emotional attachment to particular ideologies and a tendency to come up with an answer before the research, resulting in the use of research for justification of a preconceived idea. Acknowledgment of this tendency, a focus on networks rather than the industry, a comprehensive literature review and working with the academic supervisor to focus on networks limits this effect.

1.7 Conclusion.

HunterNet has been in existence for more than ten years and appears to be meeting members needs. The fact that businesspeople are committing scarce resources to remain in the network indicates that value is being extracted from the network.

The use of networks is a way of replicating the economies of scale and scope of a vertically integrated organisation whilst maintaining flexibility. Cooperation and competition are often conflicting forces in a business relationship and need to be managed in a network alliance.

Research is by way of a case study using the critical realism paradigm and replication logic. The research will be exploratory as a basis for research in other regions and industries outside the Hunter Engineering Industry.

Chapter 2 Literature Review.

2.1 Introduction.

The research question is how does knowledge sharing emerge in a formal business networking group. The degree of knowledge sharing impacts upon the identification of HunterNet as a cluster, alliance or network which is research issue 1. The benefits that HunterNet members perceive forms research issue 2. How members build and maintain relationships is examined in research issue 3. Knowledge sharing is the focus of research issue 4 whilst the focus of research issue 5 is exploring the roles of active members as knowledge integrators. Research issue 6 investigates the importance of trust as a basis for knowledge sharing across the network.

Whilst not new, business networks are a way of coping with an increasingly dynamic and complex business environment. Combined specialties allow members to concentrate on core competencies provided relationships are in place that allow participants to coordinate activities to match or better vertically integrated organisations. Whilst businesses may be contractually related, it is individuals that play out the relationships between businesses. Mutually beneficial relationships are self-strengthening but require trust and shared control. Open communication benefits the relationship by allowing participants to focus on solving an identified problem rather than apportioning blame (Buttery & Buttery 1994; Child & Faulkner 1998; Doz & Hamel 1998; Greenhalgh 2001; Osland & Yaprak 1993; Ross 1993; Yoshino & Rangan 1995).

Jarillo (1993) breaks down costs in the value chain into cost of production and the cost coordinating the value chain. The coordination can be by way of a vertically integrated company or from a number of independent companies linked through alliances or networks. Vertical integration was previously used to access scarce resources. With plentiful resources and rapidly changing markets and technology, vertical integration inside a company may not be the most efficient means of production. For the purposes of this study the focus is on companies that source resources from outside the corporation at a lower price than internal activity because core competencies of firms in different specialties leads to greater efficiencies. As competition increases, the need for efficiency improvements across core

competencies becomes greater, further increasing competition which in turn further increases the need to increase core competencies to match competition — a virtuous or vicious circle, depending on one's outlook. Technology improvements and more plentiful resources means the cost of coordinating activities outside the firm may be no more expensive — or perhaps even cheaper — than internal coordination (Jarillo 1993; Lynch 1989).

Figure 2.1 Interactions between ownership mode and cooperative or non-cooperative approaches to business relationships

	Cooperative Approach	Non-cooperative Approach
Common ownership	**Vertically integrated company**	**Bureaucracy**
No common ownership	**Strategic network**	**Market**

(Source: Jarillo 1993 p. 131).

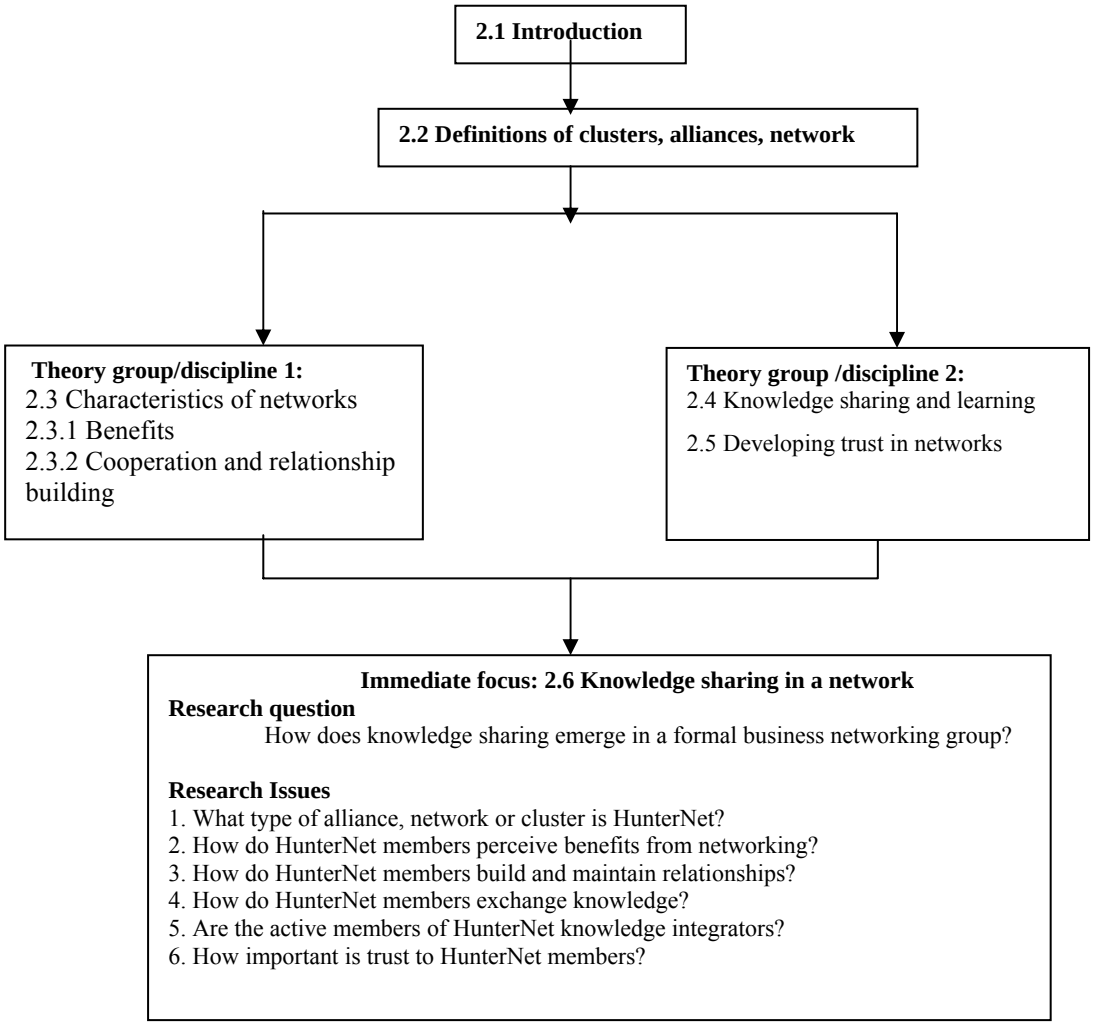
Figure 2.1 uses the horizontal axis to differentiate between degree of cooperation and the vertical axis to differentiate between common or non-common ownership. For the purposes of this study, the strategic network rather than the vertically integrated, bureaucracy or market models is important. The strategic network is not united by common ownership but by a belief that through working cooperatively, there will be superior efficiencies to all members than would otherwise have been enjoyed by not cooperating in a market hands length transaction. When there is no scarcity of suppliers, the risk of opportunism is minimised because a business can always go to a different supplier (Jarillo 1993).

The study of networks is more prevalent now because of real events such as the information explosion, globalisation, technological changes, shrinking product life cycles, the quality revolution and unsustainable competitive advantage (Greenhalgh 2001). Tallman et al (1997) highlight the importance of firms sharing technologies and management practices, core resources and capabilities, and stimulating the development of new enterprises. Internationally, cheap labour can be united with

international capital and management, often with a local partner as mandated by Government legislation (Tallman et al 1997).

Organisations must interact with other entities to conduct day-to-day operations; a connectedness often referred to as networking. Thus entry to relationships as a conscious and focused strategy is increasingly more prevalent (Zerrillo & Rainia 1996). The emergence of regional trading blocks, the evolution of new markets, and the dispersion of technological advances will continue to make business cooperation's more likely (Culpan 1993). With this introduction the following outline for the chapter is presented (see Fig 2.2)

Figure 2.2 Outline of the literature review (developed for this research)



This chapter details a review of the literature, an outline of which appears in figure 2.2. The introduction above, section 2.1, has been an introductory discussion of

cooperation. Section 2.2 discusses definitions of clusters, alliances and networks. In section 2.3, the focus is on discipline 1, the characteristics of networks. The benefits of networks, section 2.3.1, along with cooperation and relationship building section 2.3.2 are discussed in detail. Section 2.4 involves a change in theory group disciplines to knowledge sharing and learning. Section 2.5, trust, is also discussed within theory group 2. The chapter concludes with the immediate focus of the research, section 2.6, knowledge sharing in a formal business networking group.

2.2 Definitions of clusters, alliances and networks.

Section 2.2 discusses clusters, alliances and networks. In section 2.2.1, regional clusters are discussed along with the concept of increasing specialisation within a cluster to build competitive advantage. Section 2.2.2 acknowledges that there are many cooperative forms rather than one easily defined form. In section 2.2.3 alliances are discussed as part of the continuum of cooperation. Section 2.2.4 discusses multiple alliances, portfolios of alliances, the alliance web and interconnected concepts.

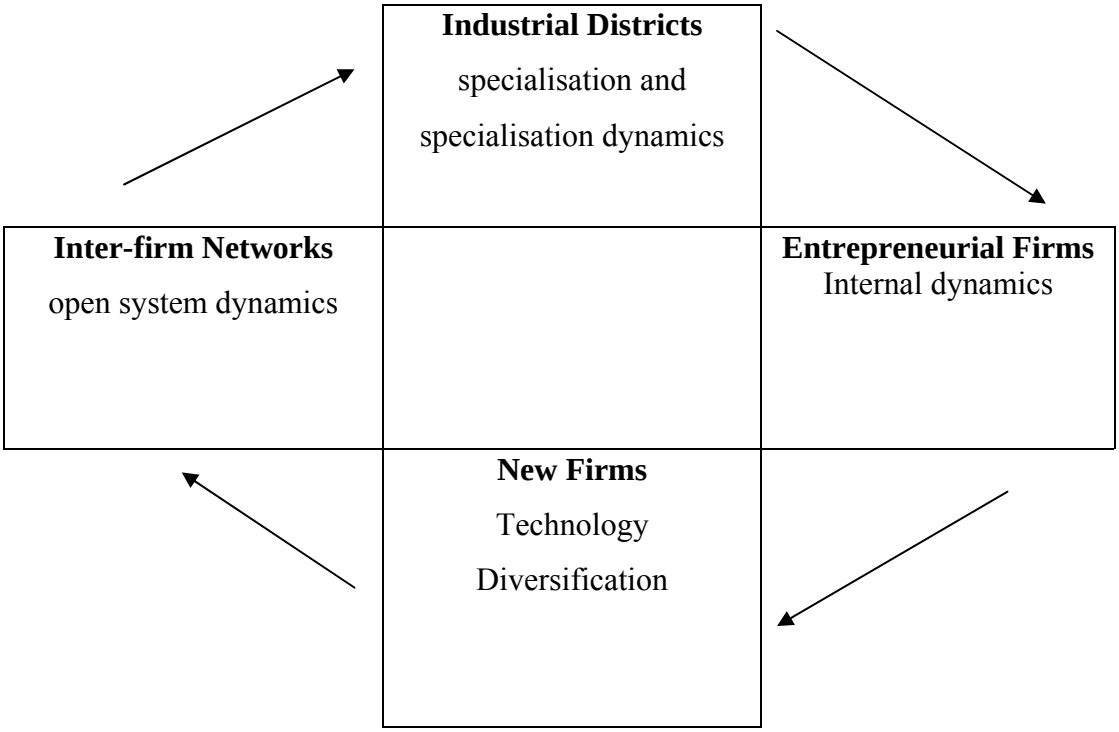
2.2.1 Clusters.

Porter (1998 p.199) describes a cluster as 'a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities.' Initially, cluster participants are reluctant to communicate or cooperate in a mutually beneficial way with potential or actual competitors because of a fear of giving away a competitive advantage. Very few competitors totally replicate each others capabilities so there is an argument for competitors to both compete and cooperate. Trade associations or networking groups are a way of linking stakeholders so that relationships can be formed (Porter 1996; Porter 1998). The focus in this study is on a formalised business networking group within a regional industrial cluster.

It could be argued that regional industrial clusters share similarities with Porter's (1998) belief that economically depressed inner city areas in the United States can use the potential advantages of local demand, access to infrastructure, integration with regional structures and access to human resources to prosper. The presence of local demand gives base revenue with which to rebuild competitive advantage whilst

access to infrastructure such as telecommunications and transport enable the potential for remote markets to be accessed. Education facilities have the ability to ensure human resources can adapt to market demands whilst existing business support facilities can offer competencies necessary to adapt to environmental change. In order to make an economically depressed area self-supporting, all levels of Government need to work with stakeholders to build a business friendly environment tuned to meeting client demands. Larger businesses can also play a part by building relationships based on mutual benefit, not self-interest or for that matter charity (Porter 1996; Porter 1998).

Figure 2.3 Model of cluster dynamics



(Source: adapted from Best 2001)

Araujo and Easton (1996) and Best (2001) argue that cluster theory is not new. The model in figure 2.3 shows market demands forcing increasing specialisation and the recognition of the separation of knowledge from production as industry evolves in a region has long been recognised. The specialisation in industrial clusters spurs entrepreneurial firms to look for new products or markets. Entrepreneurial firms spur new firms that may copy or supply new needs identified which in turn necessitate inter-firm networks to increase efficiencies. Inter-firm networks further strengthen

industrial clusters with this cycle being self reinforcing whilst-ever it is allowed to remain market focused and the factors of production respond to the market (Best 2001).

Specialised suppliers, specialist labour pools and the diffusion of knowledge within a district benefit cluster firms by way of cost economies within that cluster. Knowledge creation and innovation can be separate to the other factors of production reinforcing increased specialisation. Communications between firms are required to link the factors of production in the value chain if vertical integration is to be matched (Best 2001; Jarillo 1993). Networks and alliances form between members within a cluster so that members can work together to maximise innovation and efficiencies (Jarillo 1993).

2.2.2 Cooperative forms

In this section different types of cooperative forms will be discussed. Some definitions about strategic cooperation strategies, networks, and strategic alliances will be given as an introduction to a concept of a continuum of relationships and this model will be contrasted to the Buttery and Buttery (1994) model on collaborative arrangements.

Child and Faulkner (1998 p.1) refer to cooperative strategy as an '….attempt by organisations to realise objectives through cooperation with other organisations, rather than in competition with them. It focuses on the benefits that can be gained through cooperation and how to manage the cooperation so as to realise them.' The term strategic when used in relation to firms cooperating indicates the purpose of the cooperation is to improve the position of the firms in the future. Clear and prespecified goals with a long-term orientation should be a part of strategic alliances. It would not be seen as strategic if the focus of the alliance were on the present or immediate future (Hakansson & Sharma 1996).

The term network implies a number — more than two — of close but non-exclusive relationships (Child & Faulkner 1998). A network is defined as 'two or more

organisations involved in a relationship that maintains all participants as separate corporate entities to their mutual benefit' (Buttery & Buttery 1994 p.17).

Whilst the terms network and alliance are used interchangeably in the literature, the term alliance is more specifically regarded as a bilateral enterprise that implies a joint enterprise over a limited domain (Child & Faulkner 1998; Doz & Hamel 1998).

Yoshino and Rangan (1995 pp. 4-5) define a strategic alliance as '…possessing simultaneously the following three necessary and sufficient characteristics:

- The two or more forms that unite to pursue a set of agreed upon goals remain independent subsequent to the formation of the alliance;
- The partner firms share the benefits of the alliance and control over the performance of assigned tasks — perhaps the most distinctive characteristic of alliances and the one that makes them so difficult to manage.
- The partner firms contribute on a continuing basis in one or more key strategic areas.'

In summary, the Yoshino and Rangan (1995) definition emphasises the strategic, sharing, mutual benefit, continuing and independence aspects of the partners relationship. By this definition, mergers, takeovers and acquisitions, subsidiaries, licensing, franchising, and buy sell relationships are not strategic alliances.

In analysing the above definitions in regard to independent entities or individuals, there appears a **continuum** from formal transactional relationships through to less formal mutually beneficial strategic relationships. Whilst the advantages of relationships at the strategic end of the continuum appear many and may be ideal (Doz & Hamel 1998; Yoshino & Rangan 1995), there is also the potential for a great many organisations to realise benefits by involvement in — initially, or in the long term — the simpler forms of mutually beneficial collaborations (Buttery & Buttery 1994; Child & Faulkner 1998; Limerick et al 1998). The author is not implying that the strategic aspect should be neglected in cooperations, but to recognise that cooperations will move along the transactional— cooperation continuum over time. Strategy can be implicit or explicit, formal or informal, intended and realised, so too strict a definition of mutually beneficial cooperation's would not allow for the

dynamic nature of relationships as for example, trust is established or built upon over time.

Results of research on networks will vary because of different research parameters (Araujo & Easton 1996; Child & Faulkner 1998). However, from the collaboration definitions above, there is recognition of the relationship aspect of doing business through interaction, not action and reaction (Child & Faulkner 1998; Ford et al 1986a; Ford 1980). The contacts that a businessman has are often regarded as a network. However, if those contacts are to be used in relation to the 'push' concept of sales associated with opportunism, the lack of mutual benefit means the contacts do not fit the definitions of networking outlined above (Doz & Hamel 1998). Whilst opportunism will always exist, if there is no mutual benefit, there is little basis for a sustainable long-term relationship (Buttery & Buttery 1994; Child & Faulkner 1998; Doz & Hamel 1998). Indeed, there is evidence to suggest that whilst social relationships may facilitate the 'push' network marketing organisations, they hamper that success at the same time (Gitomer 1999; Grayson 1996; Ryan & Sherman 1999).

Networks in the strategic sense may bring partners together for communication or coordination reasons with coordinated networks much more complicated to work with than communication networks. Contacts, referrals, reputation, priori trust, expert interpretation, information collection and sharing, in conjunction with infrastructure and competencies are wider in a network because of the extra participants (Child & Faulkner 1998; Doz & Hamel 1998). The largest difference between a bilateral alliance and a network is the greater difficulty regarding maintenance and management because of the greater numbers of participants, resulting in trust being vitally important (Child & Faulkner 1998; Doz & Hamel 1998; Yoshino & Rangan 1995).

Figure 2.4 illustrates managers' emphasis on joint creation across the horizontal axis with managers' importance of structural autonomy along the vertical axis. Social networks are the result of low importance of structural autonomy and low emphasis on joint creation. That is, actors in a relationship are attracted to each other because they like what they see, but they work together because they like each other as opposed to investing — with the associated risks and rewards — in future orientated

joint creation. Social networks still develop social capital through interaction but if for example the social network is across industry boundaries, joint-creation may be impractical so it is a low priority. 'Value-creating networks describe the purposeful cooperation between independent firms along a value added chain to create strategic advantage for the whole group' (Campbell & Wilson 1996 p.131). Value-creating networks are illustrated in figure 2.4 as having a high emphasis on joint creation and a low importance of structural autonomy. The delivery of superior customer value is the concept driving value-creating networks. The emphasis on joint creation is recognition by firms of the synergies of jointly developed capabilities that increases rather than decreases the dependence on other firms. There appears to be a recognition by parties that value creation within the industry boundaries of the network justifies the risk associated with future rewards from collaboration (Campbell & Wilson 1996).

Figure 2.4 Managerial representations about the importance of networks

Importance of Structural Autonomy	Emphasis on Joint Creation: Low	Emphasis on Joint Creation: High
Low	**Social Networks**	**Value – Creating Networks**
High	**Market-Based Transaction**	**Vertical Integration**

(Source: Campbell & Wilson 1996 p. 129).

A market based transaction is illustrated in figure 2.4 as having a high importance of structural autonomy and a low emphasis on joint creation. The low emphasis on joint creation and high importance of structural autonomy means the business has little interest in developing the relationships past the transactional stage towards cooperative forms such as networks. Vertical integration is illustrated in figure 2.4 by a high emphasis on joint creation and a high importance of structural autonomy. The high emphasis on joint creation is played out across functions or controlled entities within the overall company because of the high importance place on structural autonomy. It can be argued that a focus on core competencies and

improvements in coordination technology has lessened the importance of integration and market based transactions (Campbell & Wilson 1996).

Buttery and Buttery's (1994) **model** break collaborative arrangements into benchmarking, licensing arrangements, supplier-buyer relationships, joint ventures, and consortia. Benchmarking is comparing a firm against a relevant world leader inside or outside an industry to attain world's best practice (Buttery & Buttery 1994). Licensing or franchising are contract-based agreements that allow technology, service or product to be used for a fee. Whilst licensing or franchising are good for gaining access to foreign markets, quick entry to a large number of markets, and the exchange of information, the risks of competency leakage and the difficulties of enforcing legal agreements across borders should not be forgotten (Buttery & Buttery 1994).

Supplier-buyer relationships involve one firm supplying another with a view to move from a contractual arrangement to a single sourcing agreement. One negative of building a supplier-buyer relationship is that often buyers push the supplier into the paradoxical situation of demanding a more innovative product at the same time as the slashing of costs (Buttery & Buttery 1994).

A joint venture is the formation of a separate entity for cooperative purposes, within which, the partners formulate strategy and make decisions. Joint ventures can be used in such areas as attempts to gain economies of scale and scope, learning new skills, or manipulate the competitive structure. Whilst joint ventures are friendlier in human resource terms than acquisitions — with resultant increases in the chances of acceptance — conflicts over objectives, management styles or trust frequently occur. Consortia involve firms pooling their resources into an integrated organisation. Government legislation can hinder or encourage consortia (Buttery & Buttery 1994).

Buttery and Buttery's (1994) model of collaborative forms positions agreed relationships and does not detract from the concept of a continuum from formal transactional relationships through to less formal mutually beneficial strategic relationships (see also Child & Faulkner 1998; Doz & Hamel 1998; Limerick et al

1998; Yoshino & Rangan 1995). The participants will still determine the degree of mutual benefit no matter what the agreed form.

2.2.3 Alliances

A great deal of the literature is on formal alliances amongst large corporations. However, literature has been selected in this section that complements the focus of this study which is more towards informal alliances as illustrated in figure 2.5. It can be argued that the less structured state of informal alliances is better suited to the fast changing environment currently being experienced in regional industrial clusters.

Doz and Hamel (1998) split the 'new' alliances into cooption, co-specialisation and, learning and internalisation. Cooption is the joining of actual or potential competitors or complementors into partners to gain a competitive advantage through the lessening of competition, economies of scale or economies of scope, similarly described as a horizontal alliance. Co-specialisation is the strategic joining together of partners to meet market need through the value chain, similarly described as vertical alliances. Co-specialisation may be for market or technology reasons, maximising the utility of the core competencies — including market knowledge or market opportunities, resulting in a superior competitive position or benefits for the partners than acting alone (Child & Faulkner 1998; Doz & Hamel 1998). Learning and internalisation alliances seek to learn new skills and competencies from partners and then internalise those skills into the organisation, hopefully leveraging the skills across the entire organisation (Doz & Hamel 1998; Yoshino & Rangan 1995).

The author has created a definition of an alliance from the literature reviewed in this section and section 2.2.2 for the purpose of this research study. That is, an alliance can be defined as **two or more independent companies involved in a mutually beneficial formalised relationship to serve a predetermined purpose.** The formal nature of agreements backing the relationship may vary from tight to loose but will be formal nonetheless and would normally specify the predetermined purpose and how benefits will flow to the independent parties to the agreement.

2.2.4 Interconnected concepts

In this section, the literature surrounding multiple alliances, portfolios of alliances, the alliance web and interconnected concepts are discussed. Multiple alliances and portfolios of alliances offer opportunities for cooperation but also offer potential problems. Most of the literature on multiple and portfolio of alliances is about large companies directing their formal alliances. Webs are a way of describing loose arrangements that enable independent companies to work together for mutual benefit. From this body of knowledge, statements are selected relevant to clusters, networks and alliances, and figure 2.5 is constructed to reflect these statements.

A network is described as a set of linkages between many comparable or international firms. An alliance portfolio is a set of bilateral alliances entered into by a firm that are discrete from each other. An alliance web is a set of alliances less uniform than a network but more interdependent than a portfolio (Doz & Hamel 1998).

The competing demands of many partners means confusion and conflict are constant dangers when a single firm is linked to many alliances, as is the case in a portfolio of alliances. Where the core competencies and technologies can be applied across a broad range of the portfolio of alliances, the nodal position of the firm is strengthened (Doz & Hamel 1998). To remain valuable to its portfolio partners, the nodal firm must maintain leadership in its technologies and competencies (Campbell & Wilson 1996; Doz & Hamel 1998; Epstein 1998; Lynch 1989; Zerrillo & Rainia 1996).

A nodal firm must be capable of matching its partner's investments if it is to maintain leadership in competencies and technologies. It is important that the managerial capability of the nodal partner is up to the task because whilst partner diversity is a potential difficulty, it is also a source of potential knowledge. Whilst there is an argument for the use of portfolios of alliances in the case of companies with limited resources and broad ranging competencies, in practice it is difficult to add value to a portfolio of alliances because of the conflicting interests of partners and portfolio managers (Doz & Hamel 1998).

Alliance webs are very hard to manage because of the increased potential for conflicts made likely by individual and sub-group differing interests, and a lack of structure. However, webs do offer an alternative for a partner to overcome the tendency for new technology to be ignored or stifled by existing networks, or as a transitionary mechanism until the market, alliance or technology stabilise. Webs are normally a transitory mechanism resulting in stand-alone dominance or more likely, a more stable alliance. Firms that believe that they can learn quicker than a partner or wish to leave open options — depending on how the uncertainty is resolved — are attracted to webs (Doz & Hamel 1998). The web is similar to the concept of a virtual corporation put forward by Child and Faulkner (1998). Each firm concentrates on its own area of expertise to provide a combined service or product with little formality or permanence in the structure and the coordinating function carried out by electronic communication (Child & Faulkner 1998).

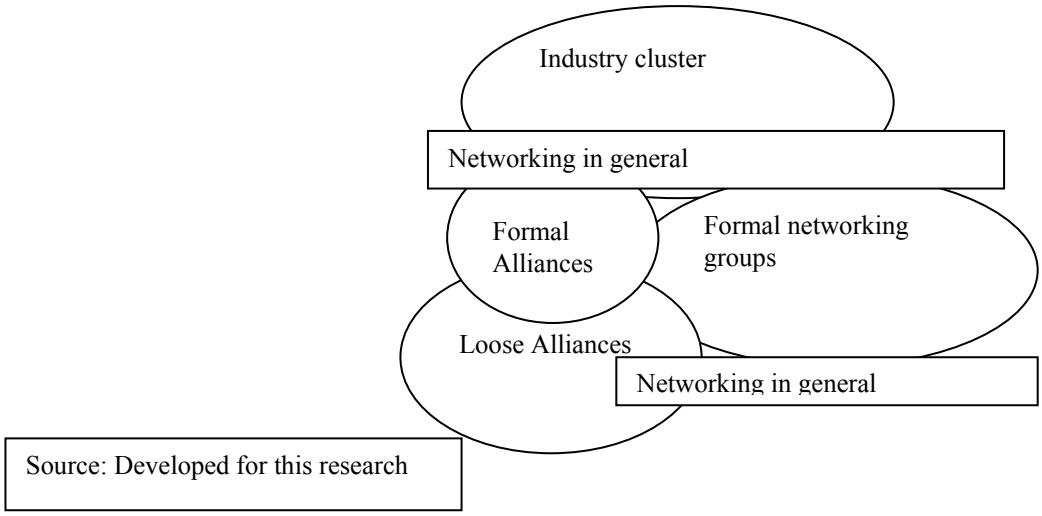
The author has created a definition of a formal business-networking group from the literature reviewed in this section and section 2.2.2 for the purpose of this research study. That is, a formal business-networking group can be defined as **a formal group formed to facilitate the networking of independent members so that relationship building and relationship maintenance can take place with a view to delivering mutually beneficial outcomes through working together**. The formal nature of the group is to facilitate networking and relationship building as independent businesses will not follow mandates directing networking or relationship building and maintenance. Because of the independent nature of the members working together for mutual benefit, it would normally be expected that strong relationships would be required in order to match efficiencies delivered by vertically integrated businesses.

The author postulates that **clusters, networks, formal networking groups and alliances do not have to exist in isolation.** A cluster can exist with little cooperation taking place and relationships at the transactional end of the relationship continuum. Networks can be formalised or informal, inside, outside or between clusters with alliances forming inside or outside formal or informal networks and inside or outside

clusters. Whilst networks complement a cluster, all members of a regional industrial cluster are not necessarily members of the same network.

Figure 2.5 **proposes that a formalised network such as HunterNet is within the Hunter industry cluster generally and that alliances form within the cluster and the network.** Networking in general takes place between parties irrespective of whether or not membership of a cluster, alliance or network is enjoyed. Clusters can form without networks but a business network is more likely to form within a cluster because of domain overlap. Alliances are a more formal arrangement than networking so alliances can form out of network membership.

Figure 2.5 Clusters, networks and alliances as interconnected concepts (figure not to scale)



Source: Developed for this research

From the above discussion of cooperative forms, clusters, networks, alliances, and interconnected concepts, **research issue 1** emerges:

What type of alliance, network or cluster is HunterNet?

2.3 Characteristics of Networks

Section 2.3 will discuss the characteristics of networks. Cooperating to coordinate the value chain enables participants to learn, adapt to change and build relationships to secure future mutual benefits.

A firm can replace the need to vertically integrate by coordinating a series of relationships within a network. The diversity and depth of specialty competencies or resources across a network offer flexibility with ongoing innovation and technological breakthroughs (Donaldson & O'Toole 2002; Jarillo 1993). Multiple interconnecting ties, crisscrossing or interdependent across partners, are dynamic in nature with any given relationship being built, maintained or lessening in importance (Donaldson & O'Toole 2002).

The position a firm holds in a network is of great strategic importance because position is a determinant of opportunities from the network. Boundaries can be limited or increased by membership of a network and the position held within that network. Links within a network can be strong or weak, manifested in part by the number of interactions between participants in a relationship as noted in the description of figure 2.4. The links within a network are most likened to a spider's web with the strongest players occupying the nodal positions. The strength of relationships and the position of participants within the network are constantly changing. Indeed, changing the number of relationships or linking with key players can positively or negatively change a participant's position in a network. The quality, quantity and type of relationship are determinants of the tightness or closeness of the network (Donaldson & O'Toole 2002).

The ability of the network to adapt to change is a determinant in the relationships within the network. Whilst contractual details may help a relationship by defining predictable issues, management of the relationship and scenario analysis are far more efficient (Donaldson & O'Toole 2002).

Competition and cooperation do exist side by side within networks. Trust and commitment are required to reach sustainable advantage through mutual value

adding across relationships within a network. Financially squeezing a focal firm or the risk of abuse by a member will place the network and members at risk (Donaldson & O'Toole 2002).

If participants in the network aren't convinced that networking is effective and efficient, investments of resources such as time and knowledge in the network will wane (Jarillo 1993) — it can be argued that this point is similar to team membership which is outside the scope of this research project. Realised results impacts positively on the success of the partnerships (Rackham et al 1996). A fair distribution of benefits fosters loyalty to the network and loyalty fosters investment in the network. Thus the network is either self-reinforcing if investment of members continues or self destructing if investment is not sufficient (Jarillo 1993).

Learning from the network and internalising the knowledge gained is ideally suited to the increasing importance of knowledge possession and the application of knowledge. Partners can have cross-purposes in a network. For example, one partner in a vertical alliance may be better at learning and internalisation, thus receiving more benefits than other partners (Buttery & Buttery 1994; Child & Faulkner 1998; Doz & Hamel 1998; Yoshino & Rangan 1995).

Figure 2.6 The dimensions of intimacy

Selling		**Partnering**
Honest	→	Bias free
Getting information	→	Sharing information
Transaction/sale based	→	Business based
Focused on today's problems	→	Future/potential orientated
Lone wolf selling	→	Building a resource team
Depth of customer relationship	→	Breadth of customer relationship

(Source: Rackham et al 1996 p.96)

Opportunistic behaviour is detrimental to long term business relationships. Honest selling is an advance on opportunistic behaviour but is still not partnering as demonstrated in figure 2.6. The dimensions in Figure 2.6 should be viewed as

continuum with the aim being to move towards the partnering end of each continuum. As partnering is about mutual benefit, each partner needs to respond or act towards the partnering end of the continuum. Building the relationship does not happen overnight so it is important to demonstrate credibility by demonstrating value where possible on the dimensions so that partners have the confidence to reciprocate in the relationship building process (Rackham et al 1996).

In a network, members may join with the idea of selling more of their service or product to other members. Figure 2.6 differentiates between honest selling and a cooperative partnering strategy that tries to win more of the benefits of networking than simply additional revenue from selling process (Rackham et al 1996). As relationships are strengthened, partners can increase information flow to ensure that superior customer solutions are developed with an increased likelihood of future income streams being cemented and sustained (Doz & Hamel 1998; Rackham et al 1996).

How best to value intangibles held by companies is an accounting issue constantly being argued by accounting and industry bodies, and of course government (Rylatt 2003). It is however accepted that intangibles and the know-how or knowledge supporting intangibles are of great value to a company. Intangibles such as the knowledge people hold individually or as a group and the relationships within or across boundaries are capital assets of the organisation, along with other asset classes such as financial or physical capital (Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002). The use of all assets in the short and long term operation of a business will result in the depletion or appreciation of those tangible and intangible assets held by the organisation (Saint-Onge & Armstrong 2004). It is therefore of great importance that the organisation manages intangible assets such as relationships and knowledge with the same care placed on more tangible asset classes (Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002).

From the literature reviewed in this section, the author suggests **that members receive benefits from membership of a formal business-networking group.** Benefits may be tangible or intangible but unless the members perceive that there is a benefit in membership, it is unlikely that the utilisation of scarce resources directed

at membership — time and money — can be justified. It follows that members must recognise potential benefits from membership as important otherwise current realisation will go unnoticed and future realisation will remain unplanned. Thus, the author further **hypothesises that members recognise benefits available from membership of a formal business networking group as important**.

2.3.1 Benefits of Networks.

Networks offer many benefits to participants. However, participants may not understand the full range of benefits available in a network if the focus is on additional sales alone. Section 2.3 explores the benefits of networks, alliances and clusters to participants.

Table 2.1 compares benefits that are drawn from the literature of clusters, alliances and networks. As an addition to the literature, the author has placed these benefits into three categories, firstly clusters, alliances and networks, secondly alliances and networks, and thirdly networks alone. A selection of authors from whom the paraphrased benefits were constructed is included in table 2.1. The cluster, alliance and network category includes benefits that can be gained through a transactional relationship as may exist in a cluster or as mutually beneficial relationships as may exist through a network or alliance. The network and alliance category has benefits that require a mutually beneficial relationship to maximise the benefit. Communicate with like minded people and, a sense of community and legitimacy, are categorised as applicable to a network alone because either one may be the sole benefit one initially receives from a network but it is unlikely that an alliance would be formed purely to access this benefit. Whilst it can be argued that any effective relationship or group would exhibit these two benefits, the focus of this study is a formal business networking group. The author thus **proposes that the benefits attributed to networking alone in table 2.1 are important to members of a formal business networking-group.**

Table 2.1 Comparison of benefits between alliances clusters and networks

Benefit	Authors	Application to alliance cluster or network categories
Accessing technology	Bergquist et al 1995; Culpan 1993; Greenhalgh 2001; Lynch 1989.	Alliance, cluster, network
Accessing labour	Howarth et al 1995;	Alliance, cluster, network
Economies of scale	Best 2001; Culpan1993; Doz & Hamel 1998; Evans & Wurster1997; Greenhalgh 2001; Osland & Yaprak 1993; Patterson 1996; Rayport & Sviokla 1999.	Alliance, cluster, network
Accessing expertise	Bergquist et al 1995; Best 2001; Howarth et al 1995; Patterson 1996; Porter 1998.	Alliance, cluster, network
Private sector leadership	Porter 1998; Zerrillo & Rainia 1996.	Alliance, cluster, network
Inventory savings	Best 2001; Campbell & Wilson 1996; Porter 1998.	Alliance, cluster, network
Accessing/Building knowledge, information and learning	Culpan 1996; Greenhalgh 2001; Osland & Yaprak 1993; Patterson 1996.	Alliance, network
Accessing core competencies	Bergquist et al 1995; Czerniawska 2002; Hakansson & Sharma 1996; Osland & Yaprak 1993.	Alliance, network
Coordinating and speeding up the value chain	Culpan 1993; Iansiti & MacCormack 1997; Jarillo 1993; Lynch 1989; Malone & Laubacher 1998; Patterson 1996.	Alliance, network
Economies of scope	Bergquist et al 1995; Culpan 1993; Greenhalgh 2001; Hakansson & Sharma 1996; Lynch 1989; Osland & Yaprak 1993; Patterson 1996; Rayport & Sviokla 1999; Ross 1993.	Alliance, network
Improve strategic position	Doz & Hamel 1998; Lynch 1989.	Alliance, network
Increased flexibility, efficiencies & rewards	Bergquist et al 1995; Greenhalgh 2001; Lynch 1989; Campbell & Wilson 1996.	Alliance, network
Expand capabilities to meet client demand for integrated offer	Bergquist et al 1995; Howarth et al 1995; Patterson 1996.	Alliance, network,
Reduce transaction costs	Campbell & Wilson 1996; Culpan 1993; Rayport & Sviokla 1999.	Alliance, network
Reduce risk and uncertainty	Culpan 1993; Howarth et al 1995; Lynch 1989; Hakansson & Sharma 1996.	Alliance, network
Share R&D costs and shorten design and development stages	Culpan 1993; Howarth et al 1995; Iansiti & MacCormack 1997.	Alliance, network
Share resources – resource access	Bergquist et al 1995; Patterson 1996; Zerrillo & Rainia 1996.	Alliance, network
Strengthen customer-supplier links	Campbell & Wilson 1996; Howarth et al 1995.	Alliance, network
Synergies	Culpan 1993; Hakansson & Sharma 1996; Lynch 1989; Patterson 1996; Zerrillo & Rainia 1996.	Alliance, network
Sense of community & legitimacy	Abell & Oxbrow 2001; Bergquist et al 1995; Burton-Jones 1999; Park et al 1993; Zerrillo & Rainia 1996.	Network
Communicate with like minded people	Abell & Oxbrow 2001; Bergquist et al 1995; Campbell & Wilson 1996; Burton-Jones 1999; Lipnack & Stamps 2000.	Network

(Source: constructed from various authors for this research)

Downsizing and de-integration are also drivers of collaboration (Jarillo 1993). Fewer staff means fewer skills available to carry out all the tasks necessary to meet market

needs resulting in the growth of outsourcing. Financiers have a preference for businesses focused on core competencies rather than empires. Capital required for change can be used more efficiently if partners concentrate on their core competency and the group leverages the combined competencies by taking a strategic position. However, if collaboration is to be successful, the cooperation of partners must still match coordination efficiencies from a vertically integrated company (Buttery & Buttery 1994; Doz & Hamel 1998; Gadde & Hakansson 1994; Hurley 1999; Jarillo 1993).

Technology has increased the potential for efficiency in business. Coordination and control — remotely and locally — are enhanced if technological potential is maximised. It is the application of technology not the technology itself that realises value. Thus learning and internalising knowledge are the keys to realising the value potential of technology (Buttery & Buttery 1994; Child & Faulkner 1998; Doz & Hamel 1998; Ford et al 1998; Jarillo 1993; Limerick et al 1998; Lipnack & Stamp 1994; Oral & Kettanni 1998; Yoshino & Rangan 1995).

Rapid and large improvements in technology have led to discontinuous change in products and services (Buttery & Buttery 1994; Jarillo 1993; Child & Faulkner 1998; Doz & Hamel 1998). Production processes have been improved with the use of new technology with resultant potential increases in efficiency, flexibility, quality, and information for the services aspect of the total product (Buttery & Buttery 1994). Maximising the economies of scale and scope through cooperative use of resources — including competencies — is a way of coping with this technological change (Buttery & Buttery 1994; Child & Faulkner 1998; Doz & Hamel 1998; Ford et al 1998; Jarillo 1993; Yoshino & Rangan 1995). This is particularly the case in industrial clusters where failure to take up technological advances may result in a business not being able to join a value chain.

It is sometimes difficult to distinguish between the internal and external drivers of networks because of the cycle of environmental change causing a shock which drives adaptation, and improvements from adaptation causing a shock that in turn drives adaptation. Vertical integration of companies occurred as an attempt to reduce

uncertainty. The drivers of de-integration can be categorised as social, motivational, economic and technological. Social changes such as disappearing job security, second incomes and the desire for more decision making power coupled with participative management have resulted in some people being motivated to work for small interesting groups as opposed to large integrated companies. A more activist feeling amongst some financiers has made it more difficult to build empires because of corporate raiders splitting the company and re-selling the parts for profit. Technology trends make it cheaper to de-integrate the corporation and integrate the network using that technology (Jarillo 1993).

Interconnected independent firms can perform operational excellence, customer responsiveness, or performance superiority strategies (Campbell & Wilson 1996). As several different companies are involved, partnerships cannot be defined as company focused. Partners frequently compete against each other in other settings (Bergquist et al 1995). Market access, learning and direct technical assistance are some of the advantages – that help alleviate risk in the alliance - to small firms (Patterson 1996).

Technological advances in communications have allowed independent companies more flexibility in designing products more quickly and with the ability to make changes to reflect the market even during implementation. The response time to bring a concept to market has also been reduced by technological advances in communications better linking members of the value chain (Iansiti & MacCormack 1997).

From this discussion in section 2.3.1, **research issue 2** evolves as:
What benefits do HunterNet members perceive?

2.3.2 Building Relationships

Cooperation cannot be assumed. The parties involved in a relationship must work towards cooperation with a regime of continual vigilance. Section 2.3.2 discusses the literature around cooperation in alliances and networks.

Gaps between partners in the strategic and organisational context of the alliance, the content that the alliance must focus on, and the processes of cooperation employed

may cause tension between the partners in implementing the alliance. The context of cooperation will be affected by partner gaps in framing, expectations, organisational context and confidence. The content of cooperation will be affected by partner gaps in skills understanding and task definition. The processes of cooperation will be affected by partner gaps in information and time (Doz & Hamel 1998).

The context of the alliance can be adversely affected by the paradox of unrealistically high expectations of the alliance, which may lead to exaggerated disappointment if not met, whilst unrealistically low expectations may result in a potentially beneficial alliance not going ahead (Child & Faulkner 1998; Doz & Hamel 1998). Whilst this expectations gap is difficult to overcome, it will be helped by quality assessment procedures, top management insistence on rationale for expectations, an overlap between staff negotiating and implementing the alliance — realistic expectations are more likely if you're responsible for the realisation of expectations — and a focus on implementation and making the alliance work (Doz & Hamel 1998).

The organisational context will impact on collaborations because of dissimilarities between partner organisations (Doz & Hamel 1998). Recognising the importance of organisational compatibility, acknowledging differences between partner organisations and identifying your own company's culture will help alleviate tension over dissimilarities. Values should not be assigned to partners and any judgements regarding partner organisations should be defended (Child & Faulkner 1998; Doz & Hamel 1998).

Tension can arise because the partners seldom know precisely the tasks the alliance will perform before the alliance begins. Define tasks and redefine tasks over time, share operating information on tasks, build on task knowledge as tasks become clearer with time, and find objects of cooperation as learning processes early in order to build on success and establish feedback mechanisms (Doz & Hamel 1998).

In order to increase efficiencies, open and honest communications are necessary to understand what is required from each specialised business (Best 2001; Porter 1996;

Porter 1998). The application of literature on how to build relationships within a network can help move individual businesses from a transactional relationship to a mutually beneficial relationship.

Table 2.2 A Western derived network development stages/states model

Dimensions	Activities
Stage 1 Relationship searching process	Search for partners Evaluation of partners based on economic & social aspects; no commitment
Stage 2 Relationship starting process	Identification of interfirm & interpersonal dynamics; selective entry based on abilities & intermediate & long term compatibility; defining mutual goals
Stage 3 Relationship development processes	Joint planning efforts; evaluation of relationship for mutual obligations of performance and effectiveness; increase interdependence through enhancement of mutual benefits; value creation through synergistic combination of partner's strengths; commitment of resources & people to relationships
Stage 4 Relationship maintenance processes HunterNet active members – are they in here?	Integration of operations and strategies; increased commitment through institutionalised conflict resolution procedures ; long term rewards based on mutual behaviour and **trus**t; adaptations and adjustment through agreement, negotiation & self control
Stage 5 Relationship termination processes	Termination based on mutual interest & cost benefit analysis of continuing in the network; developing strategies to mutually dissolve the relationship

Source: adapted from Batonda (1995) and Erwee, Perry and Tidwell (1999).

To establish collaboration, partners' must change from negotiators holding back information to partners' cooperating and sharing information in order to maximise the chance of success (Child & Faulkner 1998; Doz & Hamel 1998). At the beginning of an alliance partners will be reluctant to share information, particularly proprietary or unique information, especially if the partner intends asymmetric learning. Rivalry for information will be lessened in co-specialisation collaborations as coordination of competencies is necessary, or if trust exists (Doz & Hamel 1998). If trust allows renegotiation and equitable sharing of benefits, the information gap is likely to be less of a problem than if non-negotiable contracts and little trust exists (Child & Faulkner 1998; Doz & Hamel 1998). As time passes, information flow should increase as trust is built, providing the collaboration is proceeding smoothly (Doz & Hamel 1998).

Tension in an alliance can arise from the difference in timing between partners regarding benefits and costs associated with the collaboration. Instilling a sense of timing to the collaboration and scheduling the expected benefits and commitments can prepare partners for the timing issues, hopefully lessening partner tensions (Doz & Hamel 1998). The movement of networks towards and away from each other as tensions increase or decrease is not unusual (Galaskiewicz 1996).

Long term sustainable advantage is made more likely if partners' resources and capabilities are complementary. The extent to which distinctive features, competencies or capabilities set a cooperation apart from its competitors will determine competitive advantage of the cooperation. Making solid and equivalent commitments can build credibility with partners, increasing the chance of success because of partners linking mutual risk with mutual benefits. Sunk costs within the cooperation — tangible and intangible — are unlikely to be fully recoverable, increasing risk but highlighting the importance of working together to realise mutual benefits (Botkin & Mathews 1992; Patterson 1996; Tallman et al 1997).

Patterson (1996) discusses longevity, complementary resources, domain similarity, domain overlap and domain consensus, all of which are useful in applying the model proposed by Batonda (1995) and expanded upon by Erwee, Perry and Tidwell (1999) as illustrated in table 2.2. Domain similarity and overlap will almost always exist when parties work together in a cooperation. Establishing domain consensus will limit competition and increase the chance of parties working together by using complementary resources including core competencies to arrive at mutually beneficial outcomes. Domain similarity can therefore be linked to the searching stage whilst domain consensus and complementary resources will assist the starting, development and maintenance stages of the model illustrated in table 2.2. Whilst longevity is potentially beneficial to cooperation, termination for mutually agreed reasons such as objectives being realised or the cooperation no longer filling a strategic gap should not be viewed as a failure. The model illustrated in table 2.2 takes into account termination of a relationship.

Frequent interaction between parties around complementary resources will normally strengthen a relationship because of the mutual dependence each party has on the

other. This mutual dependence and interaction if positive will most likely strengthen the bonds between parties lessening the risk associated with sunk costs and further strengthening the relationship because of the promise of future benefit. The competition sometimes associated with domain overlap will therefore tend to be limited by the risk associated with relationship-sunk costs and the promise of future benefits from the relationship (Patterson 1996). This concept of frequent interaction around complementary resources strengthening bonds, and a limiting of the competition associated with domain overlap, fits within stages three and four of the model illustrated in table 2.2.

The above paragraphs' discussion of relationship development in a western style network lead to the proposition: **The active members in HunterNet are in the stages three or four of relationship building** in the model proposed by Batonda (1995) and expanded upon by Erwee, Perry and Tidwell (1999) as illustrated in table 2.2.

Whilst alliances have their ups and downs, a solid base for success is established if a bond of unity is present. Further cooperation's are more likely to take place once partners learn through experience to trust one another and how each partner works (Culpan 1993).

Lorange and Roos (1992) discuss ad hoc pools of potential alliance members participating in a market. Many ad hoc pools consist of small firms offering flexibility to a much larger firm. Finding a strategic match in a partnership between a large and small corporation can be difficult because of the dominance of the large corporation and the lack of power and fear of being subsumed that the smaller participant may have. Indeed, the smaller firms may find it difficult to integrate closely enough with the larger firm to enable synergies. Smaller firms seizing an opportunity to work with the larger firm by being a leader in a particular competency or skill can offset size mismatch. Face to face commitments between partners helps overcome concerns over different styles of work that different size companies may have and also helps to build the relationship. In ad hoc pools, the cooperation normally ends when agreed tasks have been completed (Lorange & Roos 1992).

Analysis of the above section has led the author to formulate the following **suggestion**:

A cluster may exist with transactional relationships alone but there must be mutually beneficial cooperation for a network to exist.

2.3.2.1 Conflict in alliances and networks

In this section conflict in alliances will be discussed. Cooperation strategies often link competitors with the possibility of competition degenerating into conflict with resultant damage to the relationship.

Whilst alliance design can minimise conflict, it cannot eliminate all conflict (Doz & Hamel 1998). Indeed, some mild constructive conflict can even cause creative tension (Buttery & Buttery 1994; Child & Faulkner 1998; Doz & Hamel 1998). Many conflicts can however be avoided if the strategic, economic and operational scope of an alliance are clearly defined, understood and as far as possible accepted by all partners at the design stage. As operational scope should be reasonably clear, many conflicts should be foreseen and designed out of the alliance. Minimising friction caused by trade at the operational boundaries of the alliance should help to limit conflict (Doz & Hamel 1998).

Conflict is damaging to cooperation and is often the result of competing goals (Hakansson & Sharma 1996). A vision can be reinforced with a quick win that partners can celebrate. Reaching the goal and celebrating the action demonstrates the value of the partnering through the recognition of realised and captured benefits, and will help cement the relationship and commitment required for continued mutual benefit (Rackham et al 1996).

Stern (1996) analyses business relationships in terms of competition, cooperation and conflict. Competition is indirect, impersonal behaviour based on scarcity, that is object or goal centred with a third party controlling the goal or object. Conflict is very direct and highly personal opponent centred behaviour in which the opponent controls the goal or object. Cooperation involves direct or indirect personal behaviour, with parties jointly striving for a goal or object controlled by a third party, where the object can only be secured if the joint parties work together. Whilst

identifying cooperation is relatively easy, Stern (1996) uses a sporting analogy to illustrate competition and cooperation. Good clean striving for a goal as occurs in a running race with no foul behaviour is competition. Conflict can be likened to a game of football where reaching the goal involves the step of spoiling an opponents actions by direct personal behaviour. Undermining one another is conflict, a form of action not conducive to cooperative behaviour. Competing on the other hand involves doing ones best which shouldn't lessen the chance of cooperation (Stern 1996). Synergy between key players in a value-creating network is made easier if a network captain takes control of the network to manage value creation coordination (Campbell & Wilson 1996).

The above paragraphs discuss the impact of competition, conflict and cooperation. Based upon the above discussion, the author hypothesises **that competition need not negatively affect a network but conflict will.**

2.3.2.2 Changes in Networks

Networks have the ability to change quickly. The following section discusses change in networks.

Nets of relationships normally evolve around a nodal hub and also interlink with other nets, directly or indirectly, based around other nodal hubs. Figure 2.7 illustrates categories of changes between nets with the horizontal axis being the type of change from gradual to radical and the vertical axis being the integration of the nets, be it decreasing or increasing. A radical increase in integration illustrated in figure 2.7 leads to a joining of nets; that is, major upheaval of individual nets occurs because of a number of new large direct relationships between nets over a short period of time. A joining of nets radically alters the make up of core competencies that a net offers. The splitting of nets illustrated in figure 2.7 is a result of a radical decrease in integration across nets over a short period of time; that is, a number of direct relationships cease or leave the net over a short period of time (Hertz 1996).

Drifting in nets is constant and dynamic. Drifting closer as illustrated in figure 2.7 is a result of existing relationships between nets gradually strengthening thus increasing integration between nets. Drifting away as illustrated in figure 2.7 is a

result of existing relationships gradually becoming weaker thus decreasing integration between nets. Drifting closer or away can be a result of changes in attitudes, roles and efficiencies that in turn change priorities. The sizes of nets are not normally changed by drifting, but the possibilities for changing net size in the future are changed. Trust and the complementarity of nets affect drifting. Trust has a positive impact whereas mistrust or a perception of trust broken will have a negative impact. Members striving to build trust will impact on the drift of the net and also impact on the balance of relationships within the net. Passive relationships between nets can change back to active, potentially changing the balance in the net and between nets. Complementarity of nets is both influenced by and a result of drifting between the nets (Hertz 1996).

Figure 2.7 Changes between nets

		Type of Change	
		Gradual	**Radical**
Integration	**Decrease**	Drifting away	Splitting a net
	Increase	Drifting closer	Joining of nets

(Source: Hertz 1996 p.185).

External factors are also considerations in regard to network change. Continued exposure to losing transactions is a factor that may lead to network change, particularly when other parties are affected. External networks are another factor in network change, particularly if they encroach on a network thus enforcing change or adaptation. Actions in the external environment that affect a network are also factors for change. Changes to government legislation or actions that invite a great deal of public interest, impact upon the entire environment, including networks (Zerrillo & Rainia 1996).

From the above section on change in networks, the **author postulates that drifting is a normal part of a network reacting to changes in internal or external factors.**

From the above section on cooperation and relationships the author puts forward **research issue 3:**

How do HunterNet members build and maintain relationships?

2.4 Knowledge Sharing and Learning in Networks.

The literature review now shifts to theory group discipline two, knowledge sharing and learning, followed by a discussion on trust. Trust will be introduced in the introduction to section 2.5 trust, and knowledge sharing will be introduced in the following paragraph.

Section 2.4 discusses knowledge sharing and learning in networks. Organisational learning is discussed in section 2.4.1 because it is organisations that join a formal networking group in a regional cluster. Differences between data, information and knowledge are discussed in section 2.4.2. Knowledge within a firm is discussed in section 2.4.3 whilst knowledge exchange in networks is discussed in section 2.4.4. Section 2.4.5 discusses converting tacit knowledge to explicit knowledge in networks. The roles of individuals in knowledge sharing in networks are discussed in section 2.4.6 with section 2.4.6.1 discussing alliance management and 2.4.6.2 discussing the tasks of top managers or owners. Finally, 2.4.7 discusses the knowledge integrator node.

2.4.1 Organisational learning

An organisation is normally the member of a formal business networking group in a regional industrial cluster. The literature on organisational learning is discussed in this section, as learning is a key benefit from membership of a network.

One of the main reasons for cooperative strategies is organisational learning (Buttery & Buttery 1994; Child & Faulkner 1998; Delahaye 2003; Doz & Hamel 1998; Spekman 1996; Yoshino & Rangan 1998). Organisations can learn from a partner or with a partner. Learning from a partner can be in regard to any number of facets of knowledge including environmental — internal or external — competencies or skills, products, processes, markets and cultures. Knowledge gained may be useful to the organisational as a whole or the alliance alone (Child & Faulkner 1998). Organisations can also learn with the other partners about the process of cooperation generally, which can be used in future or current alliances, or about how all the

partners work together in that specific alliance (Child & Faulkner 1998; Doz & Hamel 1998; Hakansson & Sharma 1996).

Learning can be tacit — knowledge is personal, intuitive, and context specific — or explicit — specified and codified. Knowledge must be explicit to be passed around a network and for technical or control reasons, people often resist making knowledge explicit. Cooperative strategies must overcome the paradox that the lack of cultural and strategic match often inhibits organisational learning, which is often the point of the cooperation (Child & Faulkner 1998).

A partner must have an intention to learn from the alliance before learning can take place (Bergquist et al 1995; Child & Faulkner 1998; Doz & Hamel 1998; Hakansson & Sharma 1996; Kaye & Hogan 1999; Lorange & Roos 1992). Whilst this may sound obvious, many partners approach a cooperative strategy with the sole intention of accessing a partner's skills through skill substitution, thus ignoring learning opportunities from the partner and the resultant enhanced competitive position through internalisation of the partner's skills. If a partner does not have any intention of learning from a relationship, an enduring mutually beneficial long-term relationship is unlikely because of the power imbalance that reliance causes (Child & Faulkner 1998; Doz & Hamel 1998; Jarillo 1993).

If focusing on a relationship between two parties, learning will be influenced by competency in learning and teaching, the intention of the relationship, characteristics of the two parties, and the relationship itself. Learning will also be limited or facilitated by the experience of other relationships that the parties may have or have had. Synchronising the routines of partners will normally aid learning, as modification of routines requires learning (Anon 2 2002). Partner firms benefit from their own learning and from the learning of other partners (Anon 2 2002; Delahaye 2003). Learning from other partners lessens the chance of firms falling into the competency trap — the assumption that what appears to be positive performance is actually inferior to other procedures that have not been sufficiently experienced (Anon 2 2002).

Learning from an alliance can be a low cost alternative to competency or skill acquisition, enabling leveraging of competences across the entire organisation, and offering bargaining power to potential collaborators with complementary competencies (Child & Faulkner 1998; Doz & Hamel 1998).

From the above section, the author **proposes that participants must have an intention to learn from the network before learning can take place.**

2.4.2 Knowledge within a firm

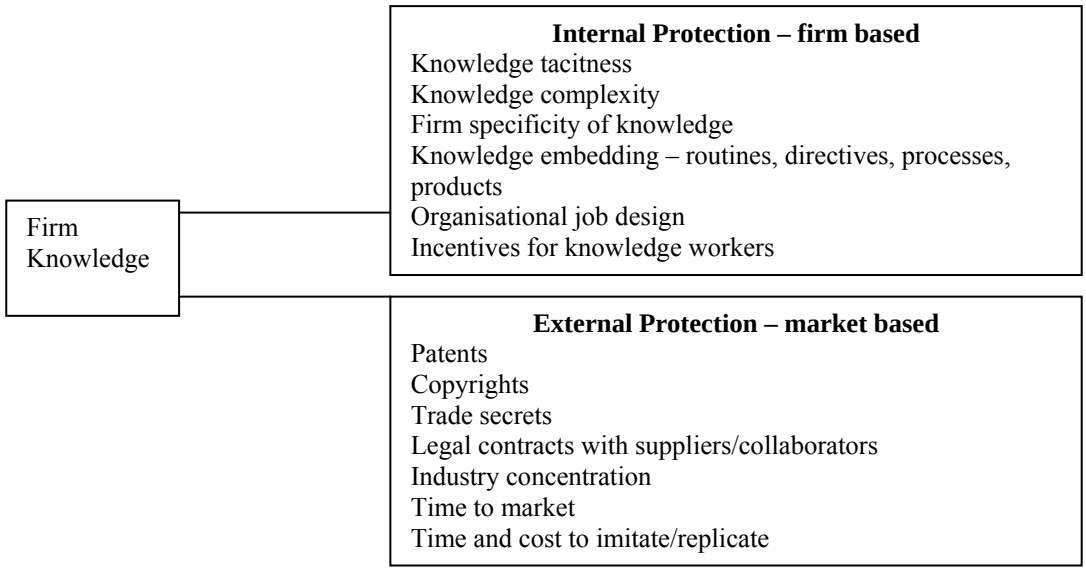
Section 2.4.2 discusses knowledge within a firm. Knowledge is a key resource within a firm and a valuable intangible asset to the firm and the network. Tacit and explicit knowledge are discussed as is the knowledge balance and the protection of firm knowledge.

Knowledge can be used to view the functioning of a firm. The key productive resource of the firm is knowledge, which is acquired by individuals and stored by individuals in the case of tacit knowledge. It is necessary for individuals to specialise in knowledge acquired due to time and cognitive limitations. A number of different types of specialised knowledge are required for production (Burton-Jones 1999; Saint-Onge & Armstrong 2004). Thus it is the primary role of the firm to protect and integrate specialised knowledge if the firm is to prosper (Burton-Jones 1999).

Figure 2.8 illustrates the difference between internal and external protection of firm knowledge. External protection offers legal protection for areas such as patents, copyrights, trade secrets, and legal contracts with suppliers and collaborators. Legal protection is however expensive, time consuming and less certain in different jurisdictions, thus negating much of the protection offered. Due to the limited nature of external protection, it can be argued that the internal protection listed in figure 2.8 is an essential component of knowledge protection. All of the internal protection areas listed in figure 2.8 involve investing in staff, a resource that cannot be traded — by extension staff can only generate a return on investment whilst working for a business. Ensuring that the tacit skills are spread across staff, and that the way staff work together is a tacit asset, will help protect knowledge. As investing in staff takes resources, costs can be minimised by investing in the core competencies and

knowledge that give a business a competitive advantage and outsource non core competencies that can be easily sourced at no commercial penalty (Burton-Jones 1999).

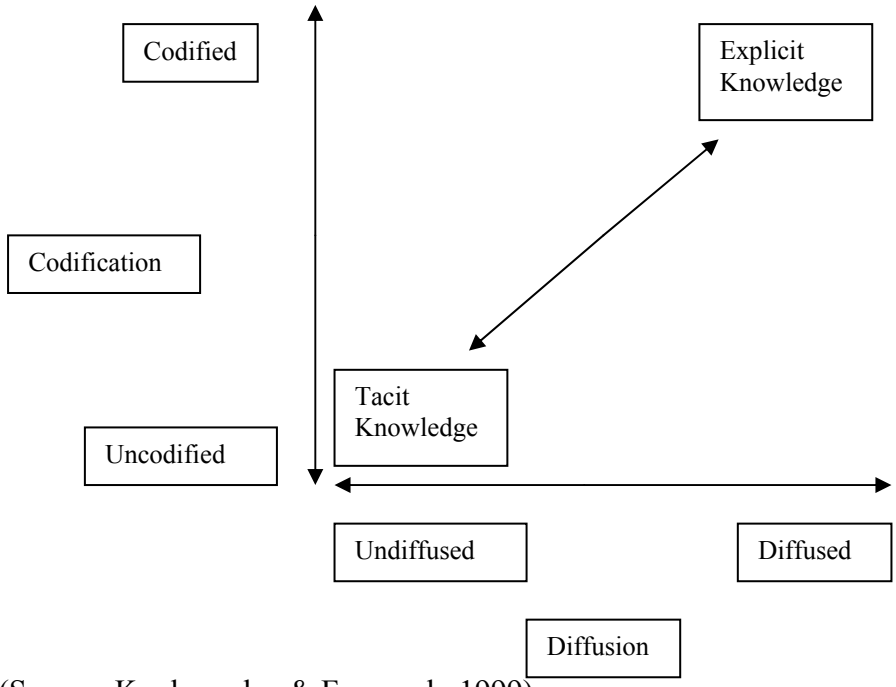
Figure 2. 8 Internal and external protection of firm knowledge



(Source: Burton-Jones 1999 p.38).

Figure 2.9 illustrates the difference between tacit knowledge and explicit knowledge with the horizontal axis being the degree of diffusion and the vertical axis being degree of codification. Explicit knowledge is codified and easily diffused so can be transmitted by print, voice or electronic means. Tacit knowledge is uncodified and difficult to diffuse so the best way to diffuse the information is face to face thus using the human element which is also the barrier to ease of diffusion. Tacit knowledge and explicit knowledge are constantly moving back and forth. A human will absorb explicit knowledge and add cognition's resulting in a degree of tacitness to the knowledge that may in turn be used to modify explicit knowledge (Koulopoulos & Frappaolo 1999).

Figure 2.9 Tacit and Explicit Knowledge



(Source: Koulopoulos & Frappaolo 1999).

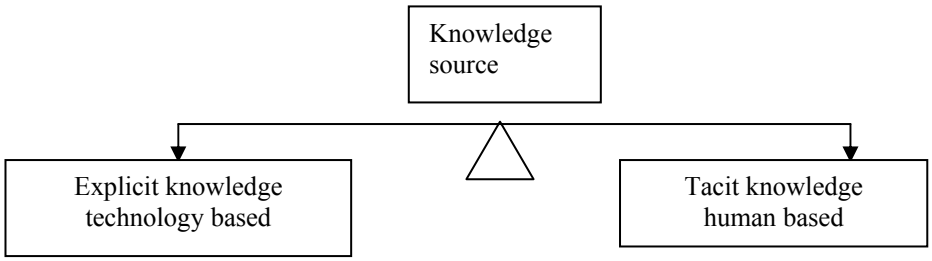
Values, feelings, subjective insights and personal experience impact on the tacit knowledge possessed by individuals, knowledge commonly referred to as know-how. Tacit knowledge has a large intuitive component and individuals demonstrate it through acting out their work in a knowledgable way as opposed to explicitly stating it because communication and sharing of the tacit component of knowledge is rarely — if ever —fully achievable. Individuals and work units hold tacit knowledge, which is normally dispersed throughout an organisation. Technical and cognitive dimensions make up tacit knowledge. The practical know-how of doing a task is the technical dimension. Perceptions, mental models, schemata and beliefs, make up the cognitive dimension of tacit knowledge and shape an individual's image of reality and the future (Poh 2001).

Explicit knowledge can be expressed in rule-based or object based format. Photographs, tools, technical drawings, prototypes, software codes, computer data bases, product specification and patents are examples of object based explicit knowledge. The codification of knowledge into standard operating procedures, routines and rules is rule based explicit knowledge. The environment that an

organisation works in determines the routines and procedures an organisation works with (Poh 2001).

Figure 2.10 illustrates that tacit and explicit knowledge balance out a knowledge source. Explicit knowledge is easily transferable so it is relatively easy to copy or steal due to the ease of processing, storage and technological transfer (Burton-Jones 1999). However, tacit knowledge is required to apply explicit knowledge (Wenger et al 2002). The human based nature of tacit knowledge makes it much more difficult to transfer thus stealing or copying is much more difficult. Whilst staff who are poached by competitors possess tacit knowledge, it is rare that one employee holds all of the tacit knowledge of a firm. However, as tacit knowledge is more difficult to copy or transfer, it is thus hard to pass on within the firm. Therefore within the firm explicit knowledge is important so that knowledge can be transferred whilst the difficulty associated with copying tacit knowledge offers some protection to the firm. It is thus important that firms balance their investment between explicit and tacit knowledge so they become knowledge integrators rather than information processors (Burton-Jones 1999).

Figure 2.10 Balance of Knowledge



(Source: Burton-Jones 1999 p.31)

Some knowledge is difficult to obtain because of in-built or passive protection systems. National or organisational cultural distance inhibits transparency and the resultant transfer of knowledge through learning. Knowledge that is contextual — embedded in the social system — or held by members with clannish behaviour, is difficult to identify and learn. Shared organisational objectives and becoming ingrained in the culture can help facilitate learning (Child & Faulkner 1998; Doz & Hamel 1998; Wenger et al 2002).

2.4.3 Knowledge exchange in networks

Knowledge exchange is discussed in this section. If knowledge is to be a valuable asset in a network it must be exchanged with other network members.

Burton-Jones (1999) uses the terminology hub to describe a network with a dominant player and many to many to describe equal non-dominant players within a network. Individuals can offer nodal hubs creativity and unique customer service, both attributes containing large components of tacit knowledge regarded as 'sticky'. In networks of equals, trust, informality, redundancy, commitment and interdependency have been shown to be critical success factors. Trust is earned and is easier to build where a history of trust exists. Collaboration is facilitated by informality between business participants at the personal and semi-social level (Burton-Jones 1999; Saint-Onge & Armstrong 2004). Too much knowledge exchange — redundancy — and domain overlap appears to be better at facilitating networks than not enough knowledge exchange (Burton-Jones 1999). Equal commitment from participants aids the success of the network as does mutual interdependency, which gives participants a reason to work together, and an opportunity to continue to build relationships by demonstrating competence (Burton-Jones 1999; Saint-Onge & Armstrong 2004). Whilst similar geographic location continues to be common in business networks, the increased benefits of communication advances have enabled networks to be spread over diverse locations (Burton-Jones 1999).

Inter-firm collaborations offer access to the constant need for explicit knowledge sources to feed ongoing development of tacit knowledge. Networks offer ongoing frequent, flexible and open knowledge exchange, sometimes without the need for formal contracts. The problem solving nature of horizontal networks offers participants the opportunity to build tacit and explicit knowledge within the firm and tacit knowledge between cooperating firms, thus offering some protection from copying of competitive advantage or knowledge (Burton-Jones 1999).

There is normally an imbalance between oversupply and undersupply for knowledge on different products that a firm may offer. Membership of a network can assist a firm by balancing required knowledge across the network. Firms may reduce

uncertainty about future and present knowledge needs by network membership**.** Identifying and rectifying knowledge gaps and adapting future developments in knowledge can be facilitated by communication amongst collaborating firms. Timeliness is also the case in bringing products to market before knowledge leaks. Networks can give member firms the critical mass to develop and bring products to market quickly enough to receive an adequate return on investment before knowledge leakage occurs (Burton-Jones 1999). Burton-Jones (1999) argues that government support for networking can alleviate some of the sunk costs that micro and individual businesses are not capable of fully funding.

The proportion of tacit and explicit knowledge in a relationship, and the ability of a firm to absorb, internalise and utilise knowledge, are major determinants in how replaceable a partner in a relationship is. If knowledge is explicit, diffusion to a partner is relatively easy provided the partner has the capability to absorb the knowledge – therefore once the knowledge is internalised, the partner can be replaced. If there is a large proportion of tacit knowledge in a relationship, diffusion is much more difficult even if a partner has the capability to internalise and utilise that knowledge. Learning of tacit knowledge is greatly assisted by practice but as tacit knowledge is dynamic, it cannot be assumed that the 'teacher' will not also learn further from the process. It will thus be much more difficult to replace the tacit knowledge of a partner as tacit knowledge is rarely identical in new partners' (Anon 2 2002).

Communities of practice (Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002) and knowledge communities (Botkin 1999) are identified in the literature as groups of people with a similar business purpose or interest that create, share and use knowledge through proactive interaction across their chosen knowledge domain (Botkin 1999; Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002). Whilst knowledge communities are held to be different to communities of practice by Botkin (1999), the knowledge sharing characteristics of communities (Saint-Onge & Armstrong 2004) will be termed knowledge sharing communities by the author as discussion of their differences is beyond the scope of this research project.

Knowledge sharing communities can be within or across organisational boundaries. Informal groups will always form to share knowledge but groups are often purposely formed to share, build and use knowledge. The driving force for forming knowledge sharing communities is that no one person is capable of holding all knowledge in a particular domain in an increasingly dynamic complex world. Knowledge sharing communities operate across a domain or area of knowledge in which they practice and have a purpose for acting as a community. Examples of purpose may vary from less tangible reasons such as vision to more tangible reasons such as solving particular problems. Working within the knowledge domain towards the community's purpose results in members building relationships through demonstrated competence, discussion, problem solving, application and celebration of successful outcomes. Whilst membership can be mandated, relationships can only be facilitated because trust bonds the informal relationships that make up the knowledge sharing community. Realisation of intangible or tangible value promotes interaction through which relationship bonds are strengthened. Promoting participation increases the chance of interaction and resultant knowledge sharing, knowledge building and knowledge application (Botkin 1999; Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002).

Mutual trust, respect and some form of reward or recognition assist the building of communities, teams and networks which in turn assists improvements in the exchange of knowledge (Abell & Oxbrow 2001). The author **postulates that the focus on the corporation** by Abell and Oxbrow (2001) **is relevant to a formalised network in a regional engineering cluster because of the shared interest participants have in engineering.** The passion with which engineers discuss technical problems can be used to develop a shared or individual superior solution to client needs and can be leveraged into honing business skills so that members can continue to be employed in their area of interest within the Hunter Region. That is, the common passion for the engineering sector and the Hunter Region motivates individuals — representing corporations — to play out interaction and relationship building across HunterNet.

From the discussion in this section, the following **research issue** evolved:

- **What knowledge is explicit in the network?**

2.4.4 Converting tacit knowledge to explicit knowledge in networks

This section discusses the conversion of tacit knowledge to explicit knowledge in networks. The organisational knowledge creation and conversion model is discussed and adaptations for networks suggested.

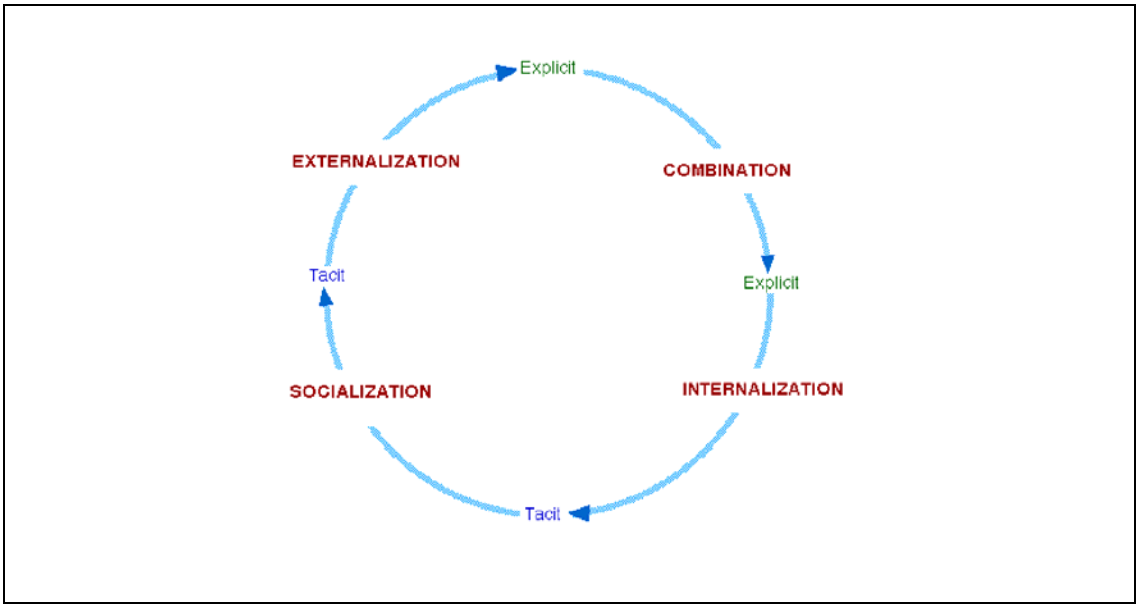
Poh (2001 p.16) observes that whilst many definitions of knowledge management emerge, … 'most contain a common thread of effectively creating, capturing, sharing, and using company-wide knowledge to improve performance and also to gain a strong competitive edge.' It can be argued that the strategy and tactics managing human-centred assets or intellectual capital is knowledge management. Leveraging wealth creating processes and activities into a portfolio of organised information and knowledge is the intellectual capital of the organisation (Poh 2001).

'Knowledge management is the systematic process of finding, selecting, organising, distilling, and presenting information in a way that improves an employee's comprehension in a specific area of interest. Knowledge management helps an organisation to gain insight and understanding from its own experience. Specific knowledge management activities help focus the organisation on acquiring, storing, and utilising knowledge for such things as problem solving, dynamic learning, strategic planning, and decision making. It also protects intellectual asset from decay, adds to the firm intelligence, and provides increased flexibility' (Poh 2001 p.17)

The author **postulates that in order to be applied to a network, this definition needs to be rewritten as: Knowledge management in regard to networks involves cooperating across organisational boundaries to systematically find, select, organise, distil, present and share authorised information that meets the strategic and operational learning intent of all parties to a cooperation.** The assumptions in this definition is that all parties have in place strategic policies to protect unauthorised transfer of confidential information and that parties to the cooperation do not source unauthorised information but do willingly share authorised information.

Knowledge is a word that refers to the content of what is known and the process of how the content of what is known was created (Botkin 1999). Knowledge is individual and social in nature. The social component of knowledge reflects a group's ability to hold a combined knowledge content greater than any individual, and improve upon that knowledge content byway of the knowledge creation process. This knowledge creation process also illustrates the important knowledge characteristic of dynamism. That is, knowledge is constantly being created so is dynamic in nature, not static (Botkin 1999; Delahaye 2003). The knowledge creation process illustrated in figure 2.12 is a model developed by Nonaka and Takeuchi (1995) to explain knowledge creation using tacit and explicit knowledge (Botkin 1999).

Figure 2-11 Organisational knowledge conversion and creation – the SECI model / process



(Source: Poh 2001 p.22)

Figure 2.11 demonstrates the interaction between tacit and explicit knowledge through a circular process of socialisation, externalisation, combination and internalisation. Key actors sharing experiences through socialisation can lead to the acquisition of tacit knowledge. Converting knowledge from the tacit state in the possession of an individual to the explicit state involves creating and converting knowledge through bringing people together with different experience and

knowledge. Externalisation demonstrated in figure 2.11 requires interaction and the use of metaphors, models or analogies to convert tacit knowledge into explicit concepts. Combination as demonstrated in Figure 2.11 involves bringing together explicit knowledge from a number of sources, in turn creating explicit knowledge. Meetings, memos, telephone conversations and other means of communications are used to combine the explicit knowledge exchanged by key actors. Crucial knowledge is yielded by combining knowledge from different areas inside and outside the organisation, particularly in cases where business issues becomes more complex. Embodying explicit knowledge into tacit knowledge is the process of internalisation illustrated in figure 2.11 whereby the experiences gained through the other earlier modes of knowledge conversion and creation are internalised. Shared mental models or work practices enhance and expand the individuals tacit knowledge. Knowledge captured in documents or through stories enables individuals to focus upon others' experiences thus facilitating internalisation. Assimilation builds on the internalisation mode by incorporating feedback into the mental models those individuals employ. That is, feedback refines tacit knowledge by internalising the adaptation of knowledge created to deal with day to day application of knowledge. The knowledge conversion and creation process is a self-reinforcing spiral that feeds off itself to build knowledge. Explicit knowledge is experienced by individuals then discussed with other actors before a new version of tacit knowledge is internalised in the individual that in turn revisits the process of knowledge creation (Poh 2001).

There must be a constant attempt to ensure all four of the knowledge generation processes are used to maximise the learning experience. Conversation is one of the means for using the full knowledge exchange range of processes, namely socialisation, externalisation, combination and internalisation (Delahaye 2003). A conversation working well enables knowledge flow and exchange that when equal and positive, is an ideal medium for knowledge exchange and knowledge building. This knowledge exchange is often an informal process byway of rational discourse through conversation. Rational discourse involves active participation in a conversation with each participant trying to put forward their point of view and understand the others point of view (Delahaye 2003; Rylatt 2003; Von Krogh et al 2000). The competitive focus of debating does not fit with knowledge building

through informal conversation because each party is trying to convince the other that their view is correct (Delahaye 2003).

The author **postulates that in regard to HunterNet, Nonaka and Takeuchi's model (1995) does not adequately cover the constraints on actively sharing knowledge across organisational boundaries.** That is, the model assumes that individuals are happy to share knowledge whereas the reality in a network is that people have to trust each other, understand what is confidential and what is shared across boundaries, earn respect for each party's technical competence and actively search out knowledge termed in contexts that may or may not exist in their existing schemata. The limited interaction of network members and the constraints across organisational boundaries means that the socialisation phase of the model may not convey the difficulties and importance of relationship building across boundaries. Delahaye (2003) makes the point that knowledge is expanded when existing frames of reference and schemata are challenged. What Delahaye (2003) terms the 'positive transfer climate' in promoting informal learning in organisations needs to be extended to Nonaka and Takeuchi's model (1995) if knowledge is to be converted from tacit to explicit and back to tacit in networks.

From the discussion in this section, the following **research issue** evolved:
How did HunterNet manage to make tacit knowledge explicit?

Table 2.3 lists a number of technologies and applications that may benefit knowledge transfer in networks. Knowledge must be transferred when working across boundaries to deliver client solutions. Changes in technology have enabled better coordination across boundaries so it follows that technology may increasingly benefit knowledge transfer across boundaries.

Table 2.3 The KM Spectrum: Knowledge management technologies and applications

	Transactional	**Analytical**	**Asset Management**	**Process**	**Developmental**	**Innovation and creation**
Knowledge Management Applications	Case based reasoning Help desk applications Customer service applications Order entry applications Service agent support applications	Data warehousing Data mining Business intelligence Management information systems Decision support systems Customer relationship management Competitive intelligence	Intellectual property Document management Knowledge valuation Knowledge repositories Content management	TQM Benchmark Best practice Quality management Business process re-engineering Process improvements Lessons learned Methodology SENCMM ISO9XXX Six Sigma	Skills development Staff competencies Learning Teaching Training	Communities Collaboration Discussion forums Networking Virtual teams Research and development Multi-disciplined teams
Enabling Technologies	Expert systems Cognitive technologies Semantic networks Rule-based expert systems Probability networks Rule induction Decision trees Geospatial information systems	Intelligent agents Web crawlers Relational and object DBMS Neural computing Push technologies Data analysis and reporting tools	Document management tools Search engines Knowledge maps Library systems	Workflow management Process modelling tools	Computer based training Online training	GroupWare E-mail Chat rooms Video conferencing Search engines Voice mail Bulletin boards Push technologies Simulation technologies
Portals, Internet, Intranets, Extranets						

(Source: Willcoxson 2003**)**

From the above literature the following **proposition** emerged: **In HunterNet sharing explicit knowledge among members is important.**

2.4.5 The roles of individuals in knowledge sharing in networks

This section discusses the literature surrounding the roles of management in cooperations. The literature discusses the role of manager in an alliance and the role of top management in partner corporations. HunterNet facilitates member's networks and has a part time board made up of members and a full time manager. The author **hypothesises that the literature on managing alliances will help understand and explain the role of the HunterNet Executive Officer.** The author acknowledges that the literature on leadership is applicable to the role of the HunterNet members and Executive Officer but word limitations prevent exploration of this area. However, it should be noted that the mutually beneficial vision for members and the community is generally accepted as being conducive to leadership (Parry 1997).

2.4.5.1 Alliance management

This section discusses the role of alliance manager. The alliance manager must try and attain the goals set by the partners, often with only the authority implied by the members.

Alliance managers have a difficult job as they have to ask and negotiate rather than direct (Child & Faulkner 1998; Yoshino & Rangan 1995). Whilst helpful if used sparingly, positional power may not be enough to ensure the alliance manager is effective (Yoshino & Rangan 1995). An alliance manager may have to rely on credibility, awareness, flexibility, technical competence, knowledge of the different functions, interpersonal skills and sensitivity to enhance the chances of cooperation (Child & Faulkner 1998; Yoshino & Rangan 1995). HunterNet has an Executive Officer but the members' organisations are too small to have formal alliance manager positions. Therefore the analysis of the existing literature had to be carefully examined to construct table 2.4.

Table 2.4 draws upon the literature to detail the tasks of the alliance manager and top management or owners involved in an alliance. The literature is mainly directed towards large corporations involved in various forms of cooperation so whilst useful for cooperation between members of a formal business networking group in a regional industrial cluster, all of the points may not apply to the formal business

networking group. As a contribution to the literature in this area, sections have been added to the table on unique tasks of a manager of a formal networking group and unique tasks of top management or owners involved in a formal networking group. The tasks in the second part of the table are based upon in depth pilot interviews as part of this research project and also derived from other areas of the literature applicable to business networks.

An understanding of the industry structure and the business that the alliance is in, sound technical competence, coupled with a good general knowledge of each function and how it fits into the business, will help boost the alliance manager's credibility (Child & Faulkner 1998; Yoshino & Rangan 1995). Knowing what groups to call on for information or problem solving or support will assist the alliance manager's job but interpersonal skills are also needed to ensure others will cooperate (Child & Faulkner 1998; Yoshino & Rangan 1995). Interpersonal skills such as flexibility, enthusiasm, listening skills, the ability to give feedback with minimal offence, cultural awareness and sensitivity to the concerns of others will increase the chance that others will help with the cooperative venture (Child & Faulkner 1998; Jarillo 1993; Yoshino & Rangan 1995). General management experience or previous alliance experience — provided that experience was positive — are good development grounds for managers but development and support should continue because of the dynamic nature of alliances (Child & Faulkner 1998).

The author **suggests that some of the tasks listed in table 2.4 will apply to the owners or managers representing member corporations in HunterNet.**

Table 2.4 Alliance management tasks

Tasks of alliance manager	**Tasks of top management or owners involved in a cooperation**
Monitors and balances the contributions of partners over time Instigate compliance if partner not contributing to benefit the cooperation as a whole Ensure that the alliance or network is meeting its objectives and still strategically viable Check partner demands against the meeting of objectives Ensure that participants at all levels support the cooperation Build personal links at all levels to assist in influencing outcomes Keep stakeholders informed by establishing and maintaining clear lines of communication Minimise fear and rivalry by focusing on solutions to a problem as opposed to the problem itself Champion the alliance by expressing enthusiasm - without becoming an apologist for partners Use authority only as a last resort because the alliance manager normally has little authority to use Control excessive demands and expectations – shape expectations	Meet regularly with top executives from alliance partners, maintaining good relations Identify and act upon strategic opportunities combined partner competencies make possible Ensure that the strategic focus is not clouded by operational detail Quick decision making based on long and short term needs Maintain clear lines of communication Ensure robust discussion with a strategic focus between counterparts Ensure staff see top level interaction and enthusiasm for the cooperation Build and maintain personal relationships with cooperation executives during and after the cooperation Ensure that the strategic intent for the cooperation and the organisation is complementary Action strategic intent and the reasons for the action to minimise staff fears and ensure cooperation Ensure appropriate personnel and resources are allocated to the cooperation
Unique tasks applicable to a formal networking group's manager in an engineering cluster	**Unique Tasks applicable to top management or owners involved with a formal networking group in an engineering cluster**
Work with the board to identify member priorities, develop and implement a strategy Act as a contact point for potential clients and projects Work with Government representatives to ensure • members understand legislative requirements • Government is aware of members views • Facilitate projects and investment Recruit new members that strengthen the network Retain members that strengthen the network Facilitate member involvement in the network to strengthen the network Ensure meetings are informative and collegial to facilitate interaction and networking Ensure trustworthy behaviour of members perceived and actual Promote: • the engineering excellence of the network, individual members and region • member businesses • celebration of success Facilitate knowledge building in areas where members have gaps	Capture crucial organisational knowledge to tide company over if owner or key manager retires Ensure attendance at meeting's by enthusiastic representatives Interact with other members at meetings Build relationships by participating in committee's where your representative can make a positive contribution Demonstrate enthusiasm for the network to all staff and other members Celebrate wins with the network Ensure mutually beneficial relationships with members

(Source: Constructed for this research mainly from Yoshino and Rangan 1995)

2.4.5.2 Tasks of Top Management or owners.

This section briefly touches on the literature concerning the tasks of top managers and owners involved in cooperation strategies. This section is appropriate to a formalised networking group in a regional industrial cluster because it is the owners and managers that act out the cooperation.

Top managers must take an active role in supporting the alliance concept internally and externally if the alliance is to be a success (Child & Faulkner 1998; Doz & Hamel 1998; Yoshino & Rangan 1995). Frequent involvement by top management in the alliance signals to the partners' that a company is serious about the alliance, resulting in the implication of commitment, thus increasing the chances of reciprocity from the other partners' at the senior level as well as other levels (Doz & Hamel 1998; Lorange et al 1997; Yoshino & Rangan 1995). Top management involvement increases the chances of prompt effective resolution of differences as opposed to haggling over detail (Yoshino & Rangan 1995).

2.4.6 The knowledge integrator

When viewing the organisational knowledge creation and exchange model illustrated in figure 2.12, the author postulates there is an assumption that the process takes place without prompting. This section discusses the knowledge integrator node, a new concept that complements the model in figure 2.12.

Poh (2001 p.28-9) brings forward the concept proposed by Erwee & Brown (2000) of a knowledge integrator node (K.I.N.) defined as individuals who promote the knowledge conversion and creation process by actively seek to draw out tacit knowledge from various sources and integrate that knowledge into internal and external groups or networks (Poh 2000). Sharing tacit knowledge actively drawn out from various sources with internal and external groups builds the knowledge process and it can be argued that the process is unworkable without a K.I.N. purposefully attempting to integrate explicit knowledge. Poh (2001 p.29) states …'the need for the K.I.N. is mainly due to the inefficiencies in the knowledge markets in organisations, which are caused by : (1) incompleteness of information - do not know where to find knowledge, (2) 'asymmetry' of information - imbalance of the

knowledge source, and (3) 'localness' of knowledge.' Knowledge creation is now the collaborative result of external partnerships and internal groups working closely together, not a single firm working in isolation. Innovation of new products and services and developing solutions for problem solving involves integration of knowledge from many sources and groups further emphasising the importance of the K.I.N (Poh 2001).

Krackhardt (1996) argues that focusing on the focal point — node — of relationships allows one to leverage off the relationships of the focal node. Some firms will be boundary spanners, members of a number of networks with each network centring on a nodal hub. Boundary spanners are thus pivotal knowledge points with a unique view of more than one network making them the shortest link between nodal hubs that may be competitors. It is therefore necessary to understand the knowledge flows and what knowledge the boundary spanner is open to because of the risk of proprietary leakage (Skyrme 1999).

Rackham et al (1996) highlights reciprocity, business focus, and a future orientation as key factors for information sharing in partnerships. Reciprocity among partners in regard to information works closely with mutual trust. If a partner wants information, there must be a willingness to show trust by giving information with the expectation of reciprocity. A business focus to information sharing in a partnership involves looking to solve problems across the partner's full value chain thus adding value to the relationship and mutual benefit. Including the future in information sharing about current issues allows partners a glimpse of opportunities and threats that may arise in the future thus reinforcing the importance of working together to find solutions for future problems.

The following **proposition** emerges from the literature discussed in this section: **The HunterNet Executive Officer or some of the active members are knowledge integrators.** From this proposition and the discussion in this section, the **research issue** that evolves is:

Are the active members of HunterNet knowledge integrators?

2.5 Developing trust in networks.

Section 2.5 deals with trust. Section 2.5.1 discusses what is meant by trust with building trust into relationships discussed in section 2.5.2 before indicators of trust are discussed in section 2.5.3.

Trust is required if mutual dependence resulting from cooperation is to eventuate (Bergquist et al 1995; Buttery & Buttery 1994; Cauley de la Sierra 1995; Ford et al 1986; Ford et al 1998; Howarth et al 1995; Howarth 1997; Jarillo 1993; Limerick et al 1998; Lipnack & Stamps 1994; Lorange & Roos 1992; Osland & Yaprak 1993; Stern 1996). A mutual understanding of why partners come to a cooperation will assist the development of trust (Lorange & Roos 1992). It takes years to establish trust between partners but once established, trust will smooth over relations between partners (Culpan 1993; and Jarillo 1993). Establishing trust therefore requires a long-term orientation with opportunistic behaviour foregone demonstrating that the relationship itself is valuable. Trust cannot be imposed but must be built up over time by developing personal relationships and a reputation for fairness (Jarillo 1993).

2.5.1 What is trust

Trust is a concept that exists in the minds of people. This section discusses the literature in regard to definitions of trust.

Child and Faulkner (1998) examine the cognitive, time and social elements regarding the foundation and development of trust. The cognitive element of trust is further split into three possibilities: a calculation of the expectations against the risk of going on with the cooperation; a sharing of cognition's between the parties concerned in the relationship; or a sharing of common values through identity, a form of bonding. There may be one or all of the types of cognitive trust, which will most probably change over time. Figure 2.12 links the stages of development of an alliance with trust. Calculation will determine if alliance formation will take place followed by mutual understanding at the implementation stage if you can work with what you find and the alliance will continue to evolve if bonding occurs through identifying with each other (Child & Faulkner 1998). Social relations increase the likelihood of trust if people like what they find (Booher 1999; Botkin 1999; Corodilos 1999;

Cauley de la Sierra 1995; Child & Faulkner 1998; Hakansson et al 1972; Johannisson 1998; Limerick et al 1998; Osland & Yaprak 1993; Rylatt 2003).

Figure 2.12 Phases of alliance development and the evolution of trust

Phase of alliance development over time	**Formation ⇒**	**Implementation⇒**	**Evolution**
Key element in trust development	Calculation	Mutual understanding	Bonding
	Being prepared to work with you	Getting to know about you	Coming to identify with you as a person

(Source: Child & Faulkner 1998 p.56)

Howarth et al (1995) highlights the use of predicability, dependability and faith as the three fundamental elements to define trust. The ability to foretell specific behaviour is used to describe predicability. A knowledge that the other person can be relied upon in times of importance is used to describe dependability. A feeling of security and a belief that caring and responsibility will continue to be acted out by the other person or party in a relationship is described as faith (Howarth et al 1995). Osland and Yaprak (1993) argue that for trust to be established between party's over time, there must be evidence of opportunistic behaviour foregone, promises upheld and integrity at all time.

2.5.2 Building trust in relationships

Trust is an important component in building and maintaining relationships required for networks. Section 2.5.2 discusses building trust into relationships.

Howarth et al (1995) categorises the building of a trusting business relationship into three phases. Early cooperation enhanced by known reputation and personal relationships is the first phase. The conditions necessary to build the relationship is the second phase with one person normally being the instigator of the rules and expectations necessary to build trust and reciprocity. Closer strategic and operational

integration reinforces trust in the third phase, with moral obligations and a concern for preserving reputations being major factors. Phases one and two are trial periods with phase three being confirmation and reinforcement of earlier perceptions. Responsibility, equality, reliability, compatible values and the acknowledgment of each other's differences have all been linked to the development of trust (Howarth et al 1995).

Figure 2.13 The Goals Continuum

Shared Goals	**Supportable Goals**	**Conflicting Goals**
Goals we already have in common	Goals one partner has that don't represent conflict	Goals that cannot both be pursued at the same time

Strong agreement←——————————————————→Strong disagreement

(Source: Rackham et al 1996 p.176).

Figure 2.13 identifies shared, supportable and conflicting goals as an aid in building trust. If shared goals are identified, partners have a greater potential for a positive cooperative experience by working together to reach those goals (Park et al 1993; Rackham et al 1996). Supportable goals are another way of partners enjoying a win-win cooperation provided partners take the time to identify goals that positively affect one partner and don't negatively affect the other. The value of supportable goals is in the realised tangible benefits to one partner and the intangible benefits such as strengthened relationships enjoyed by all partners. Conflicting goals are goals that cannot be pursued at the same time because they conflict with each partners goal. Identifying the underlying needs of each conflicting goal, determining alternative solution and resolving conflict using the best alternative options gives partners the opportunity to strengthen the relationship by working together to determine a win-win solution (Rackham et al 1996). Resolving an issue doesn't mean continually giving in (Osland & Yaprak 1993; Rackham et al 1996). Underlying tensions detrimental to the partnership will fester if all of the underlying needs aren't discussed in an open and cooperative environment (Rackham et al 1996).

Partners in successful cooperative relationships tend to balance trust over time rather than in a 'tit for tat' manner (Child & Faulkner 1998; Howarth et al 1995; Jarillo

1993). Communication, equity, shared vision and compatible goals, mutual benefit from strategic and economic issues, senior management commitment to the alliance reducing peoples fear, establishing a history of dependability and reliability, a clearly stated agenda, the avoidance — or absolute minimisation — of coercive power, focusing on the long-term relationship by not over-reacting — or involving emotion — to short-term transience, imagination and vision in leadership all facilitate the development of trust (Howarth et al 1995; Jarillo 1993).

Trust is dynamic over time in either the negative or positive direction (Child & Faulkner 1998; Gulger & Dunning 1993; Howarth et al 1995; Jarillo 1993; Osland & Yaprak 1993). Cooperative relationships that work will proceed from initial calculation through understanding to perhaps identification. However, if a party to the cooperation believes that the trust has been broken or expectations are not fulfilled, trust can be lost entirely or revert back to calculation (Child & Faulkner 1998). When trust is lost people tend to worry about protecting themselves in ways such as power seeking rather than focusing on cooperation (Howarth et al 1995).

Trust emerges from small groups. Families and friendships are the natural breeding ground of trust. Shared interests and common concerns are the basis of formal and informal associations from where trust can also emerge (Lipnack & Stamps 2000). Healthy communities and businesses are indicative of thick social networks. Good teaming and social interaction generates social capital and is a result of social capital because of the increased likelihood of a propensity by individuals to trust others (Child & Faulkner 1998; Lipnack & Stamps 2000). Social capital, a newly recognised form of wealth is formed in nations, communities, corporations, networks and teams through the accumulation of trust. The playing out of relationships results in the joint ownership of social capital as opposed to the individual or corporate ownership of other forms of capital. Human capital is the individuals within a group and social capital is the relationships within that group (Lipnack & Stamps 2000). A Productivity Commission — the independent Australian Commonwealth agency — research project found that social capital was of real value to the Australian economy but more research has to be undertaken to determine appropriate measures that better reflect the community value of social capital (Productivity Commission 2003).

Common concerns have spurred HunterNet community initiatives such as 'HunterNet Group Training', 'Make it in the Hunter', and the 'Model for Action', all of which indirectly benefit members by benefiting the region. A shared interest in engineering and the region coupled with long term business, work or education relationships have also helped HunterNet members build trust.

In business relationships, the norms of trust and reciprocity act as social controls over a relationship with the formal control taking the form of a legal contract. Trust in a business relationship is aided by mutual success associated with repeated and frequent interaction between parties in the relationship (Howarth et al 1995).

Trust is required for building knowledge through knowledge exchange. It is trust that cements informal relationships through which knowledge is often exchanged. Trust allows positive shared experiences to take place whereby people can demonstrate the competence that facilitates knowledge sharing relationships and in turn further strengthen trust (Botkin 1999; Rylatt 2003). The sense of community promoted by shared goals and access to others' knowledge will not exist unless trust allows participants in the community to externalise knowledge or knowledge gaps without fear of ridicule (Saint-Onge & Armstrong 2004). Indeed, it can be said that trust enables access to a range of individuals with knowledge, thus compensating for individual knowledge gaps (Von Krogh et al 2000).

Opportunism is the antithesis of trust. The bounded rationality of managers in hierarchies or markets is reinforced by opportunism (Pyatt & Redding 1999). If the intent of either partner is to behave in an opportunistic manner by abusing the goodwill of another partner, the long-term advantages of mutually beneficial relationships are negated. Opportunism may not be real but perceived if actions are misconstrued for reasons such as cultural differences (Botkin & Mathews 1992).

If mistrust is allowed to fester, the wear and tear of transaction costs will deplete social capital, further adding to mistrust. This cycle of mistrust searches for a stable state with never cooperate becoming the norm, particularly in top down hierarchical cultures, which inturn further entrenches mistrust. Networks and relationships are difficult to form and maintain where mistrust exists, inturn further diminishing trust

across society (Lipnack & Stamps 2000). If over time, a member is found to be not worthy of trust, that member must be terminated from the group. The group must reinforce trust by eliminating untrustworthy behaviour rather than suffering lower trust across a group because untrustworthy behaviour was tolerated (Handy 1995).

2.5.3 Indicators of trust.

Trust is a construct whereas a researcher more easily describes the indicators of trust to interviewees. This section discusses indicators of trust.

The preceding discussion on trust is highly theoretical and in order to explore it in a network, one has to reform it in a way that the interviewees can respond. Therefore as a contribution to the literature, the concept of indicators of trust has been developed for this research project. The following table is an attempt to capture concrete examples or indicators of trust in a network and will be the basis for a section of the interview protocol.

Table 2.5 A list of indicators of trust

Indicators of trust	
Demonstrated long term commitment to relationships	Open and honest communications
Commitment of appropriate resources to the relationship	A clear understanding of knowledge or resources that are to be shared
Replacing competent interface staff with equally appropriate people	A clear definition on what will belong to whom upon relationship termination
Demonstrated competence	Previous positive experience of a particular individual
The ability to make, receive and act upon non-emotive constructive criticism	Previous positive experience of a respected colleague with an individual
A focus on mutually beneficial solutions to a problem as opposed to the problem or symptoms	Shared interests, common concerns and values
Individual interaction across work groups	Evidence of reciprocity, reputation and mutual benefit
Individual interaction through social activities	Predicability, dependability and faith in the other party
Clearly defined plans and expectations	Calculating potential risk to potential benefit when evaluating willingness to trust
Setting realistic expectations and meeting expectations	A recognition that once broken trust reverts to zero
Commitment to similar or agreed goals	A willingness to work through diversity
Minimal discord	

(Source: developed for this study from various authors including Bergquist et al 1995; Booher 1999; Botkin & Mathews 1992; Buttery & Buttery 1994; Cauley de la Sierra 1995; Child & Faulkner 1998; Corodilos 1999; Doz & Hamel 1998; Ford et al 1986; Ford et al 1998; Handy 1995; Hargrove 1998; Howarth et al 1995; Howarth 1997; Jarillo 1993; Johannisson 1998; Lewis 1999; Lipnack & Stamps 2000; Lorange & Roos 1992; Limerick et al 1998; Lynch 1989; Osland & Yaprak 1993; Rackham et al 1996; Spekman et al 1997; Stern 1996).

Demonstrating a long-term commitment to continuity of the relationship will give a partner the confidence to risk building relationships and trust (Howarth et al 1995; Lewis 1999; Osland & Yaprak 1993). Continuity extends to replacing staff with equally appropriate people capable of building relationships and trust, and are developed to do so (Hargrove 1998; Howarth et al 1995; Lewis 1999).

Price goes up when trust diminishes because formality increases and informal communication decreases (Jarillo 1993; Lipnack & Stamps 2000). Political games, backstabbing, forms and legalisms, drawn out negotiations, time and effort checking other peoples work, crime, corruption and third party enforcement all increase costs because of a lack of trust.

The cost of cooperation can be lowered by trust (Jarillo 1993; Lipnack & Stamps 2000). Costs associated with formality and paperwork recede as trust allows informal communications to take place. The cost of negotiations is lowered if trust allows brief and conclusive negotiations (Lipnack & Stamps 2000). Relationships may be contractually between organisations but it is the interaction of people that play out the relationship, so if the social interaction is positive it will strengthen trust greatly (Child & Faulkner 1998; Osland & Yaprak 1993). Once reputation is damaged, trust is harder to establish, if not impossible, to repair (Lynch 1989).

The author proposes that trust is important to the development of social capital within HunterNet? From the discussion in this section, research issue 6 evolves as: **How important is trust to the success of HunterNet members?**

2.6 Conclusion.

The research question that has arisen from a review of the literature is 'how does knowledge sharing emerge in a formal business networking group?' Propositions have been formulated about the type of alliance, network or cluster that HunterNet is. For HunterNet members to join and remain part of the networking group, benefits have to be realised. This research argues that relationship building and maintenance are important components of knowledge sharing within a network. In terms of knowledge in the network, this research study attempts to identify to what extent knowledge is made explicit within HunterNet and whether members of HunterNet are knowledge integrators. It is unlikely that meaningful knowledge will be exchanged in a network without trust, thus a new approach to indicators of trust has been developed for this research.

Chapter 3. Research design/methodology

3.1 Introduction

The previous chapter reviews the literature and prior theory surrounding the research problem, which is concerned with knowledge exchange in business networks. This chapter is a justification and discussion of the research methodology and design used to collect and analyse data within the boundaries of the research issues emerging from the previous chapters. The research question is investigated in a formal business networking group in a regional industrial cluster in the Hunter Region of NSW, Australia. The research question is: **how does knowledge sharing emerge in a formal business networking group?**

HunterNet has four membership classes. Patron members are large businesses with a presence in the Hunter region that support the concept of HunterNet. Sponsor members are businesses in the Hunter who offer support to HunterNet and services member businesses may wish to acquire. General members, who have full voting rights, are small to medium sized businesses involved in the engineering manufacturing and services sector in the Hunter region. Associates are micro businesses that offer services and support to HunterNet. The membership classes participating in the embedded case studies are General Member and Patron as detailed in section 5.7, data collection procedures.

This introduction (section 3.1) is followed by an examination of qualitative research as an appropriate method within the critical realism paradigm (Section 3.2). The selection and justification of the case study research methodology to address the research problem is discussed in section 3.3. The criteria for judging the research design involving the validity and reliability of the case study research method is discussed in section 3.4. The role of prior theory is discussed in section 3.5 followed by discussion of the criteria for selecting the number and type of cases in section 3.6. Data collection procedures and development of the case protocol are discussed in section 3.7. The examination of case analysis techniques is discussed in section 3.8 followed by the interview protocol in section 3.9. Case study research limitation are discussed in section 3.10 whilst ethical issues are examined in section 3.11. Finally, conclusions arrived at are detailed in section 3.12.

3.2 Justification for the scientific realism research paradigm for this research

Section 3.2 builds a justification for the choice for this study of the realism paradigm over other research paradigms.

Table 3.1 Scientific research paradigms

	Dominant paradigm	Alternative paradigms		
Elements	**Positivism**	**Critical realism**	**Critical theory**	**Constructivism**
Ontology	An apprehensible reality exists driven by immutable natural mechanism, and the investigator and reality are independent.	"Reality" is imperfectly apprehensible because of human mental limitations and the complexity of the world.	"Reality" is shaped by social and other forces, and research should emancipate the perceptions of co-researchers and participants.	Reality is constructed by people (and a researcher), and so there is no "truth".
Epistemology	"Disinterested scientist" or "one-way mirror" observer.	Observer with some level of participation as dualism is not possible to maintain but some objectivity is sought.	Transformative intellectual.	Passionate participant.
Methodology	Surveys and experiments.	Case studies, interviews, convergent interviewing.	Action research.	In-depth interviews, participant observation.

(Source: Adapted from Chew 2001 and McPhail 1999).

The critical realism paradigm is applicable to this study because the assumption that reality is imperfectly apprehendable is suited to the HunterNet situation of a complex/dynamic business market with limited existing information (McPhail 1999). Business needs information to enable better-informed decision-making and the critical realism paradigm offers information and knowledge that is comprehensible within the mental capacity of the participants, but without the false assumption that the 'correct' answer has been found. The attempt at objectivity by the researcher allows observation whilst limiting the inference that participants are influenced towards the researcher's preferred outcome. This is not to say that total objectivity is achieved but to keep objectivity as a core aim of the research. Case study research also recognises that research should be commensurable; that is, evaluating the truth content of a researcher's knowledge claims using a consistent measure. The case study is the most appropriate form of research for researching HunterNet because it

includes the use of prior theory through a literature review (McPhail, 1999; Perry 1996).

Business networks are not an immutable natural mechanism so reality is not perfectly apprehendable in a networking group such as HunterNet. The researcher is an engineer building and maintaining relationships inside and outside of HunterNet. It thus follows that because of prior experience, the researcher and reality may not be fully independent because of the risk of bias from framing or perceptions, resulting in the realism paradigm best suiting the exploration of business networks (Yin 1994; McPhail1999).

The researcher believes that in the case of observing the HunterNet business network, whilst every effort is made to remain an observer, probing questions by the researcher may be perceived as overstepping the boundary into limited participation. The holistic nature of the HunterNet business networks means there are too many variables influencing the relationships to give a 'correct' answer. A case study is therefore the best methodology because of the many variables in a relationship and the need for members to continue on with their businesses (Chew 2001; McPhail 1999; Yin 1994).

The business nature of HunterNet means that resources are regarded as scarce and the outlook is rational so it is likely that members are looking for research within more rational boundaries that is mindful of time constraints. HunterNet members tend to be engineers, a discipline based on rules and rationality, with the business nature of the network placing a further rational focus on the members (McPhail1999; Yin 1994).

3.3 Justification of the case study methodology

Exploratory research is used because of the new and dynamic nature of the formal business networking group, HunterNet. The exploratory nature of the research, the contemporary issue of networking, and the critical realism paradigm justify the choice of case study methodology. Interviews and requests for documents are the primary means of collecting primary data for the case. Secondary data is by way of a literature review as detailed in section 3.5, prior theory.

The inductive and deductive questions need to be answered in regard to case study research. 'Deductive reasoning is the logical process of deriving a conclusion from a known premise or something known to be true' (Zikmund 1997 p. 27). Deductive reasoning is associated with the positivist paradigm as surveys can test a hypothesis or proposition (Perry 1996) whereas 'Inductive reasoning is the logical process of establishing a general proposition on the basis of observation of particular facts' (Zikmund 1997 p.27). Inductive reasoning is generally associated with the critical theory, constructivism and realism paradigms. Inductive reasoning is suited to the HunterNet research because of the contemporary nature of networking and the exploratory nature of the research. However, it would be wrong to assume that a purely inductive method takes place. Prior theory and existing mental models means there could be some deduction included in research projects using an inductive method. In the case of HunterNet, the induction/deduction question is regarded as a continuum with prior theory and exploratory research used to guide and then compare the data collected from the case (Perry 1996).

The research question is termed in the how/why of exploratory research, there is no behavioural control and the issue of business networks is contemporary, so a case study methodology is justified (Yin 1994). The case study format allows a look at the network as a whole whilst still having the structure and rigour offered by the case study format. Contemporary literature puts forward a view that a more efficient way of doing business is to form a relationship focussing on the long and short term provided that the relationship has a realistic chance of being mutually beneficial for all parties (Jarillo 1993; Howarth et al 1995). The contemporary nature of the research is thus suited to a case study method.

The units of analysis for this study are on two levels namely the HunterNet business network and a selection of its members that are being studied. Whilst HunterNet is focused on the engineering related manufacturing and services sector, the study is focused on knowledge sharing within a networking group, not the engineering industry. Therefore HunterNet is the unit of analysis for the overall case study. In order to study HunterNet, examination of member organisations is necessary. An embedded case study is defined as a smaller case study embedded in the unit of

analysis, the large case study (Perry & McPhail 1999). Therefore, the unit of analysis for the embedded case studies is selected organisations within HunterNet. Individuals play out relationships between organisations even if the relationship is contractual in nature. Therefore it is individuals within member organisations that are interviewed for each embedded case study. It is fair to assume that the views of the owners of an organisation would in most cases reflect the organisational strategy, so owners are interviewed where possible. It is also a realistic assumption that a professional manager in an organisation will reflect the organisational strategy, so senior managers are also interviewed in the embedded case studies.

3.4 Criteria for judging the quality of case study design

Ensuring that validity, reliability and generalisibility are addressed helps the utility of research. In qualitative research, validity is addressed if the…'researcher has gained full access to the knowledge and meanings of informants' (McPhail1999 p.5.17). Reliability is addressed in qualitative research by designing the methodology to ensure that…'similar observations will be made by different researchers on different occasions' (McPhail1999 p. 5.17). Generalisibility is a measure of the likelihood…'that ideas and theories generated in one setting will also apply in other settings' (McPhail55004 1999 p. 5.17). Validity, reliability and generalisibility are addressed as detailed in the following paragraphs.

Construct validity in qualitative research is enhanced by…'establishing correct operational measures for the concepts being studied' (Yin 1994 p.33). Multiple sources of evidence, written material from HunterNet and members, establishing a chain of evidence, and key informants' review of the draft case study report as detailed in Table 3.2 indicates which actions were taken to enhance construct validity by using multiple sources of evidence. The HunterNet and member Websites and brochures offer background to the research whilst working as a cross check to the interviews. HunterNet documentation is used to assess the strategic direction of the organisation in regard to member responses and documentation. The interviews enable the HunterNet members to express themselves but within the boundaries of the research issues. Responses from the interviews are crosschecked against the other data gathered. It can be argued observations by the researcher of HunterNet meetings act as a further informal enhancement of construct validity.

'Internal validity' …is enhanced by…'establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships' (Yin 1994 p.33). Pattern analysis enhances internal validity as detailed in Table 3.2. Pilot interviews and a review of HunterNet documents give the researcher an understanding to base the literature review around. Prior theory involves a comprehensive review of the literature under the guidance of the academic supervisor. The research issues and research problem are refined by the use of prior theory to form a theoretical framework to base the case study around. The case analysis uses the prior theory to analyse the findings of the interviews and to guide the pattern analysis of the interviews.

Table 3.2: Case Study Tactics for Four Design Tests

Tests	**Case study tactic**	**Actioning tactic**
Construct validity	Use multiple sources of evidence Establish chains of evidence Have key informants review draft case study report	Websites, brochures, literature review, in depth interviews Same tactics for sources of evidence on all embedded cases Interviewees at embedded case level and HunterNet Executive Officer at overall case level
Internal validity	Do pattern matching	At cross case level and cross sub group level
External validity	Use replication logic in multiple case studies	Based around pilot interviews, and input of Executive Officer
Reliability	Use case study protocol Develop case study data base	Case study protocol developed and implemented on the basis of methodology, pilot interviews and literature review Develop a 'thread' linking data

(Developed for this study based upon Yin 1994 p.33).

Table 3.2 indicates the use of replication logic in the research design and the establishment of the domain to which a study's findings can be generalised enhances external validity. Purposive sampling is the method of selecting cases that are information rich and offer maximum variation across the HunterNet member classes.

The domains to which the HunterNet study's findings can be generalised include engineering and manufacturing networking groups within a regional geographic boundary.

Table 3.2 illustrates that reliability is enhanced by the use of a case study protocol and by developing a case study database (McPhail1999; Yin 1994). The HunterNet case study protocol adds to reliability by stating the rules and procedures followed when collecting data across all HunterNet embedded cases. Designing and following a protocol allows examiners and other researchers to determine how data was collected for analysis thus allowing data collection procedures to be repeated (Yin 1994).

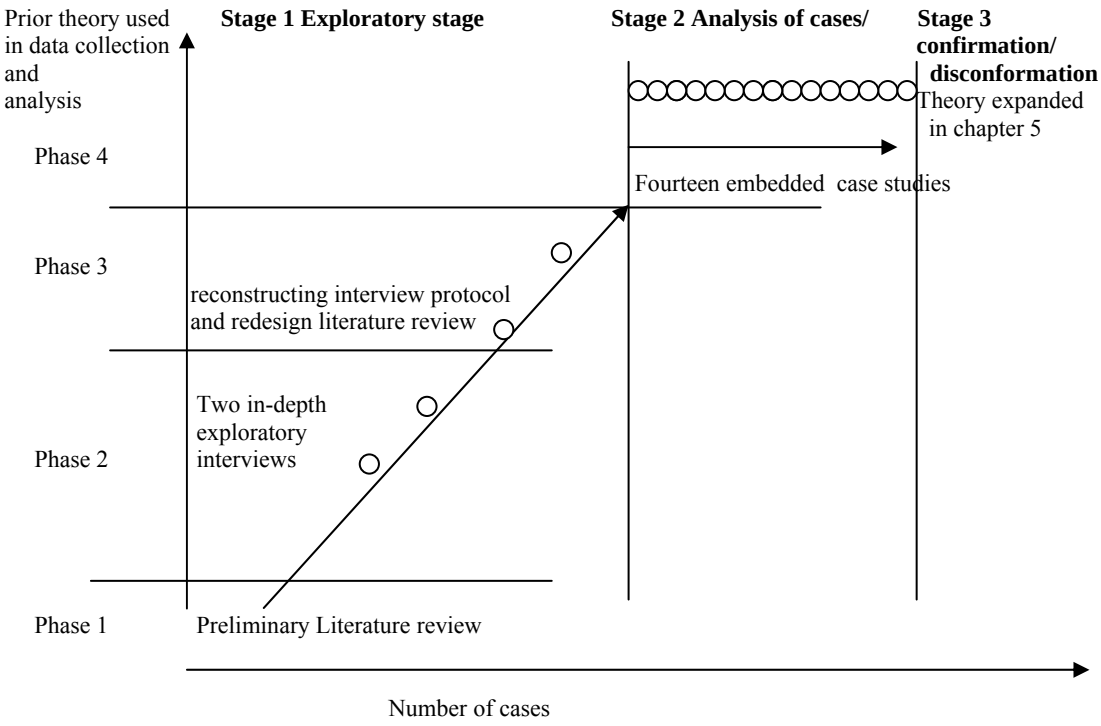
3.5 Role of Prior Theory and Case Study Research.

In regard to HunterNet, prior theory plays an important part in formulating the case study template and analysing the data. Prior theory is used in phases 1, 2, 3 and 4 — see figure 3.2. The background reading is used to identify ideas for research problems before approaching HunterNet. A preliminary literature review is revisited in phase one of the research process to determine an interview protocol for the two in depth interviews carried out on two senior board members in phase two of the research process. Phase 3 of the research process involves reviewing the interviews and literature to identify the final research issues and research problem. The pilot interviews are guided by prior theory and guide the search for relevant theory from literature in a self-reinforcing cycle. The academic supervisor guides the researcher towards relevant theory by reinforcing the importance of rigour to the research process. The interview protocol is reconstructed based upon the final research issues and prior theory detailed in chapter two, the literature review. In phase four of the research as illustrated in figure 3.2, prior theory is used to compare the findings of analysis of the case studies resulting in confirmation or disconfirmation of the prior theory.

Figure 3.2 also places stages of research across the across the horizontal axis. Phases one, two and three are part of stage one, the exploratory research stage. Stage two involves phase four, analysis of case studies. The final phase involves confirming or

disconfirming theory based upon the findings of the case study, again part of phase four of the research process.

Figure 3.2: Stages in this research



Phase 1: Preliminary Literature review
Phase 2: Two in-depth exploratory interviews
Phase 3: Reconstructing interview protocol
Redesigning literature review
Phase 4: Main data collection through embedded case studies and expansion of theory

Source: Developed for this research based on an example from McPhail (1999).

3.6 Criteria for selecting multiple case studies.

Replication logic rather than sampling logic underlies case study research using embedded case studies (Yin 1994). In this case study, cases are selected to establish literal replication where the aim is to predict similar results or theoretical replication where contrasting results are for predictable reasons. Purposive sampling is used to select the most information rich cases in regard to the research framework and question. Maximum variation within the appropriate information rich cases is another research consideration. A willingness to participate is also a necessary prerequisite for selection. A maximum of fifteen embedded case studies is recommended (Perry 1996) with the researcher using fourteen embedded case studies.

There is one case at the HunterNet level made up of fourteen embedded cases. Each embedded case is a HunterNet General Member or Patron (see Yin 1994). Guidance from the HunterNet Executive Officer as to member businesses who are information rich case study participants helps the researcher reach the final decision based upon the overall research framework and question. Active participation in the network is assumed to be an indicator of information richness. Whilst longevity in the network does not on its own indicate success, it can be argued that longevity could be a further indicator of information richness due to the history surrounding membership and relationships. The greater number of embedded case studies from the membership class of General Member reflects the positioning of HunterNet as 'the competitive edge in engineering'. Willingness to cooperate is of course another factor in determining the embedded cases.

3.7 Data collection procedures for case studies

3.7.1 Selecting multiple case studies

As detailed in section 3.6, phase three of the research includes the selection of case studies and this section details the make up of the selected case studies. Embedded cases are from two of the four membership classes (Patrons, Sponsors, General Members, and Associates) of HunterNet membership. Patron and larger General Members who are capable of acting as prime contractors are used as embedded cases because of the possibility of flow on work using member specialities. Smaller General Members are selected as embedded cases to determine how they fit into the network. A preference towards longer serving members is used because of the longevity of the network. A further selection criterium is a preference for board member or proprietor managed businesses for embedded cases because of the active role they play in HunterNet. Interviewing current General Members and Patrons is a more fruitful use of resources because of the HunterNet positioning offer as 'the competitive edge in Engineering'. **Appendix 2** illustrates the characteristics of the fourteen embedded case study organisations.

Table 3.3 illustrates the selection of embedded cases with the horizontal axis representing class of member and the vertical axis representing prime contractor capability. The C represents each embedded case study with the letter in brackets representing the job function of the managers interviewed. The letter X represents

the position of general manager, the letter Y represents the position of marketing manager, the letter A represent the position of projects manager, the letter B represents the position of operations manager, and the letter Z represents the position of owner manager.

Table 3.3: Research design for cases based on two dimensions for literal and theoretical replications

Membership Class	Patron	General Member	
	C1 (X,Y) C2 (X,A)	C3 (Z1,Z2)	C9 (X)
		C4 (X)	C10 (Z,Y)
		C5 (Z,Y)	C11 (Z,Y)
		C6 (X,Y)	C12 (Z,A)
		C7 (B,Y)	C13 (Z)
		C8 (Z)	C14 (Z1,Z2)
Totals	**2 cases, 4 interviews**	**12 cases, 20 interviews**	

Legend: C= represents one case distinguished by a unique number
A= represents one interview Projects Manager
B= represents one interview Operations Manager
X= represents one interview General Manager of the firm in a case
Y= represents one interview with the Marketing Manager of the firm in a case
Z= represents one interview with the Owner/Manager of the firm in a case

Phase 4, stage 2 of the research as illustrated in figure 2, involves fourteen embedded case studies of businesses enjoying membership of HunterNet making up one overall case study of HunterNet. The people interviewed from the member classes of Patron and General Member are staff holding senior positions in the member company. Where an owner is involved in the company, the owner is targeted for interview. Where possible, two interviews of approximately one-hour duration are conducted for each embedded case. In four cases only one interview is conducted because there is only one staff member actively involved in HunterNet at the time. The commitment and flexibility an owner-manager brings to a business relationship is justification for interviewing owner-managers. In a similar vein, a manger has to justify to owners the risks associated with membership of a network and the use of scarce resources to build and maintain relationships.

3.7.2 Interview conditions.

Planning and preparing for the interviews is part of phase three, stage one of the research process. Improved questioning and interpretation skills are applied so as not to intimidate or inadvertently influence interviewees. Interviewees sometimes answer questions other than the question asked, or avoid the question, so the researcher uses techniques to coax out answers so that the case data is optimised. Enhanced listening skills are used to highlight inferences that may be collaborated with other data, and to jolt the stereotypical mental models unconsciously relied upon by the interviewer (McPhail1999; Yin 1994). The case study protocol reminds the researcher of the business research issues previously mentioned, and through the preparation of the protocol, identifies potential procedural problems.

The HunterNet Executive Officer contacted embedded case study organisations by e-mail with a participation request. Letter and follow up telephone calls arrange access to embedded case organisations. Where possible, at least three hours is set aside between interviews to enable case notes to be written whilst the interview is still fresh. Copious notes are taken during the interview, with later pattern matching and analysis of the notes in the manual mode, rather than using a qualitative software package. A reserve list of participants is ready in the event that organisations or individuals choose not to take part in the case. A list of required resources for the interview is prepared (Perry 1996; Yin 1994). Interviews take place in the work place of the interviewee using an interview protocol as detailed below (see section 3.9). Interviews occurred over a five week period and varied between 50 minutes and two hours with the aim being one hour.

3.8 The pilot interviews

In phase two of the research, two interviews are carried out as a means of exploring the issues around the HunterNet business network. The pilot interviews cover substantive and methodologicol issues (Yin 1994). The context of interviews is for continued learning based upon prior business network theory attained from the literature review. All information is re-examined in light of new literature, existing literature and conclusions from the interview process. The pilot interviews uncover

methodologicol issues that can be improved for the case study proper. This information is used as the basis for finalising the interview protocol (Yin 1994).

Two senior board members are interviewed for the pilot interviews with each interview taking approximately one hour. The interview questions are of the open variety with probe questions designed to further tease out open answers. Background is also gained from data such as pamphlets, the HunterNet Website, planning and historical documentation supplied by the HunterNet Executive Officer. Transcripts of the interviews are supplied to both interviewees to ensure accuracy. The two senior board members are selected because they are both senior knowledgeable HunterNet individuals who are willing to take part in the pilot interviews and who are comfortable with being subjected to a less structured learning approach regarding business networks. Certain research issues — as detailed in table 3.4 — are identified from the interviews that are described below.

The two senior board members of HunterNet both identify HunterNet as an engineering business networking organisation within the Hunter engineering cluster. HunterNet draws members from the Hunter engineering cluster and members also have relationships within the cluster but outside of HunterNet. Members work together to gain projects which could be construed to be an alliance. Research issue 1, determining what type of alliance, network or cluster is HunterNet is related to these issues.

Meeting other like-minded people, finding out about other members businesses, and the potential for additional work are put forward by both senior board members as reasons for joining HunterNet. HunterNet facilitates the filling of learning gaps identified by members or affiliate organisations, thus offering real value to members given the continuing large amount of change in the regulatory and business environments. HunterNet also offers members the opportunity to find out about other members, thus raising the potential for combined offers to solve client problems. Research issue 2, how do HunterNet members perceive benefits from networking, is thus a relevant question for inclusion in the interview protocol.

The two senior board members of HunterNet stress the importance of building relationships within the networking group. Whilst some relationships are pre-existing, others are made within the HunterNet structure. Attending meetings, arriving early and leaving late from meetings, joining committees, helping out other members with advice, and attending social functions are given as ways of building and maintaining relationships. Demonstrating competence and ethics in business dealings, and never breaking trust are also given as important in building and maintaining relationships. Competitors exist within HunterNet so members are faced with cooperating with competitors, be it directly or as a part of the network. Research issue 3, how do HunterNet members build and maintain relationships, is related to these discussions and the literature review.

The two senior board members of HunterNet stress the importance of members participating in the network in order to learn about opportunities, each other's capabilities and strengthening the network through members building knowledge and skills. Research issue 4, How do HunterNet members exchange knowledge, is confirmed as a relevant question.

The two senior HunterNet board members highlight the importance of discussing issues and problems common to all businesses. Knowledge creation involves challenging existing mental models, an intimidating process for most people. Knowledge integrators assist the building and diffusion of knowledge by being catalysts in the knowledge creation process. Research issue 5, are the active members of HunterNet knowledge integrators, is therefore kept as a research issue.

Both of the senior board members state that trust was "everything" in HunterNet. Trust is also described as a "given" with there being no breach of trust within HunterNet to the knowledge of both parties interviewed. It follows that research issue 6, how important is trust to HunterNet, is confirmed as a relevant research issue.

From the preliminary interviews and the revised literature review, the research question is **how does knowledge sharing emerge in a formal business networking group?**

3.9 The interview protocol

The revision of the interview protocol and the formulation of the probe questions are part of phase three, stage one of the research as illustrated in figure 2. The interview protocol, detailed in **appendix one**, includes the size of the company in turnover, number of employees, core competences of the business and the ownership structure before going onto the questions under the headings of the research issues. Questions are determined from the prior theory identified in the literature review - see Perry 1996 - and the findings from the pilot interviews. The purpose of the questions is to gather data to flesh out the research issues (Perry 1996). Therefore the questions in the interview protocol are not identical to the research issues so that interviewees are not unduly influenced. Table 3.4 shows the links between the research issues and the interview questions in the interview protocol.

Tables are included in the interview protocol in order to:
a) assist the interviewee to focus on the research issue or question
b) to prompt a discussion on the question
c) to compare answers across embedded cases

Research issues 2.1, 4.6, and 6.1 ask interviewees to indicate on a scale of importance from one (less important) through to five (very important) of their perceptions regarding the statements made in tables supplied. The indications of importance are then reduced into response categories of less important (one and two), neutral (three) and more important (four and five). This process is undertaken at the embedded case level and at the categories of membership, size and ownership.

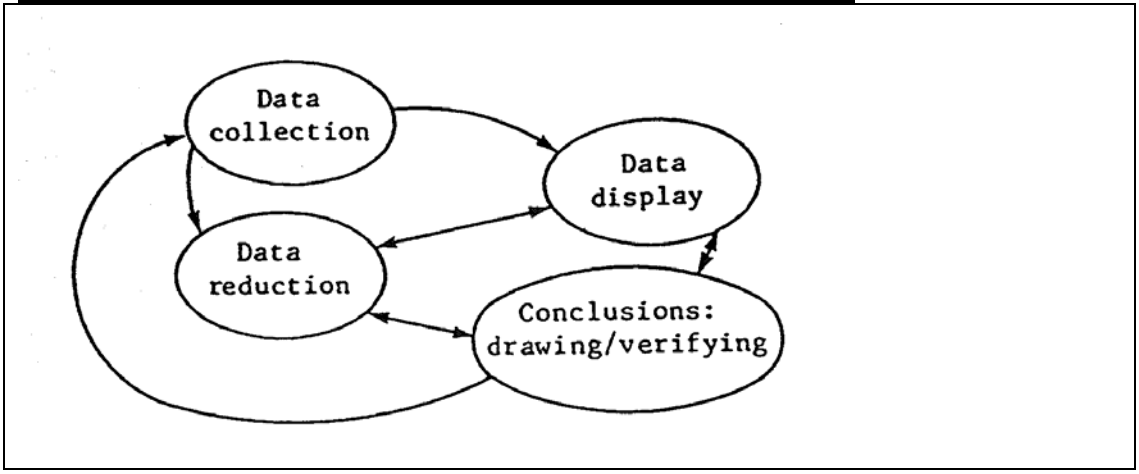
Table 3.4 Summary of the research issues and related interview questions

Research issues developed in chapter 2	Interview questions in the interview protocol
Research Issue 1: What type of alliance, network or cluster is HunterNet?	**Questions 1.1 - 1.4**
Research Issue 2: How do HunterNet members perceive benefits from networking?	Questions 2.1 – 2.2
Research issue 3: How do HunterNet members build and maintain relationships?	Questions 3.1 – 3.5
Research issues 4: How do HunterNet members exchange knowledge?	Questions 4.1 — 4.7
Research Issue 5: Are the active members of HunterNet knowledge integrators?	Questions 5.1 – 5.3
Research Issue 6: How important is trust to HunterNet members?	Questions 6.1 — 6.2
The research question is: **how does knowledge sharing emerge in a formal business networking group?**	

3.10 Case study analysis procedures

Eliminating alternative explanation and the production of a convincing conclusion are the main goals of data analysis. In order to identify meaning to the case's research question and issues, evidence must be studied, categorised, tabulated, and re-examined. The research question and issues guide data analysis. Data must be treated without bias thus preserving the original meaning within context (Yin 1994; Perry 1999). Figure 3.3 demonstrates data analysis being an interactive process involving data collection, data reduction, data display and conclusion drawing/verification (Perry 1999).

Figure 3.2 Components of data analysis: an interactive model



(Source: Perry 1999; McPhail1999)

Data analysis concurrent with data collection guides the process and limits the necessity of collecting excessive data. Data quality is enhanced by relying on all relevant evidence, including all major rival interpretations, addressing the most significant aspect of the case, and by the researcher bringing his or her own prior expert knowledge to the case. A general strategy of basing analysis around the theoretical framework developed from the literature review is used (Yin 1994). Case analysis of every embedded case is followed by cross-case analysis (Perry 1996; 1999).

Summaries, tables, lists, and matrix forms are the techniques chosen for data reduction (Perry 1999). The summaries are taken in point form during interviews and transcribed into lists and tables as soon as practicable after the interview. Matrix formats are used as described below. The communication and presentation of data at both the embedded case and case study level is vital to data analysis (Perry 1996).

The point of the replication analysis is to find patterns repeating (Perry 1996; Yin 1994). Once patterns emerge from tabulation of interview notes, matrix formats are used for case analysis with each interviewee across the horizontal axis and responses to probe questions listed down the vertical axis. For cross case analysis, each interviewee within the category being examined is presented across the horizontal axis and responses to probe questions listed down the vertical axis. Matrix forms are

another way of presenting data in a structured format to assist in pattern matching across cases.

Table 3.5 Cross case analysis by size of business.

Size of business	Small	Medium		Large
	C5 (Z,Y) C8 (Z) C9 (X) C10 (Z,Y) C11 (Z,Y)	C3 (Z1,Z2) C4 (X) C6 (X,Y) C7 (B,Y)	C12 (Z,A) C13 (Z) C14 (Z1,Z2)	C1 (X,Y) C2 (X,A)
Totals	**5 cases, 8 interviews**	**7 cases, 12 interviews**		**2 cases, 4 interviews**

Legend: C= represents one case distinguished by a unique number
A= represents one interview Projects Manager
B= represents one interview Operations Manager
X= represents one interview General Manager of the firm in a case
Y= represents one interview with the Marketing Manager of the firm in a case
Z= represents one interview with the Owner/Manager of the firm in a case

The purpose of the cross case analysis is replication and linking back to the theory generated in the literature review (Perry 1996). Initially, each case is analysed against the research issues reinforced by prior theory. Where two interviews per embedded case study are conducted, responses from interviewed colleagues are analysed to try and identify patterns and diversity at the embedded case level. Membership, size of business, and ownership are the categories where cross case analysis is applied. Table 3.3 illustrates cross case analysis by the membership categories of Patron and General Member. Table 3.5 illustrates cross case analysis by the size of business categories of small, medium and large. Revenue rather than employee numbers was used to determine the business size. Small businesses is defined as being turnover ranging from 1 to 10 million dollars, medium businesses as turnover ranging from 10 to100 million dollars and large businesses as turnover greater than 100 million dollars. Cross case analysis by the ownership categories owner and non-owner is illustrated in table 3.6. Owners are defined as interviewees who regarded themselves as minor shareholder, major shareholder or sole shareholder as detailed in the interview protocol — see appendix 1. The analysis across categories of membership, size and ownership is aimed at identifying patterns

or diversity across different categories that may be disguised in a single cross case analysis.

Table 3.6 Cross case analysis by ownership.

Ownership	Owners		Non Owners	
	C3 (Z1,Z2)	C11 (Z)	C1 (X,Y)	C7 (B,Y)
	C5 (Z)	C12 (Z)	C2 (X,A)	C9 (X)
	C8 (Z)	C13 (Z)	C4 (X)	C10 (Y)
	C10 (Z)	C14 (Z1,Z2)	C5 (Y)	C11 (Y)
			C6 (X,Y)	C12 (A)
Totals	**10 Interviews**		**14 Interviews**	

Legend: C= represents one case distinguished by a unique number
A= represents one interview Projects Manager
B= represents one interview Operations Manager
X= represents one interview General Manager of the firm in a case
Y= represents one interview with the Marketing Manager of the firm in a case
Z= represents one interview with the Owner/Manager of the firm in a case

The researcher used pattern matching in the manual mode (Yin 1994). Patterns identified are compared with the framework given by the literature in an attempt to link data identified in the case to the literature. The matrix format employed enables each reduction of data to be saved as a draft copy using a word processing program. Matrix forms are used at the embedded case level to firstly identify common answers and thereafter, the data is transferred to matrix form at the different categories of membership, size and ownership. An example of the later stages of data reduction for research issue 1.1, 'which definition best describes HunterNet', of General Members is illustrated in **Appendix 3**. Data is grouped in terms of similarity and a number is then assigned to answers that enjoy a common pattern to facilitate further data reduction as illustrated in **appendix 3-A**. Data reduction is then carried out by reducing data into statements that combined similar patterns as illustrated in **appendix 3-B**. Frequencies are calculated for the group of general member and assigned to the appropriate column in table 4.1. This process is common across all embedded case studies and categories.

A report format is used to ensure that the researcher gathers data that will fill the report as information. Early drafts of the report include prompts for the author at the

writing up stage and evidence trails during revision. A case database is assembled to support the case if required. The case database consists of all data, information and analysis for each of the embedded cases plus the full cross case analysis, including the parts not included in the final case report (Yin 1994). Whilst much of the case database is in electronic format — see the example given in **appendix 3** — there is also handwritten notes and handwritten correction of printed material that is transposed into later drafts.

In the final part of data analysis, conclusions are drawn and verified from themes and patterns located in the data using inductive analysis as detailed in section 3.5. Frequencies in the data displays throughout chapter 4 are used to identify patterns, not as quantitative analysis. Patterns or themes within a case are identified from interviews and cross checked from other sources such as prior theory, pamphlets, and company policies. However, it should be noted that the vast majority of patterns are discussed in terms of prior theory. Summary tables for the categories of membership, size and ownership are used to lessen the chance of the researcher becoming overwhelmed with data and to increase the chance that patterns are identified. Key informants reviewed the case study summary for accuracy as a means of enhancing construct validity.

3.11 Limitations of the case study method

The case study method does not give definitive answers in regard to networks. Confirmation or non-confirmation of propositions reinforced by prior theory strengthens theory but does not give an answer that is assumed correct or incorrect (Yin 1994; McPhail1999).

The method limits the view of reality. The participants in the case study influence reality so the static nature of the research will tend to normalise analysis of all participants' responses. Searching for patterns across cases shows up macro trends across the network, possibly at the expense of individual or small pattern responses that may be pertinent.

Using prior theory as the basis of the research structure and a tool in analysis may tend to normalise participant responses into a similar format of prior theory.

Pertinent points in regard to the network may be too far outside the boundaries of existing theory to be deemed relevant to the research.

The author has adapted a table used by Chew (2001) to explain the responses in the methodology to overcome identified criticisms of case study research (see table 2.7). The criticism that case study research can result in overly complex theories is addressed by using prior theory to enable the researcher to focus on the core issues. The second criticism that case study research may not achieve external validity is addressed by using replication logic across the embedded and main case studies and using the existing literature to review the collected data. The criticism that case study research is difficult to conduct is addressed by using a case study protocol, interview protocol, and having all interviewees within a 60 minute drive from the author's abode. Undertaking in depth pilot interviews and utilising prior theory during the exploratory stage and prior theory during the analysis and confirmatory/disconfirmatory stages addresses the criticism that case study research is not sufficient for the development of theory. Discussion with the supervisor and practitioners addresses the criticism regarding bias and a lack of rigour by the researcher (Chew 2001).

Table 3.7: Limitations of case study research and related strategic responses

Criticism of case study research	Strategic responses to overcome shortcomings	Sections where limitation is addressed
1. Results in overly complex theories	Develop prior theories and specific research questions	Chapter 2
2. External validity	Use theoretical replication logic, compare evidence with existent literature	Section 3.6
3. Difficult to conduct	Use case study protocol and a systematic fieldwork process	Sections 3.7.2 & 3.9
4. Not sufficient for sound theory development	Use multiple approaches	Section 3.5
5. Researcher bias and lack of rigour	Use of validity checks and discussion with other researchers and practitioners	Section 3.5 & 3.6

(Source: Adapted from Chew 2001)

3.11 Ethical considerations

Undertaking the University of Southern Queensland (USQ) ethical guidance process ensures that ethical considerations are covered. An application form is filled out and submitted to the USQ ethical research committee for guidance. Interviewees are advised that they can withdraw at any time for any reason because the psychological

and physical well being of all participants is of the upmost importance. All direct information is treated as confidential and permission to conduct the case study is gained in writing from all participants. Interviewees are stopped from inadvertently giving potentially confidential information during the interview. Interviewees are advised that feedback will gladly be provided where requested.

3.12 Conclusion

The research methodology and design, research process, data collection and analysis methods are discussed in this chapter. An explanation and justification of the chosen realism paradigm and embedded case study method is also undertaken. The management of validity and reliability issues, the number of cases selected and the criteria for selecting them and the role of prior theory are also discussed. The input of pilot interviews to the process is discussed along with ethical considerations and the limitations of case study research.

The research question is 'how does knowledge sharing emerge in a formal business networking group' with the how aspect of the question and the focus of the question on the contemporary areas of networks, knowledge and trust suiting a case study method. As no two networks are identical, the contextual nature of the research further reinforces the choice of the realism paradigm and the case study method. Further research should be possible using this research as a foundation to be built upon.

Chapter 4. Results

4.1 Introduction

Section 4.2 involves cross case analysis of the data from the research issues. Section 4.2.1 analyses the data from research issue 1, typology of HunterNet. Section 4.2.2 analyses the data from research issue 2 namely benefits from membership of a formal business networking group. Section 4.2.3 analyses the data from research issue 3 about relationship building and maintenance in a formal business networking group. Section 4.2.4 analyses the data from research issue 4 regarding knowledge exchange in a formal business networking groups. Section 4.2.5 analyses the data from research issue 5 about knowledge integrator nodes in a formal business networking group. Section 4.2.6 analyses the data from research issue 6 regarding trust in a formal business networking group. Section 4.2.7 summarises the results detailed in this section.

4.2 Cross-case analysis of the data for the research issues

4.2.1 Research Issue 1. What type of alliance, network or cluster is HunterNet?

A business cooperation can take many forms with a loose and informal relationship being one extreme through to a relationship strictly defined with formal boundaries being the other.

4.2.1.1 Research Issue 1.1 Which definition best describes HunterNet?

Of the four definitions provided in the literature review sections 2.2.1—4 and interview protocol 1.1, the formal networking group definition was clearly the most frequent choice across all groups as illustrated in Table 4.1. Upon further probing regarding their choice of the fourth definition, most interviewees' identified that the group was 'formal in that it was organised and structured, but relationships within the group are informal, take time to build, and must be maintained over time'. Further explanation included 'talking to colleagues about issues' as an important component of membership with 'knowledge combined and built' as a result of the conversations. The fact that members were independent of each other was highlighted, as was the aim of working together for mutual benefit. Respondents also highlighted the importance of talking to colleagues about wide ranging issues, which leads to knowledge combination and building.

There are certain trends emerging when the responses are analysed according to categories of membership, size and ownership. For example, there was a distinct difference between owners and non owners in the explanations provided into why they chose the formal definition. The difference was most evident with owners having a higher preference in discussing issues, working together for mutual benefit and building lasting informal relationships than non-owners. The pattern of responses between representatives of small and medium enterprises was similar but there was some difference between them and large business. Interviewees from medium enterprises showed more preference for highlighting the networking of independent members than large or small enterprises. General Members showed a greater preference for the networking of independent members working together for mutual benefit than Patrons, however this was balanced by Patrons showing a greater recognition of the informal nature of relationship building within the formal structure of HunterNet.

Table 4.1 Which definition best describes HunterNet?

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small N=8	Medium N = 12	Large N = 4	Owner n = 10	Non Owner N=14
Formal networking group definition	85%	75%	75 %	92 %	75%	80 %	86 %
It is formal in that its organised and structured, but relationships are informal, take time to build, and must be maintained over time	85%	100%	75 %	92 %	100%	100%	79 %
Working together for mutual benefit	70%	50%	88 %	58 %	50%	80 %	57 %
Facilitates networking of independent members	65%	75%	63 %	67 %	75%	80 %	57 %
Talk to colleagues about any issues (including what's going on or problems) thus building and combining information and knowledge for mutual benefit	80%	75%	75 %	83 %	75%	100 %	64 %
Networking definition next closest	40%	50%	38 %	42 %	50%	40 %	43 %
No single predetermined purpose	35%	25%	13 %	50 %	25%	40 %	29 %

4.2.1.2 Research Issue 1.2 Perceptions of fit regarding cooperation forms.

Table 4.2 illustrates the more popular responses given by interviewees' across all categories after viewing a diagram — figure 2.5 in the literature review — developed for this research depicting various forms of cooperative strategies. 'Networking in general' was given the most emphasis by interviewees, closely followed by 'participation in loose alliances'. The Hunter Engineering Cluster was also identified as containing the 'formal business networking group HunterNet', and also containing some of interviewees' clients. Respondents felt it important to stress that networking enabled one to 'tailor one's businesses by benchmarking, learning from people and understanding their issues', and that HunterNet facilitated this networking.

Analysing the responses according to membership, size and ownership categories identifies the emergence of certain trends. Patrons show a greater preference than General Members for identification of being part of HunterNet, which they defined as one formal networking group in the Hunter Engineering Cluster. Analysis due to size shows large and small businesses unanimous on this point compared to half of medium sized businesses yet when compared on ownership, there is little difference between owners and non owners.

Being part of the Hunter Engineering Cluster as a response category was far higher for Patrons than General Members. When the data is analysed according to the size of the company small and medium businesses placed similar emphasis on but a great deal less than large businesses whilst non owners showing a greater preference for this point than owners. Small businesses felt it important to highlight loose alliances when compared to medium and large businesses whilst owners highlighted this point a little more than non-owners did. Responses such as 'Tailoring businesses by benchmarking' and 'learning through networking within HunterNet' showed little difference in importance between membership classes, a little less emphasis was placed by small businesses when compared on size of business but non owners identified this issue as more important than owners.

Table 4.2 Perceptions of fit regarding cooperation forms.

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small N=8	Medium N = 12	Large N = 4	Owner n = 10	Non Owner N=14
Networking in general within or outside the Hunter Engineering Cluster	100 %	75 %	100 %	100 %	75 %	100 %	93 %
We are part of the Hunter Engineering Cluster which contains some of our clients	55 %	100 %	50 %	58 %	100 %	50 %	71 %
Loose alliances	85 %	75 %	100 %	75 %	75 %	90 %	79 %
We are part of HunterNet which is one formal networking group in the cluster	70 %	100 %	100 %	50 %	100 %	80 %	71 %
We can tailor our business by benchmarking, learning from people and understanding their issues through networking with HunterNet members	70 %	75 %	63 %	75 %	75 %	60 %	79 %
HunterNet facilitates members needs	50 %	25 %	50 %	50 %	25 %	60 %	36 %
We can contribute by being involved and making a genuine attempt to assist people achieve their business goals, and as a by product, our profile increases	40 %	0 %	25 %	50 %	0 %	50 %	21 %

4.2.1.3 Research Issue 1.3 How did you come to join HunterNet?

The most popular responses across all categories in regards to research issue 1.3 are illustrated in table 4.3. Existing relationships with HunterNet members or those who already knew of HunterNet was the most frequent response. Responses such as 'Foundation member' was highlighted followed by being approached by an existing HunterNet member or the HunterNet Executive Officer. Interviewees felt it was important to expand their answers, an example being that they 'felt they had something to contribute to the network and community', and that they were willing to spend time and money participating. It was also identified that interviewees had 'existing relationships with HunterNet members'. There was an acknowledgment by some interviewees that 'membership of competitors could have been a problem', but this point was tempered by reasoning that there was 'no need to share confidential information and that there were lots of generic areas such as learning or large projects where all benefit'.

Trends have emerged when the responses are analysed according to membership, size and ownership categories. For example, there was a higher proportion of Patrons and large businesses that knew of HunterNet or had existing relationships with members before joining. In regard to participation in the network, far more large and medium business interviewees linked contributing to the community as a motivation for participating than small businesses. Large and small businesses placed more emphasis on service provider relationships than medium businesses. Concern over the recognition of competitors tempered by a recognition of mutual benefit was highlighted disproportionately by small businesses and owners compared to medium and large businesses or non-owners.

Table 4.3 How did you come to join HunterNet?

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small N=8	Medium N = 12	Large N = 4	Owner n = 10	Non Owner N=14
Foundation member who joined with others to overcome manufacturing downturn	40 %	50 %	38 %	42 %	50 %	40 %	43 %
HunterNet Executive Officer approached us	20 %	25 %	13 %	25 %	25 %	40 %	7 %
HunterNet member approached us	35 %	25 %	38 %	33 %	25 %	50 %	21 %
We knew of HunterNet and had existing relationships with some member/s	45 %	75 %	50 %	42 %	75 %	60 %	43 %
Owner or Manager of business said it would be a good idea to attend	35 %	50 %	38 %	33 %	50 %	0 %	64 %
Felt we had something to contribute to the network and community, so we decided to spend the time and money participating	80 %	100 %	63 %	92 %	100 %	90 %	79 %
Waste of time being a member and not participating so at the least, we aim to have one of our team at every meeting	75 %	25 %	75 %	75 %	25 %	60 %	71 %
Key part of our local marketing strategy	35 %	50 %	25 %	42 %	50 %	30 %	43 %
Membership of competitors could have been a problem but there is no need to share confidential information and there are lots of things such as education, big projects, where we all benefit	35 %	0 %	75 %	8 %	0 %	40 %	21 %
Many of our service providers are members of HunterNet	25 %	50 %	38 %	17 %	50 %	30 %	29 %

4.2.1.4 Research Issue 1.4 Have you formed more formalised relationships with HunterNet members?

Members across all groups were unanimous in responses that more formalised relationships have been formed with HunterNet members as illustrated in Table 4.4. Relationship building was the dominant theme across all groups expressed as 'strengthening relationships with customers and suppliers' and, 'trust and faith flow from building a relationship with members'. Another dominant theme was working together, expressed firstly as 'learning how to work together through experience' and secondly as 'complementary skills with other members which may lead to opportunities if competencies and needs match'. Working together also flowed on to the response that the 'building of skills and the commitment to maintain reputation and relationships built over time within HunterNet led to a lower likelihood of members failing to meet expectations'. The 'altruistic motives and information' within HunterNet, 'taking the lead to talk to people about what's possible' and the 'ability to discuss anything in the social atmosphere facilitated by HunterNet' was also highlighted as important by members. There was also a response across some categories of the importance of contacts made possible by membership of HunterNet.

Examining interviewee insights across the groups of membership, size and ownership identified the emergence of certain trends as illustrated in table 4.4. For example, in regard to contacts, owners placed much greater emphasis on this point than did non-owners, as did general members when compared to Patrons and small businesses when compared to medium or large businesses**. The pattern of responses for building trust and faith through relationship building follows the same pattern of owners giving it greater emphasis than non-owners, General Members being more positive than Patrons and small businesses responding more positively than medium businesses who responded more positively than large businesses**. This pattern was also matched in the answer that 'value in the relationship' and the 'building of competencies to strengthen that relationship' with a greater emphasis being placed by owners than non-owners, General Members when compared to Patrons and small business when compared to medium and large business. There is a more positive response regarding the 'altruistic and informative nature of membership' for General Members when compared to Patrons, medium

businesses when compared to small businesses, which placed more emphasis than large businesses. The response associated with ‘learning from the experience of working together’ had greater emphasis for Patrons over General Members but when compared by size the responses of medium businesses were much less positive than small and large businesses. ‘Taking the lead to talk to people’ received a stronger response by Patrons when compared to General Members. When the responses were viewed by size of company, large businesses selected ‘complementary skills’ than did small or medium businesses. The importance placed upon ‘discussing anything in the social atmosphere of a HunterNet meeting’ did have a stronger response for small businesses as compared to medium and large businesses and a stronger response by non-owners when compared to owners.

Table 4.4 Have you formed more formalised relationships with HunterNet members?

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small N=8	Medium N = 12	Large N = 4	Owner n = 10	Non Owner N=14
Yes	100 %	100 %	100 %	100 %	100 %	100 %	100 %
I've been in contact with high profile people, government, institutions and projects that I wouldn't normally make.	45 %	0 %	75 %	25 %	0 %	60 %	21 %
If you build a relationship with members, you build trust and have more faith in what they are doing	80 %	25 %	100 %	67 %	25 %	90 %	57 %
You learn from the experience of working together even if you don't win work because of the interaction of personalities as well as business complementarities	70 %	100 %	88 %	58 %	100 %	80 %	71 %
Relationships with suppliers and customers strengthened through building a relationship with people in HunterNet	90 %	100 %	88 %	92 %	100 %	90 %	93 %
As our high standards have to go back to sub contractors, the self reinforcing nature of a relationship within HunterNet means they are less likely to let you down and more likely to build their competencies	75 %	50 %	100 %	58 %	50 %	90 %	57 %
We have complementary skills with other members so we win work depending upon their needs and our offer	75 %	100 %	75 %	75 %	100 %	80 %	79 %
Someone has to take the lead so talk to people about what's possible if the community and our industry sector is to benefit	60 %	75 %	75 %	50 %	75 %	80 %	50 %
We find the information and altruistic motives important an part of membership	85 %	50 %	75 %	92 %	50 %	80 %	79 %
More opportunity to discuss anything in the social atmosphere of a HunterNet meeting	75 %	75 %	88 %	67 %	75 %	60 %	86 %

4.2.2 Research Issue 2. Benefits from membership of a formal business networking group

4.2.2.1 Research Issue 2.1 Perceptions of importance and realisation of benefit

Interviewees' were asked to indicate on a table provided their perceptions of how important they perceived were benefits identified in section 2.3.1 table 2.1 of the literature review. Additionally they were asked to indicate benefits they believed they receive from HunterNet membership. Table 4.5 shows all interviewees perceptions of benefits and the extent to which respondents believed that they realised the benefits in HunterNet. Appendix 4 – 1 details the results of interviewees' perception of the benefits of networking and the extent to which respondents believed that they realised the benefits in HunterNet when grouped according to membership, Appendix 4 - 2 when grouped according to size, and appendix 4 - 3 when grouped according to ownership. Short summative paragraphs will be included about the major trends in the Appendices.

Table 4.5 shows some dominant patterns emerging when viewed as all interviewees'. These were three mainly intangible benefits, namely 'a sense of community and legitimacy', 'communicating with like minded people' and 'accessing/building knowledge information and learning'. These were in the most popular group of responses viewed as more important with all three benefits having a high rate of realisation from membership of HunterNet. The 'strengthening of customer-supplier links' was also perceived as a more important benefit, followed by the benefit 'expand capabilities to meet client demand for an integrated offer' but both indicated a lower realisation frequency than the three benefits mentioned above. The next most emphasis was placed upon 'private sector leadership' and the realisation of this benefit was also high.

'Accessing expertise', 'maximising synergies across the value chain', 'improving strategic position' and 'coordinating and speeding up the value chain' were the next most popular benefits but the realisation of benefits from HunterNet was lower for all four statements. 'Reducing risk and uncertainty', 'share resources – resource access' and 'accessing core competencies' were the three benefits emphasised next as most important (54% of respondents) but all three had much lower rates of

realisation from HunterNet membership. ‘Economies of scope’, ‘increased flexibility, efficiencies and rewards’, ‘shared R&D costs’ and ‘economies of scale’ were emphasised as next most important but again, all four enjoyed low realisation rates through HunterNet membership. Whilst in the lowest grouping of importance, ‘accessing technology’ and ‘accessing labour’ enjoyed similar realisation from HunterNet membership when compared to importance. The other two in the lowest importance grouping, namely ‘reducing transaction costs’ and ‘inventory savings’ both had lower realisation of benefit than importance.

The responses that 100 percent of Patrons found most important were ‘access knowledge’, ‘speeding up the value chain’, ‘improve strategic position’, ‘reduce uncertainty’, ‘sense of community’, communicate with like minded people’, and ‘customer-supplier links’. The responses in this 100 percent category had interviewees receiving these from membership in a range from 50 to 100 percent. The response that 90 percent of General Members selected was ‘sense of community’ with a realisation of 90 percent. The next most popular responses in the General Member category (80 Percent) ‘communicate with like minded people’, and ‘customer-supplier-links’ with benefit received from membership of 85 percent and 50 percent respectively. It should be noted that whilst only 70 percent of General Members selected ‘access knowledge’, there was an 85 percent realisation frequency.

All respondents from small businesses (100 percent) selected ‘Coordinating the value chain’, ‘sense of community’ and ‘customer-supplier-links’ as the most important benefit with realisation of benefit from 63 to 88 percent. A second category of responses were those that were selected by 88 percent of respondents namely ‘economies of scope’, ‘improve strategic position’, ‘communicate with like minded people’, ‘expand capabilities’, ‘accessing expertise’, ‘maximising synergies’, ‘reduce uncertainty’, ‘share resources’, and ‘increased flexibility and rewards’. The responses in this 88 percent category had benefit realisation rates from 25 to 88 percent. The responses that 100 percent of the large businesses found most important were ‘access knowledge’, ‘speeding up the value chain’, ‘improve strategic position’, ‘reduce uncertainty’, ‘sense of community’, communicate with like minded people’, and ‘customer-supplier links’. The responses in this 100 percent

category had benefit realisation rates from 50 to 100 percent. In contrast the response rate for medium sized businesses indicating their most important was lower than those for small and large businesses. Medium sized businesses selected ‘sense of community’ (83 percent) and ‘communicate with like minded people’ (75 percent) but had a high realisation frequency (92 percent) for both responses.

All respondents (100 percent) from the non-owner category selected ‘customer-supplier links’ with the next most popular response (93 percent) being sense of community. Benefit realisation for these two benefits was 64 percent and 100 percent respectively. The next most popular response category (79 percent) for non-owners selected ‘communicate with like minded people’ and ‘access knowledge’ with 93 and 79 percent benefit realisation respectively. A response frequency of 90 percent of owners selected ‘sense of community’ and ‘communicate with like minded people’ with both statements showing an 80 percent benefit realisation. There was also one response for owners at 80 percent frequency, with a 70 percent realisation, namely ‘expand capabilities’. It should be noted that whilst only 70 percent of owners selected ‘access knowledge’, there was a 90 percent benefit realisation frequency.

Table 4.5 Benefits all interviewees – in order of member emphasis

Benefit	Importance of Benefit n = 24			Benefit Received from HunterNet n = 24
	Less Important	Neutral	More Important	Benefit Received
Sense of community & legitimacy	0 %	8 %	92 %	92 %
Communicate with like minded people	0 %	17 %	83 %	88 %
Strengthen customer-supplier links	13 %	4 %	83 %	50 %
Accessing/Building Knowledge, information and learning	13 %	13 %	75 %	83 %
Expand capabilities to meet client demand for integrated offer	8 %	21 %	71 %	58 %
Private sector leadership	17 %	17 %	67 %	71 %
Accessing expertise	8 %	29 %	63 %	54 %
Maximise Synergies across the value chain	13 %	25 %	63 %	46 %
Improve strategic position	17%	21 %	63 %	58 %
Coordinating and speeding up the value chain	33 %	4 %	63 %	42 %
Reduce risk and uncertainty	17 %	29 %	54 %	29 %
Share resources – resource access	21 %	25 %	54 %	38 %
Accessing core competencies	21 %	25 %	54 %	33 %
Economies of scope	33 %	21 %	46 %	25 %
Increased flexibility, efficiencies & rewards	38 %	17 %	46 %	17 %
Share R&D costs and shorten design and development stages	38 %	17 %	46 %	13 %
Economies of scale	42 %	21 %	38 %	13 %
Reduce transaction costs	33 %	33 %	33 %	13 %
Accessing technology	46 %	21 %	33 %	33 %
Accessing labour	54 %	13 %	33 %	33 %
Inventory savings	63 %	17 %	21 %	4 %

4.2.2.2 Research Issue 2.2 What competencies have you gained from being a member of HunterNet?

Research issue 4.2 asked interviewees to generate responses regarding the competencies gained through HunterNet membership. Competencies gained are a form of benefit — see table 4.6.

'An increased awareness of the competencies possessed by others' was the most frequent response closely followed by an 'open discussion forum based on trust relationships'. Responses of high frequency referring to 'benchmarking and best practice' also were selected, as were 'feeling of well being through being involved with good things'. 'Personal development' and 'we're happy to give more than we receive' had a strong response. 'Access to information and contacts with information', 'a better understanding of client needs' and 'skills in cooperating with people in business' were also popular choices.

When difference of responses is viewed across categories, trends begin to emerge. It should be noted that between 92 to 100 percent of the interviewees in the categories according to size of organisation, membership and ownership, chose the statement 'increased awareness of the others competencies'. An 'open discussion forum' was emphasised more by General Members, small and medium businesses, and owners. The response 'Being happy to give more than you receive' was more evident amongst small businesses and owners. 'Community spirit' and a 'feeling of well being' enjoyed greater frequency by General Members and medium businesses.

'Benchmarking and best practice' was a more frequent response amongst General Members, owners, medium and small businesses. 'Personal development' was given greater response rate by General Members, owners, small and medium businesses. 'Access to information, from members, contacts or HunterNet' was given greater prominence by General Members, small businesses, and owners. 'Skills in cooperating with people in business' was given much greater emphasis by small businesses and owners. Small business interviewees' tended to emphasise 'increased awareness of the competencies that other possess' more than large and medium businesses.

Table 4.6 What competencies have you gained from being a member of HunterNet?

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small N=8	Medium N = 12	Large N = 4	Owner n = 10	Non Owner n =14
We're happy to give more than we receive	50 %	50 %	75 %	33 %	50 %	60 %	43 %
Feeling of well being because of the good things you're involved in	85 %	50 %	75 %	92 %	50 %	80 %	79 %
Personal development	80 %	0 %	75 %	83 %	0 %	80 %	57 %
An open forum where you're amongst friends who you can discuss problems with because of a relationship based on trust	95 %	75 %	100 %	92 %	75 %	100 %	86 %
A better understanding of clients needs allowing us to market ourselves better by meeting those needs	60 %	50 %	75 %	50 %	50 %	60 %	57 %
Increased awareness of the competencies that others possess for better integrated offer to meet client needs	95 %	100 %	100 %	92 %	100 %	100 %	93 %
Skills in cooperating with people in business	55 %	50 %	100 %	25 %	50 %	70 %	43 %
Access to information (or people with information) from members, contacts or HunterNet	65 %	50 %	88 %	50 %	50 %	80 %	50 %
Benchmarking and best practice with other managers	95 %	50 %	88 %	100 %	50 %	100 %	79 %

4.2.3 Research issue 3: Relationship building and maintenance in a formal business networking group

4.2.3.1 Research Issue 3.1 How do people meet within HunterNet?

Popular responses included 'HunterNet members meet each other at meetings, site visits and social functions' as illustrated in table 4.7. 'Self introduction', 'introduction by the Executive Officer', or 'being introduced by other members' were detailed as the methods of meeting people within the various activities HunterNet facilitates. Interviewees expressed another popular response, namely that they 'really get to know people by discussing common issues and problems'. A significant number of interviewees expanded this response by pointing out that a 'networking meeting was different to a sales call as they talk and share in wider areas thus building a relationship where they communicate without barriers'.

Trends start to emerge when the differences across the categories of membership, size and ownership were examined. It should be noted that 100 percent of the interviewees in the categories according to size of organisation, membership and ownership, chose the statement 'meeting people through attending meetings'. Patrons, small and large businesses gave slightly greater emphasis to 'site visits'. 'Social functions' were a more popular response by Patrons, owners, small and large businesses. General Members, small businesses and owners emphasised 'networking meetings being different to a sales call'. There was a more frequent response for 'participation in areas such as bids, committees, or boards' by owners when compared to non-owners.

Table 4.7 How do you meet people within HunterNet?

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small N=8	Medium N = 12	Large N = 4	Owner n = 10	Non Owner N=14
At meetings	100 %	100 %	100 %	100 %	100 %	100 %	100 %
At site visits	90 %	100 %	100 %	83 %	100 %	90 %	93 %
At social functions	80 %	100 %	100 %	67 %	100 %	90 %	79 %
Through participation in areas such as bids, committees or boards	50 %	50 %	50 %	50 %	50 %	60 %	43 %
I introduce myself to as many people as possible	100 %	75 %	100 %	100 %	75 %	100 %	93 %
The executive Officer introduces me	90 %	100 %	88 %	92 %	100 %	90 %	93 %
Other members introduce me	95 %	100 %	100 %	92 %	100 %	90 %	100 %
Get to know people by discussing common issues or problems	100 %	75 %	100 %	100 %	75 %	100 %	93 %
Networking meeting different to a sales call in that you talk and share in wider areas thus building a relationship so you can communicate without barriers	80 %	50 %	100 %	67 %	50 %	90 %	64 %

4.2.3.2 Research Issue 3.2 Could you identify which step best illustrates your current position in HunterNet?

When asked what step best illustrated their current position in HunterNet, the 'starting process' was the dominant answer as illustrated in table 4.8. The 'development process' and the 'maintenance processes' were the next most frequent responses. The 'searching process' and the 'termination process' were noted only in so far as 'some relationships have little business significance but are maintained because circumstances can change'. The interviewees felt it necessary to expand their answers by stating that 'HunterNet is a development opportunity for members and there is a responsibility to build and maintain standards'. 'Participation in HunterNet increases leadership in business', 'and people respect that you're trying to make a positive difference' were some more frequent responses by interviewees.

Involvement in the starting process was highlighted by more General Members, small businesses, and owners. Patrons and large businesses selected the development process to a greater extent. There was a more positive response for the maintenance process by Patrons, large businesses and owners. The termination process was a more frequent response by General Members and small businesses. 'HunterNet as a development opportunity' and the 'responsibility to build and maintain standards' was given a stronger response by General Members, small and medium businesses and owners.

Table 4.8 Could you identify which step best illustrates your current position in HunterNet?

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small N=8	Medium N = 12	Large N = 4	Owner n = 10	Non Owner N=14
Searching process	45 %	25 %	38 %	50 %	25 %	20 %	57 %
Starting process in that we're looking at how we can work together for mutual benefit	75 %	50 %	88 %	67 %	50 %	80 %	64 %
Development processes in that we try to identify and fill market gaps with partners	60 %	75 %	63 %	58 %	75 %	60 %	64 %
Maintenance processes because we have some strong long term relationships	60 %	100 %	63 %	58 %	100 %	80 %	57 %
Termination processes only in so far as some relationships have little business significance but we maintain them because circumstances can change, they may refer you to others or pass on knowledge	40 %	0 %	75 %	17 %	0 %	30 %	36 %
HunterNet is a development opportunity for members because if you're a member, there's a responsibility to build and maintain standards	70 %	0 %	75 %	67 %	0 %	80 %	43 %
Adds to leadership in business because you're giving, not just receiving, thus adding to community values and people respect that you're trying to make a positive difference	90 %	75 %	88 %	92 %	75 %	90 %	86 %

4.2.3.3 Research Issue 3.3 Competition and conflict within HunterNet

Table 4.9 illustrates the popular response given by interviewees when asked about competition and conflict. The most frequent response in regard to competition was that it was perceived as 'similar businesses chasing similar clients or opportunities'. Interviewees felt it necessary to expand upon the answer by stating they have 'little competition within HunterNet because competitors normally aren't identical', and 'companies focus on relationship building'. Conflict arises from 'delivery of poor service, bad business practices, dishonourable behaviour, preferential treatment and focusing only on tangible financial gain or local work'. This answer was expanded upon by some respondents with the assertion that 'conflict can arise when a cooperation or job goes bad'.

Certain trends appear when the responses were analysed across membership, size and ownership categories as illustrated in table 4.9. It should be noted that frequency of responses across categories of membership, size and ownership was between 88 to 100 percent for the statement the nature of competition. The view that there is 'little competition in HunterNet' was given more emphasis by Patrons when compared to General Members, a slightly greater emphasis by large businesses than medium businesses, with small businesses placing a lower emphasis on this point than medium or large businesses. The strong response namely, 'conflict arises from delivery of poor service' was selected by more small businesses than medium or large businesses but there was little difference in responses across membership or ownership categories.

Table 4.9 Competition and conflict within HunterNet

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small N=8	Medium N = 12	Large N = 4	Owner n = 10	Non Owner N=14
Competition is similar businesses chasing similar clients or opportunities – you win or loose, that's business	95 %	100 %	88 %	100 %	100 %	100 %	93 %
We have little competition within HunterNet because competitors normally aren't identical	70 %	100 %	50 %	83 %	100 %	70 %	79 %
When a cooperation or job goes bad, conflict can arise	45 %	0 %	25 %	58 %	0 %	60 %	21 %
But then, few jobs ever go totally right so there is always the potential for conflict	10 %	0 %	0 %	17 %	0 %	20 %	0 %
Conflict arises from delivery of poor service, bad business practices, dishonourable behaviour, preferential treatment and focusing only on tangible financial gain or local work	80 %	75 %	100 %	67 %	75 %	80 %	79 %
Companies that stay have the attitude that the more I put in to building a relationship with people, the more I take out	45 %	0 %	50 %	42 %	0 %	50 %	29 %
Conflict can arise from competition for positions in hierarchy of the organisation and resultant disagreement with the direction of the organisation	30 %	25 %	13 %	42 %	25 %	30 %	29 %

4.2.3.4 Research Issue 3.4 Cooperation with competitors within HunterNet

Responses illustrated in table 4.10 indicate that significant proportions of interviewees do cooperate with competitors within HunterNet but it should be noted that a noticeable percentage (between 13 to 100 percent) said that they don't really have any competitors within the formal networking group. The most frequent response (64 to 88 percent) in regard to how interviewees go about cooperating indicated that some were more likely than others to cooperate, but they cooperate 'on a case by case basis provided they are competent'.

Responses viewed across categories as illustrated in table 4.10 shows certain trends emerging. Significantly more General Members than Patrons were cooperating with competitors, as were small businesses and medium businesses when compared to large businesses, and owners when compared to non-owners. The response by interviewees that they 'don't really have any competitors' showed Patrons highlighting this point more often than General Members did, large businesses noting the point more often than medium and small businesses, and non-owners noting the point more often when compared to owners. There was significantly more emphasis by General Members compared to Patrons, small and medium businesses compared to large businesses, and owners when compared to non-owners for the response linking propensity to cooperate on a case by case basis. Comfort with networking and focusing on the relationship to ease the tensions' was a significantly higher response for General Members compared to Patrons, small businesses when compared to medium and in turn large businesses, and owners when compared to non-owners. 'Bartering', 'using specialities', and 'sharing knowledge' had a greater frequency by General Members when compared to Patrons, small businesses when compared to medium and in turn large businesses, and owners when compared to non-owners.

Table 4.10 Cooperation with competitors

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small N=8	Medium N = 12	Large N = 4	Owner n = 10	Non Owner N=14
Yes	60 %	25 %	88 %	42 %	25 %	80 %	36 %
Don't really have any	45 %	100 %	13 %	67 %	100 %	30 %	71 %
Some more likely than others to cooperate than others but we cooperate with players on a case by case basis provided they are competent	80 %	50 %	88 %	75 %	50 %	90 %	64 %
If you're comfortable with networking and focus on the relationship competing one day cooperating the next to match the situation isn't a problem	45 %	0 %	75 %	25 %	0 %	70 %	14 %
We work with different members who compete with each other so we don't breach confidential information	65 %	50 %	63 %	67 %	50 %	70 %	57 %
You can still barter and do favours or spill over work with competitors if you trust each other	60 %	0 %	88 %	42 %	0 %	80 %	29 %
We have specialities that competitors don't have and visa versa	65 %	0 %	100 %	42 %	0%	80 %	36 %
You can share knowledge that is not commercial in confidence with a competitor for mutual benefit	60 %	0 %	88 %	42 %	0%	70 %	36 %

4.2.3.5 Research Issue 3.5 The effect of bidding for projects upon members

The statements provided the highest proportions of respondents as to how members were affected by projects illustrated in table 4.11 was clearly that interviewees would 'drift closer together because of mutual self-interest'. The only other response was endorsed by 100 % of Patrons and large businesses were that they 'didn't have an exclusive relationship with particular members'.

4.2.3.6 Research Issue 3.6 The effect upon members relationships of membership change

It is clear from the responses illustrated in appendix 4 - 4 that the overwhelming feeling is that members would drift closer as 'newcomers offer opportunity for new combinations of skill sets to better meet client needs'. Between 71 % to 100 % of the interviewees also felt it important to take the time to find out what new and existing members do and to acknowledge that personalities and business ethics of new members will impact on group dynamics.

4.2.3.7 Research Issue 3.7 The effect upon members relationships from dissatisfaction with a member

In contrast to relationships affected by membership change, different reactions were noted when asked how relations are affected by dissatisfaction with a member (see table 4.12), the most frequent being that there would be no difference. Interviewees felt that members sort out problems themselves because they don't want to spoil their position in the network. When viewed across membership, size and ownership, the same trends emerged.

Table 4. 11 The effect upon relationships of bidding for projects

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small N=8	Medium N = 12	Large N = 4	Owner n = 10	Non Owner N=14
Drift closer together because of mutual self interest	85 %	100 %	100 %	75 %	100 %	90 %	86 %
It gives you an opportunity to explore relationships you wouldn't normally be able to explore and if it goes well to cement a relationship	40 %	25 %	38 %	42 %	25 %	40 %	36 %
We don't have exclusive relationships with particular members	45 %	100 %	50 %	42 %	100 %	40 %	64 %
We would probably go first to people from past relationships be it past offers, known relationships - level of trust already established	45 %	25 %	63 %	33 %	25 %	60 %	29 %
Apportioning risk can be a problem	30 %	0%	0 %	50 %	0%	40 %	14 %
You have to put a lot in before you take anything out	45 %	0 %	38 %	50 %	0 %	70 %	14 %
Some might drift apart because they would be competing for work but they don't stay members if winning a job is all they're interested in	40 %	0 %	63 %	25 %	0 %	60 %	14 %

Table 4.12 The effect upon members relationships from dissatisfaction with a member

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small N=8	Medium N = 12	Large N = 4	Owner n = 10	Non Owner N=14
No difference - let them sort it out as they're two sides to every story	85 %	100 %	75 %	92 %	100 %	90 %	86 %
You'd sort out problems yourself because you don't want to spoil your position in the network so treat all with respect and politeness to minimise fallout and focus on the problem, not the person	40 %	25 %	38 %	42 %	25 %	50 %	29 %
Drifting apart would be more likely if it was two key players because discord can negatively affect a group	20 %	0 %	25 %	17 %	0 %	10 %	21 %

4.2.3.8 Research Issue 3.8: The effect upon member relationships by external environmental factors

The statements selected by the highest proportions of respondents as illustrated in table 4.13 were that members would drift closer, provide intangible support to each other, as well as that in an adverse environmental situation they can discuss the situation. Interviewees' also noted that you can provide 'tangible support to each other' and that 'business people open up once they overcome the fear' of competitors stealing ideas from them.

There was a slightly greater emphasis placed upon 'drifting closer' by Patrons when compared to General Members, and by large businesses when compared to small and medium businesses. A significantly greater proportion of Patrons than General Members identified 'supporting each other', and this view was shared by more large businesses than small businesses and by owners than non-owners. 'Tangible support' had a higher frequency by General Members when compared to Patrons, small business when compared to medium and large, and owners when compared to non-owners. 'Identifying your own issues' was identified by a greater proportion of Patrons compared to General Members, large businesses compared to medium and small businesses. When table 4.13 is contrasted with table 4.11, there is similarity in the core theme of drifting closer but the responses in table 4.13 indicate a higher response rate than those in table 4.11.

Table 4.13 The effect upon member relationships by external environmental factors

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n = 4	Small n =8	Medium n = 12	Large n = 4	Owner n = 10	Non Owner n =14
Drift closer	85 %	100 %	88 %	83 %	100 %	90 %	86 %
You can provide support to each other – intangible	60 %	100 %	75 %	50 %	100 %	80 %	57 %
In an adverse environmental situation you can discuss situation and share experiences and knowledge with others with others	80 %	50 %	100 %	67 %	50 %	100 %	57 %
If you're having problems and so are others, you realise you're not doing it alone	50 %	0 %	63 %	42 %	0 %	50 %	36 %
Once you overcome the fear of stealing, business people open up	35 %	0 %	25 %	42 %	0 %	60 %	7 %
You can provide tangible support to each other such as work, referrals, contacts external to the region and information sessions	65 %	50 %	75 %	58 %	50 %	80 %	50 %
HunterNet can offer great leadership when times are tough	40 %	50 %	50 %	33 %	50 %	50 %	36 %
It would depend on your own situation so identify your issues and resolve them	40 %	100 %	25 %	50 %	100 %	50 %	50 %

4.2.4 Research Issue 4. Knowledge exchange in a formal business networking group

4.2.4.1 Research Issue 4.1 How do you encourage your staff to build and share knowledge inside your organisation?

Table 4.14 illustrates responses given by interviewees' regarding sharing and building knowledge inside their organisation. 'Encourage communication with each other to foster continuous improvement through knowledge sharing' was the most frequent response (75% to 92% of responses) followed closely by 'meetings such as tool box talks or information sessions' (63 -100% of responses). There was a realisation by interviewees' that 'knowledge in the organisation was tacit' and that much of that 'knowledge was gained for previous projects and employment'. 'People's skills, knowledge and experience as key assets' was a frequent response as was the related assertion that 'attracting and retaining good managers encourage knowledge sharing'. 'Structured work procedures, formalised training and quality accreditation' were identified by interviewees' as assisting in their understanding of their responsibilities. 'Technical and safety alerts' and 'good news sent by e-mail' was also noted as means of sharing and building knowledge.

The assertion that 'knowledge in the organisation was tacit' was emphasised by General Members, medium businesses and owners. Patrons and large businesses highlighted 'knowledge gained from previous projects and employment'. The 'core competencies of people' were stressed as important to a greater extent by Patrons and large businesses. The importance of 'attracting and retaining good people' was selected more frequently by General Members, medium businesses and owners. 'Knowledge sharing' was chosen by a higher proportion of medium businesses and owners. Encouraging communication to foster continuous improvement was a more frequent response by General Members, small and medium businesses. Work related meetings such as 'tool box' talks were given greater emphasis by Patrons, large and medium business, and owners.

Table 4.14 How do you encourage your staff to share and build knowledge inside your organisation?

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small n = 8	Medium n = 12	Large n = 4	Owner n = 10	Non Owner n =14
Knowledge in organisation tacit	70 %	0 %	63 %	75 %	0 %	80 %	43 %
Knowledge gained for previous projects and employment	60 %	100 %	63 %	58 %	100 %	60 %	71 %
Skills, knowledge and experience are our core competencies and key asset – people!	45 %	100 %	38 %	50 %	100 %	50 %	57 %
Our knowledge is in our people so it's vital to attract and retain good people	40 %	0 %	25 %	50 %	0 %	50 %	21 %
Managers encourage knowledge sharing and are knowledge facilitators for and between their teams	55 %	0 %	38 %	67 %	0 %	70 %	29 %
Encourage communication with each other to foster continuous improvement through knowledge sharing	90 %	75 %	88 %	92 %	75 %	90 %	86 %
Meetings such as tool box talks or information sessions about projects, quality and occupational health and safety	80 %	100 %	63 %	92 %	100 %	90 %	79 %
Technical alert, safety alert and good new stories normally sent by e-mail	25 %	50 %	38 %	17 %	50 %	30 %	29 %
Let them understand their responsibilities, make decisions and perform	60 %	0 %	63 %	58 %	0 %	60 %	43 %
Structured work procedures, formalised training and quality accreditation defines processes	60 %	100 %	63 %	58 %	100 %	60 %	71 %

4.2.4.2 Research Issue 4.2 How do you encourage your staff to build and share knowledge outside your organisation?

Table 4.15 illustrates responses to building and sharing knowledge outside the organisation, the most frequent response (67 to 100 percent) being 'encouraging people to match their competencies to the market'. The next most popular item (38 to 100 percent) was 'through deliverables such as reports' with the statements 'encourage formal education' (20 to 100 percent) and 'knowledge is network and relationship based' (50 to 80 percent) almost as popular. Respondents tried to 'gravitate towards people who value their input', but acknowledged that 'clients have to trust them before they ask for their input'. Interviewees' also mentioned that the culture of company encourages knowledge sharing.

When differences between responses is viewed across categories, trends begin to emerge as illustrated in Table 4.15. The 'culture of the company encouraging knowledge sharing' was emphasised by General Members when compared to Patrons, medium size businesses when compared to small and in turn large businesses, and owners when compared to non-owners. 'Knowledge sharing being network and relationship based' had a greater response frequency by General Members than Patrons, more by small and medium business respondents than large business and more by owners than non-owners. 'Gravitating towards people who value our input' was selected to a greater degree by General Members compared to Patrons, selected to a greater degree by small businesses than medium and large businesses, and owners than non-owners. 'Encouraging people to match their competencies to the market' had a higher frequency by Patrons when compared to General Members, as well as large businesses when compared to medium and small businesses. 'Deliverable's such as reports' had a higher response frequency by Patrons when compared to General Members, large and medium businesses when compared to small businesses and non-owners when compared to owners. The 'encouragement of formal education' was selected by Patrons more than General Members, large business more than medium businesses and small businesses, and non-owners more than owners.

Table 4.15 How do you encourage your staff to build and share knowledge outside your organisation?

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small n = 8	Medium n = 12	Large n = 4	Owner n = 10	Non Owner n =14
Culture of company encourages knowledge sharing	50 %	0 %	38 %	58 %	0 %	50 %	36 %
Network and relationship based	75 %	50 %	75 %	75 %	50 %	80 %	64 %
We gravitate towards people who work with us and value our input but Clients have to trust you before they ask for your input	55 %	0 %	63 %	50 %	0 %	60 %	36 %
We encourage our people to look outward and understand their market so they can match their competencies to the market	70 %	100 %	75 %	67 %	100 %	80 %	71 %
Through deliverable's such as reports, specifications, data, drawings, formal tender or sales proposals, site visits, trade nights, industry expositions, and solving problems for clients based upon our core competencies	70 %	100 %	38 %	92 %	100 %	60 %	86 %
Encourage formal education	45 %	100 %	25 %	58 %	100 %	20 %	79 %

4.2.4.3 Research Issue 4.3 how do you go about learning from HunterNet, including from members?

It should be noted at the outset that table 4.16 has the highest percentage of interviewee generated — without the use of tables — responses across all categories on all items. Interviewees learn from the network in a number of ways, the dominant mode being 'networking at meetings through participation'. 'Discussions about specific or common problems' and 'learning based upon relationships' were also popular responses. 'Taking the time to talk to people about issues', 'having an open mind', and 'involve themselves outside meetings' rated nearly as highly. Other responses with a high frequency included 'share information to gain recognition as a contributor' and 'the executive officer and active participants are knowledge sources within the group'. Attendance at some of the courses was emphasised the least (21 to 50 percent).

Table 4.16 How do you go about learning from HunterNet, including members?

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small n =8	Medium n = 12	Large n = 4	Owner n = 10	Non Owner n =14
Learning is an important part of membership	80 %	50 %	100 %	67 %	50 %	90 %	64 %
Networking within the network at meetings through participation	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Take the time to talk to people about issues they normally don't have time to talk about	85 %	75 %	75 %	92 %	75 %	90 %	79 %
Talking to people leads to discussions about specific or common problems from which all learn	95 %	100 %	88 %	100 %	100 %	100 %	93 %
Always have an open mind and listen during meetings or discussions	80 %	75 %	88 %	75 %	75 %	90 %	71 %
Involve yourself outside the meeting structure be through committees or contact with other members	80 %	25 %	75 %	83 %	25 %	90 %	57 %
Phone people if you have a question	90 %	50 %	100 %	83 %	50 %	100 %	71 %
Executive officer and active participants are knowledge sources within the group	75 %	100 %	75 %	75 %	100 %	80 %	79 %
Learning is based upon the relationship you build with others	90 %	75 %	100 %	83 %	75 %	100 %	79 %
Share information so others recognise you as a contributor and contribute back thus exchanging knowledge about the industry, common issues and people's capabilities	80 %	100 %	75 %	83 %	100 %	90 %	79 %
We attend some of the courses which are tailored to members needs	40 %	0 %	38 %	42 %	0 %	50 %	21 %

4.2.4.4 Research Issue 4.4 How do you communicate your business's capabilities and competencies?

Table 4.17 illustrates responses in regard to HunterNet members communicating their business's competencies and capabilities. The response (75 to 100 percent) being 'building relationships through face to face informal discussion, and site visits'. 'Face to face supported by brochures and statements of capabilities' and, 'staying in touch with clients and potential clients' were the next two most frequent responses. Within the same range of frequency were the two responses 'doing a great job' as well as 'focusing on capabilities and opportunity'. 'Leadership in the community' and 'promote yourself' were two responses of less significance.

Analysis across the categories of membership, size, and ownership identified certain trends as illustrated in table 4.17. It should be noted that the response 'face to face relationships' received no difference across the categories whereas 'face to face supported by brochures' whilst only Patrons and large businesses indicated 100 percent frequency. 'Showing them what you can do' was more frequent a response by General Members, small businesses and owners. 'Staying in touch with clients' was emphasised more frequently by General Members and medium businesses. Patrons, large business and non-owners received a stronger response for the statement 'becoming a leader in the community'.

4.17 How do you communicate your business's capabilities and competencies?

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small n =8	Medium n = 12	Large n = 4	Owner n = 10	Non Owner n =14
Face to face supported by brochures and statements of capabilities	80 %	100 %	75 %	83 %	100 %	80 %	86 %
Face to face based upon building relationships through informal discussion, and site visits	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Show them what you can do by doing a great job and tell them as well	75 %	0 %	88 %	67 %	0 %	80 %	50 %
Be open about what you're capable of and chase up any opportunities so that people know what you can do	65 %	25 %	75 %	58 %	25 %	70 %	50 %
We stay in touch with clients and potential clients so we receive feedback and they tell us their problems so we can solve them	75 %	0 %	63 %	83 %	0 %	60 %	64 %
Promote yourself, awards you've received and celebrate success with stakeholders	40 %	50 %	25 %	50 %	50 %	50 %	36 %
Become a leader in the community by promoting manufacturing and engineering	55 %	100 %	38 %	67 %	100 %	50 %	71 %
Focus on the supply relationships as well so that your integrated offer can instil confidence in your customer	40 %	50 %	38 %	42 %	50 %	30 %	50 %
Website	35 %	0 %	25 %	42 %	0 %	30 %	29 %

4.2.4.5 Research Issue 4.5 How do you find out about projects or work that HunterNet may have identified.

Respondents found out about work from the Executive Officer or through announcements at meetings as illustrated in table 4.18. 'Direct face to face meetings reinforced by follow up' was also prevalent, as was the use of E-mail to pass on details. 'Casual chit chat between members' or 'members calling us' was two responses that were also noted.

Upon response categorisation into groups of size, membership and ownership, certain trends emerged as illustrated in table 4.18. It should be noted that the most frequent response about the executive officer did not differ across the three categories of responses. 'Announcements at meetings' received a greater response frequency by General Members when compared to Patrons, small businesses when compared to medium and large businesses, and non-owners when compared to owners. 'Casual chitchat' was highlighted to a greater extent by Patrons, small and large businesses. 'Face to face meetings' received a higher response frequency by General Members and small businesses. 'E-mail' was a stronger response item by General Members, small and medium businesses.

4.2.4.6 Research Issue 4.6 How do you let other members know that you have work they may wish to quote for?

Two frequent responses as illustrated in appendix 4 - 5 were provided to this research issue, namely 'through existing relationships' and 'direct contact'.

Table 4.18 How do you find out about projects or work that HunterNet may have identified?

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n = 4	Small n = 8	Medium n = 12	Large n = 4	Owner n = 10	Non Owner n =14
Announcements at meetings	90 %	75 %	100 %	83 %	75 %	80 %	93 %
From the executive officer	100 %	100 %	100 %	100 %	100 %	100 %	100 %
By members calling us	50 %	50 %	63 %	42 %	50 %	50 %	50 %
Casual chit chat between members	55 %	75 %	75 %	42 %	75 %	60 %	57 %
Direct face to face meetings and follow up if work is available	75 %	25 %	100 %	58 %	25 %	70 %	64 %
E-mail	65 %	0 %	63 %	67 %	0 %	60 %	50 %

4.2.4.7 Research Issue 4.7 Knowledge Protection

A model by Burton-Jones (1999) and illustrated as figure 2.9 in section 4.2.2 of the literature review chapter was adapted for the research project in order to examine the importance of internal firm based and external market based knowledge protection strategies. Table 4.19 displays the most important frequency across all three categories with appendices 4 – 6 to 4 – 8 showing the full results of most important, neutral and less important. It should be noted that all interviewees placed a great deal of importance upon internal firm based protection strategies whilst only large business and Patrons placed great emphasis upon the full range of external market based protection.

Examining the interviewee responses in the categories of membership, size of company, and ownership identifies the emergence of certain trends as illustrated in table 4.19. In regard to an indication of more important in internal protection of firm knowledge, 'knowledge tacitness', and 'firm specificity of knowledge', were in the highest frequency category (83 to 100 percent). 'Knowledge complexity' and 'knowledge embedding' were the next most popular items (71 to 100 percent). 'Organisational job design' and 'incentives for knowledge workers' were the least popular response category (50 to 100 percent).

'Copyrights', 'legal contracts', 'industry concentration' and 'time to imitate' had the highest frequency (30 to 100 percent). 'Patents', 'trade secrets' and 'time to market' had a frequency response range of 30 to 75 percent.

Large businesses and Patrons gave all seven examples of external market based protection at 75 percent or greater as did owners for the examples 'industry concentration' and 'time to market'. These responses contrasted with General Members, medium and small businesses and non-owners, which had all responses below 75 percent frequency.

Table 4.19 Knowledge Protection

Internal Protection — Firm based	General Member n=20	Patron n=4	Small Business n=8	Medium Business n=12	Large Business n=4	Owner n=10	Non Owner n=14
Knowledge tacitness — difficult to codify and diffuse	95 %	100 %	100 %	92 %	100 %	100 %	93 %
Knowledge complexity	85 %	100 %	75 %	92 %	100 %	80 %	93 %
Firm specificity of knowledge	90 %	100 %	100 %	83 %	100 %	90 %	93 %
Knowledge embedding — routines, directives, processes, products	80 %	100 %	75 %	83 %	100 %	100 %	71 %
Organisational job design	75 %	100 %	88 %	67 %	100 %	80 %	79 %
Incentives for knowledge workers	60 %	100 %	75 %	50 %	100 %	70 %	64 %
External protection — market based							
Patents	35 %	75 %	50 %	25 %	75 %	30 %	50 %
Copyrights	35 %	100 %	38 %	33 %	100 %	30 %	57 %
Trade secrets	60 %	75 %	63 %	58 %	75 %	50 %	71 %
Legal contracts with suppliers/collaborators	55 %	100 %	38 %	67 %	100 %	60 %	64 %
Industry concentration	60 %	100 %	50 %	67 %	100 %	80 %	57 %
Time to market	65 %	75 %	63 %	67 %	75 %	80 %	57 %
Time and cost to imitate/replicate	55 %	100 %	63 %	50 %	100 %	60 %	64 %

(adapted for this research from Burton-Jones 1999)

4.2.4.8 Research Issue 4.8 The knowledge management spectrum

Interviewees were asked to indicate on a table which knowledge management applications and technologies they found useful for communicating across boundaries — see section 2.4.4, table 2.3 of the literature review. There was a response tendency for participants to be overwhelmed by the vast amount of information. However large business members and Patrons were not overwhelmed to the same extent as other categories.

Table 4.20 illustrates member's perceptions of the knowledge management spectrum. In regard to knowledge management applications, 'innovation/creation', 'developmental' and 'process' applications were the most frequent responses (83 to 100 percent) whilst 'analytical' applications had a response of 50 to 100 percent. 'Transactional' and 'asset management' applications were the least popular responses (38 to 75 percent). In regard to enabling technologies, 'innovation/creation technologies had the most frequent response (75 to 92 percent), whilst 'process technologies' had a response of 50 to 80 percent. 'Asset management' and 'developmental' technologies were in the next most popular category (38 to 75 percent) and 'transactional technologies' had a response of 25 to 75 percent. 'Analytical technologies' had the least popular response (13 to 25 percent). It should be noted that responses for knowledge management applications were generally greater in quantum than enabling technologies.

When difference of responses is viewed across categories, trends begin to emerge as illustrated in Table 4.20. In regard to knowledge management applications, 'transactional applications' were emphasised to a greater extent by Patrons, large businesses and non-owners. A higher frequency of Patrons and large businesses selected 'analytical applications'. 'Asset management applications' were selected to a greater extent by Patrons, medium and large businesses. It should be noted that there was no significant difference in responses across membership, size or ownership categories for 'innovation and creation', 'developmental' and 'process' applications.

When the respondents from the three categories of membership, size and ownership were asked to indicate enabling technologies used for knowledge management, a higher frequency of Patrons and large businesses than General Members, small and medium businesses selected ‘transactional technologies’. Patrons and large businesses selected ‘Asset management technologies’ by a higher frequency. ‘Process technologies’ were highlighted to a greater extent by large and medium businesses, and owners. Developmental technologies were emphasised to a greater extent by Patrons and large businesses. ‘Innovation and creation technologies’ were selected more frequently by General Members and medium businesses. It should be noted that there was no significant difference across membership, size and ownership categories for analytical technologies.

Table 4.20 The KM Spectrum: Knowledge management technologies and applications

			Transactional	Analytical	Asset Management	Process	Developmental	Innovation and creation
Knowledge Management Applications	**Membership n = 24**	**General Member n = 20**	40 %	50 %	55 %	90 %	85 %	95 %
		Patron n = 4	75 %	100 %	75 %	100 %	100 %	100 %
	Size n = 24	**Small n = 8**	38 %	50 %	38 %	100 %	88 %	88 %
		Medium n = 12	42 %	50 %	67 %	83 %	86 %	100 %
		Large n = 4	75 %	100 %	75 %	100 %	100 %	100 %
	Ownership n = 24	**Owner n = 10**	20 %	50 %	60 %	100 %	90 %	90 %
		Non Owner n = 14	64 %	64 %	57 %	86 %	86 %	100 %
Enabling Technologies	**Membership n = 24**	**General Member n = 20**	25 %	15 %	50 %	65 %	35 %	85 %
		Patron n = 4	75 %	25 %	75 %	75 %	75 %	75 %
	Size n = 24	**Small n = 8**	25 %	13 %	38 %	50 %	25 %	75 %
		Medium n = 12	25 %	17 %	58 %	75 %	42 %	92 %
		Large n = 4	75 %	25 %	75 %	75 %	75 %	75 %
	Ownership n = 24	**Owner n = 10**	20 %	20 %	60 %	80 %	40 %	90 %
		Non Owner n = 14	43 %	14 %	50 %	57 %	43 %	79 %
Portals, Internet, Intranets, Extranets								

(Adapted for this research from Willcoxson 2003)

4.2.5 Research Issue 5 The roles of individuals in knowledge sharing in networks

4.2.5.1 Research Issue 5.1 The role of the Executive Officer in a formal networking group.

Table 4.21 illustrates respondent expectations of the role of the Executive Officer in a formal business networking group. 'Promote members', 'be a facilitator of like minds' and 'maintain a reasonable understanding of skills and competencies of members' were the three most frequent responses (75 to 100 percent). 'Include all members' and 'a good grasp of what's happening in the region' were in the second most frequent category (63 to 100 percent).'Facilitate appropriate learning' and 'manage the organisation for the short and long term' were the next most frequent responses (50 to 100 percent). 'Macro focus of building the regions manufacturing' was the fourth most popular response category (25 to 100 percent).

Responses viewed across categories as illustrated in table 4.21 shows certain trends emerging. 'Manage the organisation for the short and long term' was a more frequent response by owners. 'Be a facilitator of like minds' was selected by more General Members, small and medium businesses, and owners. 'Maintain a reasonable understanding of skills and competencies of members' was selected by a higher frequency of Patrons, large and medium businesses. 'A good grasp of what's happening in the region' was selected by a greater percentage of Patrons and large businesses. 'Include all members' was given a higher frequency response by small businesses and non-owners. 'Facilitate appropriate learning' was highlighted to a greater extent by General Members, small businesses and owners. 'Macro focus of building the regions manufacturing' was given a more frequent response by Patrons, large and medium businesses, and non-owners. 'Promote members' was given a stronger response by General Members, medium businesses and owners.

Table 4.21 Expectations of the HunterNet Executive Officer

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n = 4	Small n = 8	Medium n = 12	Large n = 4	Owner n = 10	Non Owner n = 14
Manage the organisation for the short and long term by working with the board to ensure smooth operation and fiduciary duties met	70 %	75 %	75 %	67 %	75 %	80 %	64 %
Be a facilitator of like minds so the relationship side is managed as well as the business side	90 %	75 %	88 %	92 %	75 %	100 %	79 %
Maintain a reasonable understanding of skills and competencies of members whilst facilitating projects and the relationships between members	85 %	100 %	75 %	92 %	100 %	90 %	86 %
A good grasp of what's happening in the region and the contacts to call, the level of activity in existing industry, new and potential opportunities	75 %	100 %	63 %	83 %	100 %	80 %	79 %
Maintain interaction with other networks and similar organisations	35 %	50 %	38 %	33 %	50 %	50 %	29 %
Include all members and make them feel welcome	80 %	75 %	88 %	75 %	75 %	70 %	86 %
Facilitate appropriate learning and needs based training courses	80 %	50 %	100 %	67 %	50 %	90 %	64 %
Lead by example and be a great leader influenced by the members needs and desires	45 %	50 %	63 %	33 %	50 %	50 %	43 %
Macro focus of building the regions manufacturing in the long term	55 %	100 %	25 %	75 %	100 %	50 %	71 %
Promote members by lifting the profile of HunterNet as the public face and point of contact	95 %	75 %	88 %	100 %	75 %	100 %	86 %
Maintain momentum by facilitating a process whereby people are motivated to contribute	50 %	25 %	75 %	33 %	25 %	50 %	43 %

4.2.5.2 Research Issue 5.2 Interviewee perceptions of the member tasks in a formal networking group.

Table 4.22 illustrates interviewee perceptions of member tasks in a formal networking group selected from a table developed for this research based upon table 2.4 in section 2.4.5.1 of the literature review. 'Interact with other members' and 'ensure mutually beneficial relationships' were the two most frequent responses. 'Demonstrate enthusiasm for the network' and 'ensure attendance at meetings by enthusiastic representatives' were the next two most frequent responses. 'Celebrate wins' and 'build relationships through participation' were in the third most frequent category.

When interviewee responses are analysed across membership, size and ownership categories, as detailed in Table 4.22, certain trends emerged. 'Ensuring attendance at meetings by enthusiastic representatives' received higher frequency responses by medium businesses. 'Interacting with other members' was selected by a greater frequency of General Members, medium and small businesses. 'Building relationships by participation' received higher percentage responses by medium and large businesses. 'Celebrating wins' was selected as more important by small and large businesses, and owners. 'Ensuring mutually beneficial relationships' received higher percentage responses by Patrons, large businesses and owners.

Table 4.22 Perceptions of member tasks in a formal networking group

	Membership n=24		Size n=24			Ownership n =24	
Unique Tasks applicable to top management or owners involved with a formal networking group in an engineering cluster	**General Member n = 20**	**Patron n= 4**	**Small n = 8**	**Medium n = 12**	**Large n = 4**	**Owner n = 10**	**Non Owner n = 14**
Capture crucial organisational knowledge to tide company over if owner or key manager retires	35 %	25 %	38 %	33 %	25 %	30 %	36 %
Ensure attendance at meeting's by enthusiastic representatives	85 %	75 %	75 %	92 %	75 %	80 %	86 %
Interact with other members at meetings and follow up contacts	95 %	75 %	100 %	92 %	75 %	100 %	86 %
Build relationships by participating in committee's where your representative can make a positive contribution	70 %	75 %	50 %	83 %	75 %	70 %	71 %
Demonstrate enthusiasm for the network to all staff and other members	80 %	75 %	75 %	83 %	75 %	80 %	79 %
Celebrate wins with the network	70 %	75 %	88 %	58 %	75 %	80 %	64 %
Ensure mutually beneficial relationships with members	85 %	100 %	88 %	83 %	100 %	100 %	79 %

(Source: Constructed from Yoshino and Rangan 1995 and research for this project)

4.2.5.3 Research Issue 5.3 Interviewee perceptions regarding the proposed actions of top management or owners in a cooperation.

Table 4.23 illustrates interviewee perceptions regarding the tasks of top management or owners selected from a table developed for this research based upon table 2.4 in section 2.4.5.1 of the literature review. 'Maintaining clear lines of communication', 'meeting regularly with alliance partners', 'identify and act upon strategic opportunities' and, 'ensuring staff see top level interaction and enthusiasm' were the four most frequent responses. 'Quick decision making', 'ensuring complementary strategic intent', 'ensuring appropriate personnel and resources' and, 'ensuring the strategic focus is not clouded' were the second most frequent response categories. 'Ensuring robust strategic discussion', 'building and maintain personal relationships' and, 'actioning strategic intent' were in the third category of most frequent responses.

Certain trends emerged when difference across membership, size and ownership categories was examined as illustrated in table 4.23. 'Meet regularly with alliance partners' was a more frequent response by Patrons, medium and large businesses. 'Identify and act upon strategic opportunities' was selected by a higher frequency of Patrons, large businesses, medium businesses, and non-owners. 'Ensure that the strategic focus is not clouded' selected by a greater proportion of Patrons and large businesses. 'Quick decision making' was highlighted to a greater extent by owners. 'Ensure robust strategic discussion' was emphasised to a greater extent by Patrons, large businesses and owners. General Members, small businesses and non-owners highlighted 'Ensure staff see top level interaction and enthusiasm' to a greater degree. 'Build and maintain personal relationships' was selected by more Patrons, large businesses and owners. 'Ensure complementary strategic intent' received a higher frequency by Patrons, large business, medium businesses and non-owners. A higher proportion of Patrons, large businesses, and non-owners selected 'action strategic intent'. 'Ensure appropriate personnel and resources' was given more emphasis by Patrons, small businesses, large businesses, and non-owners.

Table 4.23 Perceptions of tasks of top management or owners in a cooperation

	Membership n = 24		Size n=24			Ownership n =24	
Tasks of top management or owners involved in a cooperation	**General Member n = 20**	**Patron n= 4**	**Small n = 8**	**Medium n = 12**	**Large n = 4**	**Owner n = 10**	**Non Owner n = 14**
Meet regularly with top executives from alliance partners, maintaining good relations	90 %	100 %	75 %	100 %	100 %	90 %	93 %
Identify and act upon strategic opportunities combined partner competencies make possible	85 %	100 %	75 %	92 %	100 %	80 %	93 %
Ensure that the strategic focus is not clouded by operational detail	60 %	75 %	63 %	58 %	75 %	60 %	64 %
Quick decision making based on long and short term needs	65 %	75 %	63 %	67 %	75 %	80 %	57 %
Maintain clear lines of communication	95 %	100 %	88 %	100 %	100 %	100 %	93 %
Ensure robust discussion with a strategic focus between counterparts	50 %	75 %	50 %	50 %	75 %	60 %	50 %
Ensure staff see top level interaction and enthusiasm for the cooperation	85 %	75 %	100 %	75 %	75 %	70 %	93 %
Build and maintain personal relationships with cooperation executives during and after the cooperation	55 %	75 %	50 %	58 %	75 %	70 %	50 %
Ensure that the strategic intent for the cooperation and the organisation is complementary	65 %	75 %	63 %	67 %	75 %	60 %	71 %
Action strategic intent and the reasons for the action to minimise staff fears and ensure cooperation	40 %	75 %	50 %	33 %	75 %	30 %	57 %
Ensure appropriate personnel and resources are allocated to the cooperation	65 %	75 %	75 %	58 %	75 %	60 %	71 %

(Source: Constructed from Yoshino and Rangan 1995 and research for this project)

4.2.5.4 Research Issue 5.4 How do the members of HunterNet view their tasks in knowledge sharing and integrating?

Table 4.24 illustrates knowledge sharing and integrating within HunterNet. They 'share knowledge based upon the strength of the relationship', 'call someone if I have a question' and, 'involvement and participation' were clearly the most frequent responses by interviewees. 'Interest in learning peoples capabilities so communicate', 'ask the Executive Officer who to talk to' and 'seek out those who may be able to assist in a problem' was the next most frequent response category. 'HunterNet is a means for contributing', 'discussion is not limited to specifics' and, 'discussing issues with people they trust' were the third most popular response category. 'Asking people at meetings' and, 'part of the success of HunterNet comes from sharing knowledge' two least frequent responses.

When viewed across the categories of membership, size and ownership, certain trends emerged as illustrated in table 4.24. 'Part of the success of HunterNet comes from sharing knowledge' received a higher frequency by Patrons, large businesses and owners. 'Making sure we're involved so we can participate' was selected by a higher proportion of owners. 'Discuss issues with people they trust' was emphasised more by General Members, small and medium businesses, and owners. 'Discussion not limited to specifics' was highlighted to a greater extent by General Members, medium businesses and owners. 'Interest in learning what people are capable of' was a more popular response by non-owners. 'Ask the Executive Officer who to talk to' received a higher frequency by Patrons, large businesses, and non-owners. 'Seek out those who may be able to assist in a problem' was an item selected by more General Members, small businesses and medium businesses. 'Ask people at meetings' was emphasised to a greater extent by General Members, small businesses and owners. 'HunterNet is a means for contributing' received higher response by General Members, small business and owners.

Table 4.24 tasks in knowledge sharing and integrating

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small n = 8	Medium n = 12	Large n = 4	Owner n = 10	Non Owner n = 14
Part of the success of HunterNet comes from sharing knowledge	55 %	75 %	63 %	50 %	75 %	70 %	50 %
Make sure we're involved so we can participate in knowledge sharing	90 %	100 %	88 %	92 %	100 %	100 %	86 %
You share knowledge based upon the strength of the relationship	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Discuss issues with people you've built a strong relationship with that you wouldn't normally discuss with anyone because of trust	65 %	50 %	63 %	67 %	50 %	80 %	50 %
Discussion not limited to specifics with people you've built a strong relationship so don't assume they know something that you know	70 %	25 %	50 %	83 %	25 %	70 %	57 %
I'm interested in learning what people are capable of so communicate with all members	80 %	75 %	75 %	83 %	75 %	70 %	86 %
Call someone if I have a question or they call me if they have one	100 %	100 %	100 %	100 %	100 %	100 %	100 %
Ask the Executive Officer to point you to who to talk to	65 %	100 %	75 %	58 %	100 %	60 %	79 %
Seek out those who may be able to assist in a problem	75 %	50 %	75 %	75 %	50 %	70 %	71 %
Ask people at meetings	65 %	25 %	75 %	58 %	25 %	70 %	50 %
HunterNet is a means for contributing to the community, finding out about activity and accessing competent sub contractors, so help build the competencies of sub contractors	70 %	50 %	88 %	58 %	50 %	80 %	57 %

4.2.6 Research Issue 6 Trust in a formal business networking group

4.2.6.1 Research Issue 6.1 Interviewee perceptions of various indicators of trust

Interviewees were asked to indicate on a table drawn from the literature — see table 2.5 section 2.5.3 of the literature review — from less important through neutral to very important, various indicators of trust. Table 4.25 illustrates the indicators of trust regarded as most important, a table created from the full data displays shown in Appendices 4 – 9 though 11. Table 4.26 displays the indicators of trust of all interviewees across the full range of less important, neutral and most important response categories.

The three most frequently selected indicators of trust were 'demonstrated long-term commitment to honest relationships', 'open and honest communications', as well as 'predicability, dependability and faith'. The 'ability to make, receive and act upon non-emotive constructive criticism', 'setting realistic expectations and meeting expectations', 'commitment to similar or agreed goals', a 'clear understanding of knowledge or resources that are to be shared', and 'evidence of reciprocity, reputation and mutual benefit' were in the next most frequently selected group of indicators. 'Previous positive experience of a respected colleague with an individual', 'previous positive experience of a particular individual', and 'commitment of appropriate resources to the relationship' were the next group of indicators highlighted by interviewees. A 'clear definition on what will belong to whom upon relationship termination', 'shared interests, common concerns and values' and, a 'recognition that once broken trust reverts to zero' were the next three indicators interviewees emphasised as very important. 'Individual interaction through social activities', 'calculating potential risk to potential benefit when evaluating willingness to trust' and, 'minimal discord' were in the final group when measured by frequency.

There are certain trends appearing when the responses are analysed according to membership, size and ownership categories as illustrated in tables 4.25-26. 'Commitment of appropriate resources to the relationship' was regarded as more important to a greater degree by Patrons, large and small businesses, and non-owners. The ability to 'make, receive and act upon non-emotive constructive

criticism' was highlighted as more important to a greater extent by Patrons, small and large businesses. 'Individual interaction through social activities' was emphasised as more important to a greater degree by Patrons, large and medium businesses, and owners. 'Setting realistic expectations and meeting expectations' was regarded as being more important by a greater frequency by Patrons, small and large businesses. 'Commitment to similar or agreed goals' was indicated as being more important by a greater proportion of Patrons, small businesses, large businesses and non-owners. 'Minimal discord' was felt to be more important to greater extent by Patrons and large businesses. 'A clear understanding of knowledge or resources that are to be shared' was selected as more important to a greater degree by General Members and small businesses. 'A clear definition on what will belong to whom upon relationship termination' was perceived to be more important by a greater proportion of large businesses and small businesses. 'Previous positive experience of a particular individual' was felt to be more important by a greater frequency of Patrons, small businesses, large businesses and owners. 'Previous positive experience of a respected colleague with an individual' was selected as more important to a greater extent by Patrons, small business and large business. 'Shared interests, common concerns and values' was highlighted as more important to a greater degree by Patrons and small businesses. 'Evidence of reciprocity, reputation and mutual benefit' was indicated more important to a greater extent by small businesses and owners. 'Calculating potential risk to potential benefit when evaluating willingness to trust' was emphasised as more important to a greater extent by Patrons and large businesses. 'A recognition that once broken trust reverts to zero' was selected as more important by a greater proportion of General Members, small businesses and medium businesses.

Table 4.25 Interviewee perceptions of various indicators of trust regarded as most important

	Membership n = 24		Size n = 24			Ownership n = 24	
Indicators of Trust	**General Members n=20**	**Patrons n=4**	**Small Business n=8**	**Medium Business n=12**	**Large Business n=4**	**Owners n=10**	**Non Owners n=14**
Demonstrated long term commitment to honest relationships	95 %	100 %	88 %	100 %	100 %	90 %	100 %
Commitment of appropriate resources to the relationship	65 %	100 %	100 %	42 %	100 %	60 %	79 %
The ability to make, receive and act upon non-emotive constructive criticism	85 %	100 %	100 %	75 %	100 %	90 %	86 %
Individual interaction through social activities	55 %	75 %	38 %	67 %	75 %	80 %	43 %
Setting realistic expectations and meeting expectations	85 %	100 %	100 %	75 %	100 %	90 %	86 %
Commitment to similar or agreed goals	85 %	100 %	100 %	75 %	100 %	80 %	93 %
Minimal discord	45 %	75 %	50 %	42 %	75 %	50 %	50 %
Open and honest communications	95 %	100 %	100 %	92 %	100 %	90 %	100 %
A clear understanding of knowledge or resources that are to be shared	90 %	75 %	100 %	83 %	75 %	90 %	86 %
A clear definition on what will belong to whom upon relationship termination	65 %	75 %	75 %	58 %	75 %	60 %	71 %
Previous positive experience of a particular individual	65 %	100 %	100 %	42 %	100 %	80 %	64 %
Previous positive experience of a respected colleague with an individual	70 %	100 %	88 %	58 %	100 %	80 %	71 %
Shared interests, common concerns and values	60 %	75 %	100 %	33 %	75 %	60 %	64 %
Evidence of reciprocity, reputation and mutual benefit	85 %	75 %	100 %	75 %	75 %	90 %	79 %
Predicability, dependability and faith in the other party	90 %	100 %	88 %	92 %	100 %	90 %	93 %
Calculating potential risk to potential benefit when evaluating willingness to trust	45 %	100 %	38 %	50 %	100 %	60 %	50 %
A recognition that once broken trust reverts to zero	70 %	25 %	75 %	67 %	25 %	60 %	64 %

Table 4.26 Interviewee perceptions of various indicators of trust - All interviewees – in order of popularity

	All Interviewees n = 24		
Indicators of Trust	**LI**	**N**	**VI**
Demonstrated long term commitment to honest relationships	0 %	4 %	96 %
Open and honest communications	4 %	0 %	96 %
Predicability, dependability and faith in the other party	0 %	8 %	92 %
The ability to make, receive and act upon non-emotive constructive criticism	0 %	13 %	88 %
Setting realistic expectations and meeting expectations	0 %	13 %	88 %
Commitment to similar or agreed goals	0 %	13 %	88 %
A clear understanding of knowledge or resources that are to be shared	13 %	0 %	88 %
Evidence of reciprocity, reputation and mutual benefit	4 %	13 %	83 %
Previous positive experience of a respected colleague with an individual	8 %	17 %	75 %
Previous positive experience of a particular individual	4 %	25 %	71 %
Commitment of appropriate resources to the relationship	4 %	25 %	71 %
A clear definition on what will belong to whom upon relationship termination	13 %	21 %	67 %
Shared interests, common concerns and values	4 %	33 %	63 %
A recognition that once broken trust reverts to zero	21 %	17 %	63 %
Individual interaction through social activities	8 %	33 %	58 %
Calculating potential risk to potential benefit when evaluating willingness to trust	0 %	46 %	54 %
Minimal discord	13 %	38 %	50 %

Less Important	LI
Neutral	N
Very Important	VI

4.2.6.2 Research Issue 6.2 Examples of what interviewees would view as untrustworthy acts within HunterNet

Table 4.27 illustrates interviewee perceptions of what would constitute untrustworthy acts within HunterNet. It should be noted that interviewees were generally reluctant to give examples because it was felt that examples may imply that untrustworthy acts had taken place when to their knowledge, that was not the case. 'Passing on information expressed in confidence' was the highest frequency response (75 to 86 percent) followed by 'dishonesty' (25 to 83 percent). 'Breaking of unwritten business ethics' and, 'using information against others' were selected as the next most frequent category.

Upon categorisation of responses into groups of size, membership and ownership, certain trends emerged as illustrated in table 4.27. 'Passing on information expressed in confidence' was given greater emphasis by non-owners. 'Dishonesty' was selected to a greater degree by General Members and medium businesses. 'Using information against others' received a greater response by General Members, small businesses and owners. A higher proportion of Patrons, large businesses and owners selected 'breaking of unwritten business ethics'.

Table 4.27 Perceptions of what would constitute untrustworthy acts within HunterNet

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small N=8	Medium N = 12	Large N = 4	Owner n = 10	Non Owner N=14
Someone passes on information expressed in confidence to a third party	80 %	75 %	75 %	83 %	75 %	70 %	86 %
Dishonesty	60 %	25 %	25 %	83 %	25 %	60 %	50 %
Use information against others - running us down behind our backs	30 %	0 %	50 %	17 %	0 %	40 %	14 %
Breaking of unwritten business ethics	40 %	75 %	38 %	42 %	75 %	60 %	36 %

4.2.6.3 Research Issue 6.3 Insights by members given outside of the research issues.

Table 4.28 analyses insights by members, often expressed in frustration when the interview protocol didn't allow them to tell the researcher what they felt was important. 'We're putting back in to benefit the industry and region' and, 'HunterNet Group Training (HNGT) is a great thing' were clearly the most frequent insights offered by interviewees. The interviewees noted that 'the board and active members are vital to HunterNet success' as well as 'dedicated staff of HunterNet are vital to the success and culture of the organisation'. Three insights namely 'well-run and professional organisation', 'the more you put in the more you get out' and, 'we've built quality and safety in the sector' were also shared.

Examining interviewee insights across the categories of membership, size and ownership identified the emergence of certain trends as illustrated in table 4.28. 'The more you put in the more you get out' was highlighted to a greater extent by General members, small businesses and medium businesses. 'We're putting back in to benefit the industry and region' was emphasised to a greater extent by General Members, medium businesses, and owners. 'HNGT is a great thing' was given a greater frequency by small business. General Members and small businesses selected 'Well run and professional organisation' to a greater degree. 'The dedicated staff of HunterNet are vital to the success and culture of the organisation' was a more frequent response by General Members and small businesses. A greater proportion of small business selected 'Board and active members are vital to HunterNet success'.

Table 4.28 Insights by interviewees outside of the research issues

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small N=8	Medium N = 12	Large N = 4	Owner n = 10	Non Owner N=14
The more you put in the more you get out	45 %	0 %	50 %	42 %	0 %	40 %	36 %
We're putting back in to benefit the industry and region, not just ourselves	85 %	25 %	63 %	100 %	25 %	90 %	64 %
We've built quality and safety in the sector	45 %	25 %	38 %	50 %	25 %	70 %	21 %
HunterNet Group Training a great thing	75 %	75 %	100 %	58 %	75 %	80 %	71 %
Well run and professional organisation with the dedicated structure and chain of command help act on the mission	45 %	0 %	63 %	33 %	0 %	40 %	36 %
The dedicated staff of HunterNet are vital to the success and culture of the organisation, and always respond when contacted	50 %	25 %	88 %	42 %	25 %	50 %	43 %
Board and active members are vital to success	55 %	50 %	75 %	42 %	50 %	60 %	50 %

4.2.7 Summary

Respondents identified HunterNet as a formal business networking group but stressed that relationships were informal not mandated, and alliances tended to be informal rather than formal. There was also identification with the Hunter Engineering Cluster and participation in networking in general. All respondents had been involved in more formalised relationships with other members of HunterNet, examples being strengthened relationships with suppliers and customers, discussing problems as a teacher, student or equal, and building the competencies of sub contractors.

There was a high response rate for valuing intangible benefits with the realisation t of benefits through membership generally of lower frequency. The largest difference for benefits was the much higher frequency response for valuing and realisation of benefits of small businesses in comparison to the other categories. 'Sense of community' and 'communicate with like minded people' had the highest frequency for value and realisation of benefit if the respondents were viewed as al whole rather than across categories of membership, size and ownership.

Relationships and trust were built over time through interaction made possible by participation within HunterNet, be it at meetings, site visits and social functions, or through communication outside the formal business networking group. There was evidence of existing relationships before membership and respondents actively set out to meet people and participate within HunterNet. Competition was identified similar business chasing similar clients whilst conflict was said to arise from not meeting expectations. Respondents identified reasons for cooperating with competitors but some stressed they did not have competitors within the group. When confronted with four scenarios regarding change, the most frequent response was that they would drift closer on three occasions and it would make no difference on the other.

Respondents had an intention to learn and there was a great deal of tacit knowledge across HunterNet and the individual businesses. Learning was a central reason for membership, often expressed as discussing problems. Internal firm based protection

of knowledge had the highest response across all categories of size, membership, and ownership with only large businesses and Patrons having a strong reliance upon external market based protection of knowledge. Process, developmental and innovation and creation knowledge management applications had a high response across categories for knowledge management. This response was mirrored for enabling technologies with the exception of developmental.

Respondents emphasised the importance of individuals in exchanging knowledge. Taking the initiative to call someone to offer advice or ask a question were given a high frequency response, as was the related concept of clear and honest communications. The role of the HunterNet executive Officer was identified as an active participant in knowledge sharing, as were the active members.

Trust was regarded as vital with commitment, honesty, communication, reciprocity and meeting expectations showing a high response rate. Breaking of confidentiality and dishonesty enjoyed a strong response when interviewee's were asked for hypothetical examples of untrustworthy acts.

Chapter 5 Discussion of results

5.1 Introduction

The aim of this chapter is to compare and contrast the results of this research with previous research as noted in the literature review. The issue of whether HunterNet is an alliance, network or cluster is revisited and cooperative strategies within the group are described. The benefits of networking and the benefits realised through membership of a formal business networking group is debated in section 5.3. In section 5.4 the phases of relationship development as applied to HunterNet are discussed. Propositions about knowledge exchange in networks and the roles of individuals in sharing knowledge are noted in sections 5.5 and 5.6. The evolution of trust in a network is discussed in section 5.7 and the research question, how does knowledge sharing emerge in a formal business networking group is discussed in section 5.8. Section 5.9 depicts and discusses a formal business networking group model built from this research. Contribution to practice is discussed in section 5.10 with an examination of the limitations of the study conducted in section 5.11. Directions for future research are discussed in section 5.12.

5.2 Research Issue 1: HunterNet as a cluster, alliance or network

In Figure 2.5 the author postulates that clusters, networks, formal networking groups and alliances do not have to exist in isolation. It was argued that a cluster can exist with little cooperation taking place and relationships at the transactional end of the relationship continuum. Networks can be formal or informal, inside outside or between clusters with alliances forming inside or outside formal or informal networks and inside or outside clusters.

From the results of the study HunterNet is identified as a formal networking group but the relationships within the group are informal, not mandated — see section 4.2.1.1. The definition of a formal networking group chosen by HunterNet members was namely, '**a formal group formed to facilitate the networking of independent members so that relationship building and relationship maintenance can take place with a view to delivering mutually beneficial outcomes through working together'.** This definition was created for the purpose of this research project (see section 2.2.4) and has been adapted to reflect the findings of this research: '**a formal**

group formed to facilitate the networking of independent members so that relationship building and relationship maintenance can take place with a view to delivering mutually beneficial community and business focused outcomes through working together'. Community and business have been added to this definition to reflect domain similarity (see Patterson 1996) as applicable to HunterNet.

In terms of Campbell and Wilson (1996), HunterNet could be depicted as a value-creating network because of the emphasis on building members competencies and building the sector and region (see section 4.2.1). However, the social network within HunterNet facilitates independent members forming value-creating networks based upon relationships, be it for tangible benefits such as work that some enjoy or intangible benefits such as learning. The focus of HunterNet upon the engineering manufacturing sector pushes social networking towards value creating networks because of domain overlap and domain consensus. That is, domain overlap means independent parties have a common focus and domain consensus is a result of independent parties accepting competition or boundaries within which to work (see Patterson 1996).

The identification of HunterNet and HunterNet members with the Hunter Engineering Cluster (see section 4.2.1.2) shows similarities with the literature on clusters (see Araujo & Easton 1996; Best 2001; Jarillo 1993; Porter 1998) and the acknowledgment that networks within a cluster help the cluster adapt to change (see Porter 1996). There was indeed evidence of specialisation within HunterNet; members are using local demand as a sustaining force to focus upon products and markets outside the Hunter; to work with Government and large businesses to meet regularity and market demands; and are working with educational institutions to enable human resources to adapt to environmental change. However, the emphasis of cluster theory is on the economic benefits of increasing specialisation focused upon market demands (see Best 2001) whereas the focus of networking is upon building relationships based upon trust for mutual benefit, which in turn has economic benefits (see Jarillo 1993). The results of this study thus positions HunterNet as a formal networking group within a regional industrial cluster rather than a group

representative of a cluster. It should be noted that many of these issues relate to corporate responsibility which is outside the scope of this study.

Members identified a continuum of cooperative relationships within HunterNet, the Hunter Engineering Cluster and business associates. This continuum is consistent with the continuum from formal transactional relationships through to informal mutually beneficial relationships (see Buttery & Buttery 1994; Child & Faulkner 1998; Doz & Hamel 1998; Ford et al 1986; Limerick et al 1988; Yoshino & Rangan 1995). Networking, a cooperative relationship at the less formal mutually beneficial end of the continuum was evident within HunterNet, as were loose alliances, which imply working together for a set purpose. It should be noted that the alliance definition developed for this research (see section 2.2.3) was not selected by HunterNet members as the best description of their relationships because of the informal nature of those relationships (see section 4.2.1.1).

The focus on building relationships and contributing to the network indicates a 'future orientation' among the members, so it can be argued that they have a strategic element in mind when they form relationships (see Doz & Hamel 1998; Hakansson & Sharma 1996; Yoshino & Rangan 1995) within HunterNet. This 'future orientation' was also evident in their aims of building the competencies of members, building the industry sector across the region through the development of people, marketing the region as well as member businesses, and winning projects for the region. Discussing problems, mutual learning and information sharing amongst members can all be explained as examples of cooperative relationships. These results support the findings in terms of learning as noted by various authors (see Buttery & Buttery 1994; Child & Faulkner 1998; Doz & Hamel 1998; Ford et al 1986; Jarillo 1993;Yoshino & Rangan 1995). Learning focused relationships appear to be at the informal level between members, facilitated by the collegial atmosphere of HunterNet, and at the formal level, through needs based training offered or organised by HunterNet. In terms of Doz and Hamel's model (1998) this research confirms that where opportunity allows, cospecialisation relationships exist in terms of integrated offers to clients and attracting projects to the region. Benchmarking — consistent with Buttery and Buttery (1994) — also appears a key driver of HunterNet.

All members interviewed joined the network at the suggestion of existing members suggesting existing relationships, and all members interviewed have built more formalised relationships. Thus it can be assumed that priori trust and relationships are seeds that allow trust and relationships to be built upon, factors Child and Faulkner (1998) regard as vital in cementing looser forms of cooperative strategies such as networks.

This section has made a contribution to the literature by confirming that clusters, networks, formal networking groups and alliances do not have to exist in isolation. Members identify the formal networking group definition developed for this study as representative of HunterNet but stressed that relationships between members are of the informal networking and loose alliance variety.

5.3 Research Issue 2: Benefits of networking

In section 2.3 the author suggests that members receive benefits from membership of a formal business networking group and secondly, that members recognise benefits available from membership of a formal business networking group as important. In section 2.3.1 the author further proposes that the benefits attributed to networking alone in table 2.1 are important to members of a formal business networking group. Research issue 2 thus evolved as what benefits do HunterNet members perceive. The results of this study (see section 4.2.2.1) indicate that HunterNet members highlight three mainly intangible benefits of membership, namely a sense of community and legitimacy, communicating with like minded people and accessing knowledge, information and learning.

The results of this study confirm the author's postulation that members do receive benefits from membership of a formal business networking group. It can be argued that members realisation of benefits has a positive impact on the success of HunterNet because members recognise value from the costs associated with membership and are therefore willing to allocate resources directed at realising further benefits (see Jarillo 1993; Rackham et al 1996). The high realisation of benefits for the categories of small business, large business and owners indicates a high level of interaction within the network by these categories (see Howarth et al 1995; Paterson 1996). This interaction may be promoted by the nodal position of

large businesses (see Doz & Hamel 1998) attracting the flexibility and specialisation offered by smaller businesses (see Buttery & Buttery 1994; Child & Faulkner 1998; Donaldson & O'Toole 2002; Doz & Hamel 1998; Greenhalgh 2000; Jarillo 1993; Osland & Yaprak 1993; Ross 1993; Yoshino & Rangan 1995). The author would argue that the greater benefit realisation by the owner category is a result of the ability to build relationships and trust by demonstrating credibility through interaction (Rackham et al 1996) without having to justify the allocation of resources to related parties.

The benefits highlighted as realised are mainly intangible benefits, one example being accessing knowledge, information and learning (see Culpan 1996; Greenhalgh 2001; Osland & Yaprak 1993; Patterson 1996). Learning is closely associated with networking (see Buttery & Buttery 1994; Child & Faulkner 1998; Doz & Hamel 1998; Yoshino & Rangan 1995) and its realisation through membership was repeated across the results of this study by members highlighting the importance of discussion (see sections in 4.2.2). The quantum of benefit realised is dependent upon the ability of individual members to internalise and leverage knowledge gained through membership of HunterNet (see Doz & Hamel 1998; Yoshino & Rangan 1995). The willingness of members to highlight the realisation of intangible benefits through membership demonstrates an understanding that there are more benefits to networking than just additional revenue (Rackham et al 1996).

The author's proposition that members recognise benefits available from membership of a formal business networking group as important was confirmed. Understanding the range of benefits available decreases the chance that there will be an expectations gap whereby unrealistically low or high expectations results in misallocating resources to networking (see Child & Faulkner 1998; Doz & Hamel 1998). Thus members are able to strive for future realisation of benefits (see Patterson 1996) and recognise that allocating resources to participate in HunterNet (see section 4.2.1.3) increases the likelihood of success within the network (see Jarillo 1993; Rackham et al 1996).

A sense of community and legitimacy (see Abell & Oxbrow 2001; Bergquist et al 1995; Burton-Jones 1999; Park et al 1993; Zerrillo & Rainia 1996) and

communicating with like-minded people (see Abell & Oxbrow 2001; Bergquist et al 1995; Campbell & Wilson 1996; Burton-Jones 1999; Lipnack & Stamps 2000), are the benefits the author has categorised as networking alone (see table 2.1). HunterNet members confirm these two benefits as important thus confirming the author's postulation that they are important to members of a formal business networking group. HunterNet initiatives such as 'HunterNet Group Training', 'Make it in the Hunter', and 'A Model for Action' are examples of having actioned the stated HunterNet Mission of benefiting the region and industry sector resulting in members experiencing a sense of community and legitimacy as an intangible benefit. Communicating with like-minded people allows discussion of issues relevant to participants' particular business concerns (see Abell & Oxbrow 2001; Bergquist et al 1995; Campbell & Wilson 1996; Burton-Jones 1999; Lipnack & Stamps 2000) with derived benefits such as relevant knowledge exchange likely to follow. The focus of HunterNet on engineering related manufacturing increases the likelihood of community actions and communications being relevant to participants, thus increasing the likelihood of a virtuous cycle of interaction through participation (see section 4.2.3.5) leading to realised benefit in turn leading to increased interaction through participation (see Jarillo 1993). It appears domain consensus (see Patterson 1996) has been extended by members to a consensus upon what areas are discussed. That is, members can discuss non-confidential issues that impact upon their businesses with the resultant learning benefiting all or confidential matters between parties enjoying stronger relationships, perhaps resulting in further benefits for the parties concerned (Doz & Hamel 1998; Rackham et al 1996).

HunterNet members have an increased awareness of the competencies of others and this implies the possibility of, and perhaps even willingness, to undertake cooperation strategies. Learning how to cooperate with others strengthens a network over time (see Culpan 1993; Rackham et al 1996).

The author acknowledges that the benefits included in table 2.1 were mainly intangible and this may influence the respondents. However the benefits were paraphrased from the literature and secondly, interviewee generated responses highlighted intangible benefits flowing directly to members or indirectly to HunterNet, the sector or region.

It would be wrong to suggest that members of HunterNet are not interested in tangible benefits (see sections in 4.2.2). However, members emphasised the positive impact of intangible benefits (see Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002) to their businesses and understood that interaction based around intangible benefits can build relationships from which tangible benefits are likely to flow, based upon the promise of future benefits and the delivery of relevant competencies (see Donaldson & O'Toole 2002; Doz & Hamel 1998; Jarillo 1993; Rackham et al 1996).

5.4 Research Issue 3: Relationship Building and Maintenance

In section 2.3.2, the author proposed that active members in HunterNet are in stages three or four of the relationship building model proposed by Batonda (1995) and expanded upon by Erwee, Perry and Tidwell (1999) as illustrated in table 2.2. The results of this study indicate that members are in stages two, three and four of Batonda's (1995) model. The fact that interviewees were in various stages of relationship (see section 4.2.3.2) indicates that the relationships within HunterNet are dynamic. That is, factors such as time and interaction affect individual relationships (see Batonda 1995; Erwee et al 1999; Patterson 1996) within the HunterNet entity. The shared vision of HunterNet in regard to members, region and sector, acts as a point of mutual focus for the relationships within HunterNet to work towards (see Bergquist et al 1995; Patterson 1996). Gains in productivity or competitive advantage do occur from intangible benefits thus reinforcing the positive nature of the interaction (see Jarillo 1993; Rackham et al 1996). HunterNet members' realisation of benefits and the process of working together to achieve future benefits builds trust between parties to a cooperation with a resultant strengthening of the relationship. The sunk costs involved in relationships and the trust underpinning the relationships thus minimises opportunistic behaviour (see Patterson 1996; Tallman et al 1997).

Participation within HunterNet appears to be the key to building relationships with members. Participation in HunterNet initiated meetings, site visits and social events facilitates interaction, which, in turn, increases the chance of relationships being built through a focus on common issues. Even before interaction around the common

resources of businesses (see Patterson 1996), the HunterNet entity acts as the common resource. For example, before interaction generated by the perception that they will receive a tangible benefit such as a supply/acquisition of a service, members can interact through the focus on common industry issues, with HunterNet thus acting as the common resource. A bond of unity promoting interaction (Culpan 1993) thus exists through building the knowledge base of member businesses or initiating and actioning strategies to promote the members, the region and industry sector.

In section 2.3.2 the author suggests that a cluster may exist with transactional relationships alone but there must be mutually beneficial cooperation for a network to exist. The results of this study do not establish that clusters can exist with transactional relationships alone but do support the postulation that mutually beneficial cooperation is required for a network to exist (see sections in 4.2.3). Whilst HunterNet and networking in general were identified by members as being distinct from the Hunter Engineering Cluster (see sections 4.2.1.1-4), there was little direct reference to transactional relationships. However, members did differentiate between a sales call and the relationships built through the discussion of issues at networking meetings suggesting that HunterNet was more than simply ad hoc pools of specialty providers (see Lorange & Roos 1992). Members contribute to HunterNet through cooperating to ensure community actions, tangible and intangible support for members, and discussion of issues or problems, all of which imply mutually beneficial cooperative relationships (see Child and Faulkner1998; Yoshino and Rangan 1995).

The author proposes in section 2.3.2.1 that competition need not negatively affect a network but conflict definitely will. Competition between HunterNet members does occur. Members clearly differentiate between competition and conflict in similar terms to Stern's (1996) view that competing involves doing one's best whilst conflict is undermining each other through underhand practices. Competition between members appears limited by recognition that competitors seldom share identical specialities. When members compete for the same work, there is a recognition that the work will be awarded based upon a rational decision making process trying to maximise value — that is, the buyer decides which competitor offers the greatest

value. Members view conflict as arising from not meeting expectations, be they at the community, individual relationship or more tangible business level.

Competitors do cooperate within HunterNet. Cooperation can be for non-confidential learning, initiatives that benefit the region or industry sector as described above, or alternatively, to win work together or carry out work for each other. HunterNet competitors offer each other the ability to smooth out the troughs in the business cycle whilst minimising fixed costs, and to make use of each other's specialities for mutual benefit (see Doz & Hamel 1998; Child & Faulkner 1998). Work appears to be on a contingency basis based upon relationships that have been developed. That is, there is little evidence of formal relationships detailing complex alliances but examples of informal relationships between competitors based upon trust. Domain consensus (see Zerrillo & Rainia 1996) is formal in regard to HunterNet the organisation focusing upon benefiting the community, industry sector and all members, but informal in regard to relationships acting on a contingency basis for work based upon normal competition and accessing member specialist competencies.

In terms of Hertz's (1996) model of network change, the author postulated that drifting is a normal part of a network reacting to changes in internal or external factors. HunterNet members expressed positive views towards change. Conflict between members is viewed as something between the party's concerned, which should have little impact upon the network. The entrance of new members, competing for projects, or environmental change, are all regarded as elements to pull the network together rather than drive it apart through conflict. The focus is on cooperating in areas that benefit all, thus building relationships, whilst competing for work on a normal business basis, with conflict not promoted whilst ever expectations are met. These results support the statements that managing expectations (see Doz & Hamel 1998; Child & Faulkner 1998) by building information flows through honest, robust and open communications (see Best 2001; Hakansson & Gadde 1982; Porter 1996) will benefit HunterNet and member relationships.

5.5 Research Issue 4: Knowledge Exchange

In section 2.4.1, the author postulates that parties to the cooperation must have an intention to learn from the network before learning can take place. HunterNet members clearly indicate an intention to learn (see section 4.2.4.1-3), a prerequisite for learning to take place. This premise is consistent with Bergquist et al 1995, Child and Faulkner 1998, Doz and Hamel 1998, Kaye and Hogan 1999, Hakansson and Sharma 1996, Lorange and Roos 1992, and is a key driver of membership. The intention to learn thus sets positive conditions for mutually beneficial relationships (see Child & Faulkner 1998; Doz & Hamel 1998; Jarillo 1993), as learning is a benefit all members can enjoy.

Learning within HunterNet emerges as a structured formal approach through training on a needs basis, and informal relationship based discussions of issues, problems, and capabilities amongst members. Both the informal and formal approaches within HunterNet are used for identifying or rectifying current or future knowledge gaps (see Burton-Jones 1999; Delahaye 2003). HunterNet members indicate interaction and relationship building as the means of acquiring and disseminating knowledge, thus enabling discussion amongst peers leading to wider and more diverse sources of knowledge (see Child & Faulkner 1998; Doz & Hamel 1998; Jarillo 1993). Knowledge exchanged within HunterNet occurs across a range of relationships — dependent upon the strength of the relationship — with reciprocity enabling greater access to knowledge and a strengthening of the relationship because of demonstrated competence (Child & Faulkner 1998).

Figure 2.11 illustrates that tacit and explicit knowledge balance out a knowledge source. The author proposed that the representation of corporations by individuals with an interest in engineering impacts upon knowledge within the network. The research issue that emerged is what knowledge is explicit in the network. Explicit knowledge within HunterNet is present in electronic and paper form (see section 4.2.4.1-8), but the main form of explicit knowledge across the membership is tacit knowledge externalised for a discrete time during verbal communications. The object based nature (Poh 2001) of technical specifications, drawings and written

communications within HunterNet are explicit knowledge that corporate members can easily store and access in their knowledge management systems (see Burton-Jones 1999). However, as individuals hold verbal conversations, it is the individuals representing the corporate HunterNet members who have the ability to access and store explicit knowledge through participation, rather than the corporations they represent. The verbalised knowledge can be regarded as explicit because of the shared domain of engineering held by members (see Abell & Oxbrow 2001; Botkin 1999; Delahaye 2003; Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002). It follows that if individuals do not participate within HunterNet, the corporation they represent will miss much of the explicit knowledge available to members (see Botkin 1999; Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002).

HunterNet members indicated that explicit knowledge is exchanged physically or electronically as object or rule based (see Poh 2001) for the purpose of winning work, legislative requirements, process improvement, and finding out about others capabilities. Explicit knowledge management applications and technologies (see Wilcoxson 2003) used by members are primarily process, developmental and, innovation and creation centred. However, there is a large component of know how involved in gaining the most effective utility of these applications and technologies, thus tacit knowledge is a key component to the effectiveness of these tools (see Wenger et al 2002).

The author postulated that in order to be applied to a network, this definition needs to be rewritten as: Knowledge management in regard to networks involves cooperating across organisational boundaries to systematically find, select, organise, distil, present and share authorised information that meets the strategic and operational learning intent of all parties to a cooperation. The results of this research support the rewritten definition. Confirmation of this postulation acknowledges that no individual company or person possesses all knowledge necessary in a complex dynamic environment, and that the social aspect of knowledge is not limited to individual companies (Botkin 1999; Delahaye 2003). The focus of HunterNet members upon problem solving through a learning intent is a focus for the

community aspect of knowledge sharing (see Botkin 1999; Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002).

The author hypothesised that in regard to a formal networking group in a regional industrial cluster, Nonaka and Takeuchi's model (1995) does not adequately cover the constraints on actively sharing knowledge across organisational boundaries which resulted in the research issue, how did they manage to make tacit knowledge explicit. Tacit knowledge conversion into explicit knowledge and back to tacit in terms of Nonaka and Takeuchi's (1995) knowledge exchange model occurs through telephone calls and formal or informal meetings — see section 4.2.4. Trust, relationships, continued interaction, and the bounds of confidentiality appear to minimise the suspected socialisation across boundary's limitation of the model put forward in section 2. That is, the strength of any given relationship cemented by trust determines whether otherwise confidential issues will be discussed across boundary's, and the large amount of potential mutual benefit from knowledge exchange in non-confidential business support areas allows socialisation and discussion across boundaries where relationships may not be as strong. The willingness to externalise tacit knowledge into explicit whilst listening and reflecting upon the externalised knowledge of others through the processes of combination and internalisation suggests knowledge exchange by rational discourse (see Delahaye 2003; Rylatt 2003; Von Krogh et al 2000). The socialisation process relies upon observation as well as listening (see Delahaye 2003), so the participation by members in informal conversation through problem solving, site visits and meetings facilitates the interaction necessary for socialisation.

Discussion of common issues and problems by telephone or face to face meeting involves discussion amongst equals of a problem or passing on asked for advice based upon experience or education. That is, in terms of the literature the discussion may involve two 'equals' discussing a problem or a 'teacher or mentor' offering a 'student or new member' advice (see Burton-Jones 1999; Child & Faulkner 1998; Koulopoulos & Frappaolo 1999; Poh 2001). The diversity of skills and experience across HunterNet means that the roles of 'teacher', 'student', and 'equals' may be interchangeable. This diversity of skills and experience mentioned above means that the codification and diffusibility of knowledge (Koulopoulos & Frappaolo 1999)

depends upon the experience and knowledge of the participants, so explicit and tacit knowledge is dynamic within the relationships inside HunterNet.

HunterNet members primarily rely on internal knowledge protection in terms of the Burton-Jones (1999) model. The HunterNet members recognise that staff hold knowledge vital to the competitive advantage of the business, and that the market influences the value of knowledge to a business, thus deliverable's to clients demonstrate competencies and influence repeat or referred business. Indeed, the face to face component of knowledge based upon relationships was evident in communicating capabilities to clients or potential clients, staff and network partners, and direct approach was the dominant means of approaches with invitations to tender. It can thus be argued that whilst the large component of knowledge held by employees is a potential threat to the business if employees leave, it may also prove a benefit in cooperative strategies that HunterNet members employ. That is, be open about what a business is capable of, provided internal relationships or relationships across boundaries make it difficult to copy and internalise a competency — an argument consistent with Burton-Jones (1999), Child and Faulkner (1998), Doz and Hamel (1998), Koulopoulos and Frappaolo (1999). It could be thus argued that a factor in the relative longevity of HunterNet is members' constant search for and realisation of, the knowledge component within the intangible benefits of networking, resulting in continuous improvement and relationship sunk costs reducing any risk associated with knowledge exchange.

The author's proposition that in HunterNet, sharing explicit knowledge among members is important was confirmed by the results of this study. Members highlight the importance of object based explicit knowledge (see Poh 2001) expressed as understanding other members' capabilities, tender proposals, legislative changes and observation in site visits or industry expositions (see sections 4.2.4.2-6). The constant reference by members to discussions focused upon problem solving is indicative of the importance of explicit knowledge because of the knowhedge built through problem solving, and the relationships and trust built through the processes of knowledge exchange (Botkin 1999; Delahaye 2003). That is, the combined knowledge of members is increased through participating in the knowledge sharing process as detailed above, but the strengthened relationships and trust built through

interaction in the knowledge process increases the chance of continued community and individual benefits (Botkin 1999; Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002).

5.6 Research Issue 5: The roles of individuals in knowledge sharing in networks

The author postulated that the literature on managing alliances will help understand the role of the Executive Officer in a formal business networking group within a regional industrial cluster. The member's responses regarding the HunterNet Executive Officer's role (see section 4.2.5.1) share some similarity with the tasks applicable to a formal business networking group manager illustrated in table 2.4. It follows that this role is very important to the success of a formal business networking group and as such, the individual attributes of the Executive Officer will impact upon the group. Whilst personal characteristics are not within the scope of this research, the amount of references throughout member responses to the positive impact the Executive Officer has on the members and the network indicates that strong relationships exist between the Executive Officer and the members. That is, the Executive Officer relies upon influence (Yoshino & Rangan 1998) enabled by relationships cemented by trust, to acquire and disseminate knowledge across the network. In reaching a position of influence without authority, it can be argued that the Executive Officer must use credibility, competence, awareness, flexibility, interpersonal skills, and sensitivity to increase the chances of cooperation across the network (Child & Faulkner 1998; Yoshino & Rangan 1998), an argument reinforced by the author's casual observation. Influence without authority is after all suited to the informal networks of members and the knowledge sharing community within the HunterNet structure (Botkin 1999; Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002).

The author suggested that some of the tasks listed in table 2.4 will apply to the owners or managers representing member corporations in a formal business networking group within a regional industrial cluster. The tasks of participants in a formal business networking group are generally well received by interviewees with the exception of capturing information to overcome retirement of a member. This one omission may reflect the personal informal nature of the relationships which

whilst technically are between businesses, are in fact played out by individuals (Ross 1993).

The tasks involved in business cooperations as highlighted in table 2.4 was supported by interviewees. The theme in responses mimicked the member-generated responses across the research project of relationship building, interaction through participation, clear communication, future orientation and mutuality. Rather than focusing on business transactions alone, HunterNet members identify management attributes normally expected to lead to long term mutually beneficial relationships (Yoshino & Rangan 1995).

The author hypothesised that the HunterNet Executive Officer or some of the active members are knowledge integrators. Interaction through participation (Lorange et al 1997) appeared a key aspect of access to knowledge integrators as well as acting out the role of the knowledge integrator. Relationships built through interaction allow reciprocity and the focus on the future and the domain similarity of the business sector (Rackham et al 1996) enables and facilitates the knowledge sharing of the knowledge integrator. The knowledge integrators within HunterNet fill in the incompleteness, imbalance and relevance of knowledge (Poh 2001), by using experience and education to offer advice or to discuss a problem. The active participants of HunterNet when viewed as knowledge integrators are in effect boundary spanners (see Krackhardt 1996) between the informal networks within and without HunterNet. That is, participants within HunterNet — including knowledge integrators — seek out other knowledge integrators that may assist in an information gap, resulting in internal and external networks being joined by an interface through knowledge integrators.

The Executive Officer of HunterNet is clearly a knowledge integrator as detailed by Erwee and Brown (2000). Interviewees highlight problem solving, information gathering and dissemination, learning, and advice as role responsibilities, all of which involve knowledge exchange. Knowledge exchange by the Executive Officer is both external and internal to HunterNet with the Executive Officer facilitating members internal and external networks, and like members, being an actor in networks inside and outside of HunterNet.

The predominance of owners and senior managers as business representatives within HunterNet should limit to a degree concern over unintended knowledge leakage highlighted by Skyrme (1999) thus assisting information flow towards and from knowledge integrator nodes (see 4.2.5.2-4). That is, the understanding of the strategic implications of knowledge by senior managers or owners will limit any unintended knowledge leakage although it must be acknowledged that senior management is as susceptible as junior staff to opportunists pretending to be trustworthy. The HunterNet members willingness to exchange knowledge, be it as a knowledge source, an opinion in a discussion or highlighting a problem that requires a solution suggests there are a large number of knowledge integrators within HunterNet. As knowledge is regarded as a benefit, the access to greater knowledge made possible by knowledge integrators (Poh 2001) is a benefit to HunterNet and the HunterNet members.

5.7 Research Issue 6: Developing Trust in networks

As a contribution to the literature, the concept of indicators of trust is developed for this research and the question is asked how important is trust to HunterNet. The indicators of trust in table 2.5 of the literature review were well received by members — see section 4.2.6.1. Recognition by the members of a formal business networking group of these indicators as contributing factors when looking to trust, supports the arguments put forward by the authors in table 2.5.

The researcher will concentrate on the top eight indicators of trust selected by HunterNet members. A demonstrated long term commitment to relationships, and predicability, dependability and faith in the other party allows HunterNet members to have some confidence that risk is minimised when building relationships and trust (Howarth et al 1995; Lewis 1999; Osland & Yaprak 1993). Open and honest communications, and the ability to make, receive and act upon non-emotive constructive criticism will minimise any misunderstandings between members and help members understand each other's points of view (Child & Faulkner 1998; Howarth et al 1995; Jarillo 1993; Rackham et al 1996). Commitment to similar or agreed goals allow members to interact whilst focusing on solutions and celebrating success, thus building camaraderie, trust and relationships (Botkin & Mathews 1992;

Hargrove 1998; Howarth et al 1995; Lewis 1999; Lorange & Roos 1992). Setting realistic expectations and meeting expectations allows HunterNet members to avoid unnecessary conflict and promote bonding through the process of working together and the celebration associated with realising an expectation (Child & Faulkner 1998; Howarth et al 1995; Jarillo 1993). A clear understanding of knowledge or resources that are to be shared builds the trust of members by giving a better understanding of the boundaries of the relationship and an indication of the future orientation of the other the party through the level of commitment (Lewis 1999). Evidence of reciprocity, reputation and mutual benefit allows members to confirm that trust in a party is justified through demonstrated reciprocity and mutual benefit (Howarth 1995; Jarillo 1993; Lipnack & Stamps 2000), or to have evidence of trustworthy behaviour inferred by reputation (Lynch 1989).

Trust cements the informal networks (Child & Faulkner1998) within the formal networking group structure of HunterNet. It takes time to build the social capital that enables trust (Lipnack & Stamps 2000) so trust will grow as social capital grows. It follows that the HunterNet members willingness to focus on the longer-term outcomes associated with membership allows the time to build trust with other parties inside of the formal business networking group structure.

Bonding occurs when trust is established with the relationships cemented by the bonds of trust allowing future benefits (Howarth et al 1995). That is, the interaction of HunterNet members through the discussion of common concerns and the focus of benefiting the community builds social capital, which in turn builds trust. This trust allows bonding in relationships reinforced by realised tangible and intangible benefits and the promise of future benefits. This view is supported by examples noted by members when asked if they would like to add anything at the conclusion of the interview.

Transaction costs are normally driven down by trust (Jarillo 1993). Whilst the research issues did not test this notion directly, the responses that indicated more formal relationships and cooperation between competitors implies a reduction in transaction costs when compared to a transactional relationship.

Members indicate that no examples of mistrust had occurred but when pressed for an example of mistrust, breach of confidentiality emerges (see section 4.2.6.2). Opportunism is the antitheses of trust (see Pyatt & Redding 1999) and opportunism appears non existent within the relationships HunterNet members hold — see section 4.2. A breach of trust results in informal sanctions by members in direct and inferred relationships before any action the formal business networking group could take. The sunk cost in the relationships within HunterNet and the promise of future benefit from the relationships makes the breaching of trust an expensive exercise. It can thus be argued that the lack of breaches of trust is a major component in the longevity of HunterNet. It must also be acknowledged that a breach of trust may prove damaging or even fatal to the network and as such is a constant threat. The results of breach of trust are real in nature but what defines a breach of trust is real only in the perceptions of the party's involved. Therefore the high importance given by HunterNet members to open and honest communication implies individual perceptions have more chance of being aligned with a common view of reality, perhaps another factor in the longevity of relationships within HunterNet.

5.8 Conclusions about how knowledge sharing emerges in a formal business networking group.

HunterNet is a formal business networking group but the relationships within HunterNet are informal. Thus, the informal relationships are the means for knowledge sharing amongst HunterNet members (see Buttery & Buttery 1994; Child & Faulkner 1998; Doz & Hamel 1998; Ford et al 1986; Jarillo 1993;Yoshino & Rangan 1995). The community interest and domain similarity of the engineering sector across members further promotes knowledge sharing because of the focus members have of meeting shared objectives (see Patterson 1996).

HunterNet members recognise, realise and value tangible and intangible benefits that arise from membership of HunterNet. Building knowledge is regarded by members as a benefit of HunterNet membership with knowledge sharing being a vital component of the building of knowledge (see Culpan 1996; Greenhalgh 2001; Osland & Yaprak 1993; Patterson 1996). The sense of community, and the meeting of like minds that members value so highly, facilitate knowledge sharing (Botkin 1999; Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002).

The key to building relationships within HunterNet appears to be participation. Participation in HunterNet events facilitates interaction between members which promotes knowledge sharing (Botkin 1999; Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002). Domain consensus and the sunk costs invested in relationships and trust minimise the risk associated with knowledge sharing (see Patterson 1996; Tallman et al 1997) by members of HunterNet.

Knowledge within HunterNet is primarily exchanged through informal conversation, a form of rational discourse that includes the knowledge exchange processes of socialisation, externalisation, combination and internalisation (see Delahaye 2003; Rylatt 2003; Von Krogh et al 2000). The shared domain of engineering across HunterNet means members have the tacit knowledge to understand engineering related explicit knowledge externalised by members in conversation (see Abell & Oxbrow 2001; Botkin 1999; Delahaye 2003; Rylatt 2003; Saint-Onge & Armstrong 2004; Wenger et al 2002). The HunterNet members thus build knowledge as individuals or a group, and build relationships and trust through the process of knowledge building by way of informal conversation (Botkin 1999; Delahaye 2003). Members have a learning intent, which is a prerequisite for learning and by extension, knowledge exchange (Bergquist et al 1995; Child & Faulkner 1998; Doz & Hamel 1998; Kaye & Hogan 1999; Hakansson & Sharma 1996; Lorange and Roos 1992).

The Executive Officer and the active members of HunterNet could be defined as knowledge integrators. Influence enabled by relationships cemented by trust allows the Executive officer to acquire and disseminate knowledge across HunterNet (see Yoshino & Rangan 1998). Active participants within HunterNet act as boundary spanners between informal networks with knowledge being the resource exchanged and built upon (see Krackhardt 1996).

HunterNet members regarded trust as important and it is trust that cements the informal relationships that allow members to exchange knowledge (Child and Faulkner1998). Trust built over time allows members to partake in the sharing of knowledge because the risk of opportunistic behaviour is minimised by the sunk

costs invested in trust and relationships by members (Howarth 1995; Jarillo 1993; Lipnack & Stamps 2000).

In summary, HunterNet is a formal business networking group that includes informal relationships between members. Benefits of membership include both intangible and tangible benefits. Relationships are built through community focused participation enabling interaction around issues, problems and domain similarity. Knowledge is exchanged primarily through relationship development and with active members acting as knowledge integrators. Trust is built over time through demonstrated dependability. Open and honest communication cements all aspects of the relationship-based formal business networking group.

5.9 A Formal Business Networking Group Process Model

The model depicted in figure 5.1 and the accompanying description is the author's contribution to theory. A formal business networking group process model has been built and the primary path of the model will first be discussed followed by feedback across the process.

The first step of the model is the formal business networking group structure and purpose. The formal networking group should have domain similarity to ensure the group and the members of the group have an identity and a focus. This identity and focus should be detailed in a vision of what is possible, a mission statement of what is important and strategy detailing how the vision will be reached. Normal business planning with performance indicators and variance metrics will assist the focus of participants. A community focus will allow participants to move as one towards mutually beneficial stated goals and objectives. Members or prospective members will most probably exit the process if they are not willing to contribute, benefits are not recognised, are not willing to interact, or trust is broken.

The second step of the model involves initial trust and perhaps even existing relationships allowing interaction and contribution to the network with the expectation of future individual and mutual benefit to be realised over time. Interaction takes place through participation in the organised events of the formal business networking group and through informal meetings or communication

between members. Contribution is by way of any combination of resources, but membership fees to fund the network, time, and knowledge expressed in conversation would be normal starting points. The norm of reciprocity would normally be activated by interaction and demonstrated contribution resulting in strengthened relationships. Whilst benefits of membership may be realised at this stage, it is the promise of future benefits over time that promotes initial interaction. Benefits may be mutual or individual and may be tangible, intangible or a combination of both. For example, working towards a benefit to the community is intangible in that each individual has a different measure whilst gaining additional work or contacts is clearly a tangible benefit of membership. Discovering a better safety procedure is tangible in regard to the documented procedure or measured benefits that flow from it, but intangible in regard to the knowledge backing the procedure and how it is used. It would be normal to expect that not all benefits are visible to members at this stage, but interaction in striving for visible benefits will build the relationships necessary to increase the likelihood of benefits being realised. It follows that more experienced members identifying potential benefits and giving examples of realised benefits would encourage new members to interact and build relationships. Parties are able to exit the process if benefits are not recognised, relationships are not strengthening, or trust is broken.

The third step of the model involves continued interaction over time leading to a building of relationships, trust, and of knowledge regarding the benefits available. The domain similarity, community vision and learning focus of the formal business networking group means that all members can strive towards realisable benefits provided they recognise learning and the community as beneficial. Interaction to meet community or learning goals should lead to relationships and trust being built provided the experience is positive. As relationships build, knowledge of the benefits possible through membership should increase, the value of which acting as a spur to further strengthen relationships through continued interaction and the building of trust. Members may move onto step 4 realisation of benefits and/or step 5, building new relationships. Parties are able to exit the process if benefits are not recognised, relationships are not strengthening, or trust is broken.

The fourth step of the model involves members enjoying the realisation of intangible or tangible, mutual or individual benefits over time. Realisation of benefits should allow members to recognise value for the resources deployed in membership, thus ensuring added enthusiasm for interaction. Increased interaction should lead to a strengthening of relationships and trust, provided interaction remains positive. Intangible benefits are vital as any member can enjoy community-focused benefit realisation provided community benefits are valued and recognised. This also applies to the benefits containing learning if acknowledgment that learning has benefited one's business is possible, even if no tangible benefit has as yet flowed from the learning. Realised tangible benefits will of course strengthen the will to interact but tangible benefits are often harder to realise. However, increased interaction from the enthusiasm resulting from intangible benefits realised would normally be expected to lead to stronger relationships and greater trust, which in turn makes tangible benefits more likely. This is particularly the case if the intangible benefit, learning, adds to the offer a business makes to clients or if the process of learning demonstrates competencies to potential clients, be they direct clients or referred clients. Parties are able to exit the process if benefits are not realised or recognised, relationships are not strengthening, or trust is broken.

Step 5 involves new relationships based upon trust being built within the group, once again built through interaction and contribution based upon the promise of future individual and mutual benefits. This step can be reached from step 3 or 4 but it is important to continue to build new relationships to increase the chance of benefits. This can be by way of intangibles such as learning or to fill more tangible gaps in the business value offer to clients or potential clients. The process is the same as the other steps with interaction around future benefit leading to relationships and trust cemented by realised benefit. However, constantly building new relationships increases the chance of realised benefits from the relationship and at the same time is an insurance policy against existing relationships going wrong. Parties are able to exit the process if benefits are not realised or recognised, relationships are not strengthening, or trust is broken.

Step 6 involves leveraging off the cooperation skills learned in the formal business networking group into networking in general and/or cooperation strategies with

clients/suppliers outside of the formal business networking group structure. Looking for ways to interact so that relationships and trust are built will be reinforced by realisation of mutual benefit. An example would be a supplier offering greater tangible value to a client through strengthened relationships enabling intangible benefits to the supplier such as a better understanding of client problems. Like the earlier steps, focusing on a community issue or a common problem will increase the likelihood of benefits being realised, be they tangible, intangible or a component of either. Parties are able to exit the process if benefits are not realised or recognised, relationships are not strengthening, or trust is broken. Exit is included because a bad cooperative experience external to the group will impact upon a party's interaction within the formal business networking group.

Step 7 involves trust and relationships being reinforced by continued interaction and realisation of individual and mutual benefits facilitating productivity gains through continuous improvement. Productivity gains and continuous improvements benefit both the participating businesses and the community. A business, a region and a country all benefit over time from productivity gains, be it by way of increased competitive advantage, greater employment, increased profits or lower costs. This in itself should spur participants to continue to interact, build relationships and trust with the expectation of continued benefit, be it individual, mutual, tangible or intangible.

Each step of the model mentioned so far feeds back into every other step. Thus a negative experience risks a vicious cycle whilst a positive experience increases the likelihood of a virtuous cycle. The feedback mechanisms on the right hand side of the model impact upon every part of the model because each individual experience will affect members to varying degrees. Broken trust or conflict between parties is likely to negatively affect the experience of membership, perhaps making interaction less likely or damaging relationships. If interaction or relationships are lessened by a breach of trust or conflict, it follows that there is a lower likelihood of benefits being realised resulting in more chance of a member exiting the formal business networking group. If a member exits the formal business networking group, the resources possessed by the member leave the group. Whilst the members may still be able to access the resources of the former members if relationships still exist, the

relationship is likely to drift apart over time because there is no longer the common community vision that members share. That is, the relationship is now purely based around the business proposition if the ability to realise community benefits or learning no longer exists. Broken trust or conflict is likely to feedback into all steps of the model.

Membership change is included as a separate feedback mechanism because it can be a positive or a negative to the formal business networking group. If a member who actively interacts with other members and who possesses competencies that benefit the group as a whole leaves, the group is likely to suffer because the access to competencies and knowledge of that member would be expected to dissipate over time. However, if a new member joins with competencies that benefit the group, and that new member interacts with other members, the group will be strengthened. It should be added that new or existing members who are focussed on opportunistic outcomes rather than mutual benefit will damage the group as a whole.

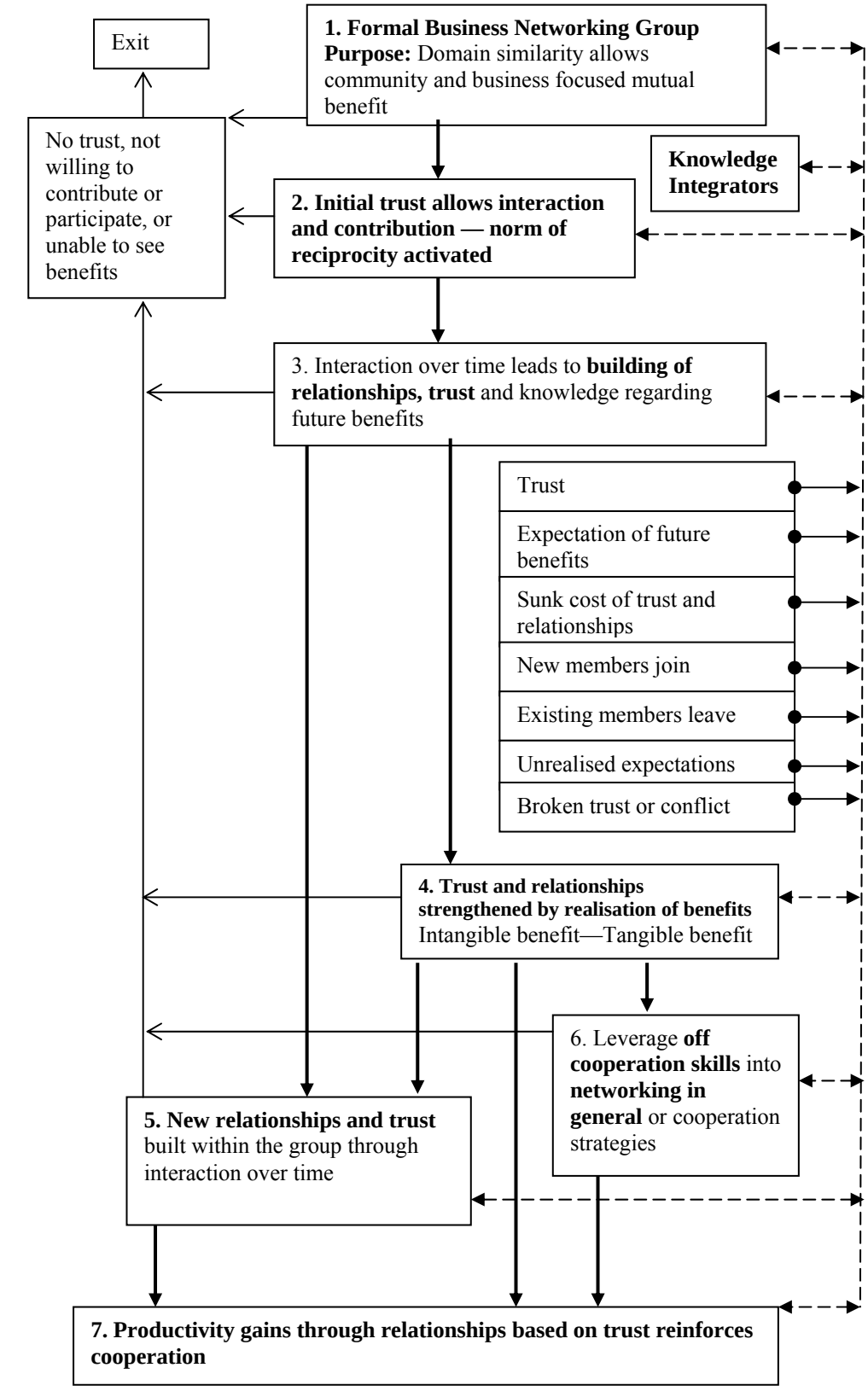
The expectation of future benefits is included as a feedback mechanism because it allows members to risk the contributions and trust required to build relationships. This future orientation allows interaction, from which a virtuous cycle of trust and relationships building, benefit realisation and interaction continually builds. It follows that the feedback mechanism of unrealised expectations should be included to recognise that expectations are not always met. Unrealised expectations may result from imagined or real perceptions so it is important that expectations are managed if the group and the individuals are to realise full potential value from membership.

The sunk cost of trust and relationships balances out the risk of broken trust or conflict. That is, members have invested in relationships and trust over time so risk losing this sunk cost if trust is broken or conflict is promoted. This sunk cost is common across all steps and all members making it even more expensive to promote conflict or breach trust. That is, if members break trust or actively promote a conflict with another member, it is likely to damage the relationships with other members as well, adding to the expense. Trust is included as a separate feedback mechanism because it is trust that cements the informal relationships throughout the formal business networking group. If trust did not exist, the risk associated with knowledge

exchange would be expected to be too great for members to participate in, with a resultant lower benefit realisation.

The knowledge integrators facilitate every step of the formal business networking group model. Much of the knowledge involved within the group is tacit and even explicit knowledge may not be readily accessible to all members. As intangible benefits (or concepts) are perceived in terms of knowledge, the knowledge integrators strengthen the network by actively passing knowledge around the network. This may be actioned by way of identifying benefits, giving examples of benefits realised, acting as a teacher, suggesting who to talk to or discussing problems with members, all of which promote relationships and trust. Any member can benefit by learning provided they participate. It is important to note that knowledge integrators are able to exit the process at any of the steps if benefits are not realised or recognised, relationships are not strengthening, or trust is broken, an event most likely to cause a great deal of damage to the formal business networking group!

Figure 5.1 Formal Business Networking Group Process Model



(Source: developed for this research)

5.10 Contributions to practice

The findings of this research project should prove beneficial to HunterNet and HunterNet members. The benefits of networking can be used as a learning tool for members to ensure that strategies are developed to maximise benefit recognition and realisation. That is, members highlighted the realisation of different benefits resulting from membership, so a discussion reflecting upon the findings of this research may result in strategies for members to enjoy greater realisation of benefits from membership. The importance of informal relationships built through interaction should be emphasised to members. If members don't participate in the network, it is unlikely that the benefits of membership will be maximised.

Members may benefit from a better understanding of the knowledge exchange process. Participating in the informal discussions surrounding problems or issues benefits all participants. Leveraging this knowledge into their relationships with clients or suppliers will benefit members and the group as a whole because success helps reinforce a virtuous cycle.

The indicators of trust developed for this project may help members better understand who to trust. However, this tool is most probably of greater benefit when deciding if one is sending the correct trust indicators to other parties. A discussion by members around this tool may benefit members.

HunterNet or HunterNet members could use the Formal Business Networking Group Process model as a learning tool. The use of the model may also strengthen arguments put to various stakeholders such as Government, large project originators or potential members.

5.11 Limitations of the study

Only one formal business networking group was studied so the generalisibility of this study has not been tested. Environmental factors render every business group different but the use of prior theory should have minimised this factor.

There is some limitation to structured interviews. Interviewees are not able to fully express themselves because of the structured nature of the interview protocol. This limitation is minimised by the guidance of the academic supervisor and the use of prior theory. Nonetheless, prior theory, the researcher and the academic supervisor may inadvertently influence the interviewee through the interview protocol.

5.12 Directions for future research

Future research could research the framework and application of the Formal Business Networking Group Process Model on other networks. It could investigate other contributions developed for this research such as the summary of benefits of networking and trust indicators in different types of networks. Verifying whether clusters, networks and alliances are interconnected concepts is another area of future research the model could assist. Research around the model could further investigate to what extent the different propositions that were formulated apply to other networks, clusters or alliances.

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Appendices

Appendix 1.

Interview protocol: HunterNet, the Competitive Edge in Engineering.

Research Question: how does knowledge sharing emerge in a formal business networking group?

Research Issues.

Research Issue 1: What type of alliance, network or cluster is HunterNet?

Research Issue 2: How do HunterNet members perceive benefits from networking?

Research issue 3: How do HunterNet members build and maintain relationships?

Research issues 4: How do HunterNet members exchange knowledge?

Research Issue 5: Are the active members of HunterNet knowledge integrators?

Research Issue 6: How important is trust to HunterNet?

About the interview participant (general information)

NB: All information is confidential. You can pull out of the research process at any time. Please bring any feelings of discomfort to my attention so we can terminate the interview immediately.

What is your current title in your company?

- *Ask for a business card.*

Do you have an equity position in the company?

- *If yes, majority shareholder; minority shareholder; sole shareholder*

Briefly describe your current job responsibilities?

Research Issue 1. What type of alliance, network or cluster is HunterNet?

1.1 Which definition best describes HunterNet?

Could you expand on why you chose that definition?

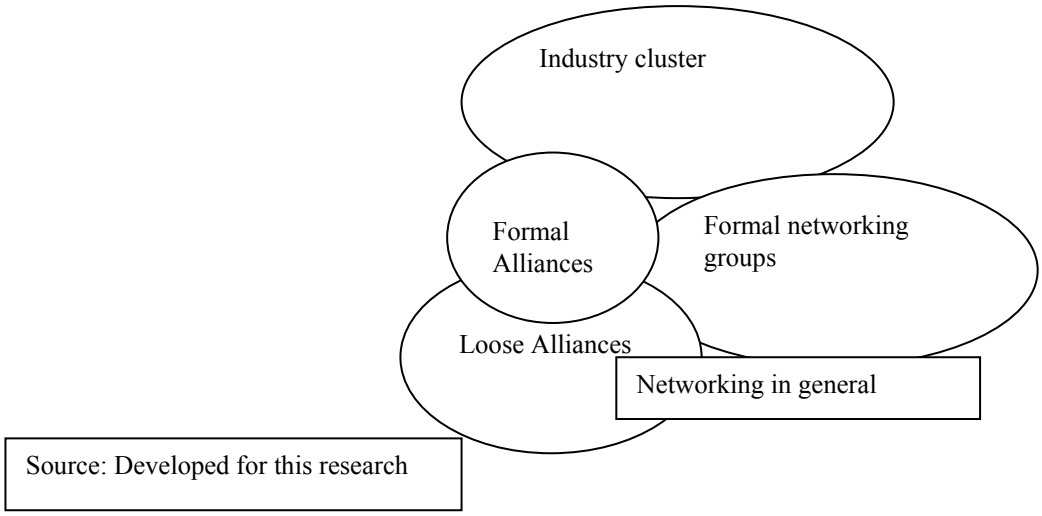
Cluster Definition: Porter (1998 p.199) describes a cluster as 'a geographically proximate group of interconnected companies and associated institutions in a particular field, linked by commonalities and complementarities.'

Alliance definition: Two or more independent companies involved in a mutually beneficial formalised relationship to serve a predetermined purpose.

Network Definition: ‘two or more organisations involved in a relationship that maintains all participants as separate corporate entities to their mutual benefit.’ (Buttery & Buttery 1994 p.17).

Formal networking group definition: A formal group formed to facilitate the networking of independent members so that relationship building and relationship maintenance can take place with a view to delivering mutually beneficial outcomes through working together

1.2 Could you view the following diagram and give your own perceptions of how your business fits in and how HunterNet fits in?
Clusters, networks and alliances as interconnected concepts (developed for this research).



Source: Developed for this research

1.3 How did you come to join HunterNet?

1.4 Have you formed more formalised relationships with HunterNet members?
If yes, please expand.

Research Issue 2. How do HunterNet members perceive benefits from networking?

2.1 Using the following table, could you indicate how important these benefits are in the first instance and secondly, indicate with a tick which benefits your receive through membership of HunterNet?

Table 1 Benefits of networking

Benefit	**Less important–Very important**				
Accessing technology	1	2	3	4	5
Accessing labour	1	2	3	4	5
Economies of scale	1	2	3	4	5
Accessing expertise	1	2	3	4	5
Private sector leadership	1	2	3	4	5
Inventory savings	1	2	3	4	5
Accessing/Building Knowledge, information and learning	1	2	3	4	5
Accessing core competencies	1	2	3	4	5
Coordinating and speeding up the value chain	1	2	3	4	5
Economies of scope	1	2	3	4	5
Improve strategic position	1	2	3	4	5
Increased flexibility, efficiencies & rewards	1	2	3	4	5
Expand capabilities to meet client demand for integrated offer	1	2	3	4	5
Reduce transaction costs	1	2	3	4	5
Reduce risk and uncertainty	1	2	3	4	5
Sense of community & legitimacy	1	2	3	4	5
Share R&D costs and shorten design and development stages	1	2	3	4	5
Share resources – resource access	1	2	3	4	5
Strengthen customer-supplier links	1	2	3	4	5
Maximise Synergies across the value chain	1	2	3	4	5
Communicate with like minded people	1	2	3	4	5

2.2 What competencies have you gained from being a member of Hunternet?

Research issue 3: How do HunterNet members build and maintain relationships?

3.1 How do you meet people within HunterNet?

3.2 Using the following examples, could you identify which step best illustrates your current position in HunterNet?

Developing relationships	**Hunternet example**
searching process	Attend meetings to meet members, looking at member websites or brochures to search for partners.
starting process	Join committees, attend meetings and start to work with members who you feel comfortable with, and where mutual benefit exists
development processes	Develop the relationship by jointly planning goals, celebrating realisation of goals and increasing mutual reliance and benefit to fill gaps in all parties offers, and create value.
maintenance processes	Use the relationships developed as one of the ways evaluated of meeting a market gap. As higher levels of trust and past success allow stronger relationships, full and frank identification and solution of problems offer more opportunities to realise mutual benefit
termination processes	Terminate relationships that don't work or no longer work based on fact. Keep open options for future cooperations by staying in the network and committees.

Source: Adapted for this research from Batonda (1995) and Erwee, Perry and Tidwell (1999).

3.3 How would you describe what would constitute competition and conflict within HunterNet?

3.4 Do you seek to cooperate with competitors within HunterNet? If yes, how do you do this?

3.5 Could you examine the following diagram and explain in similar terms how you go about moving between relationships within HunterNet?

How is your relationship with other members affected by projects within HunterNet?
How are your relationships within HunterNet affected by membership change?
How is relationship with other members affected by dissatisfaction with a member?
How are your relationships with other members affected by external environmental factors?

		Type of Change	
		Gradual	**Radical**
Integration	**Decrease**	Drifting away	Splitting a net
	Increase	Drifting closer	Joining of nets

Source: Hertz 1996 p.185

<u>Research issue 4: How do HunterNet members exchange knowledge?</u>

(Researcher to give a brief explanation of explicit and tacit knowledge)

4.1 How do you encourage your staff to share and build knowledge?

Within your organisation

Outside your organisation

4.2 How do you go about learning from HunterNet, including members?

4.3 How do you communicate your business's capabilities and competencies?

Within HunterNet?

4.4 How do you find out about projects or work that HunterNet may have identified?

4.5 How do you let other members know that you have work they may wish to quote for?

4.6 Could you look at the table below and indicate your perceptions of the importance of the various protection points listed. (Researcher to give a brief explanation of internal protection and external protection of knowledge)

Firm Knowledge					
Internal Protection — Firm based	Less important–Very important				
Knowledge tacitness — difficult to codify and diffuse	1	2	3	4	5
Knowledge complexity	1	2	3	4	5
Firm specificity of knowledge	1	2	3	4	5
Knowledge embedding — routines, directives, processes, products	1	2	3	4	5
Organisational job design	1	2	3	4	5
Incentives for knowledge workers	1	2	3	4	5
External protection — market based	**Less important—Very important**				
Patents	1	2	3	4	5
Copyrights	1	2	3	4	5
Trade secrets	1	2	3	4	5
Legal contracts with suppliers/collaborators	1	2	3	4	5
Industry concentration	1	2	3	4	5
Time to market	1	2	3	4	5
Time and cost to imitate/replicate	1	2	3	4	5

Source: Adapted for this research from Burton-Jones 1999

4.7 Which of the methods in the following table could you use in the future to communicate with HunterNet members?

Table The KM Spectrum: Knowledge management technologies and applications (Adapted for this research from Willcoxson 2003)

	Transactional	Analytical	Asset Management	Process	Developmental	Innovation and creation
Knowledge Management Applications	Case based reasoning Help desk applications Customer service applications Order entry applications Service agent support applications	Data warehousing Management information systems Decision support systems Customer relationship management	Intellectual property Document management Knowledge valuation Knowledge repositories Content management	TQM Benchmark Best practice Quality management Business process re-engineering Process improvements Lessons learned Methodology SENCMM ISO9XXX Six Sigma	Skills development Staff competencies Learning Teaching Training	Communities Collaboration Discussion forums Networking Virtual teams Research and development Multi-disciplined teams
Enabling Technologies	Expert systems Cognitive technologies Semantic networks Rule-based expert systems Probability networks Rule induction Decision trees Geospatial information systems	Web crawlers Relational and object DBMS Data analysis and reporting tools	Document management tools Search engines Knowledge maps Library systems	Workflow management Process modelling tools	Computer based training Online training	GroupWare E-mail Chat rooms Video conferencing Search engines Voice mail Bulletin boards Push technologies Simulation technologies
Portals, Internet, Intranets, Extranets						

Research Issue 5. Are the active members of HunterNet knowledge integrators?

5.1 What are your expectations of the role of the HunterNet Executive Officer?

5.2 Could you indicate which of the tasks in the following table are applicable to the top management or owners?

Unique Tasks applicable to top management or owners involved with a formal networking group in an engineering cluster	**Tasks of top management or owners involved in a cooperation**
Capture crucial organisational knowledge to tide company over if owner or key manager retires Ensure attendance at meeting's by enthusiastic representatives Interact with other members at meetings and follow up contacts Build relationships by participating in committee's where your representative can make a positive contribution Demonstrate enthusiasm for the network to all staff and other members Celebrate wins with the network Ensure mutually beneficial relationships with members	Meet regularly with top executives from alliance partners, maintaining good relations Identify and act upon strategic opportunities combined partner competencies make possible Ensure that the strategic focus is not clouded by operational detail Quick decision making based on long and short term needs Maintain clear lines of communication Ensure robust discussion with a strategic focus between counterparts Ensure staff see top level interaction and enthusiasm for the cooperation Build and maintain personal relationships with cooperation executives during and after the cooperation Ensure that the strategic intent for the cooperation and the organisation is complementary Action strategic intent and the reasons for the action to minimise staff fears and ensure cooperation Ensure appropriate personnel and resources are allocated to the cooperation

(Source: Constructed from Yoshino and Rangan 1995 and research for this project)

5.3 How do the members of HunterNet (including yourself) view their tasks in knowledge sharing and integrating?

Research Issue 6: How important is trust to HunterNet?

6.1 Using the table below, could you indicate the importance to you of the indicators of trust listed?

Indicators of Trust	**Less important–Very important**				
Demonstrated long term commitment to honest relationships	1	2	3	4	5
Commitment of appropriate resources to the relationship	1	2	3	4	5
The ability to make, receive and act upon non-emotive constructive criticism	1	2	3	4	5
Individual interaction through social activities	1	2	3	4	5
Setting realistic expectations and meeting expectations	1	2	3	4	5
Commitment to similar or agreed goals	1	2	3	4	5
Minimal discord	1	2	3	4	5
Open and honest communications	1	2	3	4	5
A clear understanding of knowledge or resources that are to be shared	1	2	3	4	5
A clear definition on what will belong to whom upon relationship termination	1	2	3	4	5
Previous positive experience of a particular individual	1	2	3	4	5
Previous positive experience of a respected colleague with an individual	1	2	3	4	5
Shared interests, common concerns and values	1	2	3	4	5
Evidence of reciprocity, reputation and mutual benefit	1	2	3	4	5
Predicability, dependability and faith in the other party	1	2	3	4	5
Calculating potential risk to potential benefit when evaluating willingness to trust	1	2	3	4	5
A recognition that once broken trust reverts to zero	1	2	3	4	5
Other indicator:					
Other indicator:					

Source: developed for this research

6.2 Could you give me some examples of what you would view as untrustworthy acts within HunterNet?

About the company, market, competition and customers (general info)

Please describe your company in terms of the following areas.

- Number of employees
- Revenue Range: Less than 1 Million dollars; 1—5 Million dollars; 5—10 million dollars; 10—15 million dollars; 15—50 million dollars; 50—100 million dollars; More than 100 million dollars.
- Are you involved in services, manufacturing or both?
- Major product/service offerings?

- How would you describe your core competencies?

Any additional information you would like to provide about HunterNet that we have not covered.

- *Pause for at least 5 seconds for the interviewee to reflect on the session.*
- *Reminder – Thank the interviewee for his/her time and effort and if necessary, will contact him/her for more information through the phone or by e-mail.*

Appendix 2 Embedded case study characteristics

Case Study	Full time employees	Turnover range	Industry sector
C1	1500	$100 million plus	Engineering manufacturing/services
C2	1500	$100 million plus	Education services
C3	40	$1-5 million	Engineering services
C4	140	$15-50 million	Engineering services
C5	35	$5-10 million	Engineering manufacturing/services
C6	80	$15-50 million	Engineering manufacturing
C7	88	$15-50 million	Engineering manufacturing/services
C8	22	$1-5 million	Engineering manufacturing
C9	13	$1-5 million	Engineering manufacturing/services
C10	18	$1-5 million	Engineering manufacturing
C11	14	$5-10 million	Engineering manufacturing/services
C12	120	$15-50 million	Engineering manufacturing/services
C13	270	$50-100 million	Engineering manufacturing/services
C14	100	$15-50 million	Engineering manufacturing/services

Appendix 3 Example of data reduction techniques

Appendix 3-A Assigning numbers to responses involving similar patterns, General member research issue 1.1 Which definition best describes HunterNet? (Source: developed for this research)

	C3Z1	C3Z2	C4X	C5Z	C5Y	C6X	C6Y	C7B	C7Y	C8Z	C9X	C10Z	C10Y	C11Z	C11Y	C12Z	C12B	C13Z	C14Z1	C14Z2
Cluster definition **(1)**	X			X			X													
Cluster definition close **(1)**											X									
Alliance definition **(2)**				X						X										
No single predetermined purpose **(2)**	X	X				X	X						X					X	X	
Networking definition **(3)**				X									X		X					
Networking definition next closest **(3)**	X	X	X								X								X	
Formal networking group definition **(4)**		X	X	X	X	X		X	X		X	X	X	X		X	X	X	X	X
Formal Group **(4)**		X					X		X			X		X		X	X	X		
Structured organisation with formal meetings and organised visits **(4)**				X	X		X											X		
It is formal in that its organised, but relationships are informal **(4) (5)**		X			X		X	X			X	X	X	X						
Relationship Building and Maintenance **(5)**		X	X			X	X	X			X	X				X	X	X	X	X
Relationships take time to build so your reputation and the reputation of other parties must be built and maintained **(5)**	X	X		X	X						X					X			X	X
We had no great expectations of HunterNet when we joined – relationships are a time based thing so maintaining positive reputations are vital **(5)**	X	X					X					X	X	X		X				
In the past, we'd shop around a job, now we try and work with someone we have a relationship with to reach a mutually beneficial outcome **(5)**		X		X	X					X		X	X	X					X	X
Put information and knowledge into the pot and we're all better off **(6)**	X	X	X	X	X	X	X			X		X				X	X		X	X
Find out what's going on **(6)**	X	X	X	X	X	X	X			X	X	X		X					X	X
Talk to colleagues about issues they don't have any others to talk to **(6)**	X	X		X		X				X	X	X				X	X	X	X	X
Working together **(7)**		X		X	X					X	X	X		X	X					
Mutual benefit **(8)**		X	X	X	X			X		X	X	X		X	X	X		X	X	
Facilitates networking **(9)**		X						X		X	X	X		X		X	X	X	X	X
Independent members **(10)**			X		X			X			X			X		X	X	X		X

Appendix 3-B Reduction of responses that share similar patterns, General member research issue 1.1 Which definition best describes HunterNet?

	C3Z1	C3Z2	C4X	C5Z	C5Y	C6X	C6Y	C7B	C7Y	C8Z	C9X	C10Z	C10Y	C11Z	C11Y	C12Z	C12B	C13Z	C14Z1	C14Z2
Formal networking group definition		X	X	X	X	X		X	X		X	X	X	X		X	X	X	X	X
It is formal in that its organised and structured, but relationships are informal, take time to build, and must be maintained over time	X	X	X	X	X	X	X	X			X	X	X	X		X	X	X	X	X
Working together for mutual benefit		X		X	X			X		X	X	X	X	X	X	X		X	X	X
Facilitates networking of independent members		X	X		X			X		X	X	X		X		X	X	X	X	X
Talk to colleagues about any issues (including what's going on or problems) thus building and combining information and knowledge for mutual benefit	X	X	X	X	X	X	X			X	X	X		X		X	X	X	X	X
Networking definition next closest	X	X	X	X							X		X		X				X	
No single predetermined purpose	X	X				X	X						X					X	X	

(Source: developed for this research)

Appendix 4 - 1 Benefits of networking General Members and Patrons

Benefit	Importance of Benefit n = 20						Benefit Received From HunterNet n = 24	
	General n = 20			Patron n = 4			General n = 20	Patron n = 4
	Less Important	Neutral	More Important	Less Important	Neutral	More Important	Benefit Received	Benefit Received
Accessing technology	50 %	20 %	30 %	25 %	25 %	50 %	40 %	0 %
Accessing labour	55 %	15 %	30 %	50 %	0 %	50 %	35 %	25 %
Economies of scale	45 %	25 %	30 %	25 %	0 %	75 %	10 %	25 %
Accessing expertise	5 %	35 %	60 %	25 %	0 %	75 %	65 %	0 %
Private sector leadership	10 %	20 %	70 %	50 %	0 %	50 %	75 %	50 %
Inventory savings	65 %	15 %	20 %	50 %	25 %	25 %	5 %	0 %
Accessing/Building Knowledge, information and learning	15 %	15 %	70 %	0 %	0 %	100 %	85 %	75 %
Accessing core competencies	25 %	25 %	50 %	0 %	25 %	75 %	30 %	50 %
Coordinating and speeding up the value chain	40 %	5 %	55 %	0 %	0 %	100 %	35 %	75 %
Economies of scope	35 %	25 %	40 %	25 %	0 %	75 %	25 %	25 %
Improve strategic position	20 %	25 %	55 %	0 %	0 %	100 %	60 %	50 %
Increased flexibility, efficiencies & rewards	40 %	20 %	40 %	25 %	0%	75 %	15 %	25 %
Expand capabilities to meet client demand for integrated offer	5 %	20 %	75 %	25 %	25 %	50 %	60 %	50 %
Reduce transaction costs	35 %	35 %	30 %	25 %	25 %	50 %	10 %	25 %
Reduce risk and uncertainty	20 %	35 %	45 %	0 %	0 %	100 %	20 %	75 %
Sense of community & legitimacy	0 %	10 %	90 %	0 %	0 %	100 %	90 %	100 %
Share R&D costs and shorten design and development stages	50 %	15 %	35 %	0 %	25 %	75 %	15 %	0 %
Share resources – resource access	25 %	25 %	50 %	0 %	25 %	75 %	40 %	25 %
Strengthen customer-supplier links	15 %	5 %	80 %	0 %	0 %	100 %	50 %	75 %
Maximise Synergies across the value chain	10 %	30 %	60 %	25 %	0 %	75 %	40 %	75 %
Communicate with like minded people	0 %	20 %	80 %	0 %	0 %	100 %	85 %	100 %

Appendix 4-2 Sizes of Business – Benefits

Benefit	Importance of Benefit n = 24									Benefit received from HunterNet n = 24		
	Small n = 8			Medium n = 12			Large n = 4			S n = 8	M n=12	L n = 4
	LI	N	MI	LI	N	MI	LI	N	MI	R	R	R
Accessing technology	25 %	25 %	50 %	67 %	17 %	17 %	25 %	25 %	50 %	38 %	42 %	0 %
Accessing labour	13 %	13 %	75 %	83 %	17 %	0 %	50 %	0 %	50 %	25 %	33 %	25 %
Economies of scale	13 %	38 %	50 %	67 %	17 %	17 %	25 %	0 %	75 %	13 %	8 %	25 %
Accessing expertise	0 %	13 %	88 %	8 %	50 %	42 %	25 %	0 %	75 %	88 %	50 %	0 %
Private sector leadership	13 %	13 %	75 %	8 %	25 %	67 %	50 %	0 %	50 %	75 %	75 %	50 %
Inventory savings	63 %	13 %	25 %	67 %	17 %	17 %	50 %	25 %	25 %	0 %	8 %	0 %
Accessing/Building Knowledge, information and learning	13 %	13 %	75 %	17 %	17 %	67 %	0 %	0 %	100%	88 %	83 %	75 %
Accessing core competencies	13 %	25 %	63 %	33 %	25 %	42 %	0 %	25 %	75 %	50 %	17 %	50 %
Coordinating and speeding up the value chain	0 %	0 %	100%	67 %	8 %	25 %	0 %	0 %	100%	75 %	17 %	75 %
Economies of scope	13 %	0 %	88 %	50 %	42 %	8 %	25 %	0 %	75 %	50 %	8 %	25 %
Improve strategic position	0 %	13 %	88 %	33 %	33 %	33 %	0 %	0 %	100%	75 %	50 %	50 %
Increased flexibility, efficiencies & rewards	0 %	13 %	88 %	67 %	25 %	8 %	25 %	0%	75 %	25 %	8 %	25 %
Expand capabilities to meet client demand for integrated offer	13 %	0 %	88 %	0 %	33 %	67 %	25 %	25 %	50 %	88 %	42 %	50 %
Reduce transaction costs	0 %	50 %	50 %	58 %	25 %	17 %	25 %	25 %	50 %	13 %	8 %	25 %
Reduce risk and uncertainty	0 %	13 %	88 %	33 %	50 %	17 %	0 %	0 %	100%	38 %	8 %	75 %
Sense of community & legitimacy	0 %	0 %	100%	0 %	17 %	83 %	0 %	0 %	100%	88 %	92 %	100%
Share R&D costs and shorten design and development stages	25 %	25 %	50 %	67 %	8 %	25 %	0 %	25 %	75 %	25 %	8 %	0 %
Share resources – resource access	0 %	13 %	88 %	42 %	33 %	25 %	0 %	25 %	75 %	63 %	25 %	25 %
Strengthen customer-supplier links	0 %	0 %	100%	25 %	8 %	67 %	0 %	0 %	100%	63 %	42 %	75 %
Maximise Synergies across the value chain	0 %	13 %	88 %	17 %	42 %	42 %	25 %	0 %	75 %	50 %	33 %	75 %
Communicate with like minded people	0 %	13 %	88 %	0 %	25 %	75 %	0 %	0 %	100%	75 %	92 %	100%

LI = Less important | N = neutral | MI = More important | R = realised | S = small | M = medium | L = Large

Appendix 4 - 3 Ownership – Benefits

Benefit	Importance n = 24						Benefit Received From HunterNet n = 24	
	Owner n = 10			Non Owner n = 14			Owner n = 10	NonOwner n = 14
	L I	N	M I	L I	N	M I	R	R
Accessing technology	50 %	20 %	30 %	43 %	21 %	36 %	40 %	29 %
Accessing labour	50 %	10 %	40 %	57 %	14 %	29 %	50 %	21 %
Economies of scale	50 %	20 %	30 %	36 %	21 %	43 %	0 %	21 %
Accessing expertise	10 %	30 %	60 %	7 %	29 %	64 %	70 %	43 %
Private sector leadership	10 %	20 %	70 %	21 %	14 %	64 %	80 %	64 %
Inventory savings	50 %	30 %	20 %	71 %	7 %	21 %	10 %	0 %
Accessing/Building Knowledge, information and learning	30 %	0 %	70 %	0 %	21 %	79 %	90 %	79 %
Accessing core competencies	10 %	30 %	60 %	29 %	21 %	50 %	40 %	29 %
Coordinating and speeding up the value chain	40 %	0 %	60 %	29 %	7 %	64 %	30 %	50 %
Economies of scope	40 %	30 %	30 %	29 %	14 %	57 %	0 %	43 %
Improve strategic position	20 %	20 %	60 %	14 %	21 %	64 %	60 %	57 %
Increased flexibility, efficiencies & rewards	50 %	0 %	50 %	29 %	29 %	43 %	10 %	21 %
Expand capabilities to meet client demand for integrated offer	0 %	20 %	80 %	14 %	21 %	64 %	70 %	50 %
Reduce transaction costs	50 %	10 %	40 %	21 %	50 %	29 %	10 %	14 %
Reduce risk and uncertainty	10 %	40 %	50 %	14 %	29 %	57 %	40 %	21 %
Sense of community & legitimacy	0 %	10 %	90 %	0 %	7 %	93 %	80 %	100 %
Share R&D costs and shorten design and development stages	50 %	0 %	50 %	36 %	29 %	36 %	30 %	0 %
Share resources – resource access	20 %	30 %	50 %	21 %	21 %	57 %	50 %	29 %
Strengthen customer-supplier links	30 %	10 %	60 %	0 %	0 %	100 %	40 %	64 %
Maximise Synergies across the value chain	20 %	10 %	70 %	7 %	36 %	57 %	50 %	43 %
Communicate with like minded people	0 %	10 %	90 %	0 %	21 %	79 %	80 %	93 %

LI = Less important	N = neutral	MI = More important	R = realised

Appendix 4 - 4 your relationships within HunterNet affected by membership change

Statement	Membership n = 24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small n = 8	Medium n = 12	Large n = 4	Owner n = 10	Non Owner n =14
Drift closer as new members offer opportunity for new skill sets to combine better meeting client needs	75 %	100 %	100 %	58 %	100 %	90 %	71 %
Take the time to find out what they do – I didn't know you did that	85 %	75 %	100 %	75 %	75 %	100 %	71 %
Membership change is a sorting process with those not willing to contribute quitting	25 %	0 %	38 %	17 %	0 %	40 %	7 %
It would depend who they were and their personalities or business ethics	45 %	25 %	25 %	58 %	25 %	50 %	36 %
Direct competitors might be a problem or might not be – wait and see	15 %	0 %	25 %	8 %	0 %	30 %	0 %
If the group became too big, maybe drift apart as too big to service	15 %	0 %	13 %	17 %	0 %	20 %	7 %

Appendix 4 -5 How do you let other members know that you have work they may wish to quote for?

Statement	Membership n=24		Size n=24			Ownership n =24	
	General n = 20	Patron n= 4	Small n = 8	Medium n = 12	Large n = 4	Owner n = 10	Non Owner n = 14
Through existing relationships	100 %	50 %	100 %	100 %	50 %	100 %	86 %
Direct contact	100 %	75 %	100 %	100 %	75 %	100 %	93 %

Appendix 4 – 6 Knowledge Protection - Membership

Firm Knowledge						
	Membership n = 24					
	General Member n = 20			Patron n = 4		
Internal Protection — Firm based	**LI**	**N**	**MI**	**LI**	**N**	**MI**
Knowledge tacitness — difficult to codify and diffuse	5 %	0 %	95 %	0 %	0 %	100 %
Knowledge complexity	10 %	5 %	85 %	0 %	0 %	100 %
Firm specificity of knowledge	5 %	5 %	90 %	0 %	0 %	100 %
Knowledge embedding — routines, directives, processes, products	5 %	15 %	80 %	0 %	0 %	100 %
Organisational job design	15 %	10 %	75 %	0 %	0 %	100 %
Incentives for knowledge workers	15 %	25 %	60 %	0 %	0 %	100 %
	Membership n = 24					
	General Member n = 20			Patron n = 4		
External protection — market based	**LI**	**N**	**MI**	**LI**	**N**	**MI**
Patents	60 %	5 %	35 %	25 %	0 %	75 %
Copyrights	40 %	25 %	35 %	0 %	0 %	100 %
Trade secrets	20 %	20 %	60 %	25 %	0 %	75 %
Legal contracts with suppliers/collaborators	25 %	20 %	55 %	0 %	0 %	100 %
Industry concentration	5 %	35 %	60 %	0 %	0 %	100 %
Time to market	25 %	10 %	65 %	0 %	25 %	75 %
Time and cost to imitate/replicate	30 %	15 %	55 %	0 %	0 %	100 %
LI = Less important	N = neutral	MI = More important				

Source: Adapted for this research from Burton-Jones 1999

Appendix 4 – 7 Knowledge Protection - Size

Firm Knowledge									
	Size n = 24								
	Small n = 8			Medium n = 12			Large n = 4		
Internal Protection — Firm based	**LI**	**N**	**MI**	**LI**	**N**	**MI**	**LI**	**N**	**MI**
Knowledge tacitness — difficult to codify and diffuse	0 %	0 %	100 %	8 %	0 %	92 %	0 %	0 %	100 %
Knowledge complexity	13 %	13 %	75 %	8 %	0 %	92 %	0 %	0 %	100 %
Firm specificity of knowledge	0 %	0 %	100 %	8 %	8 %	83 %	0 %	0 %	100 %
Knowledge embedding — routines, directives, processes, products	0 %	25 %	75 %	8 %	8 %	83 %	0 %	0 %	100 %
Organisational job design	0 %	13 %	88 %	25 %	8 %	67 %	0 %	0 %	100 %
Incentives for knowledge workers	0 %	25 %	75 %	25 %	25 %	50 %	0 %	0 %	100 %
	Size n = 24								
	Small n = 8			Medium n = 12			Large n = 4		
External protection — market based	**LI**	**N**	**MI**	**LI**	**N**	**MI**	**LI**	**N**	**MI**
Patents	50 %	0 %	50 %	67 %	8 %	25 %	25 %	0 %	75 %
Copyrights	50 %	13 %	38 %	33 %	33 %	33 %	0 %	0 %	100 %
Trade secrets	25 %	13 %	63 %	17 %	25 %	58 %	25 %	0 %	75 %
Legal contracts with suppliers/collaborators	25 %	38 %	38 %	25 %	8 %	67 %	0 %	0 %	100 %
Industry concentration	0 %	50 %	50 %	8 %	25 %	67 %	0 %	0 %	100 %
Time to market	25 %	13 %	63 %	25 %	8 %	67 %	0 %	25 %	75 %
Time and cost to imitate/replicate	25 %	13 %	63 %	33 %	17 %	50 %	0 %	0 %	100 %

LI = Less important	N = neutral	MI = More important

Source: Adapted for this research from Burton-Jones 1999

Appendix 4 – 8 Knowledge Protection - Ownership

Firm Knowledge						
	Ownership n = 24					
	Owner n = 10			Non Owner n = 14		
Internal Protection — Firm based	**LI**	**N**	**MI**	**LI**	**N**	**MI**
Knowledge tacitness — difficult to codify and diffuse	0 %	0 %	100 %	7 %	0 %	93 %
Knowledge complexity	10 %	10 %	80 %	7 %	0 %	93 %
Firm specificity of knowledge	0 %	10 %	90 %	7 %	0 %	93 %
Knowledge embedding — routines, directives, processes, products	0 %	0 %	100 %	7 %	21 %	71 %
Organisational job design	10 %	10 %	80 %	14 %	7 %	79 %
Incentives for knowledge workers	10 %	20 %	70 %	14 %	21 %	64 %
	Ownership n = 24					
	Owner n = 10			Non Owner n = 14		
External protection — market based	**LI**	**N**	**MI**	**LI**	**N**	**MI**
Patents	60 %	10 %	30 %	50 %	0 %	50 %
Copyrights	20 %	50 %	30 %	43 %	0 %	57 %
Trade secrets	20 %	30 %	50 %	21 %	7 %	71 %
Legal contracts with suppliers/collaborators	40 %	0 %	60 %	7 %	29 %	64 %
Industry concentration	0 %	20 %	80 %	7 %	36 %	57 %
Time to market	10 %	10 %	80 %	29 %	14 %	57 %
Time and cost to imitate/replicate	30 %	10 %	60 %	21 %	14 %	64 %

LI = Less important	N = neutral	MI = More important

Source: Adapted for this research from Burton-Jones 1999

Appendix 4 - 9 Indicators of trust by membership

	Membership n = 24					
	General Member n = 20			Patron n = 4		
Indicators of Trust	**LI**	**N**	**VI**	**LI**	**N**	**VI**
Demonstrated long term commitment to honest relationships	0 %	5 %	95 %	0 %	0 %	100 %
Commitment of appropriate resources to the relationship	5 %	30 %	65 %	0 %	0 %	100 %
The ability to make, receive and act upon non-emotive constructive criticism	0 %	15 %	85 %	0 %	0 %	100 %
Individual interaction through social activities	5 %	40 %	55 %	25 %	0 %	75 %
Setting realistic expectations and meeting expectations	0 %	15 %	85 %	0 %	0 %	100 %
Commitment to similar or agreed goals	0 %	15 %	85 %	0 %	0 %	100 %
Minimal discord	15 %	40 %	45 %	0 %	25 %	75 %
Open and honest communications	5 %	0 %	95 %	0 %	0 %	100 %
A clear understanding of knowledge or resources that are to be shared	10 %	0 %	90 %	25 %	0 %	75 %
A clear definition on what will belong to whom upon relationship termination	10 %	25 %	65 %	25 %	0 %	75 %
Previous positive experience of a particular individual	5 %	30 %	65 %	0 %	0 %	100 %
Previous positive experience of a respected colleague with an individual	10 %	20 %	70 %	0 %	0 %	100 %
Shared interests, common concerns and values	5 %	35 %	60 %	0 %	25 %	75 %
Evidence of reciprocity, reputation and mutual benefit	5 %	10 %	85 %	0 %	25 %	75 %
Predicability, dependability and faith in the other party	0 %	10 %	90 %	0 %	0 %	100 %
Calculating potential risk to potential benefit when evaluating willingness to trust	0 %	55 %	45 %	0 %	0 %	100 %
A recognition that once broken trust reverts to zero	20 %	10 %	70 %	25 %	50 %	25 %

LI = Less important	N = neutral	VI = Very important

Appendix 4 – 10 Indicators of trust by size

	Size n = 24								
	Small n = 8			Medium n = 12			Large n = 4		
Indicators of Trust	**LI**	**N**	**VI**	**LI**	**N**	**VI**	**LI**	**N**	**VI**
Demonstrated long term commitment to honest relationships	0 %	13 %	88 %	0 %	0 %	100 %	0 %	0 %	100 %
Commitment of appropriate resources to the relationship	0 %	0 %	100 %	8 %	50 %	42 %	0 %	0 %	100 %
The ability to make, receive and act upon non-emotive constructive criticism	0 %	0 %	100 %	0 %	25 %	75 %	0 %	0 %	100 %
Individual interaction through social activities	0 %	63 %	38 %	8 %	25 %	67 %	25 %	0 %	75 %
Setting realistic expectations and meeting expectations	0 %	0 %	100 %	0 %	25 %	75 %	0 %	0 %	100 %
Commitment to similar or agreed goals	0 %	0 %	100 %	0 %	25 %	75 %	0 %	0 %	100 %
Minimal discord	0 %	50 %	50 %	25 %	33 %	42 %	0 %	25 %	75 %
Open and honest communications	0 %	0 %	100 %	8 %	0 %	92 %	0 %	0 %	100 %
A clear understanding of knowledge or resources that are to be shared	0 %	0 %	100 %	17 %	0 %	83 %	25 %	0 %	75 %
A clear definition on what will belong to whom upon relationship termination	0 %	25 %	75 %	17 %	25 %	58 %	25 %	0 %	75 %
Previous positive experience of a particular individual	0 %	0 %	100 %	8 %	50 %	42 %	0 %	0 %	100 %
Previous positive experience of a respected colleague with an individual	0 %	13 %	88 %	17 %	25 %	58 %	0 %	0 %	100 %
Shared interests, common concerns and values	0 %	0 %	100 %	8 %	58 %	33 %	0 %	25 %	75 %
Evidence of reciprocity, reputation and mutual benefit	0 %	0 %	100 %	8 %	17 %	75 %	0 %	25 %	75 %
Predicability, dependability and faith in the other party	0 %	13 %	88 %	0 %	8 %	92 %	0 %	0 %	100 %
Calculating potential risk to potential benefit when evaluating willingness to trust	0 %	63 %	38 %	0 %	50 %	50 %	0 %	0 %	100 %
A recognition that once broken trust reverts to zero	13 %	13 %	75 %	25 %	8 %	67 %	25 %	50 %	25 %

LI = Less important | N = neutral | VI = Very important

Appendix 4 – 11 Indicators of trust by ownership

	Ownership n = 24					
	Owner n = 10			Non Owner n = 14		
Indicators of Trust	**LI**	**N**	**VI**	**LI**	**N**	**VI**
Demonstrated long term commitment to honest relationships	0 %	10 %	90 %	0 %	0 %	100 %
Commitment of appropriate resources to the relationship	0 %	40 %	60 %	7 %	14 %	79 %
The ability to make, receive and act upon non-emotive constructive criticism	0 %	10 %	90 %	0 %	14 %	86 %
Individual interaction through social activities	10 %	10 %	80 %	7 %	50 %	43 %
Setting realistic expectations and meeting expectations	0 %	10 %	90 %	0 %	14 %	86 %
Commitment to similar or agreed goals	0 %	20 %	80 %	0 %	7 %	93 %
Minimal discord	10 %	40 %	50 %	14 %	36 %	50 %
Open and honest communications	10 %	0 %	90 %	0 %	0 %	100 %
A clear understanding of knowledge or resources that are to be shared	10 %	0 %	90 %	14 %	0 %	86 %
A clear definition on what will belong to whom upon relationship termination	10 %	30 %	60 %	14 %	14 %	71 %
Previous positive experience of a particular individual	0 %	20 %	80 %	7 %	29 %	64 %
Previous positive experience of a respected colleague with an individual	0 %	20 %	80 %	14 %	14 %	71 %
Shared interests, common concerns and values	0 %	40 %	60 %	7 %	29 %	64 %
Evidence of reciprocity, reputation and mutual benefit	0 %	10 %	90 %	7 %	14 %	79 %
Predicability, dependability and faith in the other party	0 %	10 %	90 %	0 %	7 %	93 %
Calculating potential risk to potential benefit when evaluating willingness to trust	0 %	40 %	60 %	0 %	50 %	50 %
A recognition that once broken trust reverts to zero	40 %	0 %	60 %	7 %	29 %	64 %

LI = Less important	N = neutral	VI = Very important