Chapter 5

Case studies

5.1 Reason for case study approach

In order to increase the validity of the research, it was decided to follow a case study approach to verify/nullify the patterns that became apparent from the quantitative study. The main reasons to take this approach were that the sample number was small for a quantitative study, and that the structured questionnaire did not permit companies to share their insights. Where the quantitative study was useful in that it was an attempt to consider the responses from a wider distribution of companies hence guarding against merely sampling the "outliers" of the normal distribution curve, the case studies would deepen the insights of SMEs in a partnership arrangement with an LCO, and how they protected themselves in this partnership.

Case studies are useful when researching the "how" or "why" questions "when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context" (Yin, 2003:1). Where the survey has answered questions like who, what, how many, how much, the causal case study will attempt to answer the how and why questions (Yin, 200:5). "The essence of a case study….is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented, and with what result" (Schramm, 1971).

A multiple causal case study approach was decided upon in order to do a comparative study. The unit of analysis was the SME-LCO partnership relationship of a couple of SMEs that had participated in the survey. In line with the RBV theory and understanding the issues that influence a successful partnership between an SME and an LCO, an attempt would be made to validate the main results and hence support (or not) the major findings of the quantitative study.

5.2 Methodology

Four companies were selected from the original sample – two were companies that had indicated that they had perceived the partnership with the LCO to be unsuccessful or partially successful, and two were companies that indicated that they perceived the partnership with the LCO to have been successful. These two groups were selected in order to find out whether there were differences in the responses to the questions between those SMEs that had perceived the partnership to be successful and those that had not. All four companies were based in Gauteng (from which the largest portion of the survey sample had been taken).

Issues that were explored in the case studies were to what extent, according to the respondents involved:

- did the level of the capabilities/competencies of an SME affect the perceived success of the partnership?
- did the level of safeguards influence the relationship between capabilities and competencies and a perceived successful partnership, positively?
- did formal safeguards affect the relationship between capabilities and competencies more positively than informal safeguards?

The interviews were recorded and transcripts captured (see Appendix 2). Six major questions were posed by the investigator to each of the companies, namely:

1.1. Do you believe that having capabilities and competencies is important for partnership success?

1.2. If yes, which capabilities/competencies did you use in your collaboration with the LCO?

2. Which do you think are more important for a successful partnership: capabilities or competencies, and why?

3. How do you protect your capabilities and competencies when partnering with an LCO?

4. Do you believe that putting safeguards (protection mechanisms against opportunistic behaviour by the large company) in place would improve the relationship between having competencies and capabilities and partnership success?

5. Which safeguards would you use when partnering with an LCO?

In order to ensure an unbiased result in the findings, as well as to verify the initial coding by the researcher, four field experts were approached to give an opinion on the case studies (see Appendix 3 for a description of their fields of expertise and their selection).

They were provided with the transcripts (all references to company and people had been removed to ensure anonymity) and were asked to score each SME as follows:

- On a scale of 1 - 4, where relative to the other companies, 1 is a general capability/competence, and 4 is a specialist capability/competence, please rate the capability/competence of each company
- On a scale of 1 - 4, where 1 indicates that the company's capabilities/competencies are discipline specific and 4 that they are multi-disciplinary, rate the capability/competence of each company relative to the other companies.
- On a scale of 1 - 4, rate your overall impression of the company's capabilities/competencies as 1 (low) – 4 (high) relative to the other companies.
- On a scale of 1 - 4 where 1 indicates (a) weak safeguard(s) relative to the other companies, and 4 indicates (a) strong safeguard(s) relative to the other companies. (Safeguards are mechanisms that are in place to hinder/prevent opportunistic behaviour by the partnering company).

The experts were also informed that in each column, each value could only be allocated once.

What follows are highlights from the company transcripts that serve as the basis for the discussion that will follow.

5.3 Case Studies

5.3.1 SME1

SME1 was founded in January 2000, the original team comprised the CEO (who had a PhD in electronic engineering), the Chief Technical Officer (who had an MSc in electronic engineering) and three technical persons (one had an MSc in electronic engineering, the second had a BEng and was studying towards an honours in electronic engineering, and a third was studying towards a Masters in electronic engineering). As at June 2005 SME1 had grown to 6 full-time employees and a turnover of $\leq$ R 4 million. SME1 specialises in innovative product development for information and communication security solutions, with a current focus on applications utilising technologies at the convergence between mobile (GSM) and conventional data networks (the Internet). An example of a recent product it developed is "Cell Power". Cell Power is a prepaid electricity vending solution that uses mobile telephones as Point-of-Sales devices. SME1 developed the Cell Power system to assist Municipalities reduce their lost revenue through the difficult task of managing electricity usage. Another product of theirs is **eXstream**LITE, which is a robust, secure network device that ensures the optimal use of expensive Internet bandwidth through a unique blend of Internet traffic classification, bandwidth shaping and traffic prioritisation engines.

SME1 wished to achieve two objectives for which they required a partner, namely: to raise cash for growth, and to gain a "big brother", i.e. protection that would be afforded by having a bigger player as a partner. The expectation was that should a dispute arise with another large company (LCO), then that the "big brother" would enter into high level negotiation to try to resolve the dispute. With this in mind they sought a partner that they believed had a similar culture as their own and were in the same domain as they were namely electronic product development and deployment.

The company with whom they partnered, the LCO1, was a large, reputable South African corporate that specialized in electronics and communications. The LCO1 Ltd had several Divisions that focused on development and implementation – largely for the defense industry. The Division, LCO1Div, although responsible for the lion's share of LCO1's turnover of over R1 billion/year, focused on marketing of telecommunications equipment and solutions and did not do its own development – it had no in-house IP. Recognizing their vulnerability in this area, LCO1Div had a strategy of investing in SMEs in order to acquire and gain access to IP. In line with this strategy, LCO1Div, via LCO1, took a third share in SME1 in exchange for a substantial cash injection.

The expectation from SME1's side was that it would be able to continue with new product development and piggy back off LCODiv's marketing infrastructure and reputation. Furthermore SME1 expected the LCO1 to offer SME1's products protection by engaging with any other LCO that exploited SME1's patents unfairly, and resolve the dispute in a preferably amicable fashion. However, the reality was that LCO1 did not wish to tarnish its own reputation by supporting SME1 against the opportunistic LCOs that were breaching SME1's patents, as LCO1 already had existing relationships with these opportunistic LCOs that it viewed as important. SME1 was therefore expected to "fight its own battles" without the backing of its LCO partner. SME1 indicated that the relationship was partially successful because only one of the two objectives for partnering, had realized, namely the ability to raise cash. An opportunity was later created for SME1 to buy back its shares from LCO1 when a new CEO was appointed at LCO1Div who, in focusing the company's resources on its core business, sold off all subsidiaries where LCO1Div investment was R10 million or less. In this way SME1 managed to exit from a less than optimal partnership.

The CEO commented that competencies and capabilities were certainly important for partnership success. He believed that competencies rather than capabilities were more important. His reasoning was that large companies do not partner with SMEs to acquire skills, as they can "buy these in" merely by employing individuals. They are more interested in partnering with an SME such that they gain access to a "total product". In the case of SME1, it was the "existing IP belonging to the company as well as the company's "competence" to develop new IP that attracted the large company into a partnership with SME1" said the CEO. He believed that LCOs were typically after two competencies: IP and market share. In the case of SME1, although they had IP, they did not have market share.

Protecting the SME's capabilities and competencies was important when partnering with an LCO as "LCO's were ruthless and would take everything", commented the CEO. SME1 protected its capabilities and competencies, in an attempt to ensure a successful relationship, by having in place the following:

- patents already secured the first customers to used their service
- a restraint of trade had been built into their employees contracts prohibiting them from working for a competitor within a reasonable period of time
- entered into a formal shareholders agreement with the LCO that
    - excluded re-evaluation of the company against future cash flow projections
    - the LCO had to buy the majority share of SME1 (up to 51%) after a 3 year period (the market value of the shares would be determined by a third party); whereafter at any time thereafter, SME1 could offer to sell the remaining shares at market value and LCO1 Ltd would be obliged to buy them. (This clause was premised on the assumption that LCOs wish to hold the majority of the SMEs shareholding and hence SME1's intention was to build up the value of the company and then exit.)
- the relationship was built on trust where there was a similar culture and the individuals with whom they were dealing had a similar background

5.3.2 SME2

SME2 was founded by the CEO in 1999, the core business of the company being network recording. At the time of the partnership with LCO2 AG, SME2 had only one employee (the CEO) and had a turnover of $\leq$ R4 million. SME2 has subsequently grown to 31 employees and has a turnover of over R 35 million per year, and its core business is developing systems for mass interception and capturing of data and voice. SME2's current skills include being able to develop cutting edge hardware designs; software development based on knowledge of industry and systems engineering (in systems engineering the CEO believes South Africa has a competitive edge as unlike in other countries, South African engineers do not have the luxury of specializing in a niche area but need to address the overall picture); software electronic engineering with computer science. The CEO, having a BCom and BProc degrees, was the sole owner of SME2.

The CEO's prior experience was in financial management – his last position prior to starting SME2 was as a Financial Director of a high-tech engineering company. Because of his interest in technology, in 1994 he had joined a company that supplied voicemail and the system that sends SMS's for one of South Africa's large cellular service providers, as the MD. This gave the CEO an opportunity to familiarize himself with the telecommunications industry. Thereafter he joined Medium Enterprise 2 (ME2) who had an OEM (original equipment manufacturer) agreement with LCO2 to design and manufacture new products. ME2 was keen to sell the company to an American company, and as they did not believe the OEM part of the business (that was worth approximately 25% of the business) would be attractive for the sale, they wished to sell this off. The CEO bought this part of the business from ME2, around which he established his own company, SME2.

The CEO believes that having capabilities and competencies is essential for partnership success, and furthermore, that there should be complementariness, i.e. the SME should have competencies that the LCO does not have and that the LCO requires. SME2 offered a competence in the design and manufacture of products. However, this competence was outsourced to a second company with whom SME2 had a relationship. ME2 (for whom The CEO worked prior to starting SME2) could bring a new product to market at a hugely reduced cost, and much faster, than LCO2, and it was this that had attracted LCO2 to form a partnership with them. When ME2 decided to sell off this section to SME2, a three-way agreement was signed between ME2, LCO2 and SME2 whereby SME2 took over the terms and conditions of the original ME2-LCO2 agreement without any modifications.

Hence, SME2 was still expected to deliver new products to the market cheaper and faster than LCO2 could.

The interest from SME2 in partnering with LCO2 was because of LCO2's strong brand, its reputation, and access to international markets. However, the relationship turned out to be unsuccessful, largely because of a mismatch in size and power, the CEO of SME2 commented. The agreement was very one sided where LCO2 had all the rights and SME2 had all the obligations. An example was where SME2 would have to give them information on new products they were developing and would also have to guarantee availability of spare parts for these products for fifteen years, whereas there was no obligation on LCO2 to buy any of these products. Another example was where LCO2 competed head-on with SME2 selling SME2's own products to SME2's customers. As SME2 was obliged to disclose the names of its customers, LCO2 would then sell the SME2 product at a much higher price than were SME2 to sell its product directly to its customer. It appeared that the philosophy of LCO2 was to conclude the deal at all costs, and do "damage control" thereafter. The CEO commented that for a partnership to be successful both parties must benefit and it should be a win-win situation. The agreement should reflect the same rights and obligations for both parties.

The relationship between ME2 and LCO2 was never good. The CEO described it as LCO2 being "pedantic, nitpicking, demanding, and lopsided". The relationship with LCO2 deteriorated further once SME2 became the OEM. SME2 had tried to end the agreement with LCO2 and wrote a letter to them requesting that their relationship be terminated. However, it was only after a period of approximately nine months that LCO2 in fact responded, and this was after they became aware that SME2 had introduced a new product to the market. Their response was in the form a letter suing SME2. The CEO believes that this was merely a tactic to soften SME2 up for the step that followed. LCO2 then offered to withdraw the charge provided that SME2 would perform a demonstration of their new product to one of LCO2's potential customers to the satisfaction of the customer. This did eventually lead to a sale of the product to LCO2's customer, and LCO2 is again expressing interest in working with SME2 - the CEO believes it is because they are interested in SME2's new product.

The CEO defines a competence as a combination of skills, knowledge and experience that give a company a competitive edge whereas capabilities would be more generic e.g. a technical support capability, a sales capability, a financial capability – on their own these will not necessarily give a company a competitive edge. The CEO believes that established companies can't innovate that easily as they often have legacy processes and have too much invested in old systems to innovate and change to new systems. Hence he believes that competencies are more important for a successful partnership than capabilities. In the case of LCO2, he re-iterated that it was SME2's ability to develop new products and bring these to the market at a cost and time period attractive to LCO2 that attracted this company to the partnership.

The CEO commented that it is very difficult to protect one's capabilities and competencies when partnering with a large company, but safeguards would certainly help. Firstly, patents are not an effective safeguard unless you have sufficient resources to defend the patent. However, having registered patents does increase the value of the company, the CEO believes. Having "first mover advantage" would be one form of safeguard, as would having a restraint of trade agreement with your employees and preventing the LCO from appointing your employees. Also, including sales targets in the agreement with the LCO could serve as a safeguard. (The current agreement between SME2 and LCO2 lacks sales targets, but lists detailed technical specifications as to norms with which new products must comply, buying and selling prices etc.). Any new agreement to be negotiated would be for a shorter period of time (three, rather than five years), and the arbitration would be moved to an affordable location like South Africa.

The CEO believes that the contractual relationship is more important than a trust-based relationship. Not only is the development of the MOU an important part of the negotiation process, but it is an important reference document for what was originally envisaged and promised – especially for when the originators of the agreement are no longer present. A "fall-back" option is also important, i.e. having a second client (or more) lined up should the relationship with the LCO fail. Relying on a single company is risky.

The CEO concluded by saying that he would more easily trust a South African company than a foreign company – mainly because of a similar culture, as well as proximity and ability to interact on a continual basis. He believes that it is important to interact regularly with the LCO partner and to "keep a finger on the pulse". "LCO's will circumvent agreements. The more you hurt them in the market place, the more negotiable they are" the CEO comments.

5.3.3 SME3

SME3 was founded in 1999 by the CEO and his business partner, CTO, who both had a Masters in Electronic Engineering. The CEO and CTO had both left LCO3 (Pty) Ltd, a large player in the South African defense industry having approximately 300 employees, that focused on optoelectronic product development and commercialization for this industry, to found their own business in opto-electronics. This move was partly because they wished to go on their own and partially because LCO3 was short staffed and employees were carrying more than a fair work load. LCO3 had made the CEO a counter-offer when they heard he intended leaving as they were reliant on him, but as he was intent on starting his own company, they agreed that he would continue to assist LCO3 by contracting on an hourly basis with them. Prior to resigning, the CEO had been managing a project and had been working alongside an LCO3-appointed project manager for approximately 4 months. Once he went on his own, his main point of contact within LCO3 for the project contractual work was this project manager. Additional work for the new SME3 came mostly from the LCO3's laser technicians that his partner had worked with whilst still an employee of LCO3.

SME3 has grown over the years and currently has a turnover of ≤ R4 million as well as 7 full-time employees plus 5 – 8 students at any one time. Its core business is electronic engineering solutions and products – and the vision is to become a premier provider of electronic product solutions. SME3, today, has experience in the following industries: telecommunication; military and defense; aviation; agriculture; information technology; security; and mining. The skills set encompass opto-electronics, embedded hardware and software development; PC software; analog design; mechanical draughting; and PCB schematics and layout. Products include: infra-red perimeter beams that provide a cost effective means of detecting when an object passes through an infrared beam; in-circuit serial PIC programmer that programmes a wide range of microchip's 16 and 18 series of PICs; and a smart vehicle harness – an intelligent in-vehicle network that uses the CAN protocol. SME3 is currently participating in an incubation programme.

The CEO believes that it was SME3's capabilities (specialist technical abilities) rather than their competencies that attracted the LCO. It was the CEO and his partner's opto-electronic capabilities and detailed product knowledge of LCO3's products that attracted the LCO to partner with them. At the stage of the partnership, they did not have sufficient processes in place for them to have competencies, but specialist knowledge they did have. The CEO believes that this would still be the case today as LCO3 wants to develop its own products, hence it wishes to access specialist knowledge rather than, for example, a product development capability. It is difficult to find specialists, and especially locally for defense related work, hence "buying in" the skills was not a realistic option LCO3.

The nature of the partnership was one of contracting SME3's specialist skills, on an order-based basis, to assist LCO3 with product development and support. Initially this product development related to the LCO3's core products. However, with time the situation changed as the LCO built up its own in house capabilities in the areas that it had previously subcontracted SME3. Thereafter it would contract SME3 to develop test equipment or supportive products that would enhance the LCO's product range. Because both the CEO and his business partner had been employees of the LCO they used to interact on a social level and were friends of many of the technical personnel of the LCO. This relationship had been fundamental in securing continued orders from the LCO.

The relationship with LCO3 has changed over time. In the beginning no thought was given to the need for protecting its capabilities. The relationship was based on friendship where the contract work that SME3 performed for LCO3 was based on a verbal agreement, the specifications of which were captured in an order that was placed by LCO3 with SME3. The order would either specify the expected outputs to be delivered against the number of hours of input, or payment for the achievement of certain milestones, or in some instances SME3 would simply develop a complete product, carrying all the costs for product development, and this product would be sold to LCO3.

5.3.4 SME4

SME4 was established during January 1982 at a South African University. The original group comprised 3 Computer Science professors and 9 Computer Science Honours and Masters students. It became a closed corporation (CC) in March 1989. The CC was converted to SME4 (Pty) Ltd in 1993 and the overseas expansion of the company resulted in SME4 America Inc being established during 1998 as well as SME4 Limited that handled the UK business. During 2000 at least 3 subsidiary companies were created as new "venture capital"-oriented companies and SME4 supplied all the funding. The abovementioned companies now employ approximately 400 people.

SME4 initially supplied "systems programming" solutions to company A and company B. Companies A and B were in computer networking systems and were medium sized companies. The founder of SME4 commented that having capabilities and competencies was critical for partnership success as it was because of a product that SME4 had developed (a human resource (HR) module) that LCO4 had approached them in the first instance. LCO4 AG and LCO4 South Africa concentrated on ERP (enterprise resource planning), "an industry term for the broad set of activities supported by multi-module application software that helps a manufacturer or other business manage the important parts of its business, including product planning, parts purchasing, maintaining inventories, interacting with suppliers, providing customer service, and tracking orders. ERP can also include application modules for the finance and human resources aspects of a business. Typically, an ERP system uses or is integrated with a relational database system. The deployment of an ERP system can involve considerable business process analysis, employee retraining, and new work procedures." (www.Webopedia). LCO4 recognized that SME4 had certain competencies and asked them to customize the LCO4 HR module for the South African market. SME4 then entered into a Memorandum of Agreement with LCO4. SME4 later became an LCO4 implementation partner after they had been fully trained and gained the required experience. SME4 has grown from 12 full-time employees with a turnover of ≤ R4 million in 1994 to over 400 people having a turnover of in excess of R240 million in 2006. Most of the staff in the earlier days of SME4 were recruited from the University's Department of Computer Science. It is hence no longer an SME but today qualifies as a LCO. The experience shared below, however, relates to the experience of SME4 when it was still a start-up company (1994), and had a turnover of < R1,2m.

SME4 had both competencies and capabilities that had attracted LCO4. It had a broad spectrum of knowledge and skills for developing applications and new developments, as well as systems processing skills and an ability for complex programming for example, software protocol development – i.e. capabilities. In addition the company had some knowledge of the domain. The founder clarified that his understanding of capabilities was the ability to bring about new developments, and a competency was an ability to deliver something now. For example, SME4 used its payroll competency to customize the LCO4's payroll system.

The founder believed that both competencies and capabilities were important for a successful partnership. The SME must demonstrate some competency, although this competency did not need to be specifically in the domain of the LCO. However, a demonstration of the SME's capabilities and competencies was important for a prospective partnership. The founder further commented that because of domain independence, capabilities were possibly more important than competencies, for example, an LCO in the financial sector might have seen the SME's capabilities to develop systems in the mining sector, and request them to develop similar systems for the financial sector. This would clearly indicate recognition of certain capabilities that could be used to develop a new competence in a new sector or domain.

When the SME is really small, it appears that the LCO is more interested in the SME's capabilities, but as it grows and develops certain competencies, it appears that the LCO shifts its interest to the SME's competencies. The founder commented that this would be in line with Geoffrey Moore's "chasm"-discussion on how to introduce a technology product to the market as some LCOs tend to be risk averse and would be more interested in accessing a demonstrated competence than merely a capability that would need to be developed into a competence. However, the interest in accessing competencies and capabilities would also be dependent on the situation and the specific need of the LCO, for example, if specialist skills were required for instance to develop cutting edge innovation and radical thinking, then the LCO would be more interested in accessing capabilities to include in its own systems and processes than looking for a competence. Alternatively, and citing examples like Cisco and Microsoft, an LCO may recognize a domain competence in some of the individuals of an SME and acquire the SME, strip it of the people who are not core to the competence, and integrate the competence into its own company. The founder is of the opinion (and talks from SME4's current position as an LCO) that LCOs are looking for complementarity with their own business focus.

The founder believes that integrity (a confidence or trust that the one company will not try to deceive the other and that the company will deliver on what it promised) is critical to a partnership. The founder referred to work done by Fernando Flores, who obtained a PhD in Philosophy from the University of California, Berkeley on *Management and Communication in the Office of the Future*, and who discusses a four stage cycle for coordinating effort, which he refers to as the "atom of work". This is an iterative process of negotiation, commitment, and delivery on expectations. For this process to be effective there must be inherent trust and this trust gets further developed as one follows the process. The founder believes that a contract is mostly about the process of discussing the expectations (including capturing the specifications), and then having an ability to monitor the outputs against the expectations. Where there is a deviation, a contract provides the point of departure for addressing the deviation. He believes that having a contract for punitive measures is less important as if it gets to that stage, then the relationship is already broken and the partnership cannot be successful. He is of the firm opinion that contracts are put in place to avoid misunderstanding, and that they become increasingly important as the business grows. The founder stressed the importance of a contract and especially for setting the framework for the partnership and clarifying expectations. Also, contracts were important for continuity such that if the negotiator(s) left the company, the terms of the agreement are codified for the successors. He did not believe that a partnership could exist purely on trust.

An important way of protecting the company's capabilities and competencies, the founder commented, was to retain their competent employees. This SME4 did by creating a family culture where people felt they belonged. As the company grew, so the culture changed, but it also became less important to retain critical people as critical mass had been built up by that stage and the company had gained a momentum of its own. Another way of protecting itself against opportunism by the LCO was to ensure that it could offer a better service than the LCO.

To conclude, therefore, the founder believes that good service delivery, trust, contracts and culture are important to improve the relationship between competencies, capabilities and partnership success. Where the contract serves as a safety net, a trusting relationship is critical. If there is no trust, then a contract will not save the relationship.

SME4 had both competencies and capabilities that had attracted LCO4. It had a broad spectrum of knowledge and skills for developing applications and new developments, as well as systems processing skills and an ability for complex programming for example, software protocol development – i.e. capabilities. In addition the company had some knowledge of the domain.

Having described the cases, what follows is a discussion of the main observations and findings.

5.4 Analyzing the results

5.4.1 Capabilities and competencies and partnership success

The two companies that had perceived the partnership with the LCO to be successful were SME3 and SME4, whereas the companies that had perceived the partnership to be not/partially successful were SME1 and SME2. In identifying to what extent capabilities and competencies were important for partnership success and were attractants in motivating the LCO to partner with the SME, the views of the experts will be considered together with the views of the respective CEOs.

Table 31 lists the average ratings[6] arrived at by the experts for each characteristic of each SME respectively and are in response to the following:

- whether the SME had general or specialist capabilities/competencies, where 1 is a general capability/competence and 4 is a specialist capability/competence
- whether the SME's capabilities/competencies were discipline specific or multidisciplinary, where 1 indicates that the company's capabilities/competencies are discipline specific and 4 that they are multi-disciplinary
- whether the overall impression of the SME's capabilities/competencies were low (1) or high (4), relative to the other companies
- whether the safeguards in place were weak or strong where 1 indicates (a) weak safeguard(s) relative to the other companies, and 4 indicates (a) strong safeguard(s) relative to the other companies.

Table 31: Experts' ratings on the characteristics of the SMEs

	General/Specialist capabilities/ competencies	Discipline specific/multidisciplinary	Capabilities/ competencies	Weak/strong Safeguards
SME1	3.75	1,25	**2.5**	**2.5**
SME2	2	3.25	**2.25**	**2**
SME3	2.25	2.25	**1.75**	**1.5**
SME4	2	3.25	**3.5**	**4**

5.4.1.1 SME1

SME1 cited skills such as project management, programming, software development, and associated product/service support as being the capabilities of their company. Such capabilities lead to SME1's competence in GMS-internet interface systems. However, they believed that it was their competence to develop IP, as well as SME1's portfolio of IP, that had attracted the interest of the LCO. (Although IP had been described as a competence by SME1, in the quantitative study it was defined as an ability capability.) SME1 was of the opinion that LCOs wish to acquire a "total product", rather than simply gain access to capabilities, which they felt could be "bought in" by employing the right

[6] An average rating was derived at for each category by dividing the sum of the values selected by the experts for that category, by 4.

skills set. Hence the CEO believed that it was SME1's IP ability that had served as the attractant and resulted in the partially successful partnership.

From Table 31 it is apparent that the experts were of the opinion that SME1 had very specialist capabilities/competencies (3.75), and that these were discipline specific (1.25). The experts rated the overall impression of SME1's capabilities/competencies as a little above average (2.5), when compared with the other SMEs.

Hence it appears that although SME1 had specialist capabilities/competencies, these were discipline specific. These may therefore have been suitable for a niche market. However, relative to the other SMEs, SME1's capabilities/competencies appeared slightly above average rather than high. As such, SME1's capabilities/competencies although attractive for LCO1, were apparently not critical for LCO1.

5.4.1.2 SME2

The CEO of SME2 commented that his company offered a competence in the design and manufacture of products (even though this function was outsourced to another company) and could bring a new product to market at a hugely reduced cost and much faster, than LCO2. He believed it was this competence that had attracted LCO2 to form a partnership with them. The CEO defined a competence as a combination of skills, knowledge and experience that give a company a competitive edge whereas capabilities would be more generic e.g. a technical support capability, a sales capability, a financial capability – on their own these will not necessarily give a company a competitive edge. The CEO believes that established companies can't innovate that easily as they often have legacy processes and have too much invested in old systems to innovate and change to new systems. Hence he believes that competencies are more important for a successful partnership than capabilities. In the case of LCO2, he re-iterated that it was SME2's ability to develop new products and bring these to the market at a cost and time period attractive to LCO2 that attracted this company to the partnership.

The experts rated SME2's capabilities/competencies as of a general nature (2), and very multidisciplinary (3.25). Their overall impression of SME2's capabilities/competencies was that they were very slightly above average (2.25) when compared with the other SMEs.

Hence it appears that although the capabilities/competencies of SME2 were very multidisciplinary (indicating a level of complexity), they were general rather than specialist. Furthermore, SME2's capabilities/competencies rated only slightly above average when compared with the other SMEs. This would seem to indicate that SME3's capabilities/competencies, as they were general, could in all likelihood be sourced from other companies. Hence although they may have been an attractant for LCO2 to partner with SME2, LCO2 was not dependent on SME2 for its capabilities/competencies as it could potentially have accessed these from another company.

5.4.1.3 SME3

The CEO of SME3 mentioned that it was its optoelectronic capabilities and detailed product knowledge of LCO3's products that attracted LCO3 to partner with it. The CEO believed that it was the specialist technical abilities rather than their competencies that had attracted LCO3. At the time of the partnership SME3 did not yet have competencies, only capabilities. However, the sentiment is that even today, LCO3 would be more interested in SME3's capabilities than its competencies as in the defense industry (the domain wherein SME3 operates), LCOs wish to develop their own products rather than buy-in existing products. As specialist skills are not readily available locally, partnering with an SME is one way of gaining access to these skills and capabilities.

The experts rated the capabilities/competencies of SME3 as leaning slightly towards being of a specialist nature (2.25), and being slightly more multidisciplinary than discipline specific (2.25). However, the experts overall impression of SME3's capabilities/ competencies rated below average (1.75), i.e. relatively low relative to the other SMEs.

Hence, although SME3 had certain capabilities, these, in the view of the experts, rated low relative to the other SMEs. And yet the relationship with the LCO3 was successful. However, on examining the partnership arrangement with the LCO it can be concluded that this was one of dependence – LCO3 was extremely reliant on the capabilities of SME3 as it had a project running that demanded the skills, knowledge and expertise of SME3's CEO, who had left whilst the project was still running to start his own company. Because there is usually a need for confidentiality and secrecy in product development in the defense industry, skills and expertise are not readily available. It is not always possible merely to hire in the required skills as there are issues of secrecy at stake. Research and development work is therefore usually done internally.

In South Africa during the 1990's, as the era of isolation associated with the demise of apartheid ended, as well as internationally, the end of the cold war which signalled South Africa's withdrawal from military activity in Africa, there was less of a need to focus so heavily on defense for the country. The national focus shifted away from defense and towards poverty alleviation and economic growth for the county. As a direct result the defense industry saw many retrenchments as government spending was directed towards areas that would stimulate economic activity. In addition, many spin-out companies were formed by former employees of these LCOs, who because of the changing and uncertain environment had left their respective companies to start their own companies. In many cases the LCOs were still dependent on the skills, experience and capabilities of the "spin-out" companies and because there existed already a relationship of trust and confidentiality between the LCO and the ex-employee, the LCOs were prepared still to outsource some of their projects to the ex-employees's start-up companies. It was in this context that LCO3 was happy to continue working with SME3 initially, until it had time to build its own in-house capacity again. Hence, although the capabilities/competencies of SME3 may have been relatively low, dependency on these capabilities/competencies and the confidential relationship that existed was what attracted LCO3 to partner with SME3.

5.4.1.4 SME4

SME4 initially supplied "systems programming" solutions to company A and company B. Companies A and B were in computer networking systems and were medium sized companies. The founder of SME4 commented that having capabilities and competencies was critical for partnership success as it was because of a product that SME4 had developed (a human resource (HR) module) that LCO4 had approached them in the first instance. LCO4 recognized that SME4 had certain competencies and asked them to customize the LCO4 HR module for the South African market.

SME4 had both competencies and capabilities that had attracted LCO4. It had a broad spectrum of knowledge and skills for developing applications and new developments, as well as systems processing skills and an ability for complex programming for example, software protocol development – i.e. capabilities. In addition the company had some knowledge of the domain. The founder clarified that his understanding of capabilities was the ability to bring about new developments, and a competency was an ability to deliver something now. For example, SME4 used its payroll competency to customize the LCO4's payroll system.

The founder believed that both competencies and capabilities were important for a successful partnership. The SME must demonstrate some competency, although this competency did not need to be specifically in the domain of the LCO. However, a demonstration of the SME's capabilities and competencies was important for a prospective partnership. The founder further commented that because of domain independence, capabilities were possibly more important than competencies, for example, an LCO in the financial sector might have seen the SME's capabilities to develop systems in the mining sector, and request them to develop similar systems for the financial sector. This would clearly indicate recognition of certain capabilities that could be used to develop a new competence in a new sector or domain.

When the SME is really small, it appears that the LCO is more interested in the SME's capabilities, but as it grows and develops certain competencies, it appears that the LCO shifts its interest to the SME's competencies. However, he believed that some LCOs tend to be risk averse and would be more interested in accessing a demonstrated competence than merely a capability that would need to be developed into a competence. However, the interest in accessing competencies and capabilities would also be dependent on the situation and the specific need of the LCO, for example, if specialist skills were required for instance to develop cutting edge innovation and radical thinking, then the LCO would be more interested in accessing capabilities to include in its own systems and processes than looking for a competence. Alternatively, and citing examples like Cisco and Microsoft, an LCO may recognize a domain competence in some of the individuals of an SME and acquire the SME, strip it of the people who are not core to the competence, and integrate the competence into its own company.

The experts were of the opinion that SME4 has capabilities/competencies that are of a general nature (2), and that they are very multidisciplinary (3.25). Their overall impression was that SME4's capabilities/competencies were high (3.5) relative to the other SMEs.

Hence it appears that not only did the successful partnership result from SME4's high level of capabilities/competencies, but that it was both competencies and capabilities that had resulted in the successful partnership. The competency was SME4's human resource (HR) module that it had developed and which it was requested to customize such that it became a component of LCO4's system offering. The capabilities that it offered LCO4 were the ability for developing applications and new developments, as well as systems processing skills and an ability for complex programming, for example, software protocol development. Domain knowledge was also listed as a capability. In this case it was not only a competence, but also the associated strong capabilities that SME4 possessed that appeared to attract LCO4 and influence partnership success.

5.4.1.5 Conclusions on the relationship between capabilities and competencies and partnership success

As in the literature, so also in the practice there is confusion regarding the definitions of competencies and capabilities. There appeared to be a common understanding within the four SMEs that capabilities were a building block for competencies, and that capabilities could be equated with inputs (organizational components being necessary "ingredients" for producing a product or service) and competencies could be equated with outputs (final product or service). However, at what specific point skills became capabilities, and capabilities became competencies was not clear. What is evident was that in all cases the SME had capabilities and/or competencies.

Table 33 summarizes the capabilities/competencies that the SMEs had (classified as per the hierarchical definition used in this research, section 2.3.3) and that the SMEs claim served as attractants for the LCOs.

Table 32: Capabilities and competencies of SMEs interviewed

	Ability capability	Awareness capability	Competence
SME1	Intellectual property		
SME2		Complementarity	Design & manufacture of products
SME3	Opto-electronics	Detailed product knowledge	Product development
SME4	Complex programming; domain knowledge	Complementarity	Payroll development

From Table 32 it appears that those SMEs that perceived their partnership to be successful (SME3 and SME4), had at least, an ability capability, an awareness capability and a competency, where SME1 and SME2 had combinations of these, but in no instance one of each.

From the above there does appear to be a link between the level of capabilities and competencies and partnership success. In the cases of SME1 and SME2, the capabilities were slightly above average and were associated with a low level of partnership success. SME3 had a low level of capabilities/competencies and perceived the partnership to be successful. Hence an above average level of capabilities/competencies did not result in a successful partnership (SME1 and SME2), whereas a low level of capabilities/competencies did result in a successful partnership. In the case of SME4, however, the level of capabilities/competencies was high and yet this also resulted in a successful partnership. Hence it appears that although an above average level of capabilities/competencies appears to be associated with an unsuccessful partnership (SMEs 1, and 2) and a low level of capabilities/competencies is associated with a successful partnership, this is not necessarily true in all cases (SME4). Furthermore, where the capabilities were complemented by a competence, they were related to a high level of partnership success (SMEs 3 and 4).

5.4.2 Effect of safeguards on the relationship between capabilities and competencies, and partnership success

In discussing safeguards, all four SMEs indicated that they believed safeguards to be important in protecting their capabilities and competencies and ensuring partnership success. "Large companies are ruthless and will take everything" was the comment of one of the SMEs. Safeguards used included the following, and each safeguard has been categorized according to Dekker's description of formal and informal control mechanisms in inter-organizational relationships:

SME1:

- Having secured the first customers of the new product (informal – social networks)
- Binding own employees to company by means of a restraint of trade agreement (formal: behavioural control – behavioural monitoring)
- A shareholders agreement with the LCO, including an exit clause for the SME and the LCO (formal: behaviour control – behaviour monitoring; outcome control – reward structures)
- Similar cultures (informal - reputation)

SME2:

- Capability trust (informal – capability)
- Contract (specifying technical specifications, buying and selling prices, but not sales targets, and unbalanced in terms of obligations) (formal: behaviour control: structural specifications)

- Restraint of trade with employees

SME3:

- Capability trust (informal – capability)
- Trust building (informal - joint decision making and problem solving)
- Goodwill trust – (informal – goodwill)
- Contract orders specifying deliverables and payment conditions (formal: outcome control – performance monitoring)

SME4:

- Integrity (both that one company will not try to deceive the other, and that the company will deliver on what was promised) (informal – reputation and trust capability)
- Trust (informal - reputation)
- Trust building by means of agreement of the specifications for a contract (informal – joint decision making and problem solving; partner development)
- A contract that describes the parameters of the relationship (formal: behaviour control – rules and regulations)
- A company culture that retains key employees (informal - reputation)
- Delivering a better service than the LCO (formal: outcome control – performance monitoring)

It is evident that a combination of formal and informal safeguards was used in all cases. In the case of SME1, the relationship was guided mainly by a contractual agreement. Much effort was spent on defining the exact nature and expectations of the current and future relationship with LCO1, as well as possible exit strategies for both SME1 and LCO1. In reality not all eventual contingencies could be specified in the contract. An unplanned contingency that arose was when the LCO was willing to invest additional funds in SME1 to improve SME1's liquidity such that it could develop and bring to market new products faster. However, as SME1 could not match the investment this would have meant that additional shares would have to be exchanged for the additional cash investment – and SME1 did not wish to relinquish any more shares. SME1 finally decided to buy its shares back from the LCO when the LCO management changed and with this change came a change in philosophy of working with SMEs. Hence the focus of the relationship was on the contractual arrangements to protect SME1's capabilities and competencies, rather than on developing and building a trust relationship, hence on formal rather than informal safeguards. Although there was evidence of some informal safeguards, these were largely a "static" demonstration of the capability and goodwill of SME1 (i.e. an ability to develop a customer base; and a similar culture), rather than ever-evolving trust building mechanisms. This "arms length" form of trust did not assist SME1 in achieving its objective of securing the moral support from LCO1 in fending off other opportunistic LCOs. Possibly this was because the relationship with LCO1 was not sufficiently developed (e.g. by trust building) for LCO1 to feel obliged to protect SME1. This finding is supported by the findings of Gill and Butler (1996:86) in their comparisons of two different cases, where "the combination of high expectations and a legalistic approach to the joint-venture, while not necessarily leading to distrust, does, when interacting with other variables, lay open the possibility of later disappointment and litigation". The experts rated the safeguards in place for SME1 as slightly above average (2.5).

In the case of SME2, LCO2 displayed capability trust in expecting SME2 to bring about rapid and inexpensive product development. However, as with SME1, this can be viewed as rather "static" and not leading to ongoing trust building and hence relationship building. In addition, the relationship with LCO2 had never been good and hence there was no foundation upon which to build trust. Furthermore, the formal control mechanism in place controlled the inputs (product technical specifications for compliance) rather than the outputs (performance monitoring and rewarding). In addition, the contract was skewed in favour of LCO2, and hence would have been ineffective as a safeguard for SME2. The experts rated the safeguards in place for SME2 as average (2).

In the case of SME3 the experts rated the safeguards in place as weak (1.5). Although there were hardly any formal safeguards in place (only contract orders), the trust between SME3 and LCO3 was very strong. The relationship SME3 had with the technical employees of the LCO was very strong and was based on friendships that had evolved when both of the partners had been in the employ of the LCO. The partners interacted socially with the key technical employees of the LCO (e.g. played squash together) and new contracts were discussed in a social environment. There is evidence of capability trust, goodwill trust and trust building. This is demonstrated respectively by LCO3's trusting relationship and by it being reliant upon SME3's capabilities; the social interaction with employees of LCO3; and continuous dialogue as SME3 and LCO3 jointly made decisions regarding the project they worked on together. As explained in section 6.4.1.3, the defense industry is reliant on trust relationships in order to enforce secrecy with regard to product development. Not only are employees of large defense companies screened and carefully selected, but this is a socially embedded system, which in itself is an effective safeguard. The industry in which SME3 operated was therefore unique, having its own social safeguarding mechanisms.

Furthermore, the formal safeguards were in the form of contracts that SME3 signed with LCO3 and that detailed the job specifications in the format of an order. Rather than having general guiding principles governing the relationship, the terms and conditions were very specific, and performance monitoring was tight. Hence SME3 did have both informal and formal safeguards in place, although these appeared to be weak relative to those of the other SMEs.

SME4 had many strong safeguards in place – both formal and informal. A greater emphasis was placed on the informal safeguards, and specifically on trust building and partner development whilst negotiating the contract. The founder commented that the contract was mainly a means of clarifying expectations and obligations, rather than a framework for the implementation of punitive measures. Retaining key employees by creating an attractive culture was also seen to be an important informal safeguard. The founder believed that good service delivery (reputation), culture and contracts were safeguards that should be in place. Hence a mix of formal and informal is proposed where the formal comprise an important safety net, whilst the trusting relationship is vital. Both are necessary for the partnership to be successful.

Based on the discussion above, Table 33 below summarizes the findings.

Table 33: Level of capabilities, competencies and safeguards, and perceived partnership success for sample companies

	Successful partnership	Capabilities and competencies	Safeguards
SME1	Low	Average plus	Average plus
SME2	Low	Average plus	Average
SME3	High	Low	Low
SME4	High	High	Strong

From Table 33, it appears that where the SME perceived its relationship with the LCO to be successful, it had both a high level of capabilities/competencies and very strong safeguards in place (SME4). For SME4 both informal and formal appeared to be important – the process of arriving at a contract was seen to be critical, whilst the actual contract was also seen as very important and without which there could be no basis and definition for a partnership.

In the case of SME3 there did not appear to be an association between capabilities/competencies and partnership success, and strong safeguards. Not only did the safeguards appear to be low in relation to those of the other SMEs, but the informal safeguards appeared to be more critical than the formal safeguards. This result could be explained as a function of the industry in which it operated where secrecy and trust was core to business relationships. The obvious dependency by LCO3 on SME3 might furthermore have influenced the success of the partnership more so than the presence of safeguards.

Where the companies perceived their relationship with the LCO to be unsuccessful, in the case of SME1 more reliance was placed on the formal safeguards (specifically contracts with own staff, and a “static” contract with the LCO), whereas in the case of SME2, reputation trust and a biased formal contract were the safeguards. SME1 ultimately relied on the contract to end its relationship with LCO1, and exited with its capabilities and competencies still in tact. Similarly SME2 is currently in negotiation with LCO2 to exit the existing contract and enter into a new contract.

In conclusion, when the association between capabilities/competencies and partnership success was low, the level of safeguards was average, whereas when the association between capabilities/competencies and partnership success was high, the safeguards were high (in one case), whereas in the other case this pattern was not found.

From this discussion on safeguards, it therefore appears that the level of the safeguards affects the relationship between capabilities and competencies and partnership success. Furthermore, although there can be no relationship without informal safeguards (specifically trust, albeit capability trust), formal safeguards not only capture the intent of the partnership – also important for continuity should the original signatories/negotiators leave the company, but also ensure that should the partnership be unsuccessful, the exiting SME has a good chance of leaving with its capabilities and competencies still in tact.

The next chapter will relate the results to the literature, as well as highlight the new findings. It will conclude by comparing the findings of the survey with those of the case studies and comment on the extent to which the case study findings validate the results of the survey.

Chapter 6

Conclusion and Recommendations

What follows is a summary of the results that have been reported in Chapter 4. The discussion focuses on the six hypotheses that were accepted and a possible explanation for the acceptance (and where relevant, for the rejection of the associated hypotheses) is given. The associated four models are discussed and comment is given on which model best fits the data. Conclusions from the accepted hypotheses and best-fit model, and support for the conclusions are then provided. A short discussion on the relevance of the findings and recommendations in terms of future research is given. Finally a comparison is made between the findings from the survey with those of the case studies and a conclusion is reached on whether the case studies' findings validate the survey findings.

6.1 Main findings from the survey

The first hypothesis to be accepted is associated with Model 1, namely:

H_{1d} Higher numbers of ability capabilities are associated with lower levels of perceived partnership success.

It appears that having many competencies and capabilities does not lead to partnership success. In fact the findings show that the more ability capabilities an SME has, the lower is the perceived partnership success. The reason for this negative relationship can be explained as follows.

In the absence of safeguards, LCOs can behave opportunistically as they will, in all likelihood, suffer no penalties from displaying such behaviour. An SME making known its competencies and capabilities would therefore be very vulnerable and open to exploitation by the LCO. Furthermore, because of its limited resources, the SME is not well positioned to litigate against the LCO should the LCO behave opportunistically. Such an exploitative relationship would be perceived by the SME as not successful. Hence, the more ability capabilities the SME has, the more attractive it is for the LCO, and in the absence of safeguards, the SME runs the risk of being taken advantage of by the LCO. This would result in an unsuccessful relationship.

With the introduction of safeguards, the situation changed and the partnership appeared to be perceived as being successful. It appears that safeguards do, indeed, moderate the relationship between competencies and capabilities and partnership success. The second and third hypotheses which are accepted are associated with Model 2, namely:

H_{2b} The greater the number of safeguards (formal and informal) that are put in place, the more positive will be the relationship between increasing numbers of awareness capabilities, and the perceived success of the partnership.

H_{2d} The greater the number of safeguards (formal and informal) that are put in place, the less negative will be the relationship between increasing numbers of ability capabilities, and the perceived success of the partnership.

Hence introducing both formal and informal safeguards results in both a positive relationship between awareness capabilities and partnership success, and a less negative relationship between ability capabilities and partnership success. Where awareness capabilities on their own had no effect on partnership success, when safeguards moderate awareness capabilities, awareness capabilities have a positive relationship on partnership success. Where ability capabilities on their own had a negative relationship with partnership success, when moderated by safeguards they had almost no effect on partnership success. This can be explained as follows: safeguards in the relationship deter the LCO from acting opportunistically, and the absence of opportunism creates the perception (in the eyes of the SME) of a successful partnership.

Similarly, from the hypotheses below (Models 3 and 4 respectively) it can be concluded that both informal safeguards and formal safeguards, when applied on their own, moderated the relationship between capabilities (awareness and ability) and perceived partnership success:

H_{3b} The greater the number of informal safeguards that are put in place, the more positive will be the relationship between awareness capabilities and the perceived success of the partnership.

H_{3d} The greater the number of informal safeguards that are put in place, the less negative will be the relationship between ability capabilities and the perceived success of the partnership.

H_{4b} The greater the number of formal safeguards that are put in place, the more positive will be the relationship between awareness capabilities and the perceived success of the partnership.

H_{4d} The greater the number of formal safeguards that are put in place, the less negative will be the relationship between ability capabilities and the perceived success of the partnership.

However, from the Nagelkerke R^2 results as well as the percentage of data points that were classified correctly, it appears that Model 4, (formal safeguards) was the best fitting model. It can therefore be concluded that increasing numbers of awareness capabilities, when moderated by *formal* safeguards, result in greater partnership success. Similarly, increasing numbers of ability capabilities, when moderated by formal safeguards, have a less negative (and almost no) effect on perceived partnership success.

Hence, SMEs that are aware of the LCO's internal and external environment (internal politics and SWOT), how they can play a complementary role, the opportunities they present to the LCO, and also the organizational type and partnering form that the LCO prefers; and where formal safeguards are present in the SME-LCO relationship, are highly likely to perceive their partnership with the LCO as being successful. Ability capabilities, however, do not appear to have a positive effect on the partnership, even in the presence of formal safeguards.

It is interesting that competencies were not significant in any of the models. This can be interpreted as LCOs source certain capabilities rather than competencies. As seen from Figure 3 in Chapter 2, competencies comprise capabilities plus processes. However, LCOs have their own internal processes and hence would be more inclined to absorb new capabilities and fit them into their existing processes than take on new capabilities plus new processes, i.e. competencies. This may account for competencies not being significant – competencies are probably not generally "in-sourced" by LCOs. Rather, capabilities are "in-sourced". This finding would support the argument that LCOs, in order to offer variety, must innovate, and for innovation they require knowledge. As has been summarized in Figure 3, knowledge forms the basis for skills and technologies, which together with facilities/infrastructure and organization, form capabilities. LCOs are therefore after knowledge (Hamel et al, 1989), either in its raw form, or developed into capabilities. As knowledge can be packaged into capabilities, it is the capabilities that the LCO seeks.

The negative relationship between ability capabilities and partnership success was influenced by two items, namely, where the SME had developed IP; and where the SME had segmented its potential market in accordance with Moore's (1999) market segmentation strategy for hi-tech products. This can be explained as below.

An SME developing its own IP would also be aware of its vulnerability in dealing with an LCO. It would not be aware that, should the LCO act opportunistically that it would be able to restrain it, nor have the resources to litigate against the LCO. Hence, the SME would be distrustful and possibly not very open in the relationship. This would frustrate the LCO who would not be able to benefit to the degree it had intended, from the ability capabilities of the SME, leading to an unsuccessful partnership.

Although the SMEs had claimed to have segmented their market in accordance with that for hi-tech products, this may not have been the reality as this claim could not be verified. It could be that SMEs had, in fact, NOT segmented the hi-tech market accurately and hence did not package their product offering appropriately. They may, in fact, not have been able to deliver on the expectations that had been created, resulting in the partnership being unsuccessful.

The positive relationship between awareness capability and partnership success was influenced by the SME having an understanding of the LCO's SWOT. This is an expected result as the more the SME understands of the LCO, the better positioned it is to align its offering appropriately such that it presents an attractive opportunity for the LCO.

However, a negative relationship was found to exist between the awareness capability of LCO's preferring to enter into a JV with another LCO when sourcing technology. This can be explained as the SME feeling excluded as the partner of choice, and hence not being that open to the relationship in the first instance, leading to an unsuccessful partnership. The introduction of safeguards, which included items like the LCO having a technology strategy, quantitative measures for determining partnership success, expansionistic opportunities SME presented for the LCO, similar cultures, SME being project champion, joint-decision making, SME's reputation, and being seen as important in the industrial cluster, resulted in a positive relationship between awareness capability and partnership success. Such safeguards may have dispelled the SME's fear of exclusion as the LCO's commitment to the partnership became evident.

Having summarized the findings above, below is discussed how they relate to the literature.

6.2 Relationship between survey findings and the literature

The literature (Siriram and Snaddon, 2004; Porter, 1998; Kogut, 1988; Hagedoorn, 1993) emphasizes that among the major reasons for companies to form partnerships is to access technologies, skills and resources – i.e. capabilities. There is, however, no evidence in the literature to suggest that either a higher number or a lower number of capabilities is what is sought by LCOs wishing to partner. The findings of this research are that the number of ability capabilities should be low as the more ability capabilities; the less successful the partnership is perceived to be. This could be explained as the more abilities, the more opportunity of opportunistic behaviour by the LCO, and hence the less successful the perceived partnership.

Furthermore, the use of safeguards to moderate the relationship between capabilities and perceived partnership success appears to affect the relationship positively. The use of total safeguards (formal and informal) as well as both formal and informal safeguards respectively positively affects the relationship between capabilities and perceived partnership success. In the case of awareness capabilities, the interaction of safeguards results in a positive relationship between capabilities and partnership success, whereas in the case of ability capabilities, the relationship between capabilities and partnership success is less negative than when ability capabilities were tested on their own with partnership success. This would imply that SMEs wishing to partner with LCOs should ensure that appropriate safeguards are in place. Furthermore, if safeguards are in place, then the more awareness capabilities the SME has, the more successful will be the partnership. Furthermore, the more ability capabilities an SME has, in the absence of safeguards, the less likely is the relationship to be successful. However, unlike in the case of awareness capabilities, if safeguards are in place, increasing numbers of ability capabilities does not make the partnership more successful. This can be because if an SME has too many abilities, it may be defocused and not have sufficient depth in any one ability. As the LCO partners to access an ability, should the ability not materialize in line with the expectations of the LCO, the partnership may not be successful.

These findings are in line with Ouchi (1979), Das and Teng (1998), and Dekker's (2004) framework for control in inter-organizational relationships and control mechanisms, whereby both formal and informal control mechanisms or safeguards, can be used to control the behaviour of collaborating firms. However, the findings also suggest that formal rather than informal safeguards are the most influential in moderating the relationship between competencies and capabilities.

The research indicated that where SMEs had developed proprietary information, including patents, software, new products and/or new processes (IP) (an ability capability), there was a negative relationship with perceived successful partnership. The question relating to whether this IP had been patented had an insignificant result. This could indicate that where SMEs had developed IP and had not patented it, they were aware that their IP was unprotected. The SMEs were therefore probably feeling vulnerable and exposed to possible opportunistic behaviour by the LCO. In attempting to safeguard their IP, the SMEs may not have disclosed sufficient information or sufficiently engaged with the LCO, to ensure a successful partnership. These findings are in support of the findings of Teece, (1990) and Arundel (2001) who comment that a disincentive to patent is because of the requirement for full disclosure, and that creates an opportunity for mimicking. An SME that has elected not to patent, therefore, would still be aware of the dangers associated with disclosure, and would hence be reluctant to make all the required information readily available. This would explain the negative relationship with partnership success.

A positive relationship was found between the SME having an understanding of the LCO's SWOT (awareness capability), and perceived successful partnership. This is in line with the literature (Bakker, 1994; Klofsten and Schaerberg, 2000; Hlavacec et al, 1977) whereby companies need to understand where they can add value to their potential partners for the partnership to be successful.

The research indicated a negative relationship between the preferred partnering form of the LCO when sourcing technology to be *to enter into a joint venture with another LCO*, and perceived partnership success. Freeman and Soete (1997) comment that transnational companies (which because of their size would qualify as LCOs) are well positioned to cooperate with rivals and organize international joint ventures. Klein Woolthuis and Groen (2000) found that LCOs preferred to cooperate with other LCOs rather than with SMEs. O'Dwyer and O'Flynn (2005) believe that joint ventures offer a good form of governance when the absorptive capacity of the recipient is low and more interaction with the knowledge supplier is required. Therefore a joint venture, they believe, is appropriate for transferring complex capabilities. These arguments would tend to support the abovementioned finding, arguing that entering into a joint venture with another LCO would be an appropriate form for a technology sourcing strategy in an uncertain (hi-tech) environment. LCO-LCO joint ventures appear to be preferable in uncertain environments. However, an LCO-LCO partnership would in all likelihood excludes or be to the detriment of an LCO-SME partnership, hence resulting in a negative perception by the SME of partnership success.

The comments by Hadegoorn and Sadowski (1999) would offer further support for this research finding, namely that contractual agreements are preferable and tend to prevail in technology intensive sectors, whereas joint ventures are preferable in medium and low-tech industries. As the sample surveyed comprised SMEs from the technology intensive sectors, an assumption can be made that their LCO partners would also be from the technology intensive sector. A joint venture arrangement with an SME would therefore not be the LCO's preferred technology sourcing strategy – but rather a contractual agreement. Furthermore, there is much literature commenting on the high failure rate of joint ventures (Park and Russo, 1996; Kogut 1989; Porter, 1987; Frick and Torres, 2002; Das et al, 1998). This might also explain the negative relationship between the sourcing strategy of the partnering LCO to be *to enter into a joint venture with another LCO*, and perceived successful partnership as not only would the preferred form of partnership be a contractual agreement rather than a JV, but because of the high failure rate of JV's entering into a JV with an SME would not be the preferred form of partnership.

6.3 Unexpected findings from the survey

The first surprising result is that competencies appear not to play a role in determining partnership success. Rather, it is the abilities that have a relationship with partnership success. However, as described in the section above, knowledge, packaged as abilities (without associated processes) rather than competencies (abilities PLUS processes) are probably what are sought by LCOs.

This finding would support the argument that LCOs, in order to offer variety, must innovate, and for innovation they require knowledge. As has been summarized in Figure

3, knowledge forms the basis for skills and technologies, which together with facilities/infrastructure and organization, form capabilities. LCOs are therefore after knowledge (Hamel et al, 1989), either in its raw form, or developed into capabilities.

A second unexpected result was that the more ability capabilities an SME has, the less successful the partnership is perceived to be. As discussed above, this can be due both to opportunistic behaviour by the LCO, as well as a lack of focus by the SME.

A third surprising result is that one would have expected to find a positive relationship between informal safeguards (that largely comprise trust) and perceived partnership success as this is largely what is described in the literature. However, the findings of this research indicate that formal safeguards were more effective in moderating the relationship between capabilities and partnership success than informal safeguards. This finding is contrary to what was expected, as discussed below.

There is much in the literature describing how trust and formal control appear to be juxtaposed to each other. Dekker (2004:34) and Das and Teng (1998) claim that there is an inverse relationship between trust (informal control) and formal control, and that extensive use of formal control signals a lack of belief in the partner's goodwill or competence. Gulati (1998) comments that trust replaces the need for hierarchical structures to control opportunistic behaviour. Pyka (2002) comments that with time, formal contracts get increasingly displaced by more flexible informal relationships as mutual trust and confidence between the partners is built up. Gulati and Singh (1998) maintain that where there is trust, there are likely to be fewer hierarchical controls. Hence one would have expected to find a positive relationship between capabilities and partnership success when moderated by informal controls as this would indicate that the partnership had matured to the level where fewer hierarchical controls were needed, and at this stage the relationship would be stable and perceived to be successful. However, the findings suggest that informal safeguards have less of a moderating effect on the relationship between competencies and capabilities and perceived successful partnership than formal safeguards. There is support in the literature for this finding, for example Klein Woolthuis (1999) comments that contracts (formal safeguards) are often a means to an end, and i.e. they are used to make the commitment of the partners clear and tangible. But perhaps this result can better be explained by considering the historical impact on South African companies.

In order to explain this phenomenon we consider the political and economic history of South Africa. Prior to 1994, South Africa implemented a political policy of *apartheid* or "separate development" of its people. This policy removed most of the constitutional rights of non-white residents in South Africa. *Apartheid* resulted in the development of a polarized society, and was found unacceptable not only to many South Africans, but also to the Western World (US, Scandinavia and Europe). As the Western world comprised South Africa's largest trading partners, they applied pressure to the South African government to change its racist policies by imposing trade embargoes on South African goods. As a result of the trade embargoes, the South African economy was to a great extent marginalized. Two major effects resulted: a very competitive domestic market developed where local businesses competed for local market share; and a culture of distrust rather than trust in the export business environment arose, explained as follows. Those companies that wished to retain their export market share had to use devious means to continue selling into foreign markets, for example by setting up "front" companies and exporting goods via Middle East ports. The net effect was that trust was no longer the basis for doing business, local or international, and formal contracts were used to guard against opportunism. It therefore appears that South African business relationships have not yet matured to the degree where they are built on trust. Furthermore, unlike the US or Europe, there is not yet a culture in South Africa of LCOs collaborating with SMEs. This could be because of South Africa typically being viewed as a technology colony, where R&D of the large foreign-based companies was performed in the respective home country and South Africa was merely treated as a supplier of inexpensive resources – LCO's therefore had no need to develop relationships with South African SMEs.

A third argument in support of the use of formal safeguards is that formal safeguards are easier to implement. They generally have clearly defined outputs which makes monitoring and corrective intervention relatively simple. Informal safeguards, however, are far less tangible and it is much more difficult to monitor and control the partner's behaviour against informal safeguards. It follows, therefore, that formal safeguards can be seen as more important and more easily implementable than informal safeguards in moderating the relationship between capabilities and perceived partnership success.

However, although formal safeguards appear to be more important in controlling opportunism, a fourth unexpected finding is that equity did not appear to be a common formal safeguard mechanism. Equity can be viewed as a form of hierarchical control, and hence if a substantial equity stake in the SME is held by another company, this second company would be able to exert some degree of control on the SME. Similarly, were the SME to enter into a partnership with a third company, the SME's equity partner would be able to exert influence on the new partner. If the equity partner were an LCO, then the presence and engagement of this LCO might discourage opportunistic behaviour by a third party. On the other hand, where little or no equity is held, the SME, as a stand-alone entity, is vulnerable to opportunism by an LCO. Equity not appearing to be a common formal safeguard might be as a result of an apparent lack of trust in South African business relationships, such that SMEs are not willing to share equity with LCOs. It could also be as a result of the size of the SMEs in the sample population – because they were largely still very small companies, most of them may not yet have reached the stage where they were an attractive investment opportunity for another company.

A fifth unexpected finding is the negative relationship between the SME having segmented their potential market, inter alia, into early innovators, early adopters, early majority, late majority and laggards, and perceived successful partnership. This means that the more the SMEs segmented their market according to these categories, the less successful was the perceived success of the partnership. This finding is somewhat surprising as Moore (1999) elaborates extensively on the difficulties encountered in "crossing the chasm" from early adopters to the early majority. He emphasizes that the process for a successful crossing is in identifying the market categories (early innovators, early adopters etc), understanding the paradigms and needs of each category, and following a strategy to address the paradigms and needs of the early majority. Companies would need to have the capability to understand this market segmentation strategy and implement it successfully. A possible explanation for the findings of this research could be as follows. Many of the companies interviewed were still very small – the highest percentage (32%) had fewer than 5 employees – and they had therefore most probably not yet crossed the chasm. Although they had indicated that they had segmented their market into the abovementioned categories, the fact that they had not yet grown substantially would indicate that they had not yet implemented successfully a strategy to attract the "early majority" – and they had not yet, in fact, crossed the chasm. Hence, either they did not adequately understand these market segmentation categories, or they had not successfully applied tactics to influence the paradigms/address the needs of the early majority. Because their expectations for capturing a share of the early majority had not yet realized, they perceived the partnership to be unsuccessful. An additional explanation could be that the companies interviewed were NOT familiar with the theory of Moore's market segmentation strategy – in fact they may neither have read this theory, nor had an understanding of it. If their "yes" answers were taken to be "no" answers, then the result would have been expected, i.e. a lack of understanding of Moore's theory would result in a less successful partnership.

6.4 Comparison of survey findings with case study findings

Table 34 below compares the major findings of the survey with those of the case studies.

Table 34: Comparison of survey and case study findings

Survey Findings	**Case Study Findings**
1. *Higher numbers* of ability capabilities are associated with *lower levels* of perceived partnership success	• *average levels* of capabilities/competencies are associated with a *low level* of perceived partnership success (in two cases); • *low levels* of capabilities/competencies are associated with *high levels* of perceived partnership success in one case • *high levels* of capabilities/competencies are associated with a *high level* of perceived partnership success (in one case);
2. Numbers of competencies are not significant in determining partnership success	• SMEs having ability capabilities, awareness capabilities and competencies were associated with *high levels* of perceived partnership success, whereas those with either an ability capability or an awareness capability plus a competence (i.e. not all 3) were associated with low levels of perceived partnership success
3.1 The greater the number of safeguards (formal and informal) that are in place, the more positive the relationship between increasing numbers of awareness capabilities and the perceived success of the partnership 3.2 The greater the number of safeguards (formal and informal) that are put in place, the less negative will be the relationship between increasing numbers of ability capabilities, and the perceived success of the partnership	• when the level of safeguards was *strong* (in one case) then the association between capabilities/competencies and *partnership success was high* • when the level of safeguards was only *above average or average* (in two cases), then the association between capabilities/competencies and *partnership success was low* • when the level of safeguards was *weak* (in one case) then the association between capabilities/competencies and partnership success was *high*
4.1 Increasing numbers of awareness capabilities, when moderated by formal safeguards, result in greater partnership success 4.2 Increasing numbers of ability capabilities, when moderated by formal safeguards, have a less negative effect on perceived partnership success	• Both formal and informal safeguards appeared to influence the association between capabilities/competencies and paertnership success.

From the table the following is evident.

6.4.1 Slightly above average levels of capabilities/competencies were associated with low levels of partnership success, and in one case a low level of capabilities/competencies was associated with a high level of partnership success. This would seem to support the findings that *higher numbers* of ability capabilities are associated with *lower levels* of perceived partnership success. However, this finding is challenged by one SME that had *high levels* of capabilities/competencies and these were associated with a *high level* of perceived partnership success. However, this SME also had strong safeguards that could have moderated the relationship between capabilities/competencies and partnership success. Hence the findings from the case studies would appear to support the first finding of the survey, namely that high levels of capabilities/competencies are associated with low levels of partnership success.

6.4.2 The case studies reflected that SMEs having ability capabilities, awareness capabilities and competencies were associated with *high levels* of perceived partnership success, whereas those with either an ability capability or an awareness capability plus a competence were associated with low levels of partnership success. Hence it appears that competencies do play a role in influencing a successful partnership. This finding would seem to nullify the finding from the survey that indicated that the number of competencies is not significant in determining partnership success. Furthermore the case studies reflected that it was not necessarily the number, but rather the level of competencies that influenced the partnership.

6.4.3 In one case the level of safeguards was *strong* and the association between capabilities/competencies and *partnership success was high.* In two cases the level of safeguards was only slightly above average or average, and the association between capabilities/competencies and *partnership success* was low. This would seem to verify the survey findings that the greater the number of safeguards (formal and informal) that are in place, the more positive the relationship between increasing numbers of awareness capabilities and the perceived success of the partnership as well as the less negative will be the relationship between increasing numbers of ability capabilities, and the perceived success of the partnership. Hence the findings would seem to indicate a positive association between the level of safeguards and the association between capabilities/competencies and partnership success. However, one SME reflected that although the level of safeguards was weak, the association between capabilities/competencies and partnership success was high. The explanation that has been offered in section 6.4.1.3 is that there may have been a different reason for the partnership success that was not necessarily related to safeguards, i.e. dependency by the LCO on the SME for critical capabilities.

6.4.4 No concluding evidence was found in support of formal safeguards being more important than informal safeguards. In all cases the importance of both was mentioned.

6.5 Relevance of the findings and recommendations

The research set out to determine how SMEs could influence the successfulness of a partnership with an LCO. An objective was to open the "black box" that many SMEs experience when negotiating with LCOs, by identifying key components that the SME can control. Armed with this knowledge, the end result would be to restore the balance on the seesaw such that in a partnership with an LCO, the SME would be able to achieve the outcomes it had planned. This objective has been achieved to some degree.

The survey findings have confirmed that having competencies does not influence the successfulness of a partnership. Furthermore, having capabilities does not influence the successfulness of a partnership positively – in fact, the more ability capabilities (attractants) an SME has, the less successful will be the partnership. However, when safeguards (weights) are in place, and more specifically formal safeguards, then awareness capabilities affect partnership success, i.e. an increase in awareness capabilities results in improved partnership success. The awareness capabilities identified were:

- awareness of and complementarity with LCO's core business and SWOT
- understanding of the internal politics of the LCO
- being aware of the opportunities that the SME presents to the LCO
- understanding the organizational type from which LCOs source technologies
- preferred technology partnership form of LCO

The formal safeguards that influenced the relationship positively between capabilities and partnership success were:

- partnership between LCO and SME was formalized
- use of quantitative measures for determining partnership success

- LCO has a technology strategy
- expansionist opportunities SME presents for the LCO
- means by which LCO gathered information on SME
- documented process for monitoring quality control, delivery and support of products
- substantial equity stake in SME held by another entity

The case studies, in turn, highlighted that safeguards are perceived to be important to protect the company's capabilities and competencies, as confirmed by each of the companies interviewed. Furthermore, support was found in favor of the hypothesis that the stronger the safeguards, the more positive will be the relationship between capabilities/competencies and the perceived success of the partnership. Although trust (informal safeguard) was seen to be important for partnership success, formal safeguards appeared critical – both in developing a common understanding (informal: trust-building safeguard) as well as arriving at a framework for specifying the rights and obligations of the parties (formal safeguard). Furthermore the existence of formal safeguards appeared to lead to a successful exit strategy. Even in the case of the companies that had experienced an unsuccessful partnership, they had managed to exit from the partnerships with their competencies in tact due to the fact that they had formal safeguards in place.

This would support the findings from the survey that safeguards are important to ensure a positive relationship between capabilities and competencies and partnership success, but that both informal and formal are essential. Furthermore, that the quality rather than the number of safeguards is important, for example LCO3 was reliant on SME3's critical capabilities and hence capability-based trust was critical. Assuming that there are indeed capabilities and competencies to protect, and then safeguards positively moderate the relationship between capabilities and competencies and a successful partnership.

These are important findings for SMEs wishing to partner with LCOs, as firstly it cautions SMEs against having many capabilities/competencies in the absence of safeguards. This is because not only could the SME be defocused, but it would be more vulnerable to exploitation by an LCO. Secondly it highlights the importance of an SME having ability capabilities, awareness capabilities and competencies as jointly these appear to influence the successfulness of the partnership. Thirdly and SME should ensure that both formal and informal safeguards are in place as these are very influential in determining the success of a partnership. SMEs may therefore be able to influence the outcome of a partnership positively, if they ensure that certain formal and informal safeguards are in place.

These findings should be brought to the attention of professionals who assist South African SMEs in establishing their businesses – and specifically those SMEs in the hi-tech sector where partnering with an LCO is often an essential component of growing the business. In this way SMEs can be guided such that their partnership with the LCO is successful and achieves the desired outcomes.

6.6 Shortcomings and possible sources of error

As has been discussed in Chapter 3, because of the poor response rate the research design had to be changed mid-way into the project. This not only wasted valuable time, but resulted in an "adapted" questionnaire which was not sufficiently focused regarding the expected outcomes of the research, and was very lengthy – 44 questions translating to 13 pages capturing 283 variables. The reason for the many questions was an attempt to cover as many contingencies and perceptions as possible, and to allow for the compounding of variables in order to improve the variation of an envisaged small sample. Furthermore, the final method of analyzing the variables was decided upon only once the responses had been gathered and the small sample size needed to be taken into account. Should it have been possible for the method to have been decided up front, the questions could have been tailored to meet the desired outcome.

The interviewing process, if strictly controlled and not allowing much discussion from the interviewee, took approximately 75 minutes. However, companies were often keen to share their insights rather than merely respond to quantitative questions, and the structured questionnaire was not sufficiently flexible to capture many of their comments. Hence, an empirical study to arrive at the main findings, followed by multiple case studies that focussed on specific findings in attempt to gain a deeper understanding of these findings, was adopted to enhance the study. However, as only four SMEs were selected for the case studies, these SMEs may not necessarily have been the most representative SMEs of their respective categories (perceiving successful versus not successful partnerships). Hence using a larger number of case studies for the comparative study may have reduced this possible risk of unrepresentative findings.

Much time was spent trying to solicit responses from targeted companies. By far the most effective method for achieving an acceptable response rate was to target companies referred "by word of mouth". Such companies generally understood the importance of the research and were very willing to cooperate. Emphasis, from the start, could therefore have been placed on building the "word-of-mouth" referral database rather than cold canvassing and trying to cajole potential respondents to participate.

The awareness and ability capabilities were compiled from the literature and from anecdotal evidence. However, this is not an exhaustive list and there may be other items that should have been included that would have influenced the relationship between competencies and capabilities, and perceived partnership success. Furthermore the existence of a competitor intelligence activity within the SME was not tested. Although certain awareness capabilities were identified and tested, the vigour with which information on competitors was gathered by the SME was not identified as a variable, nor tested.

What the research also did not answer, were which formal/informal safeguards are the most important to put in place, and whether the formal/informal safeguards that were tested in the research, are necessarily the most effective safeguards to include. For example, anecdotal evidence indicates that an SME can be so taken in by the attention that an LCO shows in its capabilities, that in its eagerness to impress, the SME divulges more information than it should. Hence, putting in place a guiding document that explains what information may be shared and with whom, could be an effective formal control mechanism. Similarly, informal safeguards could have been expanded to include ensuring that the SME's negotiation team included a lawyer who is highly respected in the community (and specifically by the LCO). The reputation of such an individual could significantly reduce the tendency of the LCO to act opportunistically.

Furthermore, although the composition of the variables was agreed upon by a group of experts, it could be argued that a different group of experts may have decided upon a different composition – which could have resulted in different outcomes. However, the factors mitigating against this would be that the experts consulted were well versed in the field, they were familiar with the scientific literature in the field, and "collective" wisdom was applied – more than one expert was used. In addition, the researcher herself had identified and categorized the variables using the scientific literature as a point of departure. Hence, the categorization of the variables was by no means accidental, but was a consultative process based on scientific literature.

The research also did not test how strong the existing relationship was between key individuals of the LCO and the SME prior to entering into a partnership, and whether such relationships were with the appropriate decision-makers (i.e. having economical rather than technical status). It could be that should the SME have a well established relationship with appropriate key individuals within the LCO that the informal safeguard, level of trust, would be very high and could outweigh the importance of the use of formal safeguards. This relationship may, furthermore, depend on the age of a company, i.e. the more mature the SME, the greater the possibility of having established relationships with key individuals in the LCO, and the higher the level of trust. Assuming that trust therefore becomes a more important safeguard, it would be interesting to determine whether the age of a company determines the appropriateness of formal or informal safeguards, namely, whether formal safeguards are more important for very small or start-up companies, and when they reach a certain age (and/or size associated with growth), that informal safeguards become more important.

Similarly, the research did not test whether the SME had established the reputation of the LCO in its dealings with other SMEs – was it opportunistic or not. Reputation is an informal control mechanism, and if it was a key factor in identifying an LCO partner, it would weigh in favour of informal control mechanisms being important.

With the new political dispensation in South Africa (after 1994), there may be an ever changing culture, namely from a strongly individualistic culture, to a more socialistic culture where consensual behaviour rather than individualistic behaviour is encouraged. Consensual behaviour may encourage companies to collaborate for the common good, rather than act opportunistically for their own benefit. Furthermore, as legislation in South Africa drives black economic empowerment (BEE), LCOs are being challenged to partner with BEE owned companies, and many of these may be emerging companies, hence LCO-SME partnerships are being promoted. It would therefore be useful to repeat the research in a few years time to see whether there has been an explicit change in the South African culture and whether this, in turn, has resulted in a change of importance from formal to informal safeguards.

The research only tested the perceptions of SMEs, and not the perceptions of LCOs. The research therefore captures the views of one partner rather than both. Hence, if it were possible to interview both parties in the relationship, capturing the LCOs perspective would have presented an opportunity to confirm/reject the main findings. In addition, new findings may have been arrived at.

Lastly, because of the convenience sample, and the fact that the sample was small, one cannot conclude that the results presented are representative of a population. A more representative sample from different economic and geographical sectors would need to be surveyed to make conclusive statements and ensure external validity.

Future research could therefore include the following:

1. testing which of the individual items comprising the compounded variables are the most influential
2. determining whether the items selected as competences and capabilities are the most appropriate, or whether there are others that should be tested
3. revisiting the composition of formal, as well as informal safeguards and testing the appropriateness and effect of the items selected on partnership success
4. testing the research findings with a representative sample of SMEs to establish the congruence of the findings with the considered opinion of the affected population – a case study approach
5. repeating the research using a sample of companies that are slightly more established ($\geq$ 5 years old)
6. repeating the research in a couple of years time to determine the effect of a changing South African culture
7. testing the perceptions from both an SME and an LCO perspective
8. improving the external validity of the research by testing a larger, more representative sample, both geographically and from different hi-tech sectors.