Developing and Protecting the "Golden Idea" in New High-Tech Ventures: Entrepreneurs and Advisors

by

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Acknowledgement

I just thank God.

Dedication

This is for every boy, every girl, every woman, every man out there whose opportunities have been taken away by those with oppressive powers and whose future has been denied through lack of access to basic health care.

Abstract

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The preoperational stage of a new venture is characterized by concept definition, idea enhancement, and strategy formulation. Entrepreneurs consult advisors in knowledge sharing activities. Trust is dominant in these entrepreneur-advisor relationships as entrepreneurs rely on an advisor's judgment to keep venture ideas away from competitors. However, the relationships between trust, knowledge sharing, and knowledge security during the preoperational stage of a new high-tech venture are not directly examined in many research studies. Concerning types of trust, McAllister (1995) defines two types of interpersonal trust: affective trust, which develops from emotional bonds between individuals, and calculative trust, which is based on an individual's level of competence and reliability.

The present study applies McAllister's (1995) theory of types of trust to Kale, Singh, and Perlmutter (2000) findings to examine how trust relationships between entrepreneurs and advisors affect knowledge sharing and an entrepreneur's use of NDAs. This dissertation's research primary question is, "How does trust between an entrepreneur and advisors affect knowledge sharing and choices of knowledge security mechanisms during the preoperational stage of a new high-tech venture?"

I used de Koning and Muzyka's (1999) classification of the entrepreneur's social context to define three advisor types: Close Friends, Business Associates, and Licensed Professionals. Linking these types with literature on trust and knowledge, I hypothesize seven relationships dealing with trust, knowledge sharing, and knowledge security. I used structured and non- structured interview formats to collect data on 143 entrepreneur-advisor relationship in South Florida. The results confirmed that relationship length significantly contributed to affective trust and entrepreneurs were more likely to share knowledge with Business Associates than with Close Friends or Licensed Professionals.

Affective trust was found to be the dominant form of trust driving knowledge sharing but affective trust was not significantly found to impact the use of NDAs. Entrepreneurs expected all advisor types to be competent, experienced, and skilled, reporting nonsignificant differences in calculative trust across advisor types. I did not find the use of NDAs to be associated with any particular advisor type. Rather, NDAs were seldom used during the preoperational stage for reasons such as the entrepreneurs' desires to maintain positive relationships with advisors, along with their reliance on a strong institutional background.

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I. Introduction And Research Objectives

A high-tech entrepreneur assembles and organizes resources (Hanlon & Saunders, 2007), and uses his or her relationships with advisors to access resources necessary for starting a new venture. In many instances, an entrepreneur shares his or her *"golden idea*" with advisors and trusts these advisors to use their knowledge, networks, and resources to refine and advance the idea. The golden idea is the concept on which the entrepreneur plans to build a venture; the core competency of the venture. These relationships with advisors may provide opportunities to pursue new ventures and access to privileged information that can help in modifying a new venture idea. For instance, the entrepreneur's costs of acquiring resources may be reduced because of his or her personal relationships with key industry figures (Brüderl & Preisendörfer, 1998). The entrepreneur also trusts these advisors to protect the venture knowledge from competitors (McAllister, 1995).

This study focuses on the use of advisors during the preoperational stage—the period of idea development and enhancements before the startup of the new venture. Entrepreneurs find that they have to be open to access resources from three categories of advisors during this stage. They need to tap into Close Friends' experiences, rely on the complementary assets of Business Associates and prospective business partners, and also draw on professional expertise from Licensed Professionals such as accountants and lawyers. Yet, entrepreneurs seek to maintain the security of their golden ideas so as not to

lose potential financial gains and economic advantages that come from successfully commercializing these ideas. They put their golden ideas at the risk of appropriation when they work with these advisors (cf., Oxley, 1997; Teece, 1986). During the preoperational stage, entrepreneurs need to find the right balance between sharing knowledge with advisors and avoiding unintended leakage and use of valuable knowledge by competitors (cf., Klee, 2000).

Many new ventures are high-tech ventures, and these ventures are founded on knowledge or intellectual property. The kinds of knowledge on which many high-tech ventures are based are developed through consultations with advisors and are especially susceptible to unintended leakage to competitors (Bader, 2008). The world economy is now driven by the knowledge industry—telecommunications, computer networking and design, and microelectronics (Murtha, Lenway, & Hart, 2001). Microsoft, Google, and IBM are known for their interests in knowledge ventures since these small businesses spawn the new technologies that the large companies adopt. When small firms create new knowledge that can potentially generate market returns, these large companies tend to buy them up or invest heavily in them. New high-tech ventures are new businesses by entrepreneurs that address consumer needs or solve industry problems in the high-tech context. The significance of knowledge for high-tech ventures cannot be overemphasized. The challenge before entrepreneurs of these new ventures is to continually work with advisors to generate new knowledge, yet not disclose this knowledge to their competitors so as to maintain their negotiating leverage.

Besides, to successfully launch a venture, an entrepreneur needs knowledge about industry prospects and market trends. During the preoperational stage, the entrepreneur

consults with a network of suppliers, distributors, potential clients, close aides, colleagues, and contacts (Case, 1989) to appropriately gauge market prospects. Studies show that entrepreneurs who consult with a wider variety of contacts are more likely to succeed than are those who do not extensively consult with advisors (Hay & Ross, 1989). Previous studies also indicate that entrepreneurs rely predominantly on family and friends for emotional support and advice (Hanlon & Saunders, 2007).

Knowledge sharing occurs when individuals work together to apply their understanding of new or important information to solve strategic, technical, or some other challenges or to create new knowledge. As individuals work and interact over time, relationships develop among these individuals. The interactions provide opportunities for them to share knowledge, to learn from each other, and to acquire new knowledge and skills. Frequent interactions between an individual and a specialist provide opportunities for the individual to learn specialist skills or at least tap into these skills for personal benefits or to achieve business goals (Grant, 1996; Kogut & Zander, 1992; Nonaka, 1994). Knowledge is crucial for high-tech ventures since these ventures develop new knowledge into innovations (Drucker, 2002). By leveraging his or her knowledge with those of others, the entrepreneur further refines and develops the golden idea. Even then, knowledge security within the advisor network remains a concern for entrepreneurs.

Knowledge security is defined as keeping knowledge from competitors (Whitman & Mattord, 2005), and maintaining the integrity and confidentiality of electronic resources (Smith, 1989). Scholars usually analyze the knowledge security issue as an appropriability issue. Appropriability studies focus on the means firms may use to secure the rents from their innovations despite imitation, piracy, and theft threats

from competitors (Arundel, 2001). An appropriability problem occurs when unauthorized individuals or firms use another's competency to gain rents that may otherwise accrue to the original owner (Oxley, 1997; Pisano, 2006; Teece, 1986; Winter, 2006). Studies find that firms often use lead-time, patents, and secrecy to maintain appropriability of the rents from their innovations (Cohen, Nelson, & Walsh, 2000: 7; Winter, 2006). Cohen, Nelson, and Walsh (2000) also find that for process and product innovations, many firms consider the more effective security mechanisms to be secrecy and lead-time. Their study shows that firms consider secrecy as the most effective appropriability mechanism for process innovations. For product innovations, firms consider lead-time to be the most effective appropriability mechanism and secrecy to be more effective than patents. Once a product is commercialized, competitors can produce imitations. Firms may then resort to enforcing patents to protect their rents. Arundel (2001) finds that both large and small firms rely more on secrecy than on patents for securing their patent innovations. The goal of these security mechanisms is to keep crucial knowledge away from competitors.

An entrepreneur seeks to keep an original idea away from competitors while openly discussing the idea within a trusted network. The personal and business relationships between entrepreneurs and advisors influence the extent to which the entrepreneur relies on informal security mechanisms such as an advisor's discretion to not share knowledge with competitors to more formal security mechanisms such as non-disclosure agreements (NDAs). An NDA is a contract that specifies how those with privileged access to the venture knowledge use and distribute this knowledge. In some situations, especially when idea development and strategy formulations are ongoing and a

personal basis for trust is limited, entrepreneurs will ask prospective advisors to sign NDAs.

Then, there are professional and government regulations concerning professional conduct and activities in some professions such as law, accounting, and finance. These professionals have passed examinations that provide them with professional licenses concerning the standard of their services and client confidentiality. In these situations, entrepreneurs will rely on professional regulations that exist in these professions to ensure the security of the knowledge shared with these specialists. Consequently, an entrepreneur's relationships with his or her advisors significantly impact the chosen knowledge security mechanisms (cf., Lado, Dant, & Tekleab, 2008), especially when the venture is largely based on an intangible such as knowledge (cf., Lewicki, McAllister, & Bies, 1998).

Building on projects that distinguish among types of advisors, I will group advisors according to their relationship with entrepreneurs into three categories: Close Friends, Business Associates, and Licensed Professionals (cf., de Koning & Muzyka, 1999). Close Friends are those in an "inner circle of friends" or family members. These are trusted and loyal confidantes. In many cases, a strategic "board of advisors" develops the golden idea and crafts a strategic plan for the new venture (Shrader & Siegel, 2007). There are typically two to three members on the board. This is not a formal board such as a board of directors, but a group of people with the common vision for developing a new idea into a successful venture. A good board has members who complement each other's skill sets (Shrader & Siegel, 2007). These are Business Associates. When some skills are still lacking, entrepreneurs may draw from a third category of advisors, namely Licensed

Professionals such as lawyers, accountants, and finance experts. The advice entrepreneurs seek from these experts is specialized, and the advisor's knowledge about the venture may be limited to just the details necessary for the advisor to provide the needed services.

Trust: Its Implications for Knowledge Sharing and Knowledge Security

Many studies have looked at the effect of trust on knowledge sharing between individuals and firms (Dirks & Ferrin, 2001; Levin & Cross, 2004), but combined research on the relations of trust to knowledge sharing and knowledge security and their effects on a high-tech venture creation is extremely limited. Moreover, trust, knowledge sharing, and knowledge security have been studied in large organizations at the firm and industry levels of analyses (Oxley, 1997; Oxley & Sampson, 2004), but little research has been done on how entrepreneurs keep their ideas secret while sharing them within a network of friends and associates. The relationships between trust, knowledge sharing, and knowledge security, as noted in previous research, are highlighted in this section. I briefly review the definitions of trust in the literature and highlight the significance of a trusting relationship between entrepreneurs and their advisors for idea development and enhancement.

Moreover, the issue of trust in the entrepreneurial team is assumed but seldom examined. Most studies on entrepreneurs and advisors focus on the cumulative managerial, strategic, and financial experience of the team and their level of education (Cooper, Gimeno-Gascon, & Woo, 1994; Hanlon & Saunders, 2007; Shrader & Siegel, 2007; Smeltzer,1991). Studies show that the more experienced the entrepreneurial team is, the better the venture performance (Cooper et al., 1994; Shrader and Siegel, 2007). However, forms of trust in entrepreneurial teams are seldom examined.

Trust, also described as relational social capital (Nahapiet & Ghoshal, 1998), is a characteristic of the relationship between an entrepreneur and advisors that develops over time and enables knowledge sharing and knowledge security (Goel & Sarri, 2006; Makhija & Ganesh, 1997). Relational social capital is the use of one's relationships for purposive actions or to derive desired ends; it is the exploitation of one's personal relationships for access to crucial resources. The entrepreneur seeks to exploit his or her relational social capital with advisors in achieving the desired goals of useful knowledge sharing and effective knowledge security.

Other definitions of trust emphasize the behavioral certainty and the individual vulnerability aspects of trust relationships. Hosmer (1995), after an extensive multidisciplinary review of trust, likens trust to confidence in the behavior of another, and defines trust as one party's optimistic expectations of the behavior of another, when the party must make a decision about how to act. Additionally, Mayer, Davis, and Schoorman (1995) note that vulnerability is an essential part of trust, and make the distinction between simply having expectations of the trustee and having the willingness to take the extra step to be vulnerable to the trustee. The literature is replete with many definitions and conceptions of trust with the basic consensus that vulnerability and risks are central to trust relationships (Rousseau et al., 1998).

This study applies McAllister's (1995) theory of types of trust to examine how trust affects knowledge sharing and knowledge security mechanisms when an entrepreneur works with advisors. Trust can be affective or calculative (McAllister, 1995). Calculative trust relies on the trustee's abilities and capabilities to meet an expectation or provide a resource. Affective trust develops from emotional attachment to

the trustee. Affective trust is grounded in a person's confident attributions of another's behavior and develops in contexts of frequent interactions (Lewis & Wiegert, 1985). McAllister (1995) examines the social fabric of managerial working relationships to find how managers' trust in peers affects their working relationships. He suggests that those managers that have communal relationships with their peers take on their partners' problems as their own and are often sensitive to these associates' personal and work-related needs. These managers express high levels of affective trust in their peers. Managers less frequently monitor peers that have proven to be dependable and reliable even in uncertain situations. They express higher levels of calculative trust in these peers. These trust relationships have implications for performance assessments and citizenship behaviors. Even then, McAllister (1995) warns that affective trust should not be considered as a higher form of trust than calculative trust.

Trust's implications for relationships have been studied within firms and between firms. Scholars observe that affective trust among organizational participants particularly improves relationships within the organization and supports information and knowledge exchange (Williams, 2001). Moreover, trust is essential in enabling interfirm alliances to achieve the goals for which these relationships are designed (Das & Teng, 1998; Jeffries & Reed, 2000). Almeida, Song, and Grant (2002) find that trust among subsidiaries of a multinational firm enabled speedier knowledge sharing among the units. Trust is particularly necessary for knowledge sharing between individuals (Dirks & Ferrin, 2001; Levin & Cross, 2004).

Models Linking Trust to Knowledge Sharing and Knowledge Security

In this section, I review models by Tsai and Ghoshal (1998) and Kale et al. (2000) on trust, knowledge sharing, and knowledge security. Tsai and Ghoshal (1988) develop theory on three types of social capital (described below) that have been extensively applied to many research studies (c.f. Adler & Kwon, 2002; Niehm, Swinney, Miller, 2008; Yli-Renko, Autio & Sapienza, 2001). For example, Kale et al. (2000) use relational (social) capital to examine relationships between firms in a strategic alliance. I extend research on relational social capital by using McAllister's theory on types of trust to further analyze the trust relationships in these models. Understanding the forms of trust influencing entrepreneurial relationships sheds more light on the nature of the preoperational stage.

Tsai and Ghoshal (1998) review three dimensions of social capital and their relationships to resource exchange, combination, and value creation among the units of a firm as shown in Figure 1. The three dimensions are the structural dimension, the cognitive dimension, and the relational dimension. The structural dimension of social capital refers to social interaction ties. The cognitive dimension of social capital refers to the common understanding of collective goals and proper ways of acting in a social system, while the relational dimension refers to trusting relationships. They argue that the high values on the three dimensions of social capital increase resource exchange and combination among a firm's units. As the units interact over time, the structural ties become stronger and the units are likely to perceive each other as trustworthy (see Figure 1). These units tend to trust those units that share their goals and these relationships often result in resource exchange and combination. Resource exchange and combination result

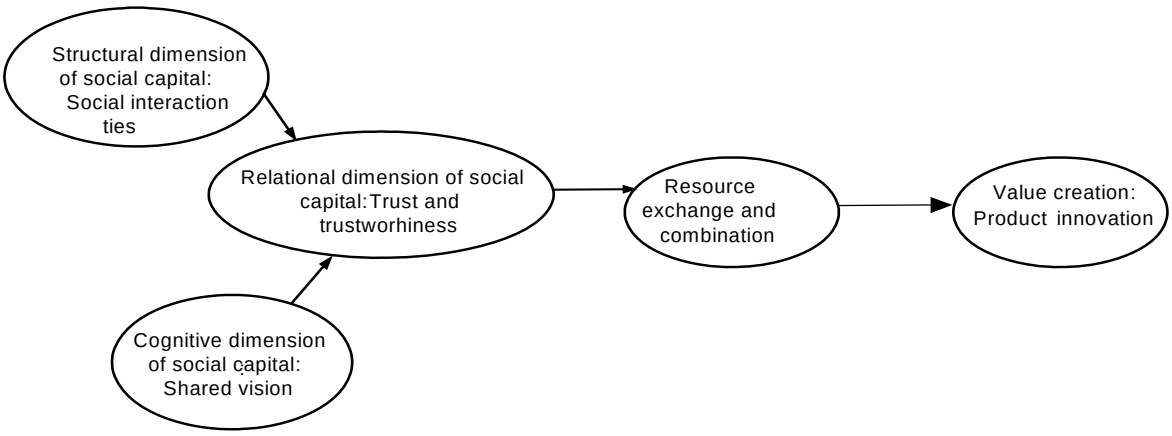

Figure 1. Tsai and Ghoshal's (1998) model of social capital and value creation (p. 466).

in new and better products as the firm "reallocates its resources or combines existing resources in new ways," (Tsai & Ghoshal, 1998:468) (see Figure 1).

Tsai and Ghoshal (1998) show that trust leads to resource exchange and combination, but they did not consider knowledge security issues. Kale et al. (2000) examine the relationship between trust, resource exchange, and security in the context of strategic alliances by proposing the model shown in Figure 2. Firms need to secure their strategic assets from their partners and yet form these alliances to gain more knowledge and capabilities from their alliance partners. Kale and colleagues' (2000) argue that relational social capital, which is trust, positively contributes to learning and protection of core proprietary assets of a firm in a strategic alliance with another firm. Trust between partners enables knowledge sharing, even with the type of knowledge that may be considered complex and difficult to codify. Furthermore, trust between partners enables sharing of critical information and know-how between partners and reduces fear of

opportunistic behavior (see Figure 2). They find that trust creates a basis for learning and curbs opportunistic behavior by alliance partners; trust between alliance partners positively relates to learning and protection of core assets. Trust creates mutual confidence between partners that neither one will exploit the other's vulnerabilities even if an opportunity arises. Their study also shows that partners in strategic alliances with existing high levels of trust between them are able to simultaneously achieve both objectives of knowledge sharing and knowledge security. Other observations by the researchers are that the greater the similarity between partners and the extent to which conflict is managed using intensive communication means, the greater the trust between them.

The issue of knowledge security is mostly studied within strategic alliances where competing firms collaborate. In this context, a firm jealously guards its strategic assets and trade secrets even as it attempts to learn or gain some competency from another firm. Many studies propose a form of legal framework as a knowledge security mechanism (Hagedoorn, Cloodt, & Kranenburg, 2005; Oxley 1997; Teece, 1992). For example, Oxley and Sampson (2004) propose contracts as a means of safeguarding assets. In the preoperational stage of high-tech ventures, many entrepreneurs may use NDAs to maintain knowledge security. When working with Licensed Professionals, entrepreneurs may rely more on professional regulations as the means to ensure knowledge security (Mintzberg, 1979).

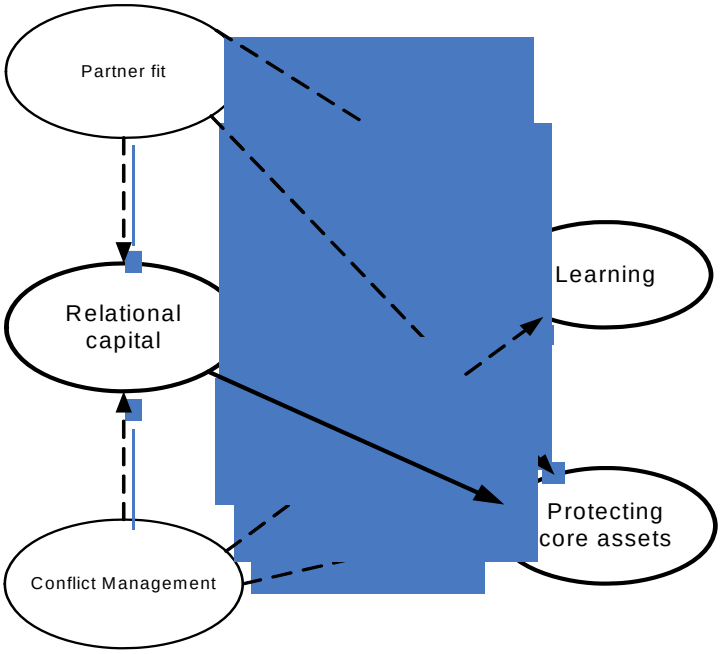

Figure 2. Model from Kale, Singh, and Perlmutter (2000)[1](p.228).

In further analyzing trust, knowledge sharing, and knowledge security of resources, I now compare Tsai and Ghoshal (1998) and Kale et al. (2000) models. We observe from Tsai and Ghoshal (1998) that trust positively relates to some form of resource exchange or knowledge sharing and indirectly value creation among units of a firm (see Figure 1). The scholars, however, did not discuss security mechanisms. The Kale et al. (2000) model also addresses the relationship between trust and (knowledge) resource exchange in strategic alliances, and also considers how trust may influence the protection of core competencies. In both studies, an exchange relationship is in place—whether among the units of a firm or between alliance partners.

This study applies these research models to the exchange relationships between entrepreneurs and advisors. The issues of knowledge sharing and knowledge security

[1] Broken lines pertain to relationships that will not be addressed in this dissertation

between entrepreneurs and advisors usually reflect the form of trust relationships between them. The entrepreneur literature lacks a deep analysis of these relationships. I refine the Kale et al. (2000) model by applying McAllister's (1995) forms of trust to an entrepreneur's advisor network in order to study their implications for knowledge sharing and an entrepreneur's knowledge use of NDAs. I examine an entrepreneur's preference for secrecy (that is, the trusting of the advisor's discretion not to disclose sensitive knowledge to competitors) versus using NDAs with an advisor. I analyze the proposed relationships between trust, knowledge sharing, and knowledge security as described in the Kale et al. (2000) model (Figure 2) by examining how the forms of trust McAllister (1995) highlights (affective and calculative) influence knowledge sharing between entrepreneurs and advisors (see Figure 3) and how these forms of trust affect entrepreneurs' use of NDAs (see Figure 3). Figure 3 shows the integrated perspective. I study knowledge as the resource here due to its significance for high-tech ventures. I apply the tested relationship that trust directly contributes to resource exchange and security in the context of high-tech venture creation.

More specifically, relationships have different forms of trust with different intensities existing between partners (Lewicki et al., 1998). In any situation, a principal form of trust will influence an entrepreneur's decision to share and secure knowledge. I apply McAllister's (1995) theory to examine entrepreneurs' principal forms of trust in different types of advisors as they turn to these advisors for advice (Case, 1989; de Koning & Muzyka, 1999; Shrader & Siegel, 2007) and develop preferences for security mechanisms with each advisor.

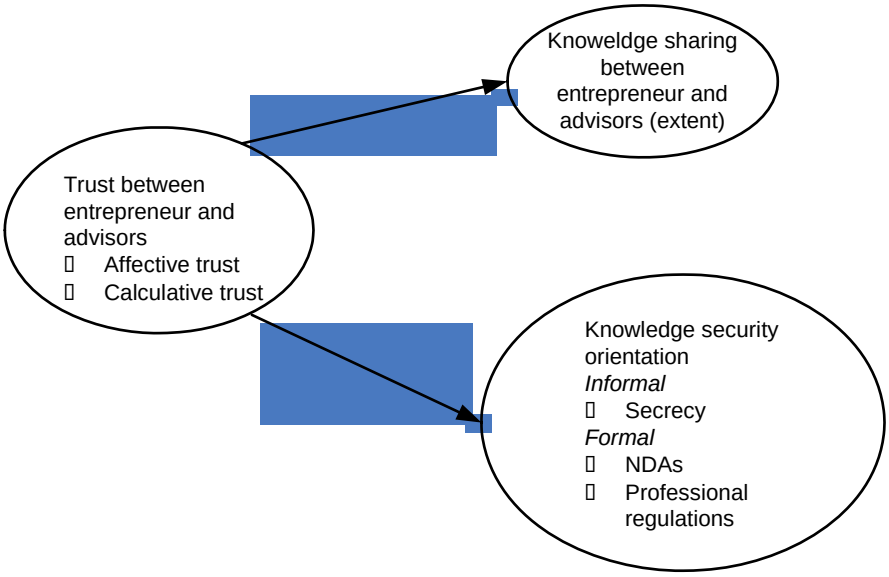

Figure 3. Integrated perspective.

As I will discuss in Chapter 2, while ideas related to trust appear in the entrepreneurship literature, there is a gap in the literature in providing a finer-tuned analysis on the principal forms of trust (affective or calculative) entrepreneurs depose in their advisors. Working with others, the entrepreneur shares and receives knowledge but is careful of how he or she exploits social relationships for knowledge sharing. Entrepreneurs are willing to be vulnerable to other people who help them access resources in the belief that these people will not act opportunistically.

In this dissertation, I hypothesize that entrepreneurs expressing higher levels of either form of trust in advisors will share more knowledge with those advisors. Higher levels of affective trust in an advisor will relate to an entrepreneur's use of NDAs with that advisor. I further analyze the principal forms of trust that entrepreneurs indicate for each advisor type and how these may influence knowledge sharing and use of NDAs. I

also collect qualitative data and analyze this data to find support for the hypotheses and further develop the theories behind trust, knowledge sharing and choices knowledge security mechanisms.

The overall question driving this dissertation is: How does trust between an entrepreneur and advisors affect knowledge sharing and the use of NDAs during the preoperational stage of a new high-tech venture? A secondary question related to this is, how do trust, knowledge sharing, and use of NDAs differ (if at all) across advisors? The study analyzes the above questions quantitatively and qualitatively.

Overview of Research Methods

I develop more specific hypotheses in Chapter Two. The relationships between trust, knowledge sharing, and the use of NDAs are studied using quantitative research methods—namely Likert-scaled questions analyzed using Ordinary Least Squares regressions. In addition, a qualitative component will use open-ended interview questions to provide insights into knowledge sharing and security issues between entrepreneurs and advisors. Knowledge security is a sensitive issue for entrepreneurs. The interview data will be mined using content analysis to gain insights into how relationships may affect knowledge security efforts for a new high-tech venture creation.

The study is based on structured and non-structured interviews with 50 entrepreneurs to identify and describe relationships with 150 advisors (three advisors per entrepreneur) that these entrepreneurs converse with during the preoperational stage. The questions probe how the entrepreneurs address idea development and imitation fears with their advisors. I will focus on a particular venture with each entrepreneur and ask questions on the impact of the trust relationships between the entrepreneur and three

advisors on knowledge sharing and knowledge security. An advisor may be a family member, a financial specialist, or the insightful industry analyst who may be well connected. The questions examine the relationship histories and the factors that determine what form of trust drives knowledge sharing and choices of knowledge security mechanisms.

The interviews will be structured and non-structured. Relationship Length, Affective and Calculative Trust, Knowledge Sharing, and Use of NDAs will be measured quantitatively. McAllister's (1995) calculative and affective trust constructs will be used to measure trust, while Kale's (1999) knowledge sharing construct and new questions based on ideas from various sources will be used to measure knowledge sharing between an entrepreneur and an advisor. Questions will be asked for each of three advisors per entrepreneur. Trust is suggested to have direct effects on knowledge sharing and the use of NDAs.

I will encourage detailed discussions on how knowledge security issues are handled between the entrepreneur and advisors during the preoperational stage. I will probe the entrepreneurs to gain insights into how they manage secrecy as they work with advisors. I will also tape record the entrepreneur's perception of each advisor in relation to security matters.

The sample will be developed through snowball technique, and this sampling technique limits the generalizability of the results. Entrepreneurs will be biased as to those they recommend for interviews for varied reasons, and the sample is also limited to entrepreneurs in South Florida. Additionally, common method biases through item wording, measurement context, and social desirability may affect the results. The steps I

will take to reduce the effects of these biases on research results are discussed in Chapter Three.

Contributions of the Study

One of the core research issues in entrepreneurship study is finding why, when, and how different modes of action are used to exploit entrepreneurial opportunities (Shane & Venkataraman, 2000:218). The outcome of exploiting an entrepreneurial opportunity is to create a new venture. The entrepreneur engages in knowledge sharing with advisors, and employs knowledge security mechanisms to prevent involuntary knowledge leakage to achieve the outcome of a new venture. In this study, I extend the research on entrepreneurship to examine why entrepreneurs choose certain advisors, when they do, and how they maintain the balance between knowledge sharing and knowledge security.

The entrepreneurship support literatures are extremely limited as to how entrepreneurs simultaneously share ideas with advisors and successfully maintain appropriability of these same ideas. This dissertation addresses this gap by examining how the nature of the relationship between entrepreneurs and advisors influences how knowledge is shared and secured.

The context of this study is the preoperational stage of a new high-tech venture. Many studies focus on growth and survival issues but neglect the initial stage before the establishment of the venture. I provide explanations and documentation of how entrepreneurs handle and mitigate imitation and theft fears during the very early stages of building a firm.

In addition, the study presents an integrative approach to studying knowledge security issues during the preoperational stage of a new venture by studying entrepreneur's reliance on advisor discretion and more formal methods of security mechanisms such as NDAs and professional regulations. The study looks at how trust relationships affect choice of security mechanisms at a critical period in new high-tech venture creation.

Moreover, the results of this study have the potential to improve the quality of small business development center programs by providing knowledge on how entrepreneurs handle knowledge sharing and security issues. This knowledge can be disseminated during seminars and workshops when experts provide assistance and counsel to aspiring entrepreneurs.

I examine the problems entrepreneurs face and how they go about solving these problems in new venture creation. The results will be of interest to small business development centers and support groups. The results show the implications of trust relationships on knowledge sharing and security during the preoperational stage of a new high-tech venture. This study contributes to the entrepreneurial support literature by examining how entrepreneurs in high-tech ventures improve and secure their ideas while working with advisors.

Organization of the Dissertation

In Chapter Two, I review the literatures on new venture creation, high-tech ventures, knowledge sharing, knowledge security, and trust. The literature review shows that work on new ventures underscores the importance of advisors in providing support (emotional) for the entrepreneur. The review also shows that knowledge sharing enhances

an original idea and is a necessary activity for entrepreneurs to get their ventures started. Entrepreneurs need to figure out what the prospects of their idea are and by working with others, come to a realistic vision of their market prospects. The knowledge security section presents the approaches to security research, analyses security threats, and discusses the importance of the "person" factor in ensuring effective security programs. The trust literature review considers the literatures on trust development and different types of trust.

Also, I develop the hypotheses from a sociological perspective in Chapter Two. Individuals may have economic goals; however, these goals are developed and modified within a network of supporters and confidantes (Granovetter, 1992). Economic goals cannot be achieved outside of a social network. New ventures, which are economic institutions, are social constructions (Granovetter, 1992). Chapter Three reviews the research methods and limitations while Chapter Four presents the results. Chapter Five discusses the results, the conclusions, theoretical contributions, practical applications, and suggestions for future research.

II. Literature Review

The objective of this chapter is to provide a review of the extant research on high-tech ventures; on knowledge sharing and knowledge security issues in venture creation; on the advisor types that entrepreneurs have and how these different categories affect knowledge issues; and on trust and knowledge issues during the preoperational stage of venture creation. At the end of the literature review, the research model and hypotheses are presented.

First, I focus on the context of high-tech venture creation and the issue of innovation in this context. Here, I review the literature on the preoperational stage of venture creation where opportunity recognition, evaluation, and idea refinement are key entrepreneurial activities. Second, I review the literature on knowledge sharing and knowledge security between entrepreneurs and advisors. Third, I review the literature on advisor types and knowledge. Fourth, I review the literature on trust and types of trust scholars propose. A summary of the issues discussed is provided at the end of the chapter. Table 1 below presents a synopsis of this chapter.

A short description of the research is presented in this introductory section. I highlight the significance of knowledge sources for high-tech entrepreneurs, and the need for the entrepreneur to balance knowledge sharing and knowledge security during the preoperational stage.

Table 1

Chapter Synopsis

Section heading	**High-Tech Ventures**	**Knowledge and Venture Creation**	**Advisor Types and Knowledge**	**Trust, Knowledge sharing, and Knowledge security**
Sub-sections	Opportunities and innovations	Knowledge sharing	Types of advisors	Trust development
	Innovation is a social activity	Knowledge security	Mapping the entrepreneurial social context	Advantages of trust
	The Preoperational stage	Knowledge security mechanisms Threats		Types of trust
Summary	Entrepreneurs seize opportunities to create high-tech ventures. They use relationships to develop their knowledge. The preoperational stage is a period of opportunity identification, evaluation, and refinement.	Knowledge sharing is crucial for developing ideas. Knowledge security essentially preserves rents from innovative ideas. Three main security mechanisms at the preoperational stage are secrecy, NDAs, and professional regulations.	Three main categories of advisors are Close Friends, Business Associates, and Licensed professionals. These advisors are the means by which entrepreneurs "think while talking," develop strategies, and access resources.	The distinction between affective trust and calculative trust is made. Entrepreneur-advisor relationships are trust relationships.

The significance of advisors to entrepreneurs for these knowledge activities is also underscored in this introduction. Advisors are sources of knowledge for the entrepreneur, however, entrepreneurs' institute and rely on security mechanisms to control the dissemination of venture knowledge (cf., Makhija & Ganesh, 1997).

Sources of knowledge are very critical for venture creation, especially high-tech ventures. Entrepreneurs use both formal and informal sources of information to develop their ideas. Formal sources are trade magazines and other trade publications. Informal sources are friends and close associates who provide information and also help in selecting raw materials, locating useful equipment, and hiring employees. Research shows that entrepreneurs rely on these informal sources to get privileged access to resources and advice for their ventures (Brüderl & Preisendörfer, 1998; Cooper et al., 1994). Nascent entrepreneurs have built social networks that would later provide this kind of support for their future ventures (Brüderl & Preisendörfer, 1998; Case, 1989). As noted in the literature, an entrepreneur does not exactly follow a romanticized image of an individual going it alone, but instead moves his or her project along with a strong support network of family and friends (Hanlon & Saunders, 2007; West, 2007).

Furthermore, entrepreneurs need external knowledge and expertise beyond that which they have acquired to successfully start a new venture (Smeltzer, Van Hook, & Hutt, 1991). Knowledge is the application of information to a context to solve problems (Spender, 1996), and high-tech entrepreneurs participate in environmental searches for new knowledge to create innovations that form the bases of high-tech ventures. When knowledge is distributed among experts, they can share their knowledge to develop effective strategies (West, 2007). By working together, entrepreneurs and their advisors

pool together their knowledge and expertise and improve venture ideas during the preoperational stage.

To attain knowledge-based competitive advantages, however, entrepreneurs must balance knowledge sharing with knowledge security. Consequently, they must keep knowledge from competitors (Whitman & Mattord, 2005), and maintain the integrity and confidentiality of their resources (Smith, 1989). The issue of knowledge security is usually studied in the context of strategic alliances and networks (cf., Bader, 2008; Chang & Gotcher, 2007; Faems, Janssens, & van Looy, 2007; Inkpen & Tsang, 2005; Kale et al., 2000). In these alliances, firms are particularly sensitive about the know-how that partner firms learn from them. Even though they are involved with the others for knowledge and technology exchange, firms still exercise caution and sensitivity about what is shared and when this exchange takes place (Oxley & Sampson, 2004). These alliances have contracts to govern how shared knowledge is used and how members of each firm interact with members of the partner firms (Oxley & Sampson, 2004).

Moreover, the consequences of poor knowledge security are dire. Knowledge leakage can significantly hurt the firm once the competition secures the firm's source of competitive advantage (Barney, 1991; Kale et al., 2000). The competitor can deftly apply this secret to improving its own products or processes, offer a better product to the market, and forge ahead of the firm in terms of service delivery or innovativeness, while ultimately undercutting the firm's gains (McEvily & Chakravthany, 2000). Knowledge security—guarding the firm's competencies—is significant especially for high-tech firms that rely on the intangibility of knowledge for their success (Thurow, 1997). High-tech entrepreneurs constantly face imitation threats from competitors. The challenge for an

entrepreneur is keeping the innovative idea within a trusted network of associates so that upon introduction of the product or process to the market, the venture is well positioned to gain significant market share and revenue.

In entrepreneurial research, Zahra, Yavuz, and Ucbasaran (2006) underscore the significance of trust among organizational participants to develop an entrepreneurial idea into a successful business. Even then, the relationships between trust, knowledge sharing, and knowledge security in the preoperational stage of venture creation have received little attention from scholars. Trust relationships between entrepreneurs and advisors are assumed but hardly scrutinized for differences or features that may provide early indications of successful ventures.

High-Tech Ventures

The context of this study is that of new high-tech ventures. Since entrepreneurs use high-tech ventures to develop knowledge into innovations, the first subsection, opportunities and innovations, reviews how entrepreneurs recognize and turn opportunities into new ventures with the help of their associates. Entrepreneurs use high-tech ventures to create new products and processes or enhance existing ones, and these ventures are the main vehicles by which innovations are produced (Drucker, 2002). This type of venture continues to attract high levels of financial and managerial capital from venture capitalists who believe that considerable wealth can be made from the high-tech industries (Farrell, 2008). The next section elaborates on the early stage of venture creation, the preoperational stage, where opportunities are recognized, evaluated, and refined.

Opportunities and innovations. A core entrepreneurship activity is creating innovations—the ability to create new concepts out of familiar threads of activity—and this activity requires the use of insightful knowledge (Drucker, 2002; Shook, Priem, & McGee, 2003). New innovations and ventures are the results of entrepreneurs effectively harnessing experiences, skills, knowledge, and creativity—that is, the results of entrepreneurs' ability to bring ideas and opportunities together to generate sustainable returns (Drucker, 2002). High-tech entrepreneurs use technology—telecommunications, software, and electronics—to exploit opportunities and create wealth. According to Drucker (1998), a new venture represents an entrepreneur's drive to achieve technological, social, or intellectual change. The society, and on a larger scale, national economies, experience advancements in technology as high-tech entrepreneurs seize opportunities to create innovations and improve existing technologies (cf., Schumpeter, 1934).

The opportunities for innovations lie in the unexpected occurrences in the industries or the markets, in the demographic and perception changes, and in new knowledge. Drucker (1998: 157) views "the very foundation of entrepreneurship as the practice of systematic innovation." He describes innovation as being the conscious search for opportunities. An incongruity between expectation and results provides an opportunity for innovation. For example, the unexpected failure of Ford's Edsel led to the company's response with the Mustang. Drucker (1998) also notes that the Japanese became the leader in robotic engineering by paying attention to the needs of elders. The Japanese exploited opportunities that reflected in demographic changes and pushed advancements in robotic engineering.

Drucker (1998:156) also observes that, "knowledge-based innovation is more market-dependent than any other kind of innovation." The innovative product has to be successful commercially. He stresses that effective innovations start small; effective innovations are not grandiose designs. Although, an innovation may encompass an individual's endeavor, talent, ingenuity, and knowledge, Drucker (1998) asserts that beyond anything else, an innovation is hard work, working diligently on an idea, rather than simply genius.

Innovation is a social activity—formidable partnerships. Entrepreneurs work with others to create innovations. Entrepreneurs generate ideas and observe opportunities through their social interactions. The broader and more diverse these social networks are, the greater the chances that the entrepreneur becomes exposed to entrepreneurial opportunities. Beyond finding opportunities, these social networks are necessary for knowledge development as entrepreneurs share their knowledge with trusted colleagues (Brüderl & Preisendörfer, 1998; Smeltzer et al., 1991). Entrepreneurs use acquired knowledge to develop innovations (Drucker, 1998).

Relationships are particularly important in high-tech industries. These relationships provide opportunities to seek advice (de Koning & Muzyka, 1999) and share and hone knowledge (Brüderl & Preisendörfer, 1998). Knowledge principally thrives on relationships. When an individual receives knowledge from another, the new knowledge is added to the individual's existing knowledge. The individual uses his or her interpretive schema to view this new knowledge, and through a combination process, creates new knowledge (Nonaka, 1994). This is knowledge creation at the individual level, which is vital for the entrepreneurial activities of opportunity recognition,

opportunity selection, and idea refinements (Ardichvili et al., 2003). High-tech ventures rely extensively on knowledge—using knowledge effectively to respond to customer needs (Kakati, 2003), tapping into associates' knowledge to enhance an idea (Cooper et al., 2004), and successfully protecting this knowledge from competitors (Arundel, 2001).

Relationships provide one with opportunities to share knowledge, which leads to new knowledge and insights (Hanlon & Saunders, 2007). By meeting with a broad-based network, an entrepreneur gets access to a wide array of technologies, knowledge, and possible assistance in starting new high-tech ventures. These relationships are also crucial to access financial capital and high-end equipment and technologies needed to start the new high-tech ventures. Relationships with other firms and with skilled individuals are particularly crucial for new high-tech ventures to tide over turbulent periods and to maintain competitiveness through knowledge acquisition and product development in the dynamic high-tech environment (Barringer, 1997; Cooper et al., 1994; Lipparini & Sobrero, 1994; Street & Cameron, 2007; Zahra & Bogner, 2000).

Knowledge tends to "spillover" (Appleyard, 1996), that is, knowledge diffuses among individuals as they work, relate, and relax together. The high-tech context is particularly characterized by the dynamism that is created by the boundaryless nature of knowledge (cf., Brown & Eisenhardt, 1997; Powell, Koput, & Smith-Doerr, 1996). High-tech firms work together to share complex knowledge and develop new innovations. The high rates of innovation witnessed in the high-tech context presently make it impossible for one firm to have all the needed technical expertise in-house. As Grant (1996) observes, if a firm stumbles on knowledge that it is not well equipped to develop any

further, it can pass that knowledge to sister firms that may benefit from the knowledge. In such a situation, network ties are important in determining what and when a firm learns.

New products and ideas are results of knowledge creation and synthesis. Individuals absorb new knowledge and synthesize this knowledge with existing knowledge to create new ideas that reflect the idiosyncratic views that these individuals have attached to the absorbed knowledge. By combining new knowledge from others with theirs and by seizing on demographic and business needs and wants, engineers, programmers, and designers work relentlessly on increasing the functionalities, performance, and the design of many high-tech products.

The Preoperational Stage

The preoperational stage is described here, as it is the stage where opportunities are evaluated and refined. For high-tech ventures, the preoperational stage is a crucial stage since poor planning and strategy dooms the venture (Castrogiovanni, 1996). Considering that the high-tech context is dynamic and fast-paced, high-tech entrepreneurs will want to prepare well before investing heavily in high-tech innovations.

Opportunity identification. New ventures are the culmination of many activities that are triggered when an entrepreneur recognizes an opportunity to introduce a new product or service into the market. This is opportunity recognition. Opportunities come from finding and creating new products or services to meet customer demands, making better product or service delivery, or identifying unused or underemployed resources.

Ardichvili and colleagues (2003) integrate the research on an entrepreneur's personality traits, social networks, and prior knowledge to develop a theory of opportunity identification and development. The theory suggests that personality traits,

social networks, and prior knowledge contribute to an entrepreneur's alertness and sensitivity to business opportunities. Outgoing and creative entrepreneurs are more likely to recognize opportunities than are risk-averse entrepreneurs. Despite outgoing entrepreneurs' high levels of optimism and self-efficacy, they are often realistic about the probable outcomes of their ventures.

An entrepreneur's social network—his or her inner circle, "weak ties," recruits, and partners—contribute to the entrepreneur's capability to access information that may lead to his or her realization and refinement of a business idea. Having a broad and diverse network of friends helps because the connections provide avenues to be exposed to different opportunities entrepreneurs can pursue. The more the entrepreneur becomes connected, the more likely colleagues contact him or her for ideas and solutions. Frequent and more interactions provide avenues through which the entrepreneur recognizes opportunities he or she wants to pursue (Birley, 1985; de Koning & Muzyka, 1999; Singh, Hills, Hybels, & Lumpkin, 1999).

Furthermore, an entrepreneur's prior knowledge sharpens his or her sensitivity to new opportunities and market needs (Ardichvili et al., 2003; Shane, 2000; Shepherd & DeTienne, 2005). An entrepreneur's "knowledge influences his or her ability to comprehend, extrapolate, interpret, and apply new information" (Marvel & Lumpkin, 2007: 810). Shane (2000) finds that prior knowledge and experience prime an entrepreneur to specific opportunities when confronted with a technological change. The entrepreneur's prior knowledge, experience, and personal events influence what the entrepreneur discovers and increase his or her sensitivity to new opportunities of how to use resources and how to meet consumer needs (Ronstadt, 1988).

In addition to Ardichvili and colleagues' (2003) integrative theory of opportunity recognition, researchers also observe that having experienced and talented people on a team augurs well for identifying opportunities that may be pursued for wealth creation (Cooper et al., 1994). "Researchers have also suggested that opportunity identification may be related to entrepreneurial alertness (Kirzner, 1997) …entrepreneurial cognition, and potential financial reward," (Shepard & DeTienne, 2005: 91-92).

Opportunity evaluation. Bhave (1994) notes that entrepreneurs find many opportunities, but seriously consider only those that reflect their experience and skills. Years of accumulated experience in an industry contribute to the entrepreneur's ability to recognize opportunities because of his or her familiarity with the industry activities. The entrepreneur has the ability to find a "fit" between resources and market needs (Ardichivili et al., 2003; Shrader & Siegel, 2007). After recognizing an opportunity, an entrepreneur compares the demands of the anticipated venture with his or her experiences, skills, available resources, and market needs. Careful investigation of the market and evaluation of opportunities occur at this stage. An entrepreneur does not have the extensive resources available to established firms for pursuing innovations. Consequently, entrepreneurs pursue those opportunities that they believe will provide gains and meet market needs with accessible resources (Bhave, 1994).

Refinement stage. This is the stage where the idea is clarified "in order for it to be a good fit between customer needs and the entrepreneur's perceptions of those needs," (Bhave, 1995: 231). An entrepreneur seeks advice and resources to enhance an initiative or idea (Shrader & Siegel, 2007). This entails seeking advice from the inner circle, Business Associates, and Licensed Professionals. This is the stage where the entrepreneur

absorbs knowledge from his social network and develops the idea's potential (de Koning & Muzyka, 1999).

Bhave (1994) describes the refinement stage as business concept development, where effort is put into "clarifying the business concept in order to achieve a good fit between customer needs and entrepreneur's perceptions of those needs," (p.231). Zahra et al. (2006) call this stage where the idea is evaluated, the concept is refined, and the scope is clarified the refinement stage.

The entrepreneur's ability to acquire and transform information and knowledge is crucial at this point in refining the idea. Corbett (2005) built on Ardchivili and colleagues' (2003) theory of opportunity identification and development and Bhave's (1994) conceptual process model of entrepreneurial venture creation to emphasize the importance of individual learning in refining ideas. Successful entrepreneurs have the capability to identify useful bits of advice, to absorb external knowledge, mull over this, and use the imbibed knowledge to advance the business creation process. Creativity and cognition are particularly crucial at this stage to fully exploit the idea potential. During this stage, articulation, description, deliberation, and reflection of the idea are key activities (Lumpkin, Hills, & Shrader, 2004).

Also, an entrepreneur's experience in that industry contributes to idea refinements. With experience in serving a particular market or designing a certain technology, entrepreneurs become versed in modifying and refining those specific processes and products (Cooper et al., 1994). Multiple opportunities can come from a single technological change (Marvel & Lumpkin, 2007). Marvel and Lumpkin (2007) show that the more entrepreneurs' are versed in certain markets, technology, and

customer service, the higher the degree of radicality in their innovations. Radical innovations are revolutionary and discontinuous from existing products and processes.

As reviewed above, scholars have studied how opportunities may be turned into ventures through careful thought and partnership. Scholars find that the entrepreneur's social community, the entrepreneur's experience, creativity, and cognition contribute to opportunity identification, evaluation, and idea refinement. More importantly, finding opportunities involves working with others, although working with others increases the risk of leakage to competitors. If advisors are not careful in social or some other situations, they may divulge the venture's secrets to competitors. So, entrepreneurs find the need to share and yet secure their venture ideas (Choi, Levesque, & Shepherd, 2008). The literatures on knowledge sharing and knowledge security in venture creation are reviewed next.

Knowledge and Venture Creation

The second section of this chapter reviews the literature on knowledge sharing and knowledge security issues in venture creation. The entrepreneur applies knowledge in seizing opportunities to create a new venture from seemingly normal information. Knowledge is shared with advisors to refine the golden idea. However, considering that knowledge is intangible, the entrepreneur takes certain precautions with advisors to secure his or her golden idea from the competition. The security of knowledge becomes a shared responsibility between entrepreneurs and advisors.

Knowledge sharing. The first subsection reviews the significance of knowledge sharing in the venture creation process and its implications for a firm's competitive advantages (Kogut & Zander, 1992). Smeltzer et al. (1991) find entrepreneurs that used

more advisors took longer to prepare their business plans and had better quality information than those entrepreneurs who used fewer advisors. The successful development of a business plan was the indication of quality information. Most knowledge research—knowledge sharing and transfer—is done at the organizational level while entrepreneurship research emphasizes the informational support of advisors. I, therefore, review relevant knowledge theories developed at the organizational level as well as entrepreneurial knowledge-sharing activities.

The significance of knowledge sharing for entrepreneurial activity is underscored by observing what happens within and between complex established organizations. A significant level of knowledge research is done at the organization level of analysis and most studies on knowledge transfer are at the firm level of analysis. Studies have considered knowledge transfer within a single firm (Szulanski, 1996; Wasko & Faraj, 2005), in multinational firms (Almeida & Phene, 2004; Kogut & Zander, 1992), in strategic alliances and cooperative relationships (Dyer & Nobeoka, 2000; Mowery, Oxley & Silverman, 1996), and its diffusion across a network of firms (Appleyard, 1996; Conner & Prahalad, 1996). The conditions under which knowledge is transferred have also been considered as motivation (Osterloh & Frey, 2000), incentives (Wasko & Faraj, 2005), adequate absorptive capacity[2] (Cohen & Levinthal, 1990), trust and goodwill (Yli-Renko, Autio, & Sapienza, 2001).

Firms engage in environmental search activities to find knowledge to transfer internally in order to find alternatives to their organizational processes, improve these

[2] Absorptive capacity refers to the capability of firms, units or individuals to generate outputs from assimilated knowledge as a result of their present knowledge base (Cohen & Levinthal, 1990).

processes, and develop competitive products (Saviotti, 1998). This new knowledge is gained from knowledge diffusing across a network of firms (Brown & Eisenhardt, 1997; Powell et al., 1996). Knowledge sharing within and across firms is particularly important for locating new ideas and is necessary to launch business initiatives (Zahra et al., 2006). Firms use new knowledge for innovative activities. Quick and efficient integration of this new knowledge into a firm's existing framework produces lead-time in innovations (Brown & Eisenhardt, 1997; Powell et al., 1996).

Interest in knowledge management issues intensified when Kogut and Zander (1992) propose knowledge as the invaluable resource responsible for the firm's competitive advantage. Distinguishing knowledge from other resources such as physical assets and financial capital, they conclude that a firm's capability to share knowledge and recreate knowledge at lower costs than its competitors provides and sustains the firm's competitive advantage. Kogut and Zander (1992) observe that knowledge sharing across a firm's units reduces costs tied with developing innovation since each unit does not have to learn from scratch but simply adopts knowledge from sister units. Conner and Prahalad (1999) substantiate this claim in their often-cited work, while Szulanski (1996) provides the seminal research showing that motivation to share knowledge and a cordial relationship between sender and recipient of knowledge are critical elements for successful knowledge transfer processes. Cooper et al. (1994) find that when highly skilled people work together, their ventures show higher performances than when lesser skilled people work on ventures. Research also shows that teams that are well versed in working together have higher levels of innovation in their products and processes (Shrader & Siegel, 2007).

High-tech entrepreneurs participate in environmental searches for new knowledge, and environmental sources of knowledge are trade fairs, publications, and networking events (Case, 1989). The entrepreneur's advisor network is also an environmental source of knowledge. Knowledge sharing facilitates understanding among those involved in a project (Nonaka, 1994). An advantage for those who work closely together is that they develop shared interpretive schema, which helps them collectively understand the challenges they face. A shared understanding of issues eases the sharing of information, ideas, and concepts between an entrepreneur and advisors. Knowledge sharing increases with higher levels of understanding between entrepreneurs and advisors, which bodes well for innovative activity.

Notably, the whole process of refining ideas and developing strategies is based on the collective skill of the entrepreneurs and advisors. West (2007) argues that a team of advisors, not just the entrepreneur, makes strategic decisions. He emphasizes that entrepreneurs work with others to make decisions on creating new ventures and the direction to take the ventures. Knowledge sharing among a diverse and experienced set of people is significant for successful new high-tech ventures.

Accordingly, an entrepreneur's many ties within a network of associates and advisors ensure access to resources needed to move forward a business plan (Cooper et al., 1994; Corbett, 2005). An entrepreneur uses extensive social capital to tap into an advisor network to analyze, plan, modify, and design a business plan (Cooper et al., 1994; Marvel & Lumpkin, 2007). Entrepreneurs have to manage the need to work with others to create new knowledge (cf., Nonaka, 1994), and the need to prevent involuntary

leakage to competitors. The analysis of knowledge sharing reviewed above focuses mainly on promoting transfer, and now I review the literature on knowledge security.

Knowledge security. In this subsection, I define knowledge security, review the knowledge security research, and underscore the significance of knowledge security to entrepreneurs. I review research on knowledge security issues done in established complex businesses because more has been done on the topic in that context than in the entrepreneurial context.

As described earlier, knowledge security means preventing competitors' from having access to knowledge (Whitman & Mattord, 2005), and maintaining the integrity and confidentiality of resources (Smith; 1989). Loch, Carr, and Warkentin (1992) define general security as equipment, capital, money, and corporate data storage. Sennewald (1985) asserts that, "the value of security is better measured by what does *not* happen than by what does," (p. 35). Knowledge security involves preventing competitors from getting access to valuable knowledge. Effective knowledge security implies knowledge is stored properly, shared carefully, and disposed properly.

I focus on the "person" link in guaranteeing security, not on physical or technological links (Roper, Gray, & Fischer, 2006). Physical means of security refers to the reliance on burglar alarms, mechanical locks and safes and perimeter barriers (Ricks, Tillet, & Meter, 1994). Technology-induced security is the development of restrictive software codes and advanced technical algorithms to block unauthorized access to knowledge (Whitman & Mattord, 2005: 239-388). Though these are necessary, people's attitudes and actions are essential for effective security programs. Moreover,

entrepreneurs consulted for this study suggest that physical means of security were of lesser concerns than the social aspects of security issues.

Individuals working within organizational systems and with others provide strong links to effective security of knowledge as their dexterity, efficiency, and discreetness make for effective security programs. Ricks et al. (1994) stress that the primary internal organizational threat to security are the employees that work closely with organizational systems and know the vulnerabilities within the security programs. Straub and Welke (1998) emphasize the need to make employees aware of the importance of security, the need to motivate employees to support security programs, and the significance of adequate training to combat security threats. Employees should also be encouraged not to discuss sensitive information in social settings including seminars, conventions, and workshops (Ricks et al., 1994; Kankanhalli, Teo, Tan, & Wei, 2003). Individuals make effective security programs.

Concerning research studies, the issue of knowledge security is usually studied in the context of strategic alliances and networks (cf., Bader, 2008; Chang & Gotcher, 2007; Faems, Janssens, & van Looy, 2007; Inkpen & Tsang, 2005; Kale et al., 2000). In these alliances, firms are particularly sensitive about what the partner firm learns about the firm and its know-how. Even though they are involved with other firms for knowledge and technology exchange, firms exercise caution and sensitivity about what is shared and when this exchange takes place (Oxley & Sampson, 2004). These alliances have contracts to govern how knowledge received from each side is used by the other side and also rules on how members of each side interact with each other (Oxley & Sampson, 2004).

Illuminating the security issue further, Kale and colleagues (2000) study how mutual trust between partners in an alliance serves as a means to secure a firm's competitive advantage. They find that when high levels of openness and transparency exist between partners, partners exchange more knowledge, and suspicion that one partner will take advantage of the other is reduced. Beyond helping firms achieve their alliance objectives, trust mitigates the fears of opportunistic attempts by partners to learn critical information and competencies. Generally, trust helps to realize equitable distribution of value in a network of firms and reduce appropriability concerns when firms work together to create value (Dhanaraj & Parkhe, 2006). These observations at the firm level can be applied to the individual level—when individuals work together, mutual trust reduces appropriability fears. Entrepreneurs overall rely on trust to mitigate leakage fears.

Knowledge leakage can significantly hurt the firm once the competition secures the firm's source of competitive advantage (Barney, 1991; Kale et al., 2000). The competitor can deftly apply this secret to improving its own products or processes, offer a better product to the market, forge ahead of the firm in terms of service delivery or innovativeness, while ultimately undercutting the firm's gains (McEvily & Chakravthany, 2000). Knowledge security—guarding the firm's competencies—is a significant matter especially for high-tech firms that rely on the intangibility of knowledge for their success (Thurow, 1997). Microsoft, Google, and Apple are examples of large firms that spend considerable resources to ensure the security of their electronic databases (Auchard, 2007; Rosoff, 2003).

Economists are concerned with how firms may hold onto rents generated by their inventions and thwart imitation attempts of their products and processes. Rivals can put imitation products in the market that may erode the firm's market share and hurt the firm's profits (Teece, 1998). High-tech entrepreneurs face imitation threats from competitors. The challenge for an entrepreneur is keeping the innovative idea within a trusted network of associates so that upon introduction of the product or process to the market, the venture is well positioned to gain significant market share and revenue.

Scholars, mainly economists, have researched how an individual or firm maintains appropriability of an innovation idea so that the owner continues to enjoy rents and secure competitive advantages (Oxley & Sampson, 2004; Pisano & Teece, 2007; Teece, 1998). Appropriability concerns are about the strategies that owners use to preserve rents from their innovations. Appropriability "governs an innovator's ability to capture the profits generated by an innovation" (Teece, 1986: 610). These issues are often studied as appropriability topics in economics and tie in directly with security topics—the issue of preserving rents (appropriability) and the methods to do so (security).

Knowledge Security Mechanisms

Concerning the more formal means for promoting knowledge security, many research studies suggest relying on the legal mechanisms (for example, patents) (Teece, 1998), but these are mostly effective for tangible outputs. Arundel (2001) finds that many firms rely on secrecy before the market launch phase of a new product. The security mechanisms literature is further examined below.

Qian and Li (2003) suggest continuous innovation (lead-time) as a security mechanism, especially for small high-tech businesses to protect their innovations. Noting

that small firms rarely compete in volume, scholars propose that they compete through high levels of innovativeness through which they may accrue first mover advantages (Qian & Li, 2003; Wolff & Pett, 2006; Zahra & Bogner, 2000). The strategy is to let competitors play catch-up. Cohen and colleagues (2000) observe a similar security mechanism, which they term lead-time, in other industries. Moreover, McEvily and Chakravarthy (2002) observe that firms constantly provide incremental innovations to a core technology as a way to hold onto their market shares and befuddle the competition on the details of the core technology. With constant modifications to the core technology (continuous innovation) the competition remains in the dark about the essence of a technology. Kogut and Zander (1992) argue that the capability of the firm to recombine its knowledge in novel ways and constantly create new knowledge in a cost-effective manner provide competitive advantages. The competitive advantages come through cost reductions in innovation and learning processes. Through continuous innovation a firm secures competitive advantage and leaves the competition to play "catch-up" (McEvily & Chakravarthy, 2002).

Patents are legal mechanisms that grant ownership of products and processes to owners, who can legally challenge unauthorized uses of their patented products and processes. Patents are designed to prevent copying by imitators, increase the firms' revenue from licensing, strengthen a firm's position during negotiations with other firms, and enhance a firm's reputation (Cohen et al., 2000:16). Firms use patents to block the development of substitutions by rivals and to force them into negotiations (Cohen et al., 2000). There is a "widespread but subtle bias on the part of policy makers and economists for patents," (Arundel, 1991:612). Economists believe that patents are the most effective

mechanisms for protecting inventions and innovations, and their studies reflect the implicit assumption that many inventions and innovations are patented (Arundel, 1991). For certain industries including medical equipment and pharmaceutical drugs, patents are considered effective. However, patents were not identified as the most effective security mechanism by any industry in a study performed by Cohen and colleagues in 2000 (Cohen et al., 2000).

For instance, patents are expensive to apply for and defend, and an application for a patent often requires full disclosure. Competitors may invent around the patent once the original idea is disclosed (Teece, 1986). Patents are not effective for process innovations since infringements are difficult to detect. In addition, the effectiveness of patents is limited at the early stages of idea generation since the knowledge is still being fine-tuned and remains largely intangible (Thurow, 1997). The limited effectiveness of patents particularly affects entrepreneurs' reliance on them since entrepreneurs have limited financial resources to pursue expensive patenting processes or legal actions.

The difficulty in patenting is in showing the novelty of the invention, in the cost of applying for the patent, and in defending it in court. Patents are only effective to the extent the firm/owner has the legal means to sue offending parties. These limitations discourage many firms from patenting their innovations. Smaller firms have been observed not to rely heavily on patent protection (Lerner, 1995). The costs associated with patenting dissuade smaller firms from availing themselves of patent protection (p.25). As such, patents are not viable options for entrepreneurs working with limited financial resources.

According to Thurow (1997), the existing patent systems are unsuitable for the knowledge economy. Knowledge keeps evolving as it is shared among specialists and experts. How much knowledge can be patented and what will be the effectiveness of such patents when knowledge evolves beyond what the patent covers are issues that question the effectiveness of patents for an evolving knowledge economy (Thurow, 1997). Other legal means pertaining to the preoperational stage are NDAs and professional regulations.

NDAs. Non-disclosure agreements (NDAs) are legal documents that ask individuals privy to business ideas to refrain from sharing those ideas or related information with others who may not be involved in the projects. A sample NDA from Irish (2001) is shown in Figure 4. NDAs cover information not covered by intellectual property rights such as patents, but may also be used to cover information in unpublished patent applications (Irish, 2001). NDAs also cover know-how such as reliability tests, engineering processes, and test results.

NDAs are formal security mechanisms and are highly recommended before discussions that may reveal crucial knowledge take place (Stim & Fishman, 2007). Entrepreneurs use NDAs to maintain the confidentiality of individual and venture know-how by ensuring that involved agents do not use the individual or venture knowledge without prior approval of the owners. The intangible nature of knowledge on which high-tech ventures are based creates the need for entrepreneurs to secure the rights to their know-how through legal documents such as NDAs especially when working with others.

Non-Disclosure Agreement

This Agreement is made the ..... day of 2001

BETWEEN

X company having its registered office at Savoy Place London WC2R 0BL ('the Company'); and

..... having its registered office at ..... ('the Recipient')

WHEREAS

A) The Company is the owner of proprietary information relating to electrical products ('the Product')

B) Recipient wishes to evaluate the Product with a view to providing maintenance services to customers of the Company.

C) The Company is willing to disclose its proprietary information to Recipient

NOW IT IS AGREED as follows:–

1.0 Definitions

'Confidential Information' means all information disclosed by the Company whether in written, graphical, oral, machine readable or demonstration form, and which is clearly marked as confidential. Confidential information which is disclosed orally or by demonstration will be identified as such by the Company in writing within thirty days of the disclosure. However, information shall not be regarded as confidential if:–

1. it is at the date of this Agreement or subsequently becomes available to the public without breach of this Agreement
2. it is published by the Company
3. it is lawfully obtained by Recipient from a third party without obligation of confidentiality
4. it is known to Recipient before disclosure by the Company or
5. it can be shown by the Recipient by documentary proof to have been independently developed by the Recipient.

'Confidential Period' means three/five/ten years from the date of this Agreement

2. Use By Recipient

2.1 Recipient may use the Confidential Information only to evaluate the Product and shall restrict access to the Confidential Information to such employees of Recipient as are directly involved in such evaluation of the Product.

2.2 Recipient shall not make any copies of any tangible record of Confidential Information, shall not disclose Confidential Information to any third party in any way, and shall not use the Confidential Information for commercial purposes. Recipient shall use the same degree of care as it uses to protect its own strictly confidential information, but not less than reasonable care, to prevent the unauthorised use or publication of the Confidential Information.

3. Termination

3.1 This agreement shall commence on the date first written above and shall continue for a period of 1/2/3 years unless terminated beforehand by either party.

3.2 On termination of this Agreement, Recipient shall return all copies of Confidential Information to the Company or, at the option of the Company, shall certify in writing the destruction of all such copies.

4. Law

This Agreement shall be governed by English law and the parties submit to the exclusive jurisdiction of the English courts.

Signed by and on behalf of the Company	Signed for and on behalf of Recipient
Name:	Name:
Position:	Position:
Signature:	Signature:
Date:	Date:

Figure 4. Sample non-disclosure agreement from Irish 2001.

Many entrepreneurs ask colleagues to sign NDAs to protect their intellectual property rights, and some entrepreneurs have associates sign NDAs before venture-related talks. If these agreements are breached, Stim and Fishman (2007) suggest that the

entrepreneur should hire an attorney to pursue the legal consequences of the breech. For example, Klee (2000) reports that a court awarded *Celeritas*, a wireless technology development firm, $50 million from *Rockwell*, its proposed licensing partner and manufacture of chip sets, for breaching the NDA that prohibited *Rockwell* from publicly disclosing *Celeritas* confidential information. Cases of litigation involving NDAs are rare but such documents are extremely invaluable (Klee, 2001; Taylor, Gresty & Askwith, 2001). Being discreet is very important in the high-tech context since someone else can work faster and more effectively on a business idea and deny a slower competitor of market gains and advantages (McEvily & Chakravathany, 2002).

Professional regulations. Apart from NDAs, professional regulations are other formal security mechanisms entrepreneurs rely on. Professional regulations are relevant in this study because entrepreneurs engage licensed professionals at some point in venture idea development. Professional regulations govern the performance and functions of licensed professionals as they engage clients. These regulations protect the clients' interests and assure these clients of an expected level of the Licensed Professional's performance. The government (local, state, federal) and professional bodies such as those of law, medicine, finance, banking, and insurance develop these regulations (cf., Martinez, 2008). Generally, professional business organizations ask members to maintain confidentiality of the information acquired in the course of their work, legal and/or technical compliance, and professional competence (Gaumnitz & Lere, 2002). Other values professional organizations highly advocate are honesty, integrity, and avoidance of discrimination and harmful acts.

Professional regulations provide confidentiality between the client and the Licensed Professional in addition to setting standards of practice and assurance of service quality (Jamal & Bowie, 1995). An agreement of confidentiality between a client and a Licensed Professional is widely understood in many cases even if a formal contract is not signed. This is what happens when a patient consults a doctor even when discussing on the telephone and the patient assumes that their discussions will remain private without signing any agreement.

In a situation where a client feels that there is a breach in the confidentiality of the matters discussed with a Licensed Professional, the client may seek redress in a law court (Fitzpatrick, 1996). The court can strip the Licensed Professional of his or her license to provide services to people. In the case of lawyers, the professional body the consultant belongs to can disbar the lawyer. These legal and professional sanctions hurt the Licensed Professional's livelihood, in addition to having a tarnished reputation. These consequences of being careless with a client's information or business strongly discourage licensed professionals from breaching trust (cf., Fox, 2003).

In management studies, the issue of professional code of conduct is particularly of interest now because of rampant reports of malpractices by managers (Higgs-Kleyn & Kapelianis, 1999; Sama & Shoaf, 2008; Wiley, 2000). Some cases have led to the collapse of once formidable organizations such as Enron and Worldcom (Ackman, 2002; BBCnews.com, 2004). Ethics researchers now emphasize topics on fostering moral authority in the workplace and enshrining consumer confidence in firm practices (Sama & Shoaf, 2008).

Secrecy. Cohen, Nelson, and Walsh (February 2000) observe that in addition to these legal security mechanisms, firms use secrecy to maintain rents from their innovations and to force interested parties in their patented knowledge into licensing arrangements. This type of security mechanism is common in the technological, chemical, and pharmaceutical industries.

Secrecy is not disclosing knowledge to others that should not have privy to the knowledge. Firms use secrecy as a knowledge security mechanism when they encourage workers to be discreet with others not authorized to have access to knowledge or with people outside of the office (Whitman & Mattord, 2005). Research reveals that secrecy is one of the mechanisms firms use to maintain appropriability of their innovations and protect their market share and position (Cohen et al., 2000; Roper et al., 2006). Arundel (1991) note that firms use secrecy is to guard their knowledge and core competencies from competitors. This observation is at the firm-level of analysis and is now applied to the individual-level of analysis research in this study.

Furthermore, studies show that secrecy is preferred as an appropriability method for most product and process innovations (Arundel, 2001; Cohen et al., 2000). "For product innovations, once, the product is on the market, it can be reverse engineered by competitors," (Arundel, 2001:613). As such, the importance of secrecy during the pre-market phase is emphasized as an alternative strategy to patenting. Secrecy is a popular strategy for US firms (Cohen et al., 2000); however, research on secrecy as an informal security mechanism through the use of norms, shared values, and beliefs is sparse (McEvily, Eisenhardt & Prescott, 2004; Dhanaraj & Parkhe, 2006).

Scholars observe the significance of secrecy in knowledge-based activities, as the knowledge-based industries increasingly becomes prominent in the business world (Arundel, 2001; Thurow, 1997). Knowledge-based industries are those that rely on innovations for market success. These are firms in the biotechnology, technology, computer, and pharmaceutical industries. Knowledge continually evolves in these industries as individuals share knowledge to create new products (Thurow, 1997). These firms need their members to share knowledge to hone their ideas. Securing knowledge from competitors then relies on the establishment of socially agreed norms among those working together to encourage knowledge sharing without the fear of opportunism (cf., Arundel, 2001; Kale et al., 2000; Kultti & Takalo, 2007). Using secrecy as a security mechanism is expecting those with access to the privileged knowledge to not share this knowledge with unauthorized personnel and competitors.

Threats to security. Scholars have observed that threats to knowledge security are widespread from individual lapses in judgment to technological obsolescence. These threats include piracy and copyright infringement, espionages, deliberate acts of information extortion, thefts, and software attacks in the form of viruses and worms, natural hazards, poor quality services from Internet service providers, equipment failure, software failure, and technological obsolescence (Ricks et al., 1994; Whitman & Mattord, 2005).

The threat of espionage is of particular concern because advisors carelessly sharing an entrepreneur's knowledge with competitors can provide these competitors with knowledge with which they improve their own innovative processes and/or products. If competitors gain the knowledge advantage, the entrepreneur loses gains that

may come from first-mover advantages. Espionage by rivals can be in the form of shoulder surfing, dumpster diving, and discussions during social events (Roper et al., 2006). Shoulder surfing is when another person leans over the shoulder (probably from a distance) to see password keys as they are typed into a computer or read what is on a computer screen or even peeps through a window to see what work is going on. Dumpster diving describes the completion going through trash and recycling materials to gain knowledge about a new venture. Discussions during social events include attempts to get the advisor to accidentally disclose critical information during workshops, seminars, and at relaxation joints such as golf events or bars. Some rivals may offer job opportunities to get the advisor to discuss his or her knowledge about his or her work with the entrepreneur.

The next section reviews literature on types of advisors researchers have described and how these different types contribute to knowledge sharing and knowledge security.

Advisor Types and Knowledge

As noted earlier, working with a diverse group of people bodes well for the venture. In-depth knowledge of industry trends and an extensive network of contacts help in developing the golden idea into a venture (Case, 1989). An entrepreneur may access information from trade publications, books, and industry reports. Another informal means of accessing information is by talking to people. Brush (1992) notes that, in many cases, informal means are the primary modes of collecting information. He also finds that entrepreneurs rate the informal sources higher than the formal sources like trade magazines. In developing a business concept into a new venture, entrepreneurs hardly go

at it alone. They have a supportive cast of family and friends who guide them with ideas, information, and expert advice.

Moreover, studies show that ventures started by entrepreneurial teams fare better than those started by single founders (Cooper & Gimeno-Gascon, 1992). Other characteristics of these entrepreneurial teams are that the members are highly educated and have many years experience working as managers and accumulating skills. Entrepreneurs and advisors who have honed their skills (for example, managerial and technical skills) and are highly educated usually have successful new ventures (Cooper, Gimeno-Gascon, & Woo, 1994; Marvel & Lumpkin, 2007; Shrader & Siegel, 2007). In addition, studies show that ventures started by teams with high levels of technological experiences and formal education fared better than teams with low levels of technological experiences and formal education (Cooper et al., 1994; Marvel & Lumpkin, 2007; Shrader & Siegel, 2007). Prior experience and knowledge influence the choice of opportunities, markets, products, and processes. Breadth of experience that the entrepreneurial team brings to the new venture positively affects its performance (Shrader & Siegel, 2007; West, 2007). Hay and Ross (1989) find that advisors play a significant role in distinguishing among failed and successful entrepreneurial firms in their study. As such, having advisors contributes to the fate of the venture.

Advisors may fall into different categories depending on the advice given. Information comes from close friends, close associates, prospective business associates, suppliers, distributors, and even competitors. Case (1989) finds that entrepreneurs responded that their spouses, customers, partners, and colleagues in the industry helped them develop their ideas. The entrepreneurs believed that knowing people well enough to

secure their help was important. The network of friends and associates also includes professional advisors such as lawyers, bankers, and accountants who provide specific data and information (Hay & Ross, 1989; O'Neill & Duker, 1986).

An entrepreneur needs the wide range of expertise that advisors provide in starting a new venture. Entrepreneurs need information about funding, legal compliance, and technical support. They work with a social network of advisors and a formal network of bankers and venture capitalists. Entrepreneurs may or may not seek investors to provide the financial capital or other required resources to start a venture. Case (1989) finds that many entrepreneurs opt to use their own financial capital or receive financial support from banks. They may also seek financial aid personal friends or Business Associates. The entrepreneurs Case (1989) interviewed rarely consulted lawyers and accountants. These entrepreneurs approached potential customers for what these customers wanted, and then, asked their colleagues for expert advice on the venture plans. Cooper et al. (1994) also find that professional advisors contribute only marginally to firm performance in their study. The implication of these studies is that the entrepreneurs worked mainly with their close friends. The personal relationships established while working are used to mobilize resources and receive physical and financial capital to get a new venture started (Brüderl & Preisendörfer, 1998; Davidsson & Honig, 2003).

In the present project, I propose that the many types of advisors an entrepreneur has can be grouped into three categories. An entrepreneur chooses among three major types of advisors—Close Friends, Business Associates, and Licensed Professionals—when seeking advice during the early stages of a starting high-tech venture.

Close Friends are those with whom an entrepreneur has had positive interactions over a considerably long period of time. They are those with whom one has stable personal relationships; those to whom one often must turn to for emotional support (Cann, 2004). As such, a high level of affection and admiration is a core characteristic of the relationship between an entrepreneur and a Close Friend. Also, there is a significant amount of trust in this relationship and limited fears that the Close Friend will take advantage of one. The Close Friend may be a high school friend, have family ties with the entrepreneur, or someone with whom the entrepreneur shares similar interests such as sports, arts, or recreation. The entrepreneur and Close Friend may have worked on a developing a business together and thereby developed mutual admiration and respect for each other. The advisors in this group act as sounding boards and a platform from which advisors can "think through talking," (de Koning & Muzyka, 1999).

Business Associates work with the entrepreneur in such close proximity at that early stage of developing a venture idea because they have complementary knowledge that the entrepreneur needs. An advantage of working with someone that is not one's Close Friend is that one tends to learn something new from that person (Grannovetter, 1985). It may be that within one's inner circle of friends, the needed complementary knowledge to effectively proceed with the new venture idea is lacking, and thus, the entrepreneur finds himself or herself in the need of a Business Associate who is not particularly a Close Friend. These associates have complementary assets that the entrepreneur needs to substantially pull resources together. Business Associates provide technical and strategic advice (de Koning & Muzyka, 1999). The entrepreneur includes

experienced people in the new venture on a "board of advisors" (Hanlon & Saunders, 2007).

A prospective business partner works with an entrepreneur to develop the idea further, and usually this person belongs to what some entrepreneurs call their personal board of advisors. A personal board of advisors is a group of an entrepreneur's close associates who provide strategic advice on how to pursue the new venture further.

As noted earlier, teams that effectively leverage their experience in technical skills, marketing, strategy, finance and other capabilities show higher levels of performance than teams that lack experience and/or talent in starting a technology-based venture. Shrader and Siegel (2007) find that the more experienced the entrepreneurial team is, the better the performance of technology-based ventures. Business Associates help the entrepreneur develop thorough assessments of the market situation and build realistic expectations before launching the venture. They help design a successful business plan. They can also provide support with product and market testing activities. These close confidantes' vested interests in the venture may be to become business partners and stakeholders.

An entrepreneur engages a *Licensed Professional* because of the specialist's knowledge in areas such as accounting, finance, or law, which the entrepreneur may need to properly assess the venture's prospects (Zinger, Blanco, Zanibbi, & Mount, 1996). Large firms can employ many specialists, but an entrepreneur cannot afford to employ as many. As such, the entrepreneur consults Licensed Professionals in limited circumstances (Stevenson & Sahlman, 1988). Even then, Stevenson and Sahlman (1988)

suggest these experts be involved early in the strategy making process rather than being asked to just "fight fires."

Many entrepreneurs find Licensed Professional's expert advice useful on how the new venture should proceed. Consulting groups are the small business development centers (SBDCs), which many entrepreneurs use for significant strategic, administrative, and operating assistances (Chrisman, 1989). However, support from SBDCs may not be regulated by professional certifications and regulations as those from charter lawyers, bankers, financial consultants, and accountants.

Though Case (1989) did not find extensive use of licensed professionals in his somewhat informally reported sample of entrepreneurs in general, I expect that high-tech entrepreneurs are more likely to use these types of consultants as they move closer to establishing their ventures. High-tech entrepreneurs and their business associates are more likely to be engineers or information technology experts, and in a broader context, pharmacists and biotechnology experts who are proficient in technical knowledge but will need help with legal, financial, and accounting aspects of establishing a new high-tech venture.

Mapping the Entrepreneurial Social Context

de Koning and Muzyka (1999) analyze the social context in which the entrepreneur finds and evaluates opportunities. They develop three clusters of advisors that successful entrepreneurs will have. First, there is the network of weak ties that provide information about changes in the technological and social environments. An entrepreneur's network of weak ties is a source of fresh and innovative ideas; these are associates and colleagues who provide the entrepreneur with unique information that the

entrepreneur recognizes as opportunities and develops into ideas (Grannovetter, 1973; Hills, Lumpkin, & Singh, 1997).

Second, there are those who have stable, long-term relationships with the entrepreneur (strong ties); these advisors belong to the inner circle of friends. These advisors may not have any major role in the proposed venture or any resource-based relationship; however, the entrepreneur taps into their experiences and networks and relies on them for frank evaluations of his or her ideas. A family member can be an important confidante.

Third, de Koning and Muzyka (1999) describe "an action set" which comprises individuals with complementary skills to those of the entrepreneur. Their skills are necessary to successfully advance the new venture idea and realistically evaluate opportunities, develop strategies, and acquire resources. de Koning and Muzyka (1999) find that the entrepreneur recruits this set of advisors to provide necessary resources such as legal, financial, or accounting advice. These individuals work with the entrepreneur in refining the business idea and adapting it to customer needs.

The fourth set of advisors that may or may not be included in the model are business partners. de Koning and Muzyka (1999) find that entrepreneurs seldom start ventures alone. They have partners who are also vested in the ventures. Partners start many high-tech ventures (West, 2007). In some situations, an entrepreneur may not have a partner. Figure 5 shows the social context without partners, and Figure 6 shows the social context with business partners.

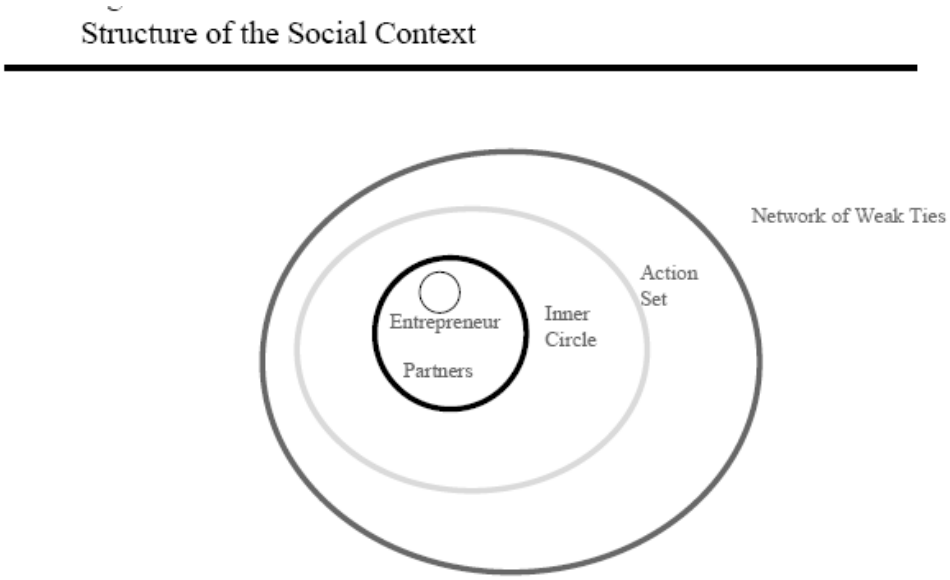

Figure 5. Structure of the social context from de Koning and Muzyka (1999).

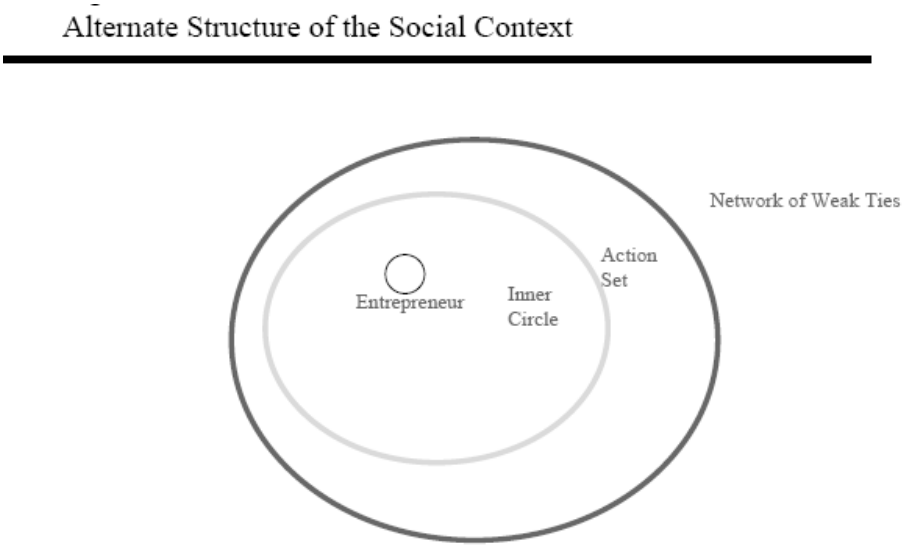

Figure 6.Alternate structure of the social context from de Koning and Muzyka (1999).

de Koning and Muzyka (1999) find that the entrepreneur begins with the network of weak ties, turns to the inner circle, and then creates an action set in finding, developing, and exploiting an idea into a business concept. Accordingly, the entrepreneur begins with information gathering, consolidates key concepts, and then moves to acquire resources. The successful serial entrepreneur is able to effectively move between the inner circle and action set (de Koning & Muzyka, 1999). Figure 7 illustrates cognitive activities and the use of the social context over time.

I focus on the inner circle and action set aspects of the social context of the entrepreneur in this dissertation, as the network of weak ties cannot be clearly defined. In addition, the network does little to help the entrepreneur clarify, refine, and pursue the golden idea after it is initially conceived. As noted earlier, Close Friends have deep personal relationships with the entrepreneur. They belong to the inner circle. Close Friends can also be family members. The action set that de Koning and Muzyka (1999) describe is further analyzed using two categories: those who regularly work without pay (cf., Brüderl& Preisendörfer, 1998) and those that are paid (Zinger et al., 1996). Those who work without pay to further develop and refine the idea and business strategies are Business Associates. These advisors' interest in the venture may be to become prospective partners, to get a position as a board of directors in the new venture, or hold some stock in the new business. There are also members of the action set that are paid for their "technical expertise, access to specialized information or legitimacy," (de Koning & Muzyka, 1999:12). This group of advisors represents Licensed Professionals (Krentzman & Samaras, 1960; Zinger et al., 1996). In this study, Licensed Professionals are those specialists that have government regulations concerning their services.

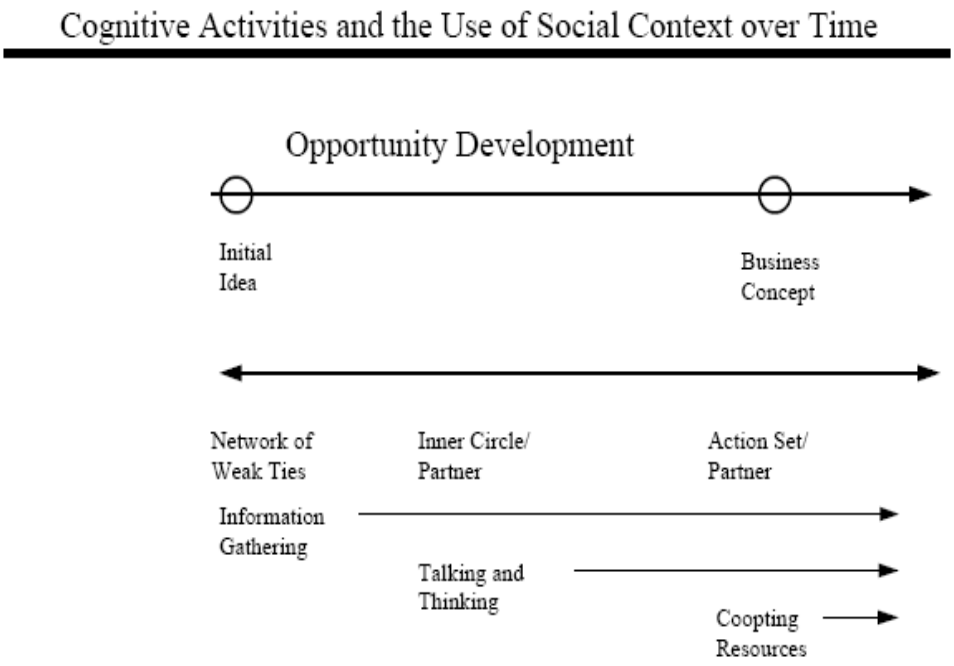

Figure 7. Cognitive activities and the use of social context over time from de Koning and Muzyka (1999)

These consultants are duly certified by the government because they have passed qualifications exams. Lawyers, accountants, professional engineers, and certified financial planners fall into this category. Figure 8 shows the modified structure of the social context.

An entrepreneur relies on his or her interpersonal relationships with Close Friends to clarify details, acquire general industry insights, hone a new idea, access resources at discounted costs, and gain access to more contacts (Brüderl & Preisendörfer, 1998; de Koning & Muzyka, 1999). Knowledge sharing with Business Associates will focus on strategic planning and consolidating key concepts.

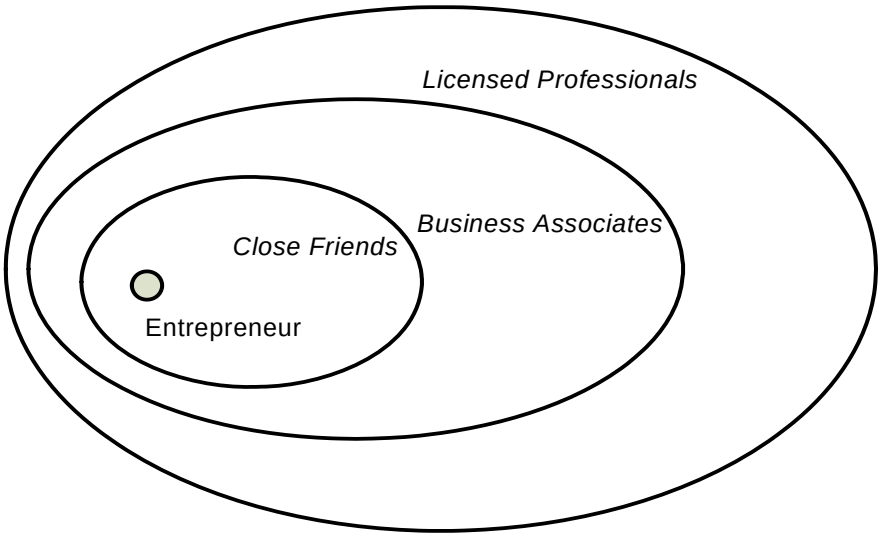

Figure 8. Modified social structure of entrepreneur's advisor network.

Licensed Professionals are primarily involved because of their specialized knowledge in certain areas such as accounting, law, and finance (Dyer & Ross, 2007; Zinger et al., 1996). While Krentzman and Samaras (1960) and Zinger et al. (1996) discuss on the relevance of (non-regulated and highly regulated) consultants for entrepreneurs, I focus on professionals that are highly regulated by both professional organizations and governments.

In this regard, I contribute a new system for categorizing advisor types that builds on de Koning and Muzyka's (1999) work. Table 2 shows the advisor types that have been discussed in literature and the types of advisor the authors focused in their studies. The new classification refers to the inner circle of friends described by de Koning and Muzyka (1999) as Close Friends. de Koning and Muzyka's (1999) action set is further described here as Business Associates and Licensed Professionals. Business Associates are unpaid for their services while Licensed Professionals are paid.

Table 2

Advisor Types

Close Friends	Business Associates	Licensed Professionals
Case (1989)-friends, coworkers	Krentzman and Samaras (1960)- Professional consultants	Krentzman and Samaras (1960)- Professional consultants
Brüderl & Preisendörfer, 1998-Close friends	Brüderl & Preisendörfer, 1998-Business associates	de Koning & Muzyka, 1999- Professional consultants
de Koning & Muzyka, 1999-Friends and family	West, 2007- Managerial team	Zinger et al., 1996- Professional consultants
	Zinger et al., 1996- Business associates	
	Dyer & Ross, 2007- Business advisor	
	de Koning & Muzyka,1999- Managerial team	
	Hanlon & Saunders, 2007- Managerial team	

Though studies emphasize the informational support of these advisors, there is limited research on the notion of trust in these advisors. I review the literature on trust next and consider its impact on knowledge sharing and knowledge security.

Trust

The third section analyzes trust issues. The review of the trust literature looks at scholars' attempts at defining trust and highlights the significance of trust in economic

relationships. The section examines trust development among parties and ends with the theories on the types of trust that may exist between parties.

Economists view trust as calculative or institutional (Williamson, 1993), while sociologists view trust as being embedded in the relationships between trustors and trustees (Granovetter, 1985). Generally, scholars agree that trust exists in relationships signaling risk and dependence between persons. An element of risk in outcomes is necessary for trust to exist between persons (MacCrimmon & Wehrung, 1990). Also, the trustor is dependent on the trustee for certain outcomes.

Rousseau, Sitkin, and Burt et al. (1998) note that though the conceptions of trust may differ across disciplines, scholars agree that trust is based on a person's willingness to be vulnerable to another. The willingness to be vulnerable to another engenders belief that the other person will act with positive intentions towards one, and the benefits of that action will outweigh the costs. Trust is defined as the willingness of a trustor to be vulnerable to a trustee in the belief that the trustee will not treat him or her opportunistically (Hosmer, 1995; Rousseau et al., 1998). Trust is also referred to as relational social capital since it develops over time through interpersonal relationships between the trustor and the trustee (Lewicki, Tomlinson, Gillespie, 2006). A trustor relies on a trustee to take desired actions or to provide needed resources.

In summary, trust is described as confidence in another (Hosmer, 1995; Lewicki, McAllister & Bies, 1995), certainty about behavior predictability, and complete empathy with another's desires and intentions (Lewicki & Bunker, 1996).

Trust development. Trust grows between entrepreneurs and associates in closely-knit communities through frequent interactions. Frequent communications and

acts of reciprocity among partners over time build into trust relationships that put entrepreneurs or any other actors at ease when working with others, sharing ideas, and consenting to business transactions, sometimes with just with a handshake (Dyer & Nobeoka, 2000; Granovetter, 1992; Uzzi, 1996). Frequent interactions provide the context to build expectations of other's behaviors and to develop confidence in other's actions, skills, and ideas.

Trust develops with repeated interactions and as each party shows itself worthy of the confidence initially reposed by the other party (Lewicki & Bunker, 1996). It develops with increased socializations between parties that facilitate unwritten and tacit understandings of expectations of reciprocity and exchanges. Studies show that consistency nurtures trust development between parties (Lewicki & Bunker, 1996; Ring & van de Ven, 1992). Trust then grows deep. Dishonesty, disloyalty, and poor judgment may hurt trust development between parties (Hosmer, 1995; Lewicki, McAllister & Bies, 1998).

A network is formed as relationships develop among a set of people. Within that social network, expectations, behaviors, and norms of accepted practices evolve and are established. Individuals develop reputations regarding their expertise, consistency, availability, influence, and status. These networks are usually nurtured on reciprocal actions and norm enforcements. The stimulation behind the development of social networks hinges on trust, and the belief that an act of generosity or goodwill will be reciprocated (Coleman, 1990:310).

Trusting relationships are very significant for entrepreneurs as trusted colleagues and family define the "inner circle of friends" with which they share business ideas

without the need for formal documents such as non-disclosure agreements to ensure the secrecy of these ideas (Corbit, 2008). Scholars have underscored the critical importance of social relationships to the successes of economic ventures (Granovetter, 1985). An economic exchange cannot exist without some level of trust between parties. Economic exchanges go beyond a one-time deal secured by price as economists may argue. Blau (1964) argues that without trust there are no economic transactions. Following this argument, other scholars have stressed that social relations and economic exchanges are "embedded" in one another (Hennart, 1993; Ouchi, 1980; Uzzi, 1996). Granovetter (1985) emphasizes that all economic transactions occur within a social structure where social relationships influence the type of contracts that are usually created. Social relationships with the underlying themes of trust and reciprocity auger better for economic transactions because of reduced fears of opportunism and levels of distrust (cf., Lewicki et al., 1998; Kale et al., 2000).

Economic transactions that are based on high levels of trust despite high levels of risks are founded on relational contracts (Ring & van de Ven, 1992). Relational contracting is "the extent to which an exchange relationship can be characterized as long-term, reciprocal, and extending beyond buying and selling," (Li & Dant, 1997:202). Lado and colleagues (2008) describe the implicit agreements and behavioral norms that drive these kinds of relational contracts as relationalism. Ring and van de Ven (1992) also observe that involved parties in these relationships rely heavily on trust to mitigate risks.

Advantages of trust. Studies show that trust reduces transaction and control costs and monitoring processes that may be involved in economic exchanges. For example, the

trust that a subsidiary or business unit does a good job reduces the need for frequent validation checks by the parent headquarters and eases the absorption of knowledge received from that subsidiary within a multinational network of subsidiaries or within a firm (Szulanski, Cappetta, & Jensen, 2004; Yli-Renko et al., 2001). Trust facilitates a "community with shared interests, a common identity, and a commitment to the common good," (Adler & Kwon, 2002: 25). Trust makes it easier to transmit even tacit knowledge since one party readily opens up to the other (McEvily & Marcus, 2005) and both parties nurse few if any thoughts of being taken advantage of. With shared interests and a common identity, knowledge, even that of a tacit nature can be easier transferred.

The relationship between trust and the entrepreneurial world is complex. Rather than resort to or enforce contracts and other formal mechanisms, trusting relationships may be relied upon to get a business order through or to resolve conflicts (Levin & Cross, 2004; McEvily, Perrone, & Zaheer, 2003). In such situations, trust reduces transaction costs and substitutes for deficiencies in institutional environments where the enforcement of formal and legal mechanisms may be weak. Entrepreneurs rely extensively on trust to start their new ventures in areas where weak intellectual property protection regimes exist (Rottman, 2008) since suing for copyright infringement is costly. In some markets, the effectiveness of formal institutions is weak.

In other instances, entrepreneurs can gain legitimacy simply from their associations with some industry associates, and such recognition from these contacts provides the basis on which suppliers and distributors trust them with businesses. Such recognition, indicating trust in entrepreneurs, help these entrepreneurs overcome some barriers to entry in the industry (Myint, Vyakarnam, & New, 2005). An entrepreneur's

interpersonal relationships can be used "for evaluating promising business opportunities, for forming connections between investors and entrepreneurs, and for staffing new enterprises with experienced management teams," (Myint et al., 2005: 176).

Types of Trust

Scholars define many types of trust, thus providing a vast literature on the concept. For example, McAllister (1995) shows that interpersonal trust has two dimensions—affect-based trust and cognitive-based trust, while Rousseau and colleagues (1998) refer to these two dimensions as relational and calculative trust. For this study, I use the term affective trust from McAllister (1995) and adopt the term calculative trust from Rousseau et al. (1998). In the next subsections, I review the literature on the different types of interpersonal trust.

Characterizations of trust defined in literature. There are many characterizations of trust in the literature. A critical look at these characterizations reveals that they are other ways of viewing calculative and affective trust. The next few paragraphs review scholars' work on the different types of trust that may exist between actors.

Shapiro, Sheppard, and Cheraskin (1992) describe three types of trust in work relationships: Deterrence-based trust, knowledge-based trust, and identification-based trust. Deterrence-based trust is based on the consistency of behavior—people will do what they say. Behavioral consistency is sustained by the threat of punishment that will occur if consistency is not maintained. James, Jr. (2002) says the problem with deterrence-based trust is that if agents require an incentive to cooperate and as long as the standard assumptions of rationality and self-interest hold, it is obvious why they are

willing to cooperate with or trust each other. Knowledge-based trust is grounded in behavioral predictability - judgment of the other's likely choice of behaviors. Identification-based trust is complete empathy with the other party's desires and intentions. Trust exists because each party understands, agrees, empathizes with and takes on the other's values because of the emotional connection between them.

Deterrence-based trust describes the processes of calculating and judging the trustee based on the costs of continuing a relationship and the rational choices available to a trustor. These are similar to issues constituting calculus-based trust (Lewicki & Bunker, 1996) and cognition-based trust (McAllister, 1995).

Ring (1996) describes two types of trust in interfirm alliances: fragile trust and resilient trust. Fragile trust is calculative. It assesses the other party's abilities, judgment, and integrity in meeting the provisions of the contract. The level of trust within the other party is an indication of the trustor's (the trusting party) level of confidence in the trustee's (the trusted party) capabilities. The trustor deems the trustee as capable, reliable, and of good judgment in fulfilling the details of the contract. Compared with other theories on types of trust, fragile trust aligns with calculative trust since it is based on the trustee's ability to provide positive returns rather than a close personal relationship with the trustor.

Resilient trust develops from positive experiences in repeated exchanges between parties. One party is confident of the behavior of the other who may not exploit opportunities for selfish gains. At this time in the relationship, when a party fails to deliver due to unanticipated developments, the trustor is willing to give the trustee another chance to redeem him or herself. Ring (1996) describes this as resilient trust,

borne out of repeated positive exchanges between parties. Resilient trust is affective trust—emotional, personal, and understanding.

Another phenomenon identified by Meyerson, Weick, and Kramer (1996) is swift trust. Teams do not have the luxury of time to socialize and learn about one another's behaviors, abilities, and goals, particularly when members are from different countries. Members in such teams rely on swift trust to accomplish their tasks (Radcliffe & Schniederjans, 2003). Jarvenpaa and Leidner (1999) use this type of trust in describing cooperative behavior between agents in virtual global teams. Since this type of trust is not developed from repeated interactions, it is closer to calculative trust that I study than to affective trust. "Swift trust is fragile and temporal," (Jarvenpaa & Leidner, 1999: 791).

Most management studies consider trust in the context of inter-firm relationships and other forms of cooperative relationships. These studies underscore the importance of developing trust with members of the partner firms to facilitate successful knowledge sharing.

Looking within the firm, Williams (2001) observes that similar members, sharing demographics and experiences, readily trust each other more than members that have no similarity on these factors. Trust development among members of the firm makes teams work better and resolve conflicts quickly.

Calculative versus affective trust. Different types of trust identified in the literature often describe a cognitive and an affective component to trust as observed above. McAllister (1995) proposes that two dimensions—cognition-based trust and affect-based trust—characterize interpersonal trust. Cognition-based trust or calculative trust (Rousseau et al., 1998) has competence and responsibility as its central elements

(Butler, 1991; Cooke & Wall, 1980). Calculative trust is the most basal type of trust existing as a result of the trustee's dependability and reliability (Zucker, 1986). The trustor is said to be behaving "rationally" (Lewis & Weigert, 1985: 972). The trust develops from insightful considerations of the trustee's capacity and ability to perform designated tasks (Shapiro, 1990). When a trustee meets the trustor's expectations in terms of competences, reliability and skill set over time, the confidence placed in such a trustee is described as rational and cognitive-based. The trustor assesses the other party's capabilities critically and concludes whether that party has the capacity, resources, and good judgment to fulfill the provisions of a contract or request. This type of trust is limited to specific exchanges between persons, and is not particularly emotionally engaging (Doney et al., 1995; Rousseau et al., 1998).

A trustor expressing high levels of calculative trust has the expectation and confidence that the trustee will be consistent and honest. This form of trust generally exists in strategic alliances, joint ventures, and many inter organizational alliances that share resources and work together on tasks. If a party has a low perception of the other (based on the party's inability to perform the tasks or poor judgment skills) in terms of the other's capabilities in fulfilling the terms of a contract, the trustor will have low calculative trust in the other party (Lewicki et al., 1995).

The other form of interpersonal trust is affect-based, affective, or emotional trust (Lewis & Weigert, 1985; McAllister, 1995). This type is based on a positive affect for the object of trust. It is loyal, open, and receptive to the other person. This type of trust is found among family members and friends, and is more involved with social bonding rather than corporate bonding. In some societies, maintaining a good family name is

more important than fulfilling the terms of a contract. Contracts are usually made between family members and friends, and these are followed through because of a stronger need to meet societal norms and maintain good business relationships with friends and family members (relationalism). According to Rodriguez and Wilson (2002), Mexicans looked to increasing social bonding in their business relationships and it was more important to them that the other party felt happy on an interpersonal rather than on a contractual basis. This type of emotional bonding over economic transactions is driven by affective trust.

The next section presents the research model, hypotheses, and research questions of this study. The hypotheses are tested quantitatively and are supported using interview texts. Research questions guide further examination of the interview texts to build theory.

Research Model, Hypotheses, and Research Questions

As noted earlier, Close Friends, Business Associates, and Licensed Professionals help entrepreneurs develop their new venture concepts. Entrepreneurs court these advisors to be part of their advisor networks in developing the ideas for new ventures. Even then, entrepreneurs need to be assured of the security of the knowledge shared with their advisors. In the entrepreneurship world, trust, secrecy, and relationships weave together to create a complex fabric from which innovations become new ventures.

I develop a research model to analyze how an entrepreneur's trust in advisors may affect knowledge sharing and the entrepreneur's use of NDAS towards these advisors. I use McAllister's (1995) theory of types of trust because of its simplicity and conciseness in describing the types of interpersonal trust. This theory is popular with researchers as they study supervisor-employee relations (Alder, Schminke, Noel et al., 2008; Podsakoff,

MacKenzie, Paine et al., 2000), trust and work values in international joint ventures (Wang & Fulop, 2007), partner characteristics in strategic alliances (Das & Teng, 1998; Globerman & Nielsen, 2007), marketing (Johnson, Bardhi, & Dunn, 2008), and negotiations (Jeffries & Reed, 2000) among other research topics.

The research model is presented in Figure 9 and is further explained in the following subsections. The model stresses that affective trust alone affects (reduces) an entrepreneur's use of NDAs, whereas both affective trust and calculative trust influence knowledge sharing. The assumption in many research studies is that entrepreneurs trust their advisors. However, the nature of that trust and how trust may affect knowledge security remains scarcely researched (cf., Goel & Sarri, 2006; Zahra et al., 2006). The examination of an entrepreneur's use of NDAs complements previous research that has considered knowledge sharing between entrepreneurs and advisors. The model examines the structure of the entrepreneurial relationships that define the preoperational stage and how these relationships contribute to entrepreneurial activity. The relationships between trust, knowledge sharing, and use of NDAs between entrepreneurs and advisors are examined in the next subsections.

Relationship length and affective trust. Relationships are established as entrepreneurs interact with their advisors. These relationships have trust implications (Levin, Whitener & Cross, 2006). Partners that are in relationships characterized by strong emotional bonds have affective trust in their partners (Lewis & Weigert, 1985; Goel & Sarri, 2006). Moreover, individuals maintain ties with others with whom they have positive repeated relationships and assurances of future expected gains (cf., Gulati, 1995).

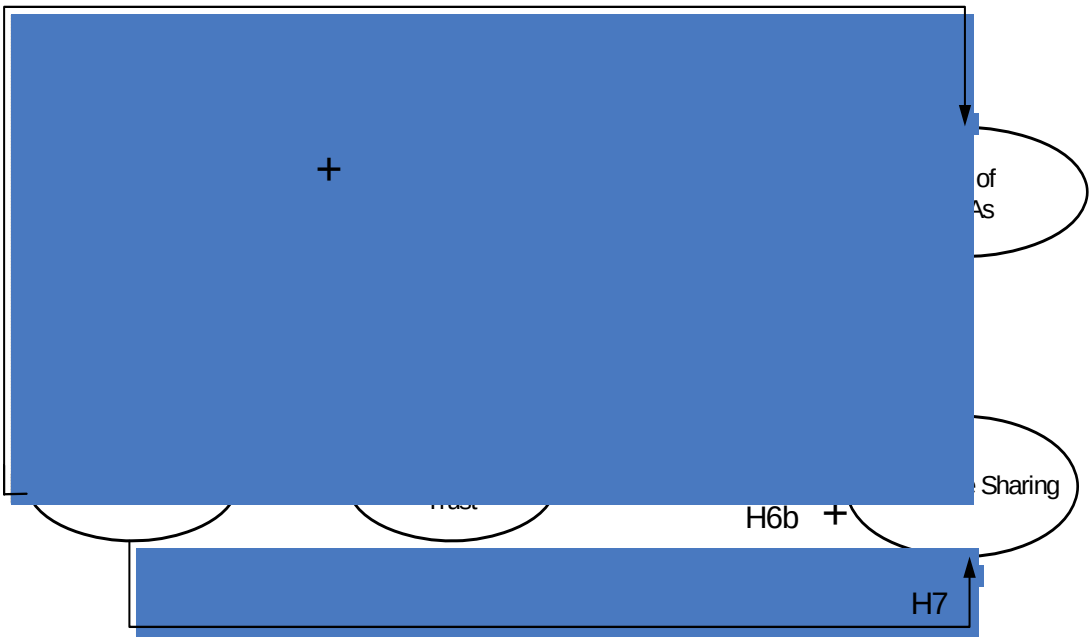

Figure 9. Research model.

Previous studies note that trusting relationships evolve from social interactions (Granovetter, 1985; Uzzi, 1999). As the frequency of social interactions increases, trust develops (McAllister, 1995). Social interactions provide an entrepreneur with opportunities to evaluate the skills, expertise, proficiency, reliability, and the competence of a prospective advisor. With time, expectations of behavior are established, and "in older relationships, personal knowledge of shared perspectives" become the basis of trust (Levin et al., 2006). Tsai and Ghoshal (1998: 465) observe that "with increased interaction, trust becomes more concrete and the actors are likely to consider each other trustworthy." Besides, norms of mutual and future obligations develop from continuous reciprocity of actions and a sense of loyalty (Coleman, 1990). Those who develop mutual

affection for others during these frequent interactions develop shared values and beliefs that are continually reinforced with time.

Partners in long-term relationships often demonstrate loyalty, friendship, and commitment towards each other (Pesämaa & Hair, 2007). With time, repeated relationships lead to increased familiarity among those involved (McAllister, 1995). Shared values, beliefs, and perspectives contribute to emotional bonding for the other person (McAllister, 1995). For those who become fond of each other, emotional attachments grow stronger (McAllister, 1995). Emotional attachments are fostered when individuals share beliefs, goals, and values (Lewicki & Bunker, 1996), leading to higher levels of understanding between them (Larson, 1992; West, 2007). Such emotional attachments over time lead to the willingness to be vulnerable to the other person without extensively evaluating competencies, consistencies, and abilities. The reduced emphasis on "rational" checks comes as a result of increased familiarity with the trusted person (Goel & Sarri, 2006; Lewis & Wiegert, 1985). Such willingness to be vulnerable to another based on emotional attachment and closeness is called affective trust.

Prior relationships that have histories of reciprocity and patterns of fulfilled mutual obligations lead to affective trust (Coleman, 1990: 310). Additionally, loyalty, friendship, and commitment engender affective trust (Pesämaa & Hair, 2007). Consequently, entrepreneurs will express high levels of affective trust in advisors they have longer histories.

Hypothesis 1: The length of the relationship between an entrepreneur and an advisor is positively related to the level of affective trust that the entrepreneur has for that advisor.

Advisor types and affective trust. Entrepreneurs will express different levels of affective trust in the three types of advisors. A Close Friend can be a family member or friend. The nature of the relationship with a Close Friend is that the entrepreneur discusses wide-ranging issues with him or her, both business and personal. There are strong emotional bonds between entrepreneurs and their Close Friends (cf., Pesämaa & Hair, 2007). The commitment and loyalty in the relationship between Close Friends and entrepreneurs may not be as typical of the relationships between the entrepreneurs and the other advisor types. The emotional attachments are different for the advisor types, making the usual levels of affective trust for the advisor types different.

Friendships stimulate loyalty and communication between people. Pesämaa and Hair (2007) observe that friends socialize outside of work, and this aspect to their relationships provides opportunities to confide in each other regarding business and personal issues. Reciprocity and communication between friends also stimulate a sense of loyalty between them. Close Friends are more likely than the other advisor types to go over and beyond what may be expected of them to provide personal and business-related support for the entrepreneur. These are people who like each other a lot and feel a sense of responsibility for the other person. Such helpful actions induce affective trust among individuals (McAllister, 1995). These kinds of support are why entrepreneurs approach their Close Friends for help in acquiring resources, in making useful business contacts, and in using networks to advance their projects.

Close Friends, more than the other advisor types, are more familiar with the entrepreneur's business and personal needs. They are the entrepreneurs' confidantes concerning family and other issues. Business-wise, they contribute to the idea

development by being a sounding board for the entrepreneurs and making their business networks available to the entrepreneur.

There is a higher likelihood that the entrepreneur is not as emotionally close with Business Associates and Licensed Professionals as with Close Friends. Family and friends have relationships that are defined by personal likeness and family ties. However, business interests primarily define relationships with Business Associates and Licensed Professionals. The influences of an affective kind of trust in strictly business relationships are then muted. The relationships with Business Associates and Licensed Professionals are not based on personal fondness but rather on targeted business goals. The focus of these entrepreneur-advisor relationships is more business-oriented than personal-oriented.

Furthermore, the main aims of the relationships with Business Associates and Licensed Professionals are for these advisors to provide complementary skills to those of the entrepreneur. The entrepreneur may not even relate with these advisors outside of work, thereby reducing the likelihood of developing affective trust in them (cf., Chua, Ingram, & Morris, 2008; Pesämaa & Hair, 2007).

Hypothesis 2: Affective trust varies with advisor type. Specifically, entrepreneurs will express higher levels of affective trust in Close Friends than in either (a) Business Associates or (b) Licensed Professionals.

Advisor types and calculative trust. Entrepreneurs work with advisors they count on. These are advisors who have reputations as skillful, reliable, and competent (Cooper et al., 2006; West, 2007). The entrepreneur may not even be familiar with an advisor but relies on other's recommendations concerning that advisor (cf., Howorth & Moro, 2006). Sometimes, the confidence in an advisor's skill comes from direct personal

experience or observation, and other occasions, it comes from personal referral by a trusted third party or general reputation (cf., Coleman, 1990). To trust someone based on their skill and competence is to depose calculative trust in them (McAllister, 1995).

Now, the nature of the typical relationships between entrepreneurs and advisor types are different. The relationships with the Business Associate and Licensed Professional are based on the task of developing a new high-tech venture idea (de Koning & Muzyka, 1999). Although, the entrepreneur may relate to these advisor types on a personal note, the focus of these relationships is the task of idea enhancement and strategy formulation. The entrepreneur is primarily approaching these two types of advisors based on their skills, expertise, and reputation rather than on goodwill or emotional attachment. As a result, the principal form of trust entrepreneurs will reflect in these advisor types is calculative trust.

However, calculative trust will not be as dominant in the entrepreneur's relationship with Close friends as it does in the relationship with other advisor types. As noted earlier, Close Friends provide emotional support and act as sounding boards for general issues concerning the venture. The trust relationship with a Close Friend is not defined primarily based on individual capabilities or expertise but on mutual attraction and personal likeness. Comparatively, entrepreneurs will indicate that they have higher levels of calculative trust in the other two advisor types than they do in Close Friends based on the nature of their working relationships (Chua et al., 2008).

Hypothesis 3: Calculative trust varies with advisor type. Specifically, entrepreneurs will express lower levels of calculative trust in Close Friends than in either (a) Business Associates or (b) Licensed Professionals.

Affective trust and use of NDAs. Trust between an entrepreneur and an advisor has implications for the entrepreneur's use of NDAs with that advisor. An entrepreneur's choice of a security mechanism is a reflection of the dominant form of trust in the entrepreneur-advisor relationships. Entrepreneurs expect advisors not to share knowledge with others who should not be privy to the knowledge. This expectation can be managed using formal mechanisms such as NDAs or social controls such as shared norms. The literature describes formal mechanisms as formal standardized procedures and rules (Makhija &Ganesh, 1997). Formal mechanisms pertain to NDAs in this study. The entrepreneur-advisor relationship may have been established for a long time, providing opportunities to define and meet mutual expectations and develop shared norms (Levin et al., 2006). As such, the entrepreneur can also rely on advisors' discretion not to discuss venture knowledge with third parties unauthorized to have access to the knowledge. Relying on advisors' discretion not to disclose knowledge to third parties is choosing secrecy as a security mechanism.

Trust makes relying on an advisor's discretion a safe choice for entrepreneurs as a knowledge security mechanism, considering the tacit and intangible nature of knowledge. Studies show that secrecy is a preferred mechanism to maintain a firm's competitive advantages (Arundel, 2000; Cohen et al., 2000; Pisano, 2000). This is more so particularly in the early stages of idea generation and refinement when patents and legal contracts may be unenforceable. The entrepreneur trusts his or her advisors not to discuss the critical knowledge in social settings, and trusts that the advisors are careful with venture knowledge. The trust deposed in advisors makes the entrepreneur willing to take

the risk to share the knowledge, and this trust provides the assurance that the critical knowledge shared between them is secure from rivals.

Secrecy is a security mechanism that is based on social forms of controls such as shared norms, objectives, values, and beliefs (Das & Teng, 2001). When an entrepreneur relies more on an advisor's discretion to keep knowledge secure, an unwritten agreement between the entrepreneur and the advisor exists that the dissemination of venture knowledge will be done discreetly. Entrepreneurs have these unwritten and often unstated agreements with advisors that they express high degrees of certainty in their behaviors (cf., Rousseau et al., 1998). As such, these relationships are maintained by implicit agreements on behavioral conduct (Coleman, 1990). These assumptions lead to a reliance on trusting advisors' discretion to keep venture knowledge secret from competitors.

To rely on an advisor's discretion more than the use of NDAs reflects high levels of emotional attachment between entrepreneur and the advisor (cf., Pesämaa & Hair, 2007). There is a high level of informality and understanding between the partners (cf., Pesämaa & Hair, 2007). Affective trust drives these types of relationships. With high levels of affective trust deposed in an advisor, entrepreneurs rely more on the unwritten assumptions that advisors will maintain secrecy because of their loyalty more than because of formal security requirements such as contracts and NDAs. The more affective trust an entrepreneur has in an advisor, the lesser the likelihood the advisor will be asked to sign an NDA. The entrepreneur expects the advisor to obey legal laws and other rules, but the higher dependability for knowledge security is on his or her expectation that an advisor will maintain secrecy.

NDAs are discretionary mechanisms because entrepreneurs decide whether to ask advisors to sign these forms. An NDA provides a legal agreement on how the knowledge the entrepreneur shares with the advisor is used. When uncertainty exists or when doubts linger concerning how the knowledge the entrepreneur shares with the advisor will be disseminated, entrepreneurs will ask advisors to sign NDAs. The partners to the agreement do not have a level of emotional bonding that may encourage the entrepreneur to be willing to be vulnerable with the venture knowledge. NDAs are introduced into relationships where there have been no or limited basis for emotional bonding between the involved parties. The entrepreneur will then ask advisors that they do not have high levels of affective trust in to sign NDAs.

Other security mechanisms include professional regulations, which are generally implicitly involved in all relationships with the sorts of Licensed Professionals who are subject to such regulations such as lawyers and accountants that will be considered in the present project. As such, they are not discretionary mechanisms on the part of the entrepreneurs. The relevance of these professional regulations during the preoperational stage will be further evaluated in the discussion section. Overall, the level of affective trust between entrepreneurs and advisors will have implications for the use of NDAs.

Hypothesis 4: The entrepreneur's level of affective trust in an advisor is negatively related to the use of NDAs with that advisor.

Advisor types and use of NDAs. Advisor type will contribute to the entrepreneur's use of NDAs for each type. The arguments here are similar to those of hypotheses 2 and 3. The purpose of stating this hypothesis is that some of the effects of advisor type on entrepreneurial behavior on the use of NDAs may not be mediated by

respondent's answers to questions about trust. Direct, unmediated effects of advisor type on NDAs may reflect levels of trust about which the entrepreneur is either unaware or does not wish to disclose. The typical personal and business relationships with each advisor type are different, producing different typical uses of NDAs for each type. For example, Licensed Professionals are legally bound by the nature of their professions to maintain certain standards of integrity and professionalism. Lawyer and accountants are examples of these advisors that have government and professional regulations concerning their practices (Gaumnitz & Lere, 2002). Government and professional regulations govern these specialists' conducts. Direct effects of advisor type on use of NDAs may occur because the entrepreneur may not ask Licensed Professionals to sign NDAs, but implicitly relies on the regulations governing the respective professions. This reliance on legal institutional trust, though not a form of interpersonal trust, will be evident in the entrepreneur-Licensed Professional relationship. As such, high levels of institutional trust dissuade the entrepreneur from using NDAs with Licensed Professionals (cf., Hisrich, Peters, & Shepherd, 2008: 203). The entrepreneur shows a lesser tendency to ask Licensed Professionals to sign NDAs[3]. Even then, entrepreneurs expect Licensed Professionals such as lawyers and accountants to keep the shared privileged knowledge secret because of the expected levels of professional conduct. These entrepreneurs risk their sources of potential income by confiding in these Licensed Professionals. These Licensed Professionals risk their licenses if they breach the entrepreneur's trust. The risks are high on both sides. An entrepreneur will likely rely more on professional regulations as knowledge security mechanisms with Licensed Professionals than on NDAs. The type

[3] The assumption here is high institutional trust exists. However, if weak institutional trust exists, entrepreneurs may ask Licensed professionals to sign formal contracts like NDAs.

of trust evident with this group of advisor is institutional trust (cf., Lewis & Wiegert, 1985; Rousseau et al., 1998).

As noted earlier, there is a greater tendency to be willing to be vulnerable to Close Friends and not suggest they sign NDAs. A stronger sense of loyalty and a history of reciprocity has been established, albeit informally, with Close Friends. The entrepreneur trusts Close Friends to be discreet about sensitive details of the high-tech venture and that these advisors will not take advantage of him or her if the opportunity arises. Entrepreneurs rely on the goodwill of Close Friends based on their close interpersonal relationships. "Trust makes people confident about entering into vulnerable situations," (De Carolis & Saparito, 2006: 47). These expectations of their Close Friends are such that the greater dependency for knowledge security in this relationship is on the advisor's discretion. NDAs may still be present in the relationships with Close Friends, but the entrepreneur's stronger reliance or preference is in the advisor's discretion.

The entrepreneur has formal business relationships with Business Advisors. The introduction of NDAs in their relationships signifies the anticipation that Business Associates will have inside venture knowledge. Business Associates are expected to extensively contribute to the development of the high-tech venture more than the other advisor types (de Koning & Muzyka, 1999). The NDA indicates a formal business relationship with expected positive benefits accruing from the shared knowledge between entrepreneur and Business Associate. Business Associates are brought in to develop the venture concepts into high-tech ventures (West, 2007). Considering the amount of venture knowledge available to Business Associates, the entrepreneur will rely more on NDAs as knowledge security mechanisms. The assurance derived from institutional trust

evident with Licensed Professional is missing in the Business Associate relationship. Therefore, entrepreneurs are more likely to ask Business Associates than Licensed Professionals to sign NDAs.

Hypothesis 5: Entrepreneurs' use of NDAs varies with advisor type. Specifically, entrepreneurs are more likely to have Business Associates sign NDAs than to have (a) Close Friends or (b) Licensed Professionals sign them.

Trust and knowledge sharing. Entrepreneurs' trust in advisors encourages knowledge sharing on how to enhance the original idea (Brüderl & Preisendörfer, 1998). Entrepreneurs rely on the expertise of their advisors in developing their high-tech venture ideas (cf., Smeltzer et al., 1994; West, 2007). Entrepreneurs also share their ideas with those they trust in their judgment, as in the case with Close Friends. The next few paragraphs further examine how trust in advisors may contribute to knowledge sharing.

Trust allows the entrepreneur to be confident in the veracity of the recommendations of advisors (Uzzi, 1996). Many entrepreneurs have developed trusted networks of contacts and colleagues over time, which become their support groups for idea enhancement, capital, and prospective clients. The amount of knowledge sharing between an entrepreneur and an advisor relates to the level of trust deposed in that advisor. Drawing from research on firm alliances, Suseno and Ratten (2007) observe that the level of mutual trust between alliance partners' contributes to tacit and explicit knowledge sharing between the partners. This observation at the firm level of analysis is applied to the individual level of analysis in this study. The entrepreneur becomes increasingly willing to disclose sensitive venture knowledge with higher levels of trust in advisors.

Entrepreneurs need the valuable inputs of others in making decisions, filtering through opportunities, and enhancing their ideas. West (2007) emphasizes that entrepreneurs collaborate with others to develop strategies for their new ventures. Cooper et al. (1994) also find that entrepreneurs work with advisors who have managerial and technical experience to improve the performance of their ventures. An entrepreneur will discuss his or her ideas with those that are deemed capable of improving these ideas. The entrepreneur will share knowledge with those that are perceived to be capable of providing the necessary enhancements and improvements. This type of trust in another's capability, apart from mutual affection, is calculative trust. Higher levels of calculative trust in another encourages more knowledge sharing

Likewise, the entrepreneur will confide in those he or she considers as loyal and committed to him or her. Friends and family support and encourage entrepreneurs (Smeltzer et al., 1994). Close associates may also have business contacts that the entrepreneur may need. The fear of opportunistic actions is not a concern in relationships with high levels of affective trust. Such high levels of affective trust encourage the entrepreneur to share more knowledge with those in whom he or she reflects high levels of this type of trust.

Hypothesis 6: Knowledge sharing is positively associated with (a) affective trust and (b) calculative trust.

Advisor types and knowledge sharing. I argue that different advisor types engender different levels of knowledge sharing. There are different types of advisors because they play different roles in the preoperational stage of a new high-tech venture. While Close Friends will be consulted for general clarifications and moral support, the

other two types contribute directly to the development of the high-tech idea. There will be differences in the amount of the high-tech venture idea shared with each advisor type.

Business Associates make up the core of entrepreneurial team that is deeply involved in developing a successful business concept (Cooper et al., 1994; West, 2007). Entrepreneurs engage Business Associates regarding developing the high-tech idea (de Koning & Muzyka, 1999). Business Associates have managerial experience to improve the entrepreneur's venture idea, help the entrepreneur establish a business plan, and to conduct consumer, competitive, and market analyses. Business Associates are involved in action plans to start the new high-tech venture. The entrepreneur's relationship with a Business Associate is primarily for idea enhancements and refining strategies (cf., de Koning & Muzyka, 1999). Entrepreneurs will have more knowledge sharing with Business Associates than with the other advisor types, as Business Associates are more involved with strategy formulations and idea enhancements.

Close Friends are consulted for general clarifications and probably for their connections that may be useful for resource acquisitions while Licensed Professionals are limited in knowledge sharing about specialized details such as financial outlook, accounting details, and legal implications. Licensed Professionals are brought in to provide specialized knowledge and to fill in the missing link to achieving the business goal (Zinger et al., 1996). Besides, starting a venture has implications for the entrepreneur's personal and family life (Smeltzer et al., 1994). Entrepreneurs will talk about the personal and family challenges with Close Friends (cf., Pesämaa & Hair, 2007). The entrepreneur may also talk about personal and family-related financial matters with

Licensed Professionals such as accountants and lawyer that they may not discuss with their Close Friends.

Even then, compared to the other advisor types, more knowledge sharing will occur with a Business Associate than with a Close Friend or a Licensed Professional as entrepreneurs focus on idea development and strategy formulations. Overall, different levels of knowledge sharing will be evident with each type of advisor.

Hypothesis 7: Knowledge sharing varies with advisor type. Specifically, entrepreneurs will share more knowledge with Business Associates than either (a) Close Friends or (b) Licensed Professionals.

I have argued for hypotheses above. I will test theories by providing evidences from interview texts. The details about the methods will be provided in the Methods chapter. These texts will be used to find support for the quantitative results. Entrepreneurs' responses to interview questions provide richer insights that can be analyzed to confirm or disconfirm theory. In the next section, I describe the theory-building process through content analysis.

Research Questions

Research questions guide the theory building process (Eisenhardt, 1989). I will explore research questions for more explanations to build the theories supporting the above hypotheses. This is additional analysis to the quantitative research. As advised by Eisenhardt (1989), researchers should proceed with qualitative analysis with specific questions in mind so as not to be overwhelmed by copious interview data. The research questions guiding the theory building process are described below.

Relationship length and affective trust. Entrepreneurs will be prompted to share relationship histories they have had with their advisors. The questions will probe how the introduction occurred, what factors encouraged the entrepreneur to enter the relationship, and how many prior projects they had done together. Their narratives may also describe how calculative trust emerged from the reputations of advisors. Their narratives will be analyzed to provide further evidence of how relationship tenure contributes to affective trust and calculative trust.

Research question 1: How does relationship length affect affective trust between entrepreneurs and advisors?

Affective trust and use of NDAs. Hypothesis 4 states that affective trust contributes to the use of NDAs. The theory behind this is that emotional attachment to an advisor drives an entrepreneur to rely more on informal security mechanisms with that advisor. The reason for choosing a security mechanism will be explored. Entrepreneurs will be encouraged to discuss why they trust their advisors and then later on in the interview, whether and why they asked these advisors to sign NDAs. I build on existing theory through a careful analysis of the interview texts to answer the following question.

Research question 2: How does affective trust in an advisor relate to an entrepreneur's use of NDAs with that advisor?

Advisor types and use of NDAs. Hypothesis 5 suggests that entrepreneurs will rely less on the use of NDAs with Close Friends and Licensed Professionals, but rely more on NDAs with Business Associates. As noted earlier, entrepreneurs will be encouraged to discuss the extent to which they were vulnerable to these advisors and why so. Their responses will be analyzed to see the dominant form of trust with each of the

advisor types. Further explanations for the trust relationships will be obtained and examined. This theory will be further developed using evidence from entrepreneurs' responses concerning why they use the security mechanisms they do with each advisor type.

Research question 3: How does advisor type affect an entrepreneur's use of NDAs?

Trust and knowledge sharing. The theory here will be developed as to how affective and calculative trusts affect knowledge sharing with advisors. I will explore the idea development stage to see the impact of trust in this process. Entrepreneurs will discuss the extent of knowledge sharing with their advisors. I will probe entrepreneurs on whether they have reservations about any advisor, why so, and see how these reservations affected knowledge sharing.

Research question 4: How does an entrepreneur's affective trust in an advisor affect knowledge sharing with that advisor?

Research question 5: How does an entrepreneur's calculative trust in an advisor affect knowledge sharing?

Knowledge sharing and use of NDAs. The relationship between the use of NDAs and knowledge sharing will be explored qualitatively to develop the theory behind their relationship. More knowledge sharing could spur an entrepreneur to use of NDAs with an advisor and vice versa. The theory remains underdeveloped as to the relationship between the phenomena. Entrepreneurs will discuss why they rely on an advisor's discretion, why they asked the advisor to sign or not sign an NDA, and the knowledge

sharing with this advisor. I will use content analysis to build this theory on the relationship between use of NDAs and knowledge sharing.

Research question 6: What is the relationship between an entrepreneur's use of NDAs with an advisor and knowledge sharing with that advisor?

Summary

This review shows that new ventures are the result of concerted efforts by entrepreneurs to harness resources. An entrepreneur's lack of resources creates the need to contact friends and associates. The need to share the venture idea with these advisors then arises. However, the security of the idea must be assured.

Studies indicate that entrepreneurs scan the environment to get required information for knowledge-intensive start-ups and working with others is invaluable for enhancing the original concept to make the innovation better, more effective, and versatile. However, there is a gap in the literature regarding the form of trust the entrepreneur has in those with whom he or she shares golden idea and the entrepreneur's knowledge use of NDAs. Furthermore, research shows that entrepreneurs rely on three main types of advisors for advice during the early stages of starting new business ventures: Close Friends, Business Associates, and Licensed Professionals (de Koning & Muzyka, 1999). These advisers help the entrepreneur as he or she mulls various opportunities, filters the many opportunities to a narrow few, and makes the decision to develop an original idea.

This study looks at these issues within the context of new high-tech ventures, and presents an integrated perspective to understand how an entrepreneur balances the demands of knowledge sharing and knowledge security during high-tech venture

creation. The context of this dissertation is the preoperational stage when limited participants have access to an entrepreneur's idea and where they help the entrepreneur to carve out a niche (Saviotti, 1998).

Trust facilitates resource exchanges and is often relied on to gauge an individuals' capacity to provide the needed resources to start a new venture and remain discreet about the know-how behind the venture. Knowledge sharing, if properly managed, is a crucial source of competitive advantage. Knowledge security is keeping the golden idea away from competitors. The knowledge security mechanisms studied are secrecy, NDAs, and professional regulations.

I suggest that calculative trust and affective trust both contribute to knowledge sharing. I apply McAllister's (1995) theory of affective trust to argue that affective trust in advisors negatively relates to a formal use of NDAs, and use of NDAs negatively relates to knowledge sharing. I further analyze entrepreneurial relationships with each type of advisor to suggest that advisor types will show differences in the types of trust, level of knowledge sharing, and use of NDAs. I plan to develop a framework for achieving balance between knowledge security and knowledge sharing in entrepreneur-advisor relationships through qualitative analysis. The next chapter presents the research methods.

III. Methods

This chapter provides details on the study's research design, data collection, scale purification, and the qualitative analysis procedures. The hypothesized relationships were examined using quantitative and qualitative methods. Multiple methods provide triangulation, or the corroboration of results, which improves the understanding and credibility of a study. Researchers have suggested integrating qualitative and quantitative analyses in one study as these provide different forms of evidence that allow for multifaceted interpretations of results (cf., Bartunek & Seo, 2002; Denison & Mishra, 1995).

Data were collected from each respondent within a single session in which respondents completed short closed-ended questionnaires administered in writing interspersed with oral answers to open-ended interview questions. Their responses to the open-ended questions provide information to further understand the quantitative results. The descriptive accounts are insightful anecdotes dealing with entrepreneur-advisor relationships. In addition to providing a second way to test the hypotheses, the entrepreneurs' responses to the open-ended questions were used to augment and validate the extant theories that explain entrepreneur-advisor relationships.

For variables in the quantitative analyses, I purified the scales by checking item-total correlations and using exploratory factor analyses. I also checked for discriminant and convergent validities and reliabilities of these scales. I used regression analysis to test

the hypotheses. For qualitative analyses, I used content analyses for hypotheses tests and to answer research questions.

This chapter's first section describes the general research design. The second section describes the measurement of key variables. The third section reviews the analytical techniques for quantitative analyses while the fourth section describes some limitations of the quantitative analyses. The last section describes the qualitative procedures for testing and building theory.

Research Design

The high-tech sector includes pharmaceuticals, biotechnology, computers (hardware and software), electronics, telecommunications, and related industries. The unit of analysis is the relationship between the entrepreneur and an advisor. Entrepreneur-advisor data on Relationship Length, Affective Trust, Calculative Trust, Knowledge Sharing, and Use of NDAs are almost impossible to get through archival sources. One can collect these data through interviews with or surveys of entrepreneurs who had started their ventures. I sought entrepreneurs who had started ventures in these areas because of my familiarity with telecommunications and also because of the knowledge-intensive nature of high-tech ventures. The knowledge-intensive nature of high-tech ventures is useful for studying knowledge sharing and knowledge security topics. I talked to 52 entrepreneurs in the South Florida. The next subsections describe the sample, the data collection process, ethics regulations, the interview format, sample size considerations, and other practical concerns.

Sample selection. The entrepreneurs sampled were those who had started high-tech ventures. Since there is no single list of high-tech ventures in South Florida, I used

several sources to identify high tech entrepreneurs. I started interviewing those on a list of entrepreneurs provided by faculty and community business advisors associated with the Adams Center for Entrepreneurship at the Florida Atlantic University College of Business. I also used the Florida Atlantic University research and development incubator to find entrepreneurs to interview. After I interviewed each entrepreneur, I asked for referrals to other entrepreneurs. This is a snowball sampling technique since current study participants identify additional participants (Goodman, 1961). That way, the sample size grew as entrepreneurs suggested other entrepreneurs for interviews as the study progressed. In most cases, the entrepreneur also puts in a good word about the research to colleagues to encourage them to participate in the study. Such recommendations were useful to secure interview appointments with additional entrepreneurs.

I compared the venture type distribution of the entrepreneurs in the sample with lists of relevant business classifications from the Greater Fort Lauderdale Chamber of Commerce business directory, Palm Beaches Chamber of Commerce business directory, and the Greater Miami Chamber of Commerce business directory to get an indication of generalizability. The Palm Beach county directory had 11 high-tech classifications relevant to this study; seven of these classifications were represented by 33 ventures in my sample. The Greater Fort Lauderdale business directory had four high-tech classifications. I sampled nine ventures representing three of those classifications. The Greater Miami directory had 12 high-tech business classifications and I had nine of these classifications represented by 10 ventures in my sample. Since most high-tech venture types in the South Florida area were represented, the research results should have wide

generalizability even though the sampling technique was through friend and colleague recommendations.

Pilot study. Before the main data collection, I did a pilot study. A pilot study with two entrepreneurs was used to see how to refine the questions if necessary and to explore ways to make the interview shorter. Crisp, clear questions and shorter interviews reduce biases that may interfere with respondents' choices and the validity of results (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). I refined the survey questions based on feedback from the pilot interviews by deleting some questions to reduce interview length and introducing paragraphs that extensively defined the advisor types. Furthermore, the decision to ask respondents to complete the Likert-scaled questions themselves rather than asking the questions orally was made after the pilot study. The main data collection process started after revisions were made based on the pilot study results.

Main data collection interview process. Before the interviews, each entrepreneur and I exchanged emails to set up the interview and to describe the study. At the beginning of our meetings, I explained to them that the study investigated their advisor network to examine advisor influence on starting high-tech ventures. I made these explanations to prepare them for the interview. I then asked them if they had any questions before the start of the interviews. I told them I was going to record the interview and would start recording when they were ready. They let me know when they were ready for the interview to start and asked questions if they had any. Then, with their approval, I turned on the digital voice recorder.

I began each interview by reading an informed consent as required by Florida Atlantic University for research interviews. The form explains the project's ethical provisions, and entrepreneurs signified their consent orally. I assured entrepreneurs that the confidentiality of their responses was kept within the research group and that they could discontinue their participation at any time. I also emphasized to interviewees that I was not going to divulge commercially sensitive information. I then gained their consents to proceed with the interview and began to ask the questions. This consent was recorded on a digital voice recorder. This informed consent form is shown as the first paragraph of the questionnaire in Appendix A.

After clarifying ethical and confidentiality issues, I asked some background questions as to where the entrepreneur worked before the present job. The interview questions are also in Appendix A. The open-ended questions asking respondents to describe their personal background were designed to develop rapport so that the respondents would be more relaxed and comfortable to respond to the questions about their advisors that tap into the main constructs of the study.

The interview had subsections dealing with each of three categories of advisors. I asked them to focus on high-tech ventures in which they had all three types of advisors. In order to identify these advisors, I first asked entrepreneurs to think of advisors that they had in each of the three categories when they were starting a particular high-tech venture. I explained to them that a Close Friend was someone they considered to be in their inner circle of friends or a family member, a Business Associate was someone who helped them develop business strategies and may be someone they considered to be on their board of advisors, and a Licensed Professional was someone with specialist

knowledge and had a professional license that was based in part on the requirement that they maintain client confidentiality. I asked them if they were clear on these explanations and confirmed that they understood the differences in these advisor types.

They might also write down the advisors they had in mind for each advisor type so that they were focused on who they were talking about at any point in time. I let them know that I did not have to see the sheet of advisor names or labels.

If an entrepreneur indicated that he or she did not have one of the types of advisors in the venture that they had in mind, I then asked the entrepreneur to think of another venture that he or she had started in which all three types of advisors were used. If the entrepreneur had not started a venture that used all the three advisor types, I omitted the section(s) of the interview for the unavailable advisor type. The data concerning that type of advisor for the entrepreneur was coded as missing. Research about entrepreneurs' advisors has indicated that Licensed Professionals are used less often than the other advisor types (Stevenson & Sahlman, 1988), so I anticipated that I might have a smaller sample size for relationships with Licensed Professionals than with the other advisor types. In reality, I did not have a smaller Licensed Professional sample as I had 47 Close Friends, 48 Business Associates, and 48 Licensed Professionals in the data set.

I started with entrepreneur background questions and then the open-ended questions on Close Friend. Then, entrepreneurs filled the Likert-scaled questions pertaining to Close Friend. When they signified they were done with the Likert-scaled questions, I reminded them of what a Business Associate is, asked open-ended questions on Business Associate, and then gave them the Likert-scaled questions on Business

Associate. When they were done filling out the questionnaire on Business Associate, we then proceeded to questions on Licensed Professional. After completing the questions for the advisors, I asked them their policies on the use of NDAs and whether they used other security measures when planning their new ventures. The complete interview is as shown in Appendix A.

When entrepreneurs had all three advisors that were helpful in starting a new high-tech venture, the interview would usually last about 50 minutes. When entrepreneurs had only one or two advisors who were relevant to starting the new venture, the interviews would usually last about 20 to 30 minutes. At the end of the interviews, I asked them to circle their age-group on the survey and if they had any colleagues they would like to recommend for the project. Half of the interview respondents provided referrals to at least one other entrepreneur in South Florida. I had a response rate of 37 percent of all the entrepreneurs I contacted for the study.

The open-ended questions were about the entrepreneur's education, the entrepreneur's prior experience, and whether they were in touch with the contacts they had from when they were working in the industry. The open-ended questions encouraged discussions and provided insights into how entrepreneurs handled knowledge sharing and knowledge security with their advisors. I followed up the open-ended questions by asking "why" and "how" a lot to gain insights to trust relationships, knowledge sharing habits, and the use of knowledge security mechanisms. I was careful to stay on topic and avoided distractions and side issues. The open-ended questions also increased the chances that the entrepreneurs would fully switch their thinking to the advisor in a particular category as they filled out the Likert-scaled questions pertaining to these advisors. By fully

switching their thoughts to one advisor, the effects of priming that may occur from having discussed another advisor earlier in the interview was reduced. At the conclusion of the interview after asking about all three categories of advisor, I asked them demographic questions such as the respondent's age.

Sample characteristics. High-tech entrepreneurs are busy people, who spend considerable time seeking legitimacy in their industries and resources for their ventures, meeting with associates, advisors, and employees. Consequently, it could be difficult to access them for interviews. In this study, I planned to interview about 50 entrepreneurs to have a moderate sample size of 150 advisor relationships for sound empirical analyses. I ended up with 52 interviews and 143 advisor relationships since some entrepreneurs did not have advisors in every category.

To have a broad-based sample that is useful for quantitative analyses, I interviewed 52 high-tech entrepreneurs. I scheduled more than 50 interviews (as I originally planed to do 50 interviews) as some entrepreneurs canceled their interviews and not all entrepreneurs had the three advisors. In some cases, I received contacts that I later found did not fit into the description of a high-tech entrepreneur needed for the study. For example, an entrepreneur might provide the contact of a manager of a high-tech venture that I would later realize was not the founder of the firm. I had to remove these interviews from the data. Overall, I did 60 interviews and after removing data from non-high-tech entrepreneurs, I ended up with 52 interviews with eligible respondents and 143 advisor relationships since some entrepreneurs did not have advisors in every category.

In determining the sample size suitable for regression analysis, the general rule of thumb is to have five respondents for each predictor variable (5:1). Some other suggested formulations are 104 + *m* where *m* is the number of predictor variables and 50 + 8*m* (Tabachnick & Fidell, 2000). A limited sample size may provide regression coefficients that overestimate the regression model and may provide unstable results. The analysis is then said to be lacking in generalizability and has methodological flaws. There are four predictor and 13 (two dummy-coded advisor type control variables, seven venture type dummy-coded variables and four demographic variables) in this study. Some or all of the control variables had no relationship to a given criterion, and I re-ran the analyses without the non-significant controls. I use a maximum of 14 predictor and control variables for any analysis. The 104 + *m* formulation suggests a minimum of 118 entrepreneur-advisor relationships. The 50 + 8*m* formula suggests 50 + 112 or 162 observations are required for regression analysis. For this study, the minimum number of advisor relationships to be examined was the average of 118 and 162 (as calculated above), which is 140 observations. I expected to conduct the statistical analyses on at least 140 entrepreneur-advisor observations and I ended up with 143 observations. There were 143 valid responses for advisors as 13 entrepreneurs indicated they did not have advisors in one or more of the three categories— close friends, business associates or licensed professionals—who helped them during the preoperational stage. The data has 92 percent valid advisor cases and 8 percent missing advisor cases. Also, the data comprises of 47 Close Friends, 48 Business Associates, and 48 Licensed Professionals.

The entrepreneurs were involved in a range of technological activities including software development, aviation, information security, computer services, and

biotechnology. I provide a classification of the entrepreneurs' ventures in Table 3. Table 4 provides a distribution of ventures by city location. All of them were based in the South Florida region—from Palm Beach County to Miami-Dade County. Forty eight of 52 respondents were male. Table 5 shows their age distribution.

Practical precautions. I tried not to schedule interviews back to back to allow time to download and transcribe each interview. I also asked to talk to the entrepreneur in a quiet place such as a private office so that my audio recording was clear. I was always successful at arranging a quiet place in the entrepreneur's office or on either the FAU Boca or Davie campus. I taped interviews with a digital voice recorder. The digital recording allowed for quick downloads to a computer for analysis.

I made short notes during the interviews. These notes were not extensive. I wrote down codes such as reciprocity and integrity that came to my mind as entrepreneurs discussed their advisors. These notes helped me think through the interviews as I transcribed and analyzed the interviews. I asked questions to gain insights into the entrepreneur's relationships with advisors. I also emphasized to interviewees that I was not going to divulge commercially sensitive information. I asked "why" and "how" a lot to gain insights to trust relationships, knowledge sharing habits, and the use of knowledge security mechanisms. I was careful to stay on topic and avoided distractions and side issues.

Table 3

Venture Type

Item	Frequency	Percent
Software development, application development	8	15
Internet-based firms, social networking websites	13	25
Computer networking, computer support services	6	11
Engineering, engineering consultancy, telecommunications	7	14
Technology consulting- Information security, solutions	12	23
Aviation	2	4
Medical research	1	2
Green tech, biotech, energy management	1	2
Other-cosmetics research	2	4
Total	52	100

Table 4

Venture Distribution across South Florida Cities

Venture location	S/ware	Internet firms	Comp services	Eng	Tech consult	Aviation	Medical research	Green tech	Other	Total
Jupiter, Port St. Lucie	0	1	0	0	0	0	0	0	1	2
WPB, Boynton	1	0	0	0	1	0	1	0	0	4
Delray, Boca, Deerfield	3	9	3	4	6	2	0	0	0	27
Coral Springs, Miramar, Plantation Ft. Laud	3	1	1	2	4	0	0	0	0	11
Doral, Miami, Miami Beach, Homestead	1	2	2	0	1	0	0	1	1	8
Total	8	13	6	7	12	2	1	1	2	52

Table 5

Entrepreneurs' Age Distribution

Age group	Frequency	Percent
21-30	6	11.5
31-40	16	30.8
41-50	18	34.6
51-60	8	15.4
61-90	4	7.7
Total	52	100.0

After the interview, I transferred the audio recording to a computer and transcribed the interview and other notes I may have made. I wrote out shorthand notes and mental notes as soon as possible to maintain clarity and validity of my perceptions.

Measurement of Key Variables and Scale Purification

The closed-ended portion of the project depended heavily on established measures. However, since the measures had not been used for entrepreneur-advisor relationships and since some were designed specifically for the project, a measure refinement step was needed. I describe the questionnaire scales and then the purification process to identify items that turned out to be so weak in this application that they needed to be omitted from analysis. After these sections, I present the results of the validity checks and the reliabilities of the final scales.

Questionnaire measures. The key variables were measured with both Likert-scaled questions and open-ended questions. The variables in the research model are

Relationship Length, Advisor Types, Affective Trust, Calculative Trust, Use of NDAs, and Knowledge Sharing. Accurate results for the Likert-scale measures are obtained with measures that have good psychometric characteristics, that is, their scores should be both reliable and valid (Nunnally, 1978). All the variables except Advisor Types and Use of NDAs were measured using multi-item scales. The rating scores of the items were averaged for each corresponding construct when conducting statistical analyses. I checked the validity of these scales as described below and computed Cronbach alphas to assess scale reliabilities. Reliability refers to the consistency or stability of a measure and is inversely related to the degree to which the measure is contaminated by random error (Carmines & Zeller, 1979). The reliability coefficient provides an indication of the quality of the construct (Churchill, 1979). Scales with high reliability indicate that measures have been obtained with minimal error variance. The next few paragraphs describe the items for the constructs, validity, and reliability of these constructs.

Trust was measured using McAllister's (1995) measures for Affective and Calculative Trust. As I stated in Chapter Two, affective trust is based on "emotional bonds between individuals" while calculative trust is based on competence and reliability of another (McAllister, 1995:25-26). McAllister (1995) used five items to assess affective trust and seven items to assess calculative trust. He used 7-point Likert scales such that 1 indicated 'strongly disagree' and 7 indicated 'strongly agree.' To illustrate, two of the affective trust items were, "If I shared my problems with this person, I know (s)he would respond constructively and caringly," and "I would say that we have both made considerable emotional investments in our working relationships." Examples of the

calculative trust items are, “This person approaches his/her job with professionalism and dedication,” and “Given this person’s track record, I see no reason to doubt his/her competence and preparation for the job.” The rest of the items are as shown in Appendix B.

In McAllister’s (1995) study, all the items’ factor loadings for affective trust were significant, and the items had a reliability coefficient of .89. Wu, Hsu and Yeh (2007) used the affective trust items in their study with 5-point Likert scales. Their scale had a Cronbach’s alpha of .80 and a mean of 3.71. All the calculative trust items had significant factor loadings and a Cronbach reliability coefficient of .91 in the McAllister (1995) study. Olson, Parayitam, and Bao (2007) used the calculative trust measures and reported a reliability of .92. For both kinds of trust, I used a 7–point Likert scale anchored from 1 for “strongly disagree” to 7 for “strongly agree.”

Relationship Length was indicated by the number of years the entrepreneur indicated that he or she had known the advisor.

Knowledge Sharing was developed specifically for this study using Kale and colleagues’ (2000) learning construct and some other items adapted from research done outside the entrepreneurship context (cf., Hansen, 1999; Szulanski, 1996). Kale and colleagues (2000) designed items for the alliance context where partner firms have to share their knowledge (cf., Anand & Khanna, 2000; Dhanaraj, Lyles, Steensma & Tihanyi, 2004; Dyer & Nobeoka, 2000). The items are, “Your company learnt or acquired some new or important information from the partner,” “Your company learnt or acquired some critical capability or skill from the partner,” and “This alliance has helped

your company to enhance its existing capabilities/skills." The items were adapted for the present study as follows: (1) I learned or acquired some new or important information from this advisor; (2) I learned or acquired some critical capability or skill from this advisor, and (3) this advisor has helped me to enhance my existing capabilities/skills. For the Kale and colleagues' (2000) study, respondents indicated their agreement on a 7-point Likert scale such that 1 corresponded to strongly disagree and 7 corresponded to strongly agree. The items had significant factor loadings, indicating convergent validity (Anderson & Gerbing, 1988). The construct reliability was .91. I used a 5–point Likert scale anchored from 1 refers to "strongly disagree" to 5 refers to "strongly agree."

I added new items to Kale et al.'s (2000) scale because of its shortness and because differences in context might limit the reliability of some of the original items. The four additional items for knowledge sharing were developed using a domain sampling approach. Domain sampling describes the process of creating items that tap into the construct's conceptualization (Nunnally, 1978). Knowledge sharing is conceptualized here as the discussion and use of knowledge among individuals. The other items developed for this study are, "I shared crucial information about the venture with this advisor," "This advisor added to my ideas about the venture," "This advisor helped me develop the idea on which the venture is based," and "This advisor helped me develop strategies for the venture." For this study, a total of seven items tapped into Knowledge Sharing.

Use of NDAs with an advisor measures the entrepreneur's tendency to ask an advisor to sign an NDA. An entrepreneur shows a greater tendency to use an NDA for an

advisor by expressing a preference for NDAs compared to relying on that advisor's discretion to keep knowledge secret. The construct *Use of NDAs* was a single item construct. The question is, "Did you ask this advisor to sign a Non-Disclosure Agreement? Yes or No."

Advisor Types were measured by asking entrepreneurs to think of three different advisors as described in the preceding description of the interview procedure. The result is a three-category variable. One type of advisor is a Close Friend that belongs to an inner circle of friends or a family member. A Business Associate is one who helps with developing strategies and belongs to a board of advisors. The third advisor type is a Licensed Professional who has passed certain qualifying exams and is government regulated such as an accountant or a lawyer. Since the entrepreneurs that I interviewed had started high-tech businesses, there was a high probability that most would have had an advisor in each category. In cases where an entrepreneur did not have an advisor in a category, data for that category was coded as missing.

The data entry and data coding process. Different procedures were followed to record and code the quantitative and qualitative data. Each interview was played back and transcribed while the quantitative aspect (the survey section) of the interview was directly entered into appropriate columns in SPSS.

To transcribe the interviews, I listened to each interview at least three times. The first time was to attune myself to the entrepreneur's voice again, remind myself of the context in which the interview was recorded, and note the nuances surrounding the particular interview; a second time was to transcribe the interview, and a third time was

to cross-check the transcription and correct any mistakes. I transcribed the interviews by hand. I listened to audio recordings more times if I felt the need to cross check information. I then uploaded the interview texts into the *Hypertext* software package for content analysis.

Secondly, I entered the quantitative responses of the survey aspect into SPSS spreadsheets and asked someone else to read the responses while I checked the spreadsheet to ensure accurate entry.

Scale purification. Items were designed according to a construct's theoretical descriptions to tap into each construct's meaning. The process of scale purification identified items that, for high-tech entrepreneurs describing their advisors, did not reflect the construct's definition and did not fit well with the other items. Eliminating the poor items of a construct contributes to the accuracy and validity of the study's results. I examined the Affective Trust, Calculative Trust, and Knowledge Sharing items to see if any item should be considered for elimination to improve scale validity and reliability.

I considered the item-total correlations and corrected item-total correlations to see if any item correlated poorly with the other items forming a construct. Scholars suggest that scales can be purified by eliminating items with item-total correlation and corrected item-total correlation less than 0.40 (Koufteros, Vonderembse, & Doll, 1998; Koufteros, 1999).

The total-item and corrected item-total correlations indicate the extent to which an item taps into the underlying construct for which it is created, that is, the relatedness of the item to a construct. The item-total correlation of an item refers to a correlation of that

item with the composite score of all the items forming the same set. The corrected item-total correlation of an item refers to a correlation of that item with the composite score of all the items forming the same set excluding the score of the particular item in question. This parameter excludes the score of the particular item in question in its calculation, hence the term "corrected" (Koufteros, 1999). The item-total and corrected item-total correlations for Affective Trust, and Calculative Trust, and Knowledge Sharing are shown in Tables 6 to 8.

The results shown in Tables 6 to 8 indicate that the item-total and corrected item-total correlations are adequate for Affective Trust, but there are some issues to resolve for the Calculative Trust and Knowledge Sharing measures. The tests suggest that CAL7 and KSG1 should be considered for deletion from the Calculative Trust and Knowledge Sharing scales, respectively. Since the Calculative Trust items are widely used and validated by other scholars, I decided to conduct other tests to check CAL7's fit with the construct using this data. I conducted similar tests for the fit of KSG1 in the knowledge-sharing scale. I now describe the scale refinement process using exploratory factor analysis EFA for Calculative Trust and Knowledge Sharing. I used EFA to further check the unidimensionality of the items tapping into the constructs. This process is discussed in the next section.

Table 6

Affective Trust's Item-Total and Corrected Item-Total Correlations

Item	Item-total correlations	Corrected item-total correlations
AFF1	.82	.78
AFF2	.83	.82
AFF3	.85	.83
AFF4	.70	.69
AFF5	.80	.75

Table 7

Calculative Trust's Item-Total and Corrected Item-Total Correlations

Item	Item-total correlations	Corrected item-total correlations
CAL1	.73	.62
CAL2	.82	.77
CAL3	.77	.66
CAL4	.74	.65
CAL5	.78	.74
CAL6	.80	.75
CAL7	.43	**.32**

Table 8

Knowledge Sharing's Item-Total and Corrected Item-Total Correlations

Item	Item-total correlations	Corrected item-total correlations
KSG1	.50	**.43**
KSG2	.76	.73
KSG3	.75	.66
KSG4	.81	.74
KSG 5	.71	.63
KSG6	.77	.67
KSG7	.74	.67

EFA of each scale. EFA is a statistical analysis for determining the latent variables underlying a set of items (Hair et al., 1999). EFA ascertains the unidimensionality of items (Koufteros, 1999). Unidimensionality refers to a set of items tapping into one single construct (O'Leary-Kelly &Vokurka, 1998). The statistical test is indicated by a one-factor solution in factor analysis results. I used the one-factor criteria to test for unidimensionality. I did EFA using the principal axis factoring means of extraction. All seven items of Calculative Trust indicated unidimensionality as the results show a one-factor solution.

McCallum and Tait (1986) recommend 0.4 as the cut off factor loading for EFA. Peterson (2000) observes, after a meta-analytic review of cut-off values used in research, that "there is no consensus on what constitutes a high or low factor loading…different

researchers apply different cut off values," (pp. 263-264). The most common cut off value he noticed was 0.4. Hair et al. (1998) suggest ".3 to be the minimum level, .4 to be more important, and .5 to be practically significant," (pp.111). Hair et al. (1998) further suggest a factor loading of at least .4 for a sample size of 150 respondents. I decided to go by MacCallum and Tait (1986) and Peterson's (2000) recommendations of 0.4 as the cut off value for EFA.

I examined Calculative Trust's factor loadings and found that CAL7 had the lowest factor loading of .35 (Table 9). By having low item-total correlations (.43) and low factor loadings (.35), I seriously considered CAL7 for elimination. Moreover, CAL7 is a reverse-coded item that many entrepreneurs were not careful to observe the change in the pattern of questions. Some had problems understanding the question. Knowledge Sharing items had acceptable factor loadings, with all values greater than the widely used .40 cut off value. Table 10 shows the factor matrices for Knowledge Sharing items.

EFA of the three scales together. I decided to do a crosscheck of discriminant validity using factor analysis with all the items in the model to clarify or confirm which items may need to be deleted from the data to improve discriminant validity. I did an oblimin rotated factor analysis on all the items of the three constructs to see how the items load on factors. An oblimin rotation is used when factors are expected to correlate with each other (Hair et al., 1998). Affective Trust, Calculative Trust, and Knowledge Sharing constructs would bear some relationships that reflect they are not orthogonal factors.

Table 9

Calculative Trust's Factor Matrix

Item	Factor loading
CAL1	.69
CAL2	.84
CAL3	.76
CAL4	.75
CAL5	.80
CAL6	.83
CAL7	.35

Table 10

Knowledge Sharing's Factor Matrix

Item	Factor loading
KSG1	.46
KSG2	.78
KSG3	.71
KSG4	.79
KSG 5	.67
KSG6	.73
KSG7	.72

Affective trust items load on factor 1 (Table 11) with factor loadings greater than .7, Calculative Trust load on factor 2 with factor loadings greater than .4 except for CAL7, which had a factor loading of .33; while all KSG items had loadings greater than .4 on factor 3 except KSG1 with .26.

Validity Checks and Reliabilities

Validity checks were done on the Knowledge Sharing, Affective Trust, and Calculative Trust constructs. Validity refers to the accuracy of the construct, that is, the degree to which the items measure what they are meant to measure (O'Leary-Kelly & Vokurka, 1998). The items have been developed carefully according to tap into the domain of the construct and to reflect high accuracy. The items have face validity.

Convergent validity of the construct is checked through significant factor loadings of the items tapping into the construct (Churchill, 1979). The degree of association of an empirical indicator and a variable is called the factor loading. The factor loading is expected to be at least 0.30 (Hair et al., 1992). Factor loadings with significant levels indicate convergent validity. The intercorrelations of the items also were checked to see that they had high correlations.

Discriminant validity was assessed at the item level using a single-method, multiple trait approach (Campbell & Fiske, 1959). The correlations for a particular item with any other item taping into the construct were compared with correlations with items outside the construct. Discriminant validity holds if the item correlations within a construct are higher than those of item correlations with items outside of a construct.

Table 11

Pattern Matrix of All Items

	Factor 1	Factor 2	Factor 3
aff1	**.86**	-.05	-.03
aff2	**.83**	-.02	.08
aff3	**.84**	-.04	.08
aff4	**.67**	.29	-.06
aff5	**.75**	.01	.05
cal1	-.13	**.74**	.02
cal2	-.06	**.88**	-.03
cal3	.09	**.75**	-.01
cal4	.03	**.71**	.20
cal5	.06	**.76**	.06
cal6	.08	**.77**	.10
cal7	.04	***.33***	-.11
ksg1	.23	.08	***.26***
ksg2	.26	-.06	**.61**
ksg3	.05	-.14	**.74**
ksg4	-.04	-.02	**.86**
ksg5	-.08	.11	**.70**
ksg6	.08	.07	**.63**
ksg7	.32	.13	**.46**

In the case of poor convergent or discriminant validity, items that reflect high correlations with other constructs were deleted.

Convergent validity. Convergent validity tests that the items tapping into a construct are theoretically similar. Convergent validity was evaluated by testing the lowest within-group correlation to determine if it was significant at 0.01 level. Table 12 shows convergent validity results for Affective Trust, Calculative Trust, and Knowledge Sharing.

The results show that CAL7 has poor fit with the other items tapping into Calculative Trust. As such, the construct has poor convergent validity. CAL7 is a suspect bad item since it had low item-total correlations with the other items. Knowledge Sharing items and Affective Trust items have convergent validity.

Discriminant validity. Discriminant validity shows that the items tapping into a construct are not also significantly tapping into another construct in the study. Discriminant validity was assessed at the item level using a single-method, multiple-trait approach (Campbell & Fiske, 1959). The lowest correlation for a particular item and any other item within the factor was compared to correlations of that item and all items outside of that factor. If the former correlation was less than the latter, then discriminant validity cannot be ascertained. In this data, correlations between items outside of those within a construct were higher in some cases than the correlations of the items tapping of a construct. Table 12 has the item level correlations.

Table 12

Item Means, Standard Deviations, and Inter-Item Correlations

	Item	M	s.d.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	*AFF1*	5.84	1.48																		
2	*AFF2*	5.97	1.39	**.76**																	
3	*AFF3*	5.12	1.93	**.73**	**.72**																
4	*AFF4*	6.00	1.30	**.62**	**.65**	**.61**															
5	*AFF5*	5.08	1.91	**.58**	**.70**	**.76**	**.57**														
6	*CAL1*	6.62	.73	.11	.14	.11	.28	.11													
7	*CAL2*	6.56	.79	.13	.17	.18	.41	.24	**.72**												
8	*CAL3*	6.44	1.06	.33	.32	.27	.50	.28	**.49**	**.61**											
9	*CAL4*	6.19	1.20	.32	.31	.36	.46	.27	**.49**	**.58**	**.68**										
10	*CAL5*	6.29	1.00	.25	.33	.32	.40	.36	**.54**	**.63**	**.60**	**.59**									
11	*CAL6*	6.17	1.21	.28	.43	.29	.49	.27	**.51**	**.67**	**.67**	**.61**	**.73**								
12	*CAL7*	5.57	1.91	.07	.05	.15	.08	.10	**.25**	**.38**	**.16**	**.18**	**.33**	**.30**							
13	*KSG1*	4.59	.81	.30	.37	.32	.28	.30	.10	.13	.09	.15	.19	.32	.01						
14	*KSG2*	3.90	1.12	.50	.56	.46	.37	.46	.06	.08	.13	.18	.16	.22	-.02	**.40**					
15	*KSG3*	3.06	1.39	.31	.37	.43	.18	.39	-.02	-.01	.05	.16	.04	.07	-.08	**.25**	**.65**				
16	*KSG4*	3.56	1.30	.34	.48	.40	.27	.31	.03	.00	.12	.27	.14	.20	-.06	**.28**	**.67**	**.71**			
17	*KSG5*	3.88	1.10	.25	.32	.40	.25	.27	.09	.06	.19	.32	.19	.17	.04	**.27**	**.45**	**.43**	**.60**		
18	*KSG6*	3.50	1.24	.35	.37	.41	.31	.39	.02	.09	.14	.30	.22	.21	.00	**.43**	**.47**	**.41**	**.47**	**.61**	
19	*KSG7*	3.99	1.05	.48	.46	.54	.48	.50	.16	.20	.25	.44	.29	.31	-.01	**.43**	**.55**	**.44**	**.47**	**.45**	**.68**

These correlations are discussed next. The least correlation among the Affective Trust items is .58 (see Table 12). There are no higher correlations between any of the Affective Trust item and the items of the Calculative Trust and Knowledge Sharing. The Affective Trust construct shows discriminant validity.

Calculative Trust items have the least correlation between CAL7 and CAL3 at .16. Affective Trust items and Knowledge Sharing items have higher correlations than .16 with Calculative Trust items. Being that CAL7 is a reverse-worded item that I observe entrepreneurs do not answer accurately to indicate reflection of their advisors and it had failed all prior scale purification tests, I concluded that CAL7 should be deleted from the data to improve discriminant validity of the Calculative Trust construct.

The least correlation among KSG items is between KSG3 and KSG6 at .41 Affective Trust items have higher than .41 correlations with KSG items. For instance, AFF2 has higher correlations than .41 with all KSG items. In addition, KSG7 has about as high correlations with Affective Trust items as it does with the items of its intended construct.

The results confirm that CAL7 and KSG1 should be removed from the data for discriminant validity reasons. Table 13 summarizes the results of the scale purification and validity check processes**.**

Following this scale purification process, I did not use CAL7 and KSG1 items to develop the corresponding scales. I deleted the items from their respective scale. Affective Trust items are AFF1, AFF2, AFF3, AFF4, and AFF5. Calculative Trust items are CAL1, CAL2, CAL3, CAL4, CAL5, and CAL6. Knowledge Sharing items are KSG2, KSG3, KSG4, KSG5, KSG6, and KSG7.

Table 13

Summary Result of the Scale Purification Process

Construct	Item-total correlations	EFA	Convergent validity	Discriminant validity
Calculative Trust	Delete CAL7	Delete CAL7	Delete CAL7	Delete CAL7
Knowledge Sharing	Delete KSG1	Delete KSG1		Delete KSG1

Reliabilities. The reliabilities of the final scales were evaluated using Cronbach's alphas, and they are shown below with and without the problematic items in Tables 14 and 15. Calculative Trust has a higher reliability without CAL7. Knowledge Sharing values did not change with or without KSG1 or KSG7. Affective Trust, Calculative Trust, and Knowledge Sharing's Cronbach alphas were .90, .90, and .87 respectively. To ensure consistency across respondents and reduce error variance, I checked the Cronbach alpha for the multi-item scales to see if they meet the often-used standard of .70 (Nunnally, 1978). If the reliability coefficient is low, I followed Churchill's (1979) suggestion to eliminate items that have very low correlations with the others. Table 16 shows the mean, standard deviations, and correlations among the variables.

Table 14

Cronbach Alphas of All Items (including CAL7 and KSG1)

Construct	Alpha_all (*n*)	Alpha_c.f (*n*)	Alpha_b.a (*n*)	Alpha_l.p (*n*)
Affective Trust	.90 (142)	.90 (46)	.86 (48)	.90 (48)
Calculative Trust	.83(140)	.82(44)	.86(48)	.80(48)
Knowledge Sharing	.87(141)	.86(46)	.83(47)	.85(48)

Table 15

Cronbach Alphas excluding CAL7 and KSG1

Construct	Alpha_all (*n*)	Alpha_c.f (*n*)	Alpha_b.a (*n*)	Alpha_l.p (*n*)
Affective Trust	.90 (142)	.90 (46)	.86 (48)	.90 (48)
Calculative Trust	.90(141)	.89(45)	.93(48)	.85(48)
Knowledge Sharing	.87(141)	.86(46)	.83(47)	.85(48)

Table 16

Correlation Table

	M	s.d.	1	2	3	4
Affective Trust	5.60	1.38				
Calculative Trust	6.26	.83	.39(**)			
Knowledge Sharing	3.78	.86	.58(**)	.21(*)	1	
Relationship Length	9.17	10.60	.38(**)	.09	.16	1
Use of NDAs	.18	.39	-.08	-.09	.10	-.21(*)

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Response Bias Check and Nested Data Issues

The use of entrepreneurs to provide data for both the measures of advisor characteristics as well as for the criterion measures increases the potential for response bias in the data.

Common method bias. Common method bias is the bias due to independent and dependent variables being measured by the same method. Also, common method bias occurs when the data-collection instrument interferes with the scoring of the measures. Common method variance is artifactual variance attributable to the measurement method rather than to the constructs the measures represent (Podsakoff et al., 2003). The covariances between the constructs are affected. High common method variance reduces the validity of the results, reduces effect sizes, and can make the results redundant. Survey studies attempt to reduce the potential problems common method variance may cause. Measurement error can inflate or deflate observed relationships, which affects the reliability and validity of results. One of the main sources of common method bias is measurement error (Nunnally, 1978).

Bias seeps into the work when people try to maintain some consistency between their cognition and attitudes. Their responses to questions concerning the predictor and criterion variables may be affected to reflect this consistency in their responses. This is even more problematic if they are providing retrospective accounts of their attitudes, perceptions, and behavior.

According to Crowne and Marlowe (1964), social desirability "refers to the need for social approval and acceptance and the belief that it can be attained by means of culturally acceptable and appropriate behaviors," (p. 109). Social desirability is generally

viewed as the tendency to present oneself in a favorable light, regardless of one's true feelings about an issue or topic. Another situation is when people rate those whom they know well higher than they should. Research has shown that face-to-face interviews tend to induce more socially desirable responses and lower accuracy than computer administered questionnaires or paper-and-pencil questionnaires (Martin & Nagao, 1989).

Furthermore, the way the items are presented to respondents may produce artifactual variables in the observed relationships. A bias occurs here when questions have similar scale formats and similar scale anchors. Despite the standardized format, respondents may not think through the questions and simply answer based on their immediate previous choices. Other sources of bias may come from the items and the environments' characteristics. Asking certain questions about previous work experience or history of advisor relationships may prime entrepreneurs to certain aspect of their experiences that may influence their responses. Respondents' moods may influence their responses to items, independent of the content of the items themselves. Long questionnaires may produce fatigue and carelessness in responses (Hinkin, 1995) and the medium of data collection may also produce bias. Interviewer characteristics and verbal idiosyncrasies are also potential sources of method biases (Podsakoff et al., 2003).

Sources of response bias. Some sources of common method variance are reviewed below.

Consistency motif: This describes the anchoring and adjustment of the manner people arrive at final judgments. They start at an initial value or anchor and then adjust from this point to arrive at a final judgment.

Carelessness: This arises when respondents respond inaccurately because they did not read the questions closely (Morgeson & Campion, 1997).

Sex of the investigator: This may introduce bias into the study because of the personal contact between investigator and subject (Feild, 1975).

Acquiescence bias: This is the type of bias when respondents tend to answer in the affirmative (Podsakoff et al., 2003).

A compound question: This type of question is also called the double-barreled question. There are two questions embedded in the compound question (Podsakoff et al., 2003).

Social desirability bias: This type of common method bias describes the bias that seeps into the data when respondents answer questions to impress others or the interviewer rather than answer the questions sincerely (Podsakoff et al., 2003).

According to Podsakoff et al. (2003), common method variance also seeps into the data through the following survey effects:

Item characteristic effects occur through the item design, for example, when items may have been ambiguous.

Item context effects may occur through the positioning of the predictor or criterion variables on the questionnaire which can make a variable more salient to the respondent and imply a causal relationship with other variables.

Priming effects occur if the first question induces a mood for responding to the rest of the questionnaire.

Contextual effects occur when there is artifactual covariation from the context in which the measures are obtained. The fact that measures of different constructs are

measured at the same location may cause artifactual covariance independent of the content of the constructs themselves. Also, measures of the different constructs measured with the same medium may produce artifactual covariance independent of the content of the constructs themselves.

These and other sources of method bias reported by Podsakoff et al. (2003) are summarized in Table 17.

Steps to minimize potential problems. Podsakoff et al. (2003) provides the most comprehensive review to date with provisions of procedural and statistical techniques to reduce the effect of common method variance in research results. Podsakoff et al. (2003) recommend several procedural or research design fixes. Harrison, McLaughlin and Coalter (1996) also propose procedural techniques to reduce contextual effects on results. Additionally, Podsakoff and Organ (1986) do not find statistical procedures to be very effective in assessing the common-method variance. Also, statistical procedures do not completely eliminate method variances. According to Podsakoff and Organ (1986), procedural methods show thoughtfulness on the part of the researcher to deal with these same-source problems.

To reduce the effect of common method variance in results, Lindell and Whitney (2001) suggest that acquiescent bias can be reduced by reverse-scoring some of the items and that scales can be equated by making the same proportion of items in each scale reverse-scored. Additionally, they suggest that questionnaires be short enough to avoid transient mood states such as boredom and fatigue and recommend the use of marker variables to estimate the effect of common method variance.

Table 17

Sources of common method biases and definitions (Ref: Podsakoff et al. 2003)

SOURCE (effect)	DEFINITION
Common Rater	Same respondent for predictor/criterion (artifactual covariance)
Consistency Motif	Consistent question response
Implicit Theories	Relations between traits, behaviors, outcomes
Social Desirability	Social acceptability vs. true feelings
Leniency Biases	Attribute desirable traits to those they know/like
Acquiescence Biases	Agree with items independent of content
Mood State	View world negatively or positively
Transient Mood State	Mood change upon self/world view
Item Characteristic	Specific properties/characteristics of items
Social Desirability	Reflect socially desirable attitudes
Demand Characteristics	Convey hidden cues in how to respond
Ambiguity	People use heuristic or random response
Common Scale Formats	Same scale format (Likert, semantic diff)
Common Scale Anchors	Same anchors (extremely, always, never)
Positive/Neg. Wording	Positive or negative wording produces artifactual covariance
Item Context	Influence ascribed to other items
Priming	Positioning/salience implies causality
Embeddedness	Neutral words in pos/neg.-worded items take on evaluative properties
Context-Induced Mood	First question(s) induce mood
Scale Length	Scales w/fewer items more accessible
Intermixing (Grouping)	Mixing constructs decreases intraconstruct correlation
Measurement Context	Context from which measure are obtained
Same Time	Same time (predictor/criterion in short-term memory)
Same Location	Same location (contextual cues)
Same Medium	Same medium (interviews, questionnaires)

In a meta-analysis research on the potential confounding effects of social desirability in organizational behavior research, Moorman and Podsakoff (1992) find small or moderate size correlations of social desirability bias. They conclude that social desirability bias had little impact on the nature of the relationships reported. Richardson, Simmering, and Sturman (2009) note three main methods used for detecting and correcting common method variance (CMV). These methods are correlational marker variables as suggested by Lindell and Whitney (2001), the use of CFA marker variables, and the unmeasured latent method construct (ULMC) method. CFA marker technique is

"modeling the latent marker construct with paths to each of its own unique manifest indicators as well as with paths to the manifest indicators of all the substantive constructs believed to be contaminated by CMV….comparing the change in fit between a model in which the marker construct-substantive item loadings are freely estimated to one in which they are constrained to zero is posited as a statistical test for detecting CMV," (page 7). Rather than a marker that is measured with multiple manifest indicators, the ULMC method uses a latent construct with no unique observed indicators. Richardson and others (2009) tested the efficacies of these methods using simulated data. They concluded that none of these methods could accurately detect common method variance at all times.

In the present project, one way of limiting response bias effects was to collect data by assuring respondents of their anonymity. I emphasized respondent anonymity to elicit honest feedback from entrepreneurs. In addition, items were carefully worded so that respondents would draw the intended meanings from them. Researchers must be careful not to use technical jargon or unfamiliar words. This may be the biggest problem in comprehension since the more ambiguous the question, the harder it is for respondents to understand what they are being asked and how to answer accurately (Podsakoff et al., 2001). I avoided vague concepts but used familiar terms. To reduce perceived insults or slights in the questions, I carried out a pilot test to find out unclear questions. I asked entrepreneurs to provide a suitable time for them to patiently answer questions for about an hour. I also confirmed meeting times the day prior and a few hours prior to the meetings to ensure that the meeting time was suitable for them. If they preferred, I emailed them my personal background and previous work.

Also, people are going to map their judgment to response scales. This bias was mitigated since I used different scales throughout the interview. Also, I broke the sequence of anchored questions by asking open-ended questions. I used different scales and formats for the predictor and criterion measures. I had face validity of the scale items by having professors check the items and by having a pilot study.

To increase validity of the results despite generalizability concerns, I used in-depth descriptions of the contexts to provide explanations for results. The responses to the open-ended questions were carefully analyzed to find entrepreneur's meanings and beliefs underlying the relationships. These subjective inferences illuminate and add to the validity of the statistical results.

Eliminating or reducing response bias: procedural techniques.

Procedural remedies minimize, if not totally eliminate, the potential effects of response bias on research findings. Podsakoff et al. (2003**)** suggest that the following actions to reduce common method variance in study:

- That items be written clearly and concisely
- Researcher should avoid compound (double-barreled) questions
- Predictor and criterion variables should have different scale endpoints.

Procedural techniques applied to this study to reduce common method variance were:

- Professors reviewed the research questions to check that these questions were simple, concise, and clear
- Scales were relatively short: seven items were the maximum for a construct
- Respondents were assured of the confidentiality of their responses from the time I approached them for interviews and before the start of every interview

- I read to respondents a confidentiality and ethical paragraph from FAU, which I recorded on a tape recorder, to assure them again of the confidentiality of their responses
- I explained the interview format and the research objective before the start of each interview to reduce confusion, clarify expectations, reduce social desirability bias and leniency bias
- I interspersed the quantitative material with qualitative questions that should have helped the respondents fully switch their frame of reference from one type of advisor to another.
- Since procedural remedies cannot control for all the potential sources of response biases, a statistical remedy may be used.

Eliminating or reducing response bias: statistical techniques.

1. Harman's single factor test is a widely used technique to diagnose the extent to which common method variance may be a problem. Researchers load all the variables in their study into an exploratory factor analysis (cf., Andersson & Bateman, 1997; Podsakoff et al, 2003, Schriesheim, 1979) and examine the unrotated factor solution to determine the number of factors that are necessary to account for the variance in the variables. The basic assumption of the technique is that if a substantial amount of common method variance is present, either a single factor will emerge from the factor analysis or one general factor will account for the majority of the covariance among the measures. The major drawback is that this method does not control for method effects. It is more of a diagnostic check for common method variance.

2. Partial correlation procedure using marker variables. The argument is that by partialling out the average correlation between the marker variable and the other variables included in the study, the researcher can control or the possible contaminating effect of method biases. The marker variable is a variable that on theoretical grounds should not be related to at least one other variable in the study. A similar procedure is Peterson and others' (1995) suggestion about using a general measure of affect as a control variable. The drawback to this method is the elimination of variance due to more genuinely positive affect tendencies of some respondents than others. This method is simple to use but it is not powerful enough to control for some other causes of response bias such as social desirability bias (Podsakoff et al., 2003).

3. Smith (2004) addresses the issue of cultural biases that may seep into communication style and responses. Culture-level acquiescent bias may be a significant problem. Smith (2004) created a response bias score for each entrepreneur by finding the average response for each entrepreneur to all of the Likert-scaled measures. The response bias score is used to partial out common method variance by entering it as a control variable. The drawback is that the response bias score as a control variable may eliminate variance due to more positive affect tendencies of some respondents over others.

4. Durbin-Watson (D-W) Test: The initial application of the Durbin-Watson (D-W) test was to check for dependencies in time series data, but that it has since been generalized to other dependencies such as one rater evaluating the performance of multiple people being rated. In this particular study, one entrepreneur rates three other

people, leading to a hierarchical nested data. The discussion below starts with D-W test for time-series data.

The D-W statistic, *d*, checks the independence of residuals in data collected over time (Durbin & Watson, 1951; Hair et al., 1999). Durbin and Watson (1951) originally developed the test for time-series data to check that serial correlation does not exist in the data. Smith, Carson, and Alexander (1984) used the D-W statistic in a longitudinal study to find the influence of leadership on organizational performance. They collected data over a 20-year period and wrote, '… to determine if the variables required correction for serial correlation, the Durbin-Watson (D-W) statistic, a test for the statistical independence (or lack of it) of time-series data, was calculated (Durbin & Watson, 1951). All the values exceeded the critical point (1.58) at alpha at 0.01, indicating that serial correlation does not exist in the data used and thus no correction for autocorrelation was needed" (Smith et al., 1984: 770). If significant autocorrelation exists, one or more key independent variables that have time-ordered effects on the dependent variable may have been omitted from the model. Introducing these variables into the models can eliminate or reduce the autocorrelation. If these attempts are not helpful, then transformations on the dependent or independent variables can be done (Anderson, Sweeney & Williams, 1998: 714).

Additionally, researchers use the D-W test to check if an assumption of regression analysis, that errors are independent, has been violated and whether or not the residuals are independent (Verran & Ferketich, 1987). Positive autocorrelation suggests successive values of errors are close together while negative autocorrelation suggests successive values of errors are far apart (Anderson et al., 1996: 664-665). The value of *d*

ranges from 0 to 4. Values close to 0 indicate extreme positive autocorrelation; close to 4 indicates extreme negative autocorrelation; and close to 2 indicates no serial autocorrelation. The rule of thumb is that a Durbin-Watson statistic in the range of 1.5 to 2.5 implies that the hypothesis that the data are autocorrelated (that is serially dependent) is not supported. The independence of errors may then be assumed. Verran and Ferketich (1987) suggest using a variable that is suspected to cause the dependency for analysis when testing for autocorrelation. I use the respective criterion variables as the variable of interest when I was running the hypothesis tests.

The Harman and Durbin Watson tests on this data are reported in the subsection titled "Checks for response bias and nested data problems" on page 141.

Nested Bias Considerations

As described previously, each entrepreneur interviewed in this study described relationships with multiple advisors, which raises concerns about potential nested design bias. A nested design situation arises when each rater rates a unique, non overlapping set of ratees. Ratees are then nested within raters. Alternatively, if each ratee is rated by a set of raters, raters would be nested within ratees (Putka, Le, McCloy, & Diaz, 2008). This design is different from a crossed design where each of multiple raters rates each of multiple ratees. In nested designs, idiosyncratic ratings variance is expected to be larger than when one rater rates all ratees (Scullen, Mount, & Goff, 2000). Idiosyncratic entrepreneur bias may significantly contribute to the variance in the data. It is thus necessary to review existing methods on how to handle this bias in the data. I reviewed research on variance and bias of multiple raters to learn how to proceed on the same issue

with my data. I found that the authors used a variety of methods from hierarchical linear modeling (HLM) to hierarchical regressions depending on the research design.

SEM/CU-CFA method. Scullen, Mount and Goff (2000) distinguished between two types of rater bias effects. One type of rater bias effect is the idiosyncratic tendencies exhibited by individual raters. One idiosyncratic tendency refers to the tendency of raters to allow the overall impression of ratees to influence judgments on other independent dimensions (the halo effect). Another idiosyncratic tendency is the rater's tendency to assign ratings that are generally higher or lower than are warranted by the ratee's actual performance (leniency error). These are idiosyncratic rater effects. For their analysis, the researchers used performance ratings data for 2,142 managers. Seven ratings were available for each manager, that is, self, two bosses, two peers, two subordinate ratings. They used SEM models and the correlated uniqueness method (CU-CFA) method. This method allows variance in a multitrait method matrix to be partitioned into trait (performance, in their context), method (rater), and random measurement error components. In the first step, a corrected uniqueness (CU) model partitions observed variance into performance-related and unique variance components. Then, in a second step, a CFA partitions the unique variance into method-related and measurement error components. Their analysis showed that idiosyncratic rater effects accounted for over half of the variance in performance ratings in the data. Their research quantified the idiosyncratic rater effect on performance ratings. In light of their results, they renewed calls for research that investigates ways to reduce idiosyncratic rater biases while increasing the amount of actual ratee performance in performance ratings.

A major challenge of adapting this method to this study is that there are only 3 (or fewer) advisors being rated by each entrepreneur. Three advisors are not enough to provide a stable estimate of bias that is idiosyncratic to an entrepreneur (Cheung & Au, 2005).

Multilevel random coefficient (MRC). LaHuis and Avis (2007) proposed multilevel random coefficient (MRC) modeling (also known as hierarchical linear modeling) as a solution to study rater characteristics that affect performance ratings. MRC modeling allows the study of rater attributes on performance ratings while controlling for ratee characteristics. To examine if raters have significant leniency bias, raters are entered in the model for the first stage. The regression coefficient of rater is then checked to see if it is significantly positive. An assumption of MRC modeling is that ratees are comparable across raters, that is, ratees are not better or worse than those of another rater. If this assumption is violated, it makes it difficult to determine if variance at the first step is due to rater effect or ratee effects.

MRC is suitable for data that exist at more than one level of analysis, when hypothesized relationships at one level are expected to affect interactions at another level. The data is hierarchically structured, for example, data at student, schools, and district levels will fit MRC modeling. The application to my data is to see how idiosyncratic entrepreneur bias affects advisor relationships. Entrepreneur data can be put in the model at stage 1 and then advisor characteristics can be put into the modeling at the second stage.

This method is not applicable to this study as there are too few advisors for the idiosyncratic bias indications to be stable (cf., Cheung & Au, 2005; Hox & Maas, 2001).

Researchers have recommended 30 respondents per group for 30 groups to have stable parameters (Scherbaum & Ferreter, 2009).

True score variance. The single aggregate approach refers to when individual-level data are correlated with data that have been averaged across multiple respondents (James, 1982). According to Scullen (1997), the results of analysis using this type of aggregation may reflect from 20 to 70 percent systematic bias. Scullen (1997) uses generalizability theory to addresses the single-aggregation problem. Aggregation bias is a function of the generalizability (reliability) of individual responses and the number of individuals per group. Group sizes also affect results. Larger groups have larger correlations and larger effects. Thus, disparities in group sizes lead to unequal effects from averaging responses (p. 881).

Multiple raters have variability in their ratings of a manager or a subordinate. Scullen (1997) surmises that the averages of group ratings for analysis may bias results. The aggregation problem should be avoided. The perception of an individual should not be correlated with the mean of two or more individuals. Rousseau (1985: 5) notes, "aggregation and disaggregation alter the variances and covariances of data, thereby influencing their correlations and regression coefficients, and possibly the meaning and character of the data themselves."

For nested rating systems, the generalizability index is

$$\rho^2_{nested} = \sigma^2_m / (\sigma^2_m + \sigma^2_e)$$

where ρ^2_{nested} is the true score variance divided by expected observed score (that is the intra class correlation coefficient)

σ^2_m is the variance due to true differences in ratees

and

σ^2_e is the confounded variance due to differences in raters, interactions of raters and ratees, and error.

I can calculate the true score variance from the above formula. I can also calculate the error variance; however, this calculation does not correct or adjust the error variance in the data. The variance due to entrepreneur bias is still not known. This method is not a correction or adjustment of the nested issue. Moreover, I am not aggregating data to another level, so the aggregation issue is not applicable.

Partial correlations. Another way to consider the effects of independent and dependent variables is to evaluate partial correlations. Partial correlations provide the unique contribution of the independent variable on dependent variable after other variables have been controlled for in the independent and dependent variables. Part correlations provide correlations of independent variable on dependent variable after other variables have been controlled for in the independent variables. The squared part (semi-partial) correlation is the percent of total variance in the dependent variable explained by the independent variable, over and beyond, other independent variables. Standardized regression coefficients (beta weights) are semi-partial (part) correlations.

With regards to the research, I can run regressions to find the part and partial correlations and the percentage of variance contributed by the independent variables towards a dependent variable. The remaining variance not explained by the independent variables would be error variance, part of which is the idiosyncratic variance caused by the nested design effects. Regressions use variance due to partial correlations, which in essence has partialled out error variances (cf., Hair et al., 1998).

Methods in performance evaluation, particularly race bias research. The study of personality bias on a criterion, particularly performance, is extensively studied in race research where scholars attempt to find race effects on performance ratings. In summary, results have shown small race effects on performance ratings. Since I study entrepreneurs who may have tendencies that may influence their advisor ratings, I researched the race and performance literature to examine how scholars in that field treated race effects on performance ratings.

Scholars reviewing bias in performance measurement consider how much impact race would have on performance evaluation (Mount & Ellis, 1987; Mount, Sytsma, Hazucha & Holt, 1997). The research question is that ratees' race may influence rater ratings and they evaluate the effect sizes of race in their data. Scholars (Harris, Kacmar, & Zivnuska, 2007; Pulakos, White, Oppler, & Borman, 1989) calculate zero-order correlations to observe the effect of two variables. However, zero-order correlations may reflect bias, indirect effects, effects of one variable on the other, and indirect causal effects of one variable on the other.

Different approaches have been derived to study bias in performance ratings. Oppler, Campbell, Pulakos, and Broman (1992) review three approaches to investigate group bias in performance measurement. The three approaches are *total association approach*, the *direct effects approach* and the *differential constructs* approach.

The total association approach. The total association approach has been used to determine the total amount of dependent variable variance that is accounted for by subgroup membership (Oppler et al., 1992: 201). The total association is the zero-order correlation between variables. The total association approach is so named because it uses

the total correlations (sum of direct and indirect correlations) between two variables. Total correlations, estimated by zero-order correlations, take into account correlations between variables, indirect, and direct causal effects of one variable on the other. The correlations do not indicate whether they are due to rater differences on a criterion or are as a result of errors in the criterion. Pulakos, White, Oppler and Borman (1989) did research on race using the total association approach in evaluating performance using White and Black raters on the same ratees. They held constant the Black-White differences in ratee performance across rater subgroups. They asked White and Black raters to rate the same ratee. Any interaction must then be attributed to bias in the ratings. The study found that there was a small relationship between ratee race and performance ratings. However, the findings did not indicate if the bias was due to either White or Black raters or both. The application of zero-order correlations to this study is limited, as the correlations do not indicate where the bias lies.

Direct effects approach. Performance research also used the direct effects approach, which refers to the method of isolating the effects of subgroup membership that are not mediated by true performance ratings between members of different subgroups (Oppler et al., 1992). This research may use experimental manipulation in laboratory studies or statistical controls of subgroup differences. This way, the contamination of the dependent variable is any effect that is observed after performance differences have been considered. In laboratory studies, employees or ratees' performances of simple tasks are held constant and resulting differences are attributed to biases of the study participants. In general, the effect sizes have been small.

Another method was to statistically remove the direct effect of biases, in many studies, that being race, from the performance ratings. These studies are based on White and Black ratees. Researchers would use analysis of covariance on ratings data. Oppler et al. (1992) emphasize the importance of using a complete set of covariates that must be job relevant and not suffer from subgroup contamination. This way, the resulting direct effect sizes that are now observed after the covariates' effects have been removed accurately reflect the influence of race on performance ratings. For example, Thompson and Thompson (1985) used job tenure as the covariate in their study and found no significant race effects. An application of this method to the dissertation would be to use age, gender (Nivea & Gutek, 1980), education (Shrader & Siegel, 2007), organizational tenure (Mount & Ellis, 1997), and industry controls (Shepard & DiTienne, 2005) so that resulting effects can be attributed to relationships being studied. Oppler et al. (1992) note that the accuracy of the results "depend on the assumption that there are no other factors contributing to the relevant variance in ratings" (page 203).

Harris, Kacmar, and Zivnuska (2007) collected performance ratings from self ratings, supervisor ratings, and performance appraisal ratings to investigate abusive supervision in the work place. Supervisor ratings of subordinates were taken through surveys. The statistical method they used was hierarchical moderated regression. The participants were from the same organization and many reported to the same organization. They note that the data may not be independent and may need to be analyzed at two levels: individual level and supervisor level. They computed intraclass correlations (ICC1, which represents the amount of variance that resides between supervisors) and the intraclass coefficient 2 (ICC2), which represents the stability of the

supervisor means for each study variable. To check for independence of data, they used organizational tenure, age and gender controls for the regression analyses. They calculated ICCs to check need for a multilevel approach for their analysis. This method can be applied to my data through the use of control variables in hierarchical regressions to account for entrepreneur bias.

The differential constructs approach. The *differential constructs approach* examines correlations between ratings and other objective data to determine whether there is bias due to rater and/or ratee effects. The size or pattern of correlations is examined to see whether the ratings are due to bias from the raters, the ratees or both. Race studies have shown that White ratees have a greater relationship to performance than Black ratees (cf., Bigoness, 1976; Hamner, Kim, Baird, & Bigoness, 1974). Oppler et al. (1992) suggest that to further examine whether race bias exists in the evaluation of equivalently performing members of different races, "one must compare the respective regression lines of ratings on performance for Black and White ratees," (p. 204).

Ratings may also be contaminated by raters' subjective expectations of a ratee, the rater's stereotype expectations similar to the ratee, and that of the ideal job incumbent. Oppler et al. (1992) then suggest that data be with regards to race. The application of this to my research is to compare data with regards to each entrepreneur to find statistically different ratings.

Oppler and colleagues (1992) used the three approaches in their study. They separated ratings for Black and White raters and they calculated correlations for Black ratees, White ratees, and Black and White ratees combined. Using the total association approach, they calculated correlations where the White ratee scores were higher than

those of Black ratee scores. For the differential constructs approach, they calculated correlations between performance ratings and nonrating measures. An example of a nonrating measure is hands-on proficiency scores. These analyses between performance ratings and the nonrating measures of performance were intended to examine the extent to which the relationships between performance ratings and the nonrating measures of performance were moderated by rater race, ratee race, or both. They found statistically significant correlations along race lines. All my data are provided by entrepreneurs, so it is impossible to use variables associated with nonrating scores.

The differential constructs approach examines the effects of ratings mediated by factors other than race. The researchers calculated semipartial (part) correlations between ratee race and residual performance rating scores. These residual scores were formed by removing from the ratings variance associated with the nonrating performance measures. This method cannot be applied to my research since I do not have nonrating measures to use for correlations.

Repeated measures design. Other research on components of ratings' variance considers gender and race biases. To do so, Mount, Sytsma, Hazucha, and Holt (1997) used a repeated measures design separating Black and White managers. They then compared effect sizes of their ratings. Their results were then attributed to race effects.

Mount and Ellis (1987) used an experimental study to find if gender bias and knowledge of pay levels affected subsequent job evaluations in the University of Iowa. 52 study respondents were performance evaluators who were on job evaluation committees. The genders of the jobs were experimentally evaluated to have male or female titles. For example, the job titles were nurse aid (female) and orderly (male). The

factors were job type, gender, and pay level. The dependent variable was job evaluation. To control for any pre existing subject knowledge of market pay levels, the average of high and low pay rates for each job was chosen to correspond to the average rates of pay for similar job reported by the U.S Bureau of Census (1980). They used ANOVAs and interactions as they also evaluated the interaction effects of job type, gender, and pay levels on job evaluation. They found a significant effect of gender on evaluators.

A repeated measures design is not applicable to my research since I would have to create a variable with 51 different values, which is analogous to using 51 dummy variables.

Using factor scores. Bernardin (2009) suggested the use of factor scores created through principal component analysis. The logic is that these factor scores are based on common variances in measures from entrepreneurs, thus eliminating variances due to individual biases. Regression is based on the difference in mean scores and entrepreneur scores. To remove or reduce nested bias issues, I have to create data devoid of entrepreneurs' leniency, positivity, or negativity biases. Factor analysis using principal component analysis can provide factor scores that are devoid of leniency, positivity and negativity biases.

The application of this method to my research would involve splitting the advisor data the three groups of data for close friend, business associate, and licensed professional groups. Then, I would factor analyze data in each group. To illustrate this point, Affective Trust is comprised of five items. Five items for three groups create creating 15 items for all three groups. Factor analysis would require at least 75 respondents for all three groups using the 5 respondents per item rule of thumb as per

Hair et al. (1998). The present data has 47 close friends, 48 business associates and 48 licensed professionals. I do not have the sample size to run factor analysis that will provide stable results.

Variance components analysis. A variance components analysis is most commonly used to determine the level at which variability is being introduced into a product. The goal is to determine the relative percentages of the overall process variability that are being introduced at each level.

Variance components models are a way to assess the amount of variation in a dependent variable that is associated with one or more random-effects variables (Rao & Kleffe, 1988). The central output is a variance components table, which shows the proportion of variance attributable to the random variable's main effect and, optionally, the random variable's interactions with other factors. "Random-effects variables are categorical factors whose categories (levels) are conceived as a random sample of all categories (not as all the categories/levels of interest). Examples might include identification variables for observers taking measurements, for days of the week when measurements were taken, or for subjects," (Garson, 2008).

Variance components analysis output will show whether such random observer effects, day-of-week effects, or subject effects are important or if they may be discounted. The variance components procedure supports four methods of estimation, each of which gives somewhat different estimates: analysis of variance (ANOVA), maximum likelihood (ML), restricted maximum likelihood (REML), and the minimum norm quadratic unbiased estimator (MINQUE) method. The applicability to my data is limited since

variance components provides the variance due to error but does not correct for these errors in the hypothesis testing.

Conclusion. The extant research expounds on confounding variance due to rater effects and the interaction of rater and ratee effects. Most recent research advocates the use of variance component analysis or hierarchical linear modeling to partition variances at different level of analysis. Scullen et al. (2000) used the SEM/CU-CFA method to estimate measurement error variances due to raters. I also found that researchers control for sources of variances such as job tenure, gender, and race to reduce systematic variance in data. Part and partial correlations can provide estimates of variances due to independent variables. The challenge of accounting for entrepreneur biases in my data, however, requires that entrepreneur characteristics have to be controlled before the main predictor variables are entered into statistical models.

Multilevel analysis and hierarchical regressions are methods to achieve this. For the first stage of hierarchical regressions, control variables are entered into the models. This way, the variance that can be attributed to entrepreneur biases such as job tenure, industry effects, gender, and age can be initially accounted for. The second stage then involves the main model test. MRC can be similarly modeled. MRC achieves what can be done with regression analysis when control variables are entered into the models to remove the effect of those variables on the hypothesized relationships.

As detailed below, I first checked for response bias in the data that is likely to be reflected in idiosyncratic entrepreneur effects that produce biases in their ratings of all of their advisors. Having established that response bias effects are relatively minor, I also used hierarchical regressions as detailed below in the discussion of hypothesis testing

methods. Entrepreneur idiosyncratic biases can be accounted for through the use of control variables using the direct effects approach. Further, I am able to take advantage of a basic strength of the research design – the ability to check the quantitative results against a systematic coding and qualitative analysis of the open-ended interview questions.

Checks for response bias and nested data problems. To check for response bias and nested data problems, I used the Harman single factor test, which checked the prevalence of one single factor emerging from the data. The emergence of a single factor signals significant common method variance in the data. I did not find any research study documenting what large variance is but any factor contributing at least 60 percent of variance suggests significant common method variance.

Research studies show the emergence of multiple factors underlying the data and no single factor contributing a significantly large variance as evidence of limited common method bias. Andersson and Bateman (1997) found four distinct factors with their Harman test, and concluded that common method variance was not a significant concern in their study. Likewise, Aulakh and Gencturk (2000) also conducted Harman single factor test and found eight factors with one factor showing less than 20 percent variance and concluded that common method variance was not a problem in their study.

I ran an unrotated factor analysis procedure on all the items tapping into affective trust, calculative trust, and knowledge sharing. The results show there are three distinct latent factors underlying these items. For Harman's test, a single factor either emerges or explains most of the variance in the data to suggest significant common method variance in data. With my data, the first factor explains 38.6 percent of total variance; the second

factor explains 17.3 percent of variance while the third factor explains 7.5 percent of variance. As a diagnostic check, a single factor has not emerged and neither has a factor accounted for most of the total variance.

To further check for autocorrelation in data, I used the Durbin-Watson test. I checked for the *d* statistic using a model that had Affective Trust as the dependent variable and Calculative Trust, Knowledge Sharing, Relationship Tenure, and Use of NDAs as independent variables. The *d* statistic was 1.97. Following the rule of thumb for the D-W test of ranges around 2.0 for insignificant autocorrelation, the hypothesis that autocorrelation exists in the data could not be confirmed. The results showed that the hypothesis that the errors are correlated cannot be confirmed and that autocorrelation is not a concern with this data. Other statistical remedies included triangulation of survey data with data obtained from field interviews.

Hypothesis Testing Methods

The quantitative methods used are appropriate for testing the proposed relationships. Regression analysis provides prediction equations that yield estimates of the relationships between independent and dependent variables.

I used two types of regression analysis. I used logistic regression for models where *Use of NDAs* is the dependent variable since it is a categorical variable. In other instances, I used the hierarchical regression technique as the other dependent variables are quasi-interval variables.

A multiple regression model provides a prediction equation and an adjusted *R*-squared that show the contributions of the independent variables to the dependent variable. The assumed relationship is a linear relationship based on the correlations

among the independent variables and the dependent measure. Regression analysis provides a means of objectively assessing the magnitude and direction (positive or negative) of each independent variable's relationship with the dependent variable. Multiple regression analysis is based on the least squares formulation—minimizing the differences in error terms between the predicted values and the actual observations. The regression equation represents the minimal sum of errors that produces a relationship among the independent variables that explains the dependent variable.

The relative importance of each independent variable is determined through the regression coefficient, *beta* (Hair, Anderson, Tatham, & Black, 1998). The regression coefficients, *betas*, reflect the unique combination of each independent variable to the dependent variable. The coefficient of determination (*R*-squared) is the strength of the relationship between the independent variable and the dependent variable and can be represented as the sum of squares of regression (*SSR*) divided by the total sum of squares (*SST*). The sum of squares of regression (*SSR*) is the sum of squares of differences between the predicted values and the mean of observations. *SST* is the sum of sum of squares of regression (*SSR*) and the sum of squares of the error terms, *SSE*. *SSE* is the sum of squares of differences between each observation and predicted value for each observation.

Adjusted coefficient of determination (adjusted *R* squared) is a modified measure of the coefficient of determination that takes into account the number of independent variables included in the regression equation and the sample size. Although the addition of independent variables cause the coefficient of determination (*R*-squared) to rise, the adjusted coefficient of determination (adjusted *R*-squared) may fall if the added

independent variables have little explanatory power and /or if the degrees of freedom become too small. This statistic is useful for comparison between equations with different number of independent variables, differing sample sizes, or both.

Ordinary least squares (OLS) is the common form of multiple regression, used in early, stand-alone path analysis programs (Kline, 1998). When autocorrelation is present, one may choose to use generalized least-squares (GLS) estimation rather than the usual ordinary least-squares (OLS). GLS is an adaptation of OLS to minimize the sum of the differences between observed and predicted covariances rather than between estimates and scores.

Use of NDAs was analyzed using logistic regression models. A logistic regression model is estimated by the maximum likelihood procedure that finds the "most likely" estimates for the coefficients. The coefficients are estimated through an iterative manner rather than the sum of squares for the multiple regression. The Wald statistic is a test of the significance of each coefficient in the model. "The procedure that calculates the logistic coefficient compares the probability of an event occurring with the probability that it is not occurring," (Hair et al., 1998: 278). This is the odds ratio. The odds ratio can be expressed in logarithms so that the relative effects of the probabilities can be interpreted easier. Logits are the natural log of the odds ratios. The logistic regression procedure is similar to the multiple regression method in that estimates of coefficients fitted closest to the data.

The variables used in regression analyses for this study are: Relationship Length, Advisor Type, Affective Trust, Calculative Trust, Knowledge Sharing, and Use of NDAs. Advisor Type was dummy-coded into two variables since there are three categories for

the variable. One category of advisor type was left out to prevent singularity in the data. I used control variables to account for nested bias effects. These were entrepreneur age, entrepreneur gender, entrepreneur's years as an employee, years as an entrepreneur, and venture type. Venture type was dummy coded into nine categories featured in Table 4 on page 99. The selection of these variables was based on sound theoretical grounds and so the specification problem (omission of causally important variables) was avoided. Care was taken to make sure that there were not too many predictor variables because the analysis may lose parsimony. At the same time, I wanted to avoid making a specification error by leaving out relevant variables from the analysis (Hair et al., 1998: 163). In this particular case, there were two predictor variables: affective trust and calculative trust. Alternate analyses were to have multiple predictor variables for a criterion variable without the control variables that were insignificant in these analyses. I ran these analyses as well and the results are in Appendix C.

After the sample size and predictor variables were determined, the next thing was to be certain that the data satisfied the assumptions of the regression analysis. The assumptions in multiple regression analysis are that there is linearity in the relationships between dependent and independent variables such that a change in the dependent variable is associated with the independent variables, that the data has constant error variances, that the error terms are independent, and that the data have normal characteristics. I conducted graphical analyses of residuals to see that the assumptions of regression analysis are met (Hair et al., 1998: 172-175). I also conducted casewise diagnostics to identify outliers and to check for multicollinearity.

All the independent variables and the control variables were entered in two or three steps. The first step in developing a regression model here was to enter the control variables that accounted for nested bias effects into the model. The second step was to enter the control variables that were part of the research model and could influence the relationship being tested. I did not have these control variables in all tests. The third step was to enter the independent variable(s) of the relationship being tested into the model.

The variance contributed by the independent variables was checked as well as the significance levels of regression coefficients (betas). These parameters (variances and regression coefficients) provide evidences to support or reject the hypotheses. The significance level of the regression coefficients of the predictor variables was observed after these control variables have been entered into the model. The betas' significance levels are checked for their contribution to the explanation of the dependent variables.

Before data analysis, I screened the data to test for the fulfillment of test assumptions, that is, ascertain linearity, normality of data, and homoscedasticity of variance. I evaluated linearity of the data using scatter plots. Scatter plot shapes that are close to elliptical shapes indicate linearity and normality of data. Residual plots of homogeneity of variance show elliptical shapes, confirming that homogeneity of variance exists. The scatter plots are shown below (Figures 10 to 12) for Affective Trust, Calculative Trust, and Knowledge Sharing items.

Since the use of scatter plots is subjective in examining linearity, I also use a more sophisticated method that compares standardized residuals to the predicted results of the dependent variable. In this case, I used the "*Use of NDA*" as the dependent variable and all the items in the survey section as independent variables.

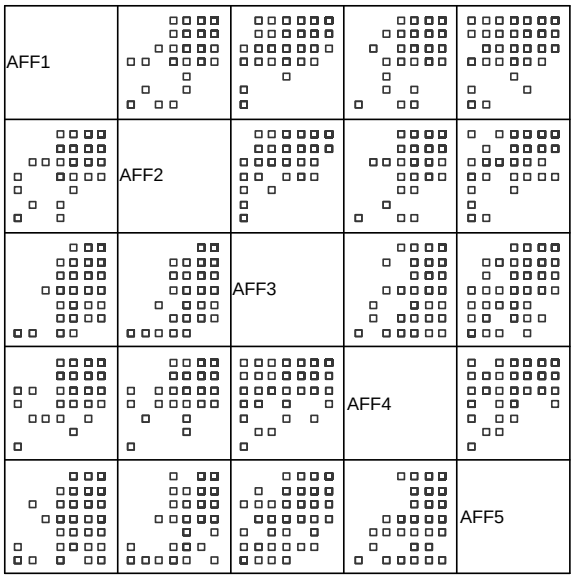

Figure 10. Affective trust scatter matrix plot.

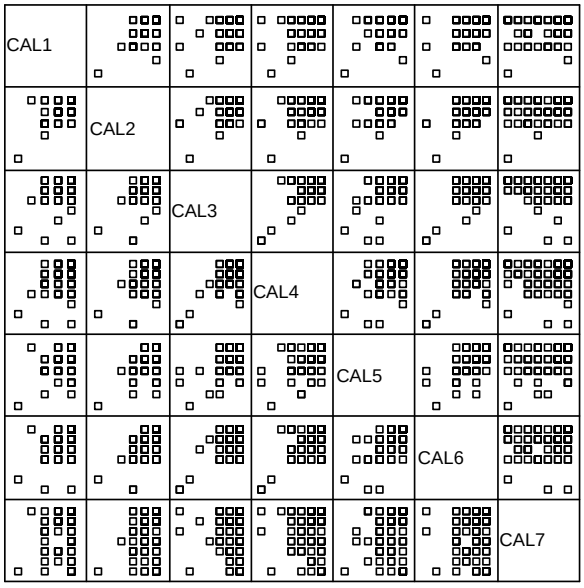

Figure 11. Calculative trust scatter matrix plot.

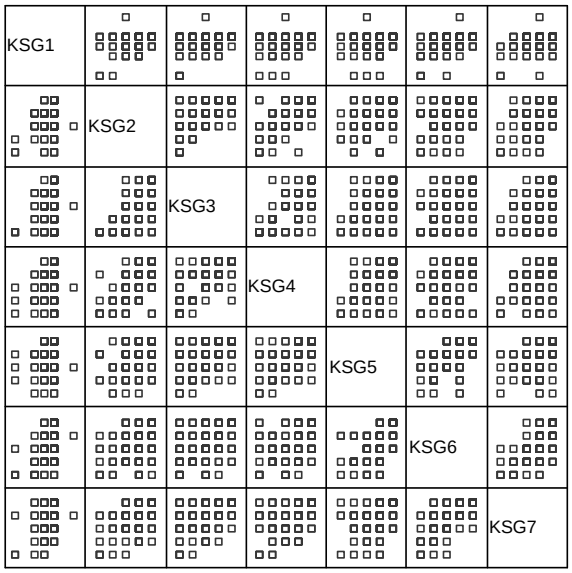

Figure 12. Knowledge sharing scatter matrix plot.

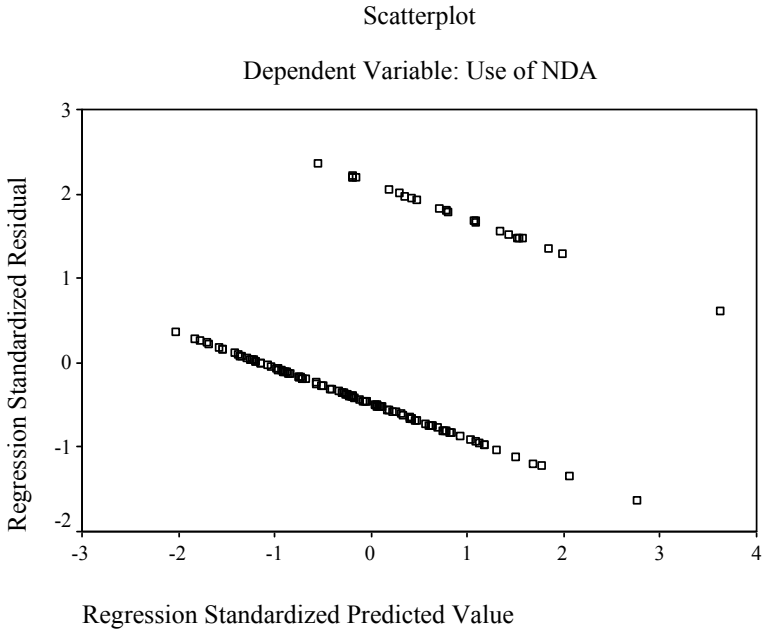

Figure 13. Scatterplot showing assumptions of normality and homoscedasticity are met.

When the assumptions of linearity, normality and homoscedasticity are met, residuals create an approximate rectangular distribution with a concentration of scores along the center. Figure 13 shows this type of rectangular distribution. As such, the data was found to meet all assumptions necessary to proceed with data analysis.

Qualitative Analysis

In the next few sections, I review some of the general principles of doing qualitative analysis and then explain how I applied these principles to this research. The interviews were analyzed both for hypothesis testing and theory development.

Interviews provide qualitative data through unstructured and open-ended questions that is rich in contextual information. The data developed as entrepreneurs described their relationships with their advisors, which were recorded and transcribed verbatim (cf., Stern, Thompson, & Arnould, 1998). I asked them to think of an advisor who was in their inner circle of friends and whom they knew for a long time as a Close Friend; to think of another advisor who helped with business strategies as a Business Associate; and someone who was a licensed specialist as a Licensed Professional.

Entrepreneurs were encouraged to discuss their perceptions and experiences with these advisors as they started a high-tech venture. The narratives were shaped by the entrepreneurs' perspectives—they are the ones who specified their advisors for the three types I was studying, and described events to describe failures and successes of these relationships. By allowing their "perspectival subjectivity" (Stern et al., 1998: 200), I gained insights into their world. As they provided their narratives, I learned what happened in their relationships and why these things happened. I analyzed these

narratives to find motivations and explanations for observed relationships. Qualitative data provides ways to critically analyze existing theory.

The insights increased my understandings of perceptions and explanations of how and why people manage their situations**.** Interviews may be time-consuming and sample sizes of respondents are usually smaller than those of surveys; however, qualitative analyses clarify implicit assumptions and provide understanding of the underlying dynamics of the relationships under observation (Eisenhardt, 1989). While quantitative approaches usually aggregate data, qualitative approaches look for patterns in interactions, which might reveal factors as to how relationships develop and are maintained (Bartunek & Seo, 2002).

Qualitative analysis entails extensive writing to describe the context and to support the new theory. Details are very important in qualitative study. The researcher must take notes about the respondent and the immediate environment. All these notes are later scrutinized for meanings and explanations. As such, qualitative analysis is based on detailed descriptions, an attempt to transport the reader to the place and time when the data was collected, and a concerted effort to support hypotheses that are being presented.

Qualitative data can be used to test or build theory (Eisenhardt, 1989; Glaser & Strauss, 1979). Testing theory through qualitative data is similar to quantitative analysis in that the constructs are well laid out. The method of finding supporting comments, responses, and observations from the data to support these laid-out codes is called content analysis. However, testing theory presents a challenge. The researcher has argued for some relationships and hypotheses. Rather than use quantitative data to provide empirical support of these relationships and hypotheses, he or she now relies on statements, events,

and transactions for hypothesis testing. The advantage of qualitative data over empirical data is that the "why" of results are obtained through respondent responses. Researchers would turn to personal events, experiences, and theory to explain results. Detailed descriptions of the context and transactions between participants provide clues that experienced researchers use to explain and support their hypotheses.

Grounded theory is using qualitative analysis to build theory. The purpose of building theory is "to discover the underlying theoretical reasons for why the relationship exists," (Eisenhardt, 1989:542). The researcher may not have any abstractions or a priori concepts; simply copious data from which to describe, explain, or predict phenomena. The researcher needs to go beyond the obvious relationships in the data to find hidden meanings. In addition, support for relationships must be generated to create internal validity and generalizability. This skill of finding sophisticated meanings in the data requires careful corroboration of evidence from texts from which constructs are defined and sharpened (Eisenhardt, 1989). This skill takes considerable insight on the part of the researcher.

I tested theory by using the data to find support for the hypotheses. Furthermore, I built theory by analyzing the responses to study knowledge sharing and the use of NDAs by entrepreneurs with their advisor networks.

Interview questions. Here, I provide examples of the open-ended interview questions for qualitative analysis. More questions, elaboration on these questions, and the qualitative methods are provided in the Qualitative Analysis section. An example of a question to gain insights into trust relationships with each advisor is, "Did you think this advisor might take advantage of you in some way?" To explore the choices of knowledge

security methods, the questions are "Did you specifically ask your advisor not to discuss your new project with other people?" To explore "Knowledge Sharing" with each advisor, I asked, "What aspects of your venture did you usually talk about with this advisor? Like did you share general stuff, specialist knowledge, or strategic issues?" and "How much do you think this advisor contributed to developing your venture idea?"

To further examine and develop the relationship behind knowledge sharing and the use of NDAs, I asked, "Apart from relying on the advisor's discretion or asking for an NDA, did you use any other security measures with your advisors as you planned your venture?" "Have there been any major changes in the way you work with advisors as a result of your experiences with this venture?" Appendix B also has the complete list of qualitative items.

Hypothesis testing. The method I used to analyze the qualitative data for hypothesis testing is content analysis. The steps I took to code data are as described in Auerbach and Silverstein (2003:109 –110). This qualitative analysis process is quite similar to the process of building theory suggested by Eisenhardt (1989). From Auerbach and Silverstein (2003) suggestions, I took the following steps to analyze the data. First, I went through transcripts with a list of codes and highlighted relevant texts describing each code. I then made a note beside the relevant text of the construct that the text refers to. These are the illustrative texts for the hypotheses (Auerbach & Silverstein, 2003 :109).

This process provided iterative tabulations of evidence for each code. As I conducted these steps, I looked for replications across entrepreneurs (cases) as advised by Eisenhardt (1989). I also searched for the evidence for the "whys" behind relationships to

build internal validity. As Eisenhardt (1989) advises, texts that conflict with literature should lead to construct definition refinements. If I found anything that is similar with existing literature, I noted evidence of generalizability of that theory. I reached theoretical closure with the coding when I could not find significant additions to codes and illustrative quotes.

In reporting the results, Auerbach and Silverstein (2003) suggest

1. Create a theoretical narrative by retelling participants' stories in terms of the theoretical constructs.
2. Describe the histories of four to six relationships that represent unique patterns. Then, look for other relationships that may follow these unique patterns to support the hypothesis.

The codes are relationship length, affective trust, calculative trust, secrecy, NDAs, and knowledge sharing.

I also used chi-square tests for statistical tests. Chi-square tests the hypothesis of no association between two variables (Anderson, Sweeney, & Williams, 1996: 430). The chi statistics tests association between the row data in rows and columns. "A chi-square probability of .05 or less is commonly interpreted by social scientists as justification for rejecting the null hypothesis that the row variable is unrelated to the column variable," (Garson, 2009). For each hypothesis, I used relevant coded interview data for the chi-square tests and the results are in Appendix F.

Relationship length and affective trust (Hypothesis 1). I sought evidence for hypothesis 1 by coding the responses indicating relationship length and trust. I had encouraged entrepreneurs to discuss the events that characterized their relationships such

as golf outings and other social activities. The questions providing Relationship Length and evidence for relationship history were “How long have you know this person?” “How did you meet this advisor?” “Can you tell me a little bit more about how your relationship with this person developed?’ “Apart from your business-related discussions, what sorts of things do you and this advisor do together? Is the venture you are describing the only one you have worked on with this person, or have you worked together on other projects as well? Please tell me a bit more about your other projects with this person.” These are questions in Appendix B and are shown in Table 18. For the chi-square test, I coded the relationship length into two categories where one category represented relationships less than the average of 9.71 years in the data set. The second category represented relationships longer than 9.71 years. Affective trust was coded from the answer to the question, “Would you say that you depend on this person more because of his or her business skills or because of your familiarity with him or her?” Answers that indicated familiarity were coded as affective trust. The results are presented in the results chapter and Table F1 in the Appendix.

Table 18

Research Codes and Interview Questions

Code	Interview questions
Relationship length	How did you meet this advisor? (PROBE: Was this someone you knew from your work? Was this a family member? Were you introduced by a mutual friend? Was this someone who was recommended by a business associate?) How long you have known this advisor? Can you tell me a little bit about how your relationship with this person developed? Apart from your business-related discussions, what sorts of things do you and this advisor do together? (PROBE): Social activities such as golfing, traveling, having drinks, coffee? Do you talk about strictly business things only that are related to your own business? Are you involved with this person in other forms of business activities such as board meetings?) Is the venture you are describing now the only one that you have worked on with this person, or have you worked together on other projects as well? Do you ever help one another out on either business or personal matters apart from the times when you are working together on a specific venture? [If yes] Can you give an example? Are there any similarities or differences in your personal or professional background that made your relationship with this advisor either particularly easy or somewhat difficult?
Trust	Were you ever concerned that this advisor might take advantage of you in some way? (If yes) Please explain. Is there anything about this advisor or your relationship with him/her that makes him or her especially trustworthy? Would you say that you depend on this person more because of his or her business skills or because of your familiarity with him or her?

Advisor discretion	Did you specifically ask your advisor not to discuss your new high-tech venture with other people? Yes or no. Please explain.
NDAs	Did you ask this advisor to sign an NDA? Yes or no. (PROBE: Please explain)
Knowledge sharing	What aspects of your venture did you usually talk about with this advisor? Did you share general information, technical knowledge, or strategic issues? How much do you think this advisor contributed to developing your venture idea? Please explain. Is there anything about this particular advisor that made it especially easy or difficult for you to get information or share ideas about your venture? (PROBE: Please explain.)
NDA policies	Some entrepreneurs use NDAs very frequently, while others use them only occasionally. Are there any kinds of advisors you do not ask to sign NDAs or do you always use NDAs? Why so? (PROBE: Please tell me more about your own policy about why and when you use NDAs.) Considering the three types of advisors that we have talked about in this interview, would you say that you are most likely to use NDAs with close friends, business associates, or licensed professionals? (PROBE: Please explain why.)
Competitor threats	Some ventures are particularly vulnerable to being jeopardized if competitors learn about the technical, financial, or other business plan. Were there any aspects of this particular venture that were sensitive to theft or imitation by competitors? (PROBE: Please explain.)
Knowledge sharing and knowledge security	Thinking about the process of planning this venture as a whole, compared to other ventures you've been involved with, would you say that you were more successful, about as successful, or less successful at getting the information and advice that you needed to start this venture? (PROBE: Please explain.) Thinking back, was there any kind of information or advice that you needed that you did not have? (PROBE IF YES): Please explain. Apart from relying on the advisor's discretion or asking for an NDA, did you use any other security measures with your advisors as you planned your venture? Have there been any major changes in the way you work with advisors as a result of your experiences with this venture? Did you lock up the flow charts, designs, and other paperwork after your meetings in a safe or burglary proof box?

The trust questions (#7a-c, Appendix B) were "Were you ever concerned that this advisor might take advantage of you in some way?" "Is there anything about this advisor or your relationship with him/her that makes him/her especially trustworthy?" and "Would you say that you depend on this person more because of his or her business skills or because of your familiarity with him or her?" Answers to these questions were coded with codes such as "Familiarity," "Competence," and "Repeated personal interactions" and "Limited personal interactions."

***Advisor type and trust* (*Hypotheses 2 and 3*).** The advisor type was specified for the set of questions, and the responses to the trust questions (some are stated above) were analyzed to test hypotheses 2 and 3. I coded entrepreneurs' responses of whether emotional attachment or reliance on competence defined a relationship to test the hypotheses. As described for chi-square test for hypothesis 1, I coded responses that indicated familiarity for "Would you say you depend on this person more because of his or her competence or because of your familiarity with him or her?" as Affective Trust and those that indicated business skills as Calculative Trust. The results are in Appendix Tables F2 to F5.

Trust and use of NDAs (Hypothesis 4). The responses to the secrecy and NDA questions were juxtaposed to see the dominant use of NDAs with each advisor. Some other responses to the trust questions might show familiarity, loyalty, and mutual affection. I encouraged entrepreneurs to share stories of reciprocity between them and their advisors. The underlying basis of trust was compared to their reported use of NDA for each advisor. The responses to the trust question were also compared to entrepreneurs' responses to secrecy questions. Secrecy questions (#8a, Appendix B) are, "Did you specifically ask your

advisor not to discuss your new project with other people? Yes or no." NDA questions (#9a, Appendix B) are "Did you ask this advisor to sign an NDA? Yes or no." I tabulated evidences to corroborate hypothesis 4 to show whether trust in advisor affects an entrepreneur's use of NDAs. Chi-square tests are shown in Table F6.

Advisor type and use of NDAs* (*Hypothesis 5). The responses to the use of NDA question for each type of advisor were coded. I also probed entrepreneurs on why they asked some advisors to sign NDAs and not ask others. The chi-square results are shown in Tables F7 and F8.

Trust and knowledge sharing* (*Hypothesis 6). Based on entrepreneurs' responses on whether they viewed advisors as opportunistic, I got insights into the nature of the entrepreneur-advisor relationships. I also analyzed the basis of the trust through the coding of entrepreneurs' responses as to whether the trust was based on familiarity or competence. This analysis of the entrepreneur-advisor relationships was now compared with the entrepreneur's responses to questions as "How much do you think this advisor contributed to developing your business idea?" "Why so?" I compared responses to why they trust their advisors with the degree of knowledge sharing with these advisors for further insights to support Hypotheses 6a and 6b. The chi-square results are presented in the results chapters and also shown in Tables F9 and F10.

Advisor type and knowledge sharing* (*Hypothesis 7). I investigated the degree of knowledge sharing between the entrepreneur and each advisor type to find support for hypothesis 7. The questions, Nos. 10 a-d in Appendix B, are "What aspects of your venture did you usually talk about with this advisor? Like did you share general stuff, technical knowledge, or strategic issues? and as noted above, " How much do you think this advisor

contributed to developing your business idea?" "Why so?" The coding results for " How much do you think this advisor contributed to developing your business idea?" was used for chi-square analyses and the results are presented in the results chapter and details are as shown in Tables F11 and F12.

Building theory. To build the theory on which new hypotheses could be based, I asked questions that called for fuller descriptions of the responses and entrepreneurial relationships. For example, questions for Relationship Length are how long have you known this advisor? What factors caused you to enter into this friendship? What factors caused you to enter into the friendship? What activities do you and this advisor do together? Social activities such as golfing, traveling, having drinks, coffee? Strictly technical stuff? Some other forms of business activities such as board meetings?

Also, I sought for more codes in the interview texts to build on the codes that I used to test the theories. The codes were based on literature of entrepreneurial support, advisor networks, knowledge sharing, and knowledge security. These codes captured the nature of the entrepreneur-advisor relationships and how these relationships impacted knowledge sharing and knowledge security. The data was systematically coded using the guidelines described above.

Statements that portrayed similar responses will be coded under the same code. The interviews with the entrepreneurs' statements were carefully coded into the different codes. Different codes were grouped together to achieve parsimony. Even then, Eisenhardt (1989:541) suggests researchers juxtapose "seemingly similar cases...to break simplistic frames." Complete coding of the interviews provides deeper insights into how entrepreneurial relationships affect knowledge activities will be gained.

Second coder. I asked a fellow graduate student to be a second coder and code the interview texts. She had taken a qualitative analysis class that I was also in, done some interviews and content analysis for her class paper, so she had some experience in coding management research. A second rater affords comparison of coded texts. I provided the second coder with a coding sheet that specifies the codes and their definitions. I asked a second coder to analyze the interviews texts and we met several times to compare our codings of the scripts.

The second coder and I went over our different interpretations of some of the codes that lead to discrepancies in our codings. For areas of texts where we disagreed on their coding, we discussed our reasons for our respective coding decisions and carefully worked through the interview texts and codes to resolve these differences. We discussed our different inferences of the texts and came to agreement on coding the texts to achieve complete agreement on the coded texts. We edited the coding list to remove codes that were redundant, refined other codes to make them apply better to the interviews, and discussed the definitions of the codes.

We had 65 percent agreement on the first coding and then discussed our coding. Thereafter, the minimum agreement we had on subsequent coding was 75 percent, which satisfies the accepted level of agreement between coders. I present the final code list and examples of codes we removed in the results chapter.

The qualitative analysis is in two parts: hypothesis tests and research questions. The research questions refer to the theory building aspect of qualitative research. To answer each research question, I carefully reviewed interview texts for hidden meanings to describe the underlying dynamics of relationships (Eisenhardt, 1999; Glaser & Strauss,

1979). I used the qualitative software, *HyperResearch*, to facilitate coding. Software coding of texts allows filing of coded texts under different codes and easier comparison of many multiple interviews. *HyperResearch* has a function for researchers to develop hypotheses that can be run through the multiple interview texts. The software then provides a results sheet that shows where codes that support the hypotheses occur in the texts.

Summary

This chapter reviewed the measurement design, the analytical techniques, and the limitations of this study. Data was collected in a semi-structured format. I asked the questions and filled in entrepreneur's answers on surveys.

I anticipated interviewing 50 entrepreneurs to have approximately 150 advisor relationships, and I actually interviewed 52 entrepreneurs, which resulted in data on 143 advisor relationships. The entrepreneurs were identified through snowball sampling—recommendations from friends and colleagues. I had a pilot study that contributed to improving the final study's interview format.

There are six main variables in this study: Relationship Length, Advisor Types, Affective Trust, Calculative Trust, Knowledge Sharing, and Use of NDAs. I checked the validity and reliability of the scales of the multi-item scales, and used regression analysis to test the hypotheses. For qualitative analysis, I transcribed the interviews and used content analysis for analyses. The results are presented next.

IV. Results

I present quantitative and qualitative results in this chapter. I start by describing the quantitative modeling and present the results. Next, I describe the qualitative coding, present the results of the content analysis for hypothesis testing and then the answers to the research questions. The results of the quantitative analysis are now presented.

Hypotheses Tests

Here I present the results of the hypotheses tests. I run analyses on the full sample and then on a smaller sample that consisted of only entrepreneurs that reported relationships with all three categories of advisors. I refer to the second sample as the filtered sample. The tests with the smaller sample provide the "theoretical" scenario where entrepreneurs have been hypothesized to have three advisors and eliminate missing data on advisor types. The results of the smaller sample confirm the results of the full sample and again establish the stability of the results in addition to the qualitative results. The results for tests without the controls and for where two more independent variables are hypothesized to affect a dependent variable were also done and the results are shown in Appendix C.

Hypothesis 1 stated that relationship length would positively relate to the level of affective trust an entrepreneur has in an advisor. The control variables were entrepreneur age, entrepreneur gender, entrepreneur's years as an employee, entrepreneur's years as an entrepreneur, the venture type as well as the advisor types. I dummy coded "Advisor

Types" into Close Friend (CF), Business Associate (BA), and Licensed Professional (LP) variables. LP was the reference category for this test, so it was not included in the analyses. I entered entrepreneur age, entrepreneur gender, entrepreneur years as an employee, entrepreneur years as an entrepreneur, and the venture type into Model 1 to control for nested bias. I then entered CF and BA in Model 2 and Relationship Length in Model 3. Table 19 shows the regression coefficients. Model 1's control variables did not have any significant coefficients, indicating limited nested bias effects for this analysis. The R^2 for Model 1 was 11 percent while it is 31 percent for Model 2. In Model 3, the R^2 was 36 percent. Model 3 was significant with an F-statistic of 4.66 ($p < 0.001$). The relationship length's standardized regression coefficient, β, was significant ($\beta = .31$, $p < .001$).

Hypothesis 2 stated that entrepreneurs would report higher levels of trust in Close Friends than in either Business Associates (H2a) or Licensed Professionals (H2b). To test hypothesis 2a, I focused on the 95 CF or BA observations in my dataset. The F statistic and regression coefficients were not statistically significant, indicating that the hypothesis was not supported (see Table 20). Model 1 control variables did not have any significant coefficients, indicating limited nested bias effects not just for this analysis but for all the remaining analyses. To test Hypothesis 2b, I focused on the CF or LP observations in my dataset, which had a size of 95 observations. Model 1 included entrepreneur age, entrepreneur gender, entrepreneur years as an employee, entrepreneur years as an entrepreneur, and the venture type in the analysis. CF was then entered for Model 2, leaving LP out as the reference category. I found support for this hypothesis with the regression coefficient, β, significant ($\beta = .45$, $p < .001$). See Table 21.

Table 19

Relationship Length and Affective Trust

	Dependent variable		
	Affective Trust		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	-.03	-.01	-.06
Entrepreneur's gender	.14	.15	.08
Years as an employee	-.04	-.05	-.05
Years as an entrepreneur	.05	.04	.02
Venture type[a]	-	-	-
Close Friend		.50***	.33**
Business Associate		.38***	.37***
Relationship Length			.31**
R^2	.11	.31	.36
ΔR^2	.11	.21	.05
F-statistic	1.25	3.98***	4.66***

Note: N =140. *$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$
[a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.

Table 20

Affective Trust Test between Close Friends and Business Associates

Variable	Dependent variable Affective Trust	
	Model 1	*Model 2*
Entrepreneur's age	.07	.08
Entrepreneur's gender	.12	.12
Years as an employee	-.05	-.06
Years as an entrepreneur	-.08	-.08
Venture type[a]	-	-
Close Friend		.17
R^2	.07	.10
ΔR^2	.07	.03
F-statistic	.49	.65

Note: n=95. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Table 21

Affective Trust between Close Friends and Licensed Professionals

	Dependent variable	
	Affective Trust	
Variable	*Model 1*	*Model 2*
Entrepreneur's age	-.12	-.10
Entrepreneur's gender	.19	.21
Years as an employee	.05	.03
Years as an entrepreneur	.13	.12
Venture type[a]	-	-
Close Friend		.45***
R^2	.17	.37
ΔR^2	.17	.20
F-statistic	1.40	3.63***

Note. $n = 95$. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.

Hypothesis 3 stated that entrepreneurs would express higher levels of (a) calculative trust in Business Associates than in Close Friends and (b) higher levels in Licensed Professionals than in Close Friends. The procedure to test the hypothesis was similar to that of hypothesis 2. I did not find support for Hypothesis 3a or 3b. The results are on Tables 22 and 23.

Table 22

Calculative Trust Test between Close Friends and Business Associates

	Dependent variable	
	Calculative Trust	
Variable	*Model 1*	*Model 2*
Entrepreneur's age	.14	.14
Entrepreneur's gender	.06	.06
Years as an employee	-.01	-.01
Years as an entrepreneur	-.05	-.05
Venture type[a]	-	-
Close Friend		.02
R^2	.10	.10
ΔR^2	.10	-
F-statistic	.78	.71

Note. $n = 95$. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
$^*p \leq 0.05$; $^{**}p \leq 0.01$; $^{***}p \leq 0.001$.

Table 23

Calculative Trust Test between Close Friends and Licensed Professionals

	Dependent variable	
	Calculative Trust	
Variable	*Model 1*	*Model 2*
Entrepreneur's age	-.18	-.18
Entrepreneur's gender	.09	.09
Years as an employee	-	-
Years as an entrepreneur	.15	.15
Venture type[a]	-	-
Close Friend		-
R^2	.20	.20
ΔR^2	.20	-
F-statistic	1.75	1.60

Note. $n = 95$. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
$^*p \leq 0.05$; $^{**}p \leq 0.01$; $^{***}p \leq 0.001$

Hypothesis 4 stated that the entrepreneur's level of affective trust in an advisor would be negatively related to the use of NDAs with that advisor. This hypothesis was tested on a full sample size of 141 observations. I used logistic regression analysis on the full sample, entering entrepreneur age, entrepreneur gender, entrepreneur years as an employee, entrepreneur years as an entrepreneur, and the venture type in Model 1 and advisor type variables in Model 2. I entered Affective Trust in Model 3. Regression results did not indicate support for the predicted effects of affective trust on the use of NDAs (see Table 24).

Table 24

Affective Trust and Use of NDAs

	Dependent variable		
	Use of NDAs		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	2.71	2.89	2.95
Entrepreneur's gender	1.01	1.13	.86
Years as an employee	3.05	3.29	3.25
Years as an entrepreneur	.04	.04	.07
Venture type[a]	-	-	-
Close Friend		.86	.32
Business Advisor		1.00	1.39
Affective Trust			.52
-2 log likelihood*	123.73	119.97	119.46

Note: $N = 141$. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
$^{*}p \leq 0.05$; $^{**}p \leq 0.01$; $^{***}p \leq 0.001$

Hypothesis 5 stated that entrepreneurs were more likely to have (a) Business Associates sign NDAs than to have Close Friends sign them, and that (b) entrepreneurs were more likely to have Business Associates sign NDAs than to have Licensed Professionals sign them. I used logistic regression to test the two parts of Hypothesis 5. For Hypothesis 5a, I selected BA and CF sample ($n = 94$). For Hypothesis 5b, I selected

BA and LP sample (n = 95). Regression results did not show support for the predicted effects of advisor type on the use of NDAs. These results are shown in Tables 25 and 26.

Hypothesis 6 stated that knowledge sharing was positively associated with (a) affective trust and (b) calculative trust. To test hypothesis 6, entrepreneur age, entrepreneur gender, entrepreneur years as an employee, entrepreneur years as an entrepreneur, the venture type, and advisor types were used as control variables in Model 1. I entered BA and CF into Model 2 and Affective Trust and Calculative Trust for Model 3 (n = 143). Affective Trust significantly contributed to Knowledge Sharing while Calculative Trust was insignificant. The results are shown in Table 27.

Table 25

Close Friends, Business Associates, and Use of NDAs

	Dependent variable		
	Use of NDAs		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	1.87	1.94	2.01
Entrepreneur's gender	.05	.14	.05
Years as an employee	2.65	2.74	2.87
Years as an entrepreneur	.25	.21	.24
Venture type[a]	-	-	-
Affective Trust		5.21**	4.01**
Business Associate			2.19
*-2*log likelihood*	83.22	77.41	75.10

Note: n= 94. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Table 26

Business Associates, Licensed Professionals, and Use of NDAs

	Dependent variable		
	Use of NDAs		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	2.76	2.76	2.81
Entrepreneur's gender	2.24	2.17	1.95
Years as an employee	1.60	1.59	1.57
Years as an entrepreneur	.06	.06	.05
Venture type[a]	-	-	-
Affective Trust		.01	.30
Business Associate			1.37
*-2*log likelihood*	87.62	87.61	86.21

Note: n= 95. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Table 27

Affective Trust, Calculative Trust, and Knowledge Sharing

	Dependent variable		
	Knowledge Sharing		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	-.12	-.13	-.11
Entrepreneur's gender	.12	.13	.05
Years as an employee	.11	.12	.12
Years as an entrepreneur	.15	.16	.13
Venture type[a]	-	-	-
Close Friend		.28**	.04
Business Advisor		.47***	.29***
Affective Trust			.54***
Calculative Trust			-.04
R^2	.09	.26	.46
ΔR^2		.17	.20
F-statistic	1.04	3.19***	6.56***

Note: N= 143. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Hypothesis 7 stated that (a) entrepreneurs would share more knowledge with Business Associates than with Close Friends and that (b) entrepreneurs would share more knowledge with Business Associates than Licensed Professionals during the preoperational stage. I entered the demographic and venture type control variables for Model 1 (see Table 29). Then, I entered Affective trust and Calculative Trust as control variables for Model 2. I entered Knowledge Sharing in Model 3. To test Hypothesis 7a, I selected CF and BA sample with a size of 95 respondents. I selected BA and LP sample (n =96) for Hypothesis 7b. Hypothesis 7a was supported, indicating that entrepreneurs share more knowledge with Business Associates than with Close Friends ($\beta_{CLOSE\ FRIEND}$ = 0 < $\beta_{BUSINESS\ \text{ASSOCIATE}}$=.30). Hypothesis 7b was also supported, indicating that entrepreneurs share more knowledge with Business Associates than with Licensed Professionals ($\beta_{LICENSED\ PROFESSIONAL}$ = 0 < $\beta_{BUSINESS\ \text{ASSOCIATE}}$= .27). The results are shown in Tables 28 and 29.

Table 28

Business Associates, Close Friends, and Knowledge Sharing

	Dependent variable		
	Knowledge Sharing		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	.03	.01	-.01
Entrepreneur's gender	.17	.12	.11
Years as an employee	-.01	.02	.03
Years as an entrepreneur	.06	.06	.07
Venture type[a]	-	-	-
Calculative Trust		-.06	-.09
Affective Trust		.44***	.51***
Business Associate			.30**
R^2	.11	.26	.35
ΔR^2	.11	.16	.09
F-statistic	.82	2.05**	2.84***

Note: N= 95. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Table 29

Business Associates, Licensed Professionals, and Knowledge Sharing

	Dependent variable		
	Knowledge Sharing		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	-.24	-.20	-.21
Entrepreneur's gender	.07	-.03	-.01
Years as an employee	.11	.14	.14
Years as an entrepreneur	.22	.15	.17
Venture type[a]	-	-	-
Calculative Trust		-.10	-.04
Affective Trust		.75***	.61***
Business Associate			.27***
R^2	.06	.52	.58
ΔR^2	.06	.45	.06
F-statistic	.47	6.21***	7.26***

Note: N= 96[a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

The next section provides information when analyses were run on another set of data with respondents having all three advisor types.

Filtered Data Tests

I ran the same analysis using a filtered data set (that is, data made from only the entrepreneurs with three advisors). The results of the smaller sample confirm the results of the full sample and establish the stability of the results in addition to the qualitative results. The filtered sample results corroborate the results of the full sample. For hypothesis 1, I entered entrepreneur age, entrepreneur gender, entrepreneur years as an employee, entrepreneur years as an entrepreneur, and the venture type in Model 1. I put CF and BA in Model 2, while relationship length was put in Model 3. The R^2 for Model 1 was 8 percent while it was 28 percent for Model 2. In Model 3, the R^2 was 33 percent. Model 3 is significant with an F-statistic of 3.79 ($p < 0.001$). The relationship length's standardized regression coefficient, β, was significant ($\beta = .31$, $p < .05$). The results are shown in Table 30.

Table 30

Relationship Length and Affective Trust

	Dependent variable		
	Affective Trust		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	-.06	-.05	-.10
Entrepreneur's gender	.19	.19	.10
Years as an employee	.04	.03	.03
Years as an entrepreneur	.11	.10	.03
Venture type[a]	-	-	-
Close Friend		.50***	.32**
Business Advisor		.37***	.36***
Relationship Length			.31**
R^2	.08	.28	.33
ΔR^2	.08	.20	.05
F-statistic	.87	3.24***	3.79***

Note: N= 123. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Hypothesis 2 stated that entrepreneurs would report higher levels of trust in Close Friends than in either Business Associates (H2a) or Licensed Professionals (H2b). The sample size was 84 for the two tests. I put entrepreneur age, entrepreneur gender, entrepreneur years as an employee, entrepreneur years as an entrepreneur, and the venture type in Model 1. CF was put in Model 2.The results are on Tables 31 and 32.

Table 31

Affective Trust Test between Close Friends and Business Associates

Variable	Dependent variable Affective Trust	
	Model 1	*Model 2*
Entrepreneur's age	.07	.07
Entrepreneur's gender	.18	.18
Years as an employee	.01	.01
Years as an entrepreneur	-.03	-.03
Venture type[a]	-	-
Close Friend		.16
R^2	.08	.10
ΔR^2	.08	.03
F-statistic	.55	.68

Note: N= 84. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.

Table 32

Affective Trust between Close Friends and Licensed Professionals

	Dependent variable	
	Affective Trust	
Variable	*Model 1*	*Model 2*
Entrepreneur's age	-.14	-.14
Entrepreneur's gender	.26	.26
Years as an employee	.09	.09
Years as an entrepreneur	.18	.18
Venture type[a]	-	-
Close Friend		.46***
R^2	.14	.31
ΔR^2	.14	.21
F-statistic	1.05	3.15***

Note: N= 84. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.

Hypothesis 3 stated that entrepreneurs would express higher levels of calculative trust in Business Associates than in Close Friends and higher levels in Licensed Professionals than in Close Friends. The sample size was 84 observations for the two hypotheses tests. No statistical differences were found in the levels of calculative trust in advisor types. The results are on Table 33 and 34.

Hypothesis 4 stated the entrepreneur's level of affective trust in an advisor is negatively related to the use of NDAs with that advisor and was tested on a sample size of 125. I put entrepreneur age, entrepreneur gender, entrepreneur years as an employee, entrepreneur years as an entrepreneur, and the venture type in Model 1 and dummy coded advisor type variables in Model 2. I put Affective Trust in Model 3. No statistical significant results were found, see Table 35.

Table 33

Calculative Trust between Close Friends and Business Associates

	Dependent variable	
	Calculative Trust	
Variable	*Model 1*	*Model 2*
Entrepreneur's age	.15	.15
Entrepreneur's gender	.15	.15
Years as an employee	.08	.08
Years as an entrepreneur	.04	.04
Venture type[a]	-	-
Close Friend		.01
R^2	.12	.12
ΔR^2	.12	-
F-statistic	.89	.80

Note: N= 84. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Table 34

*Calculative Trust between Close Friends and Licensed Prof*essionals

Variable	Dependent variable Calculative Trust *Model 1*	 *Model 2*
Entrepreneur's age	-.19	-.19
Entrepreneur's gender	.16	.16
Years as an employee	.06	.06
Years as an entrepreneur	.21	.21
Venture type[a]	-	-
Close Friend		-.02
R^2	.22	.22
ΔR^2	.22	-
F-statistic	1.80	1.63

Note: N= 84. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Table 35

Affective Trust and Use of NDAs

	Dependent variable		
	Use of NDAs		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	3.45	3.59	3.91
Entrepreneur's gender	2.88	3.02	2.54
Years as an employee	2.23	2.32	2.54
Years as an entrepreneur	.06	.06	.02
Venture type[a]	-	-	-
Close Friend		.39	.01
Business Advisor		1.88	2.76
Affective Trust			1.43
-2 log likelihood*	109.38	105.11	103.68

Note: N= 125. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Hypothesis 5 stated that (a) entrepreneurs were more likely to have Business Associates sign NDAs than to have Close Friends sign them and that (b) entrepreneurs were more likely to have Business Associates sign NDAs than to have Licensed Professionals sign them. The models were created using demographic and venture type variables for Model 1. Affective Trust was used as the control variable for Model 2. For Hypothesis 5a, I chose CF and BA sample (n = 83) and for Hypothesis 5b, BA and LP

sample (n = 84) respectively. These results are shown in Tables 36 and 37. I did not find support for hypothesis 5b.

Hypothesis 6 stated that knowledge sharing would be positively associated with (a) affective trust and (b) calculative trust. The sample size was 126. Entrepreneur age, entrepreneur gender, entrepreneur years as an employee, entrepreneur years as an entrepreneur, the venture type and advisor types were used as control variables in Model 1. I put in advisor variables in Model 2 and trust variables in Model 3. Table 38 has the results

Table 36

Close Friends, Business Associates, and Use of NDAs

	Dependent variable		
	Use of NDAs		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	2.66	3.13	3.11
Entrepreneur's gender	.36	-	.02
Years as an employee	2.12	2.71	2.67
Years as an entrepreneur	.07	.16	.15
Venture type[a]	-	-	-
Affective Trust		5.16*	3.86*
Business Associate			2.21
*-2*log likelihood*	77.36	71.63	69.31

Note: N= 83. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Table 37

Business Associates, Licensed Professionals, and Use of NDAs

	Dependent variable		
	Use of NDAs		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	3.29	3.38	3.59
Entrepreneur's gender	4.65*	4.45*	4.39*
Years as an employee	.96	.98	1.05
Years as an entrepreneur	.62	.55	.54
Venture type[a]	-	-	-
Affective Trust		.26	1.29
Business Associate			2.92
*-2*log likelihood*	74.31	74.05	70.92

Note: N= 84. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$.

Table 38

Affective Trust, Calculative Trust, and Knowledge Sharing

	Dependent variable		
	Knowledge Sharing		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	-.18	-.18	-.13
Entrepreneur's gender	.06	.06	-.05
Years as an employee	.16	.16	.13
Years as an entrepreneur	.19	.19	.12
Venture type[a]	-	-	-
Close Friend		.31**	.05
Business Advisor		.48***	.26**
Affective Trust			.55***
Calculative Trust			-.02
R^2	.08	.24	.46
ΔR^2		.16	.22
F-statistic	.94	2.71**	6.27***

Note: N= 126. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Hypothesis 7 stated entrepreneurs would share more knowledge with Business Associates than with Close Friends and that (b) entrepreneurs would share more knowledge with Business Associates than Licensed Professionals during the preoperational stage. Affective trust and Calculative Trust were control variables for

Hypothesis 7 tests. I selected CF and BA sample for Hypothesis 7a test and LP and BA sample for Hypothesis 7b sample. Knowledge sharing was the dependent variable. The sample size was 84 for both sample sets. Both tests were supported. Tables 39 and 40 show the results. The results are also corroborated using models where multiple independent variables explain a dependent variable as shown in Appendix C.

Summary- Quantitative Analyses

Affective Trust items were made of all five affective trust items. After exhaustive scale purification procedures and validity checks, I developed the Calculative Trust construct using CAL1 to CAL6 items. I developed the Knowledge Sharing construct using KSG2 to KSG7 items.

Hypotheses were tested using regressions. To control for method biases, I entered entrepreneur demographic and venture type variables in Model 1. I entered other variables from the model that could influence results but not in relationship being tested in Model 2. I then entered independent variables of relationships being tested in Model 3. I found support for two out of six hypotheses and partial support for Hypothesis 2 and 6. I used a smaller sample of entrepreneurs having all three advisor types that confirmed the results. Table 41 provides a summary report of hypotheses testing results.

Table 39

Business Associates, Close Friends, and Knowledge Sharing

	Dependent variable		
	Knowledge Sharing		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	-.01	-.04	-.04
Entrepreneur's gender	.06	-.03	-.03
Years as an employee	.03	.03	.03
Years as an entrepreneur	.06	.07	.07
Venture type[a]	-	-	-
Calculative Trust		-.01	-.04
Affective Trust		.51***	.57***
Business Advisor			.26**
R^2	.08	.32	.38
ΔR^2	.08	.24	.07
F-statistic	.58	2.51**	3.06***

Note: N= 84. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Table 40

Business Associates, Licensed Professionals, and Knowledge Sharing

	Dependent variable		
	Knowledge Sharing		
Variable	*Model 1*	*Model 2*	*Model 3*
Entrepreneur's age	-.31	-.21	-.22
Entrepreneur's gender	.07	-.03	-.09
Years as an employee	.21	.17	.18
Years as an entrepreneur	.29	.18	.19
Venture type[a]	-	-	-
Calculative Trust		-.09	-.04
Affective Trust		.69***	.57***
Business Advisor			.25**
R^2	.09	.48	.54
ΔR^2	.09	.40	.05
F-statistic	.65	5.06***	5.72***

Note: N= 84. [a]The venture type term was represented by a set of dummy variables, all with their own parameters and associated t-values.
*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Table 41

Summary of Hypothesis Tests

Hypothesis	Results Full sample	Results Filtered sample
Hypothesis 1: The length of the relationship between an entrepreneur and an advisor is positively related to the level of affective trust that the entrepreneur has for that advisor.	Supported	Supported
Hypothesis 2a. Entrepreneurs will express higher levels of affective trust in Close Friends than in Business Associates.	Not Supported	Not Supported
Hypothesis 2b. Entrepreneurs will express higher levels of affective trust in Close Friends than in Licensed Professionals.	Supported	Supported
Hypothesis 3a. Entrepreneurs will express higher levels of calculative trust in Business Associates than in Close Friends during the preoperational stage.	Not supported	Not supported
Hypothesis 3b. Entrepreneurs will express higher levels of calculative trust in Licensed Professionals than in Close Friends during the preoperational stage.	Not supported	Not supported
Hypothesis 4: The entrepreneur's level of affective trust in an advisor is negatively related to the use of NDAs with that advisor.	Not supported	Not supported
Hypothesis 5a: Entrepreneurs are more likely to have Business Associates sign NDAs than to have Close Friends sign them.	Not Supported	Not Supported
Hypothesis 5b: Entrepreneurs are more likely to have Business Associates sign NDAs than to have Licensed Professionals sign them.	Not Supported	Not Supported

Hypothesis 6: Knowledge sharing is positively associated with (a) affective trust and (b) calculative trust.	Supported Not Supported	Supported Not Supported
Hypothesis 7a: Entrepreneurs will share more knowledge with Business Associates than with Close Friends during the preoperational stage.	Supported	Supported
Hypothesis 7b: Entrepreneurs will share more knowledge with Business Associates than Licensed Professionals during the preoperational stage.	Supported	Supported

Qualitative Analysis

I present the results for the qualitative tests of the hypothesis and the research questions. My interviews with 52 entrepreneurs provided the data on which I then did content analysis. How I developed the codes, did the coding, and evaluated validity of coding was reported in Chapter Three. The questions are shown in Appendix B. The qualitative tests are in two parts: hypothesis testing and research questions.

I derived the codes from the interview texts, that is, finding a word or phrase that could cogently describe the essence of the statement. Some of these codes were "Competence", "Reciprocity", "Limited personal interaction", and "Familiarity." Some of the codes have theoretical references such as "Selective Knowledge Sharing" which was based on Arundel's (2001) work. Examples of other such codes are as shown in the Table 42.

Table 42

Codes and Theoretical References

Code	Theoretical reference
Admiration/Respect, Competence, Familiarity, Repeated joint projects Repeated personal interactions, Sounding board	McAllister (1995)
Loyalty, Reciprocity, Repeated joint projects, Repeated personal interactions, Sounding board	Pesamaa & Hair (2007)
Selective knowledge sharing,	Arundel (2001)

Other codes were created directly from entrepreneurs' responses. Examples of such codes are "I trust advisor." Some other codes were created from taking words from the interview such as "Straddle" to code affirmative responses to the question, "Did you continue working in a paid position while you were starting that first venture?"

I first drew up an exhaustive list of codes from theory and reading through the interview texts with codes such as "Advisor discretion," "Advisor makes significant contribution," "face-to face communication," and "I know my family." The second coder and I initially coded three interviews and compared our codings. Based on our meetings and our codings, we deleted and edited some codes. Some of the codes that we decided to delete because these codes duplicated codes were "Advisor discretion," "Advisor makes significant contribution," "face-to face communication," and "I know my family." Some codes were reedited such that "Business information/advice" became "Business skills," "Developing business strategy" became "Business strategy." "Respect" and "Admiration" were combined into a single code, "Respect and or Admiration." The second coder and I clarified definitions of codes such as "Knowledge sharing" and "Sounding board." We decided to code examples of entrepreneur and advisor exchanging

advice and descriptions of consultations as Advisor helps me or Knowledge Sharing or Sounding board.

The final list of codes is presented below:

- About as successful
- Admiration or Respect
- Advanced electronic security
- Advisor helps me or Knowledge sharing or Sounding board
- Advice not have
- Broad background: has worked in more than one industry
- Business skills
- Business strategy
- Changes made
- Character
- Competence
- Complementary skills
- Concerned
- Contribution-insignificant
- Contribution-moderate
- Contribution-significant
- Coworker helpful
- Coworker not helpful
- Delayed
- Difficult relationship
- Easy relationship
- Education not useful
- Education useful
- Electronic security
- Experienced advisor
- Familiarity
- First joint project
- First-time entrepreneur
- I trust advisor: use when respondent explicitly says so.
- Institutional security
- Integrity
- Knowledge sharing/Knowledge sharing/Sounding board
- Less successful
- Limited personal interaction
- Loyalty
- More successful
- More successful
- Narrow background- has worked in only one industry
- Not completely trust advisor
- NDA not useful
- NDA- somewhat useful

- NDA useful
- NDA-marginally useful
- Neither sped up or delayed
- No changes made
- Non-technical background- no experience in the technological sector
- Not concerned
- Not paid
- Not straddle
- Not vulnerable
- Outside help not useful
- Outside help useful
- Paid
- Physical security
- Positive experiences: I had a nice time, enjoyed meeting with advisor, felt good about relationship
- Reciprocity: helped me with a project I was working on and I also advise him or her projects
- Recommended: Advisor was recommended by my mum or I used the yellow pages.
- Repeated joint projects
- Repeated personal interactions
- Reputation
- Respect/Admiration
- Selective knowledge sharing: Entrepreneur suggests he doesn't share everything with advisors
- Serial entrepreneur
- Shared understanding
- Shared values
- Sounding board
- Sped up
- Straddle
- Strictly business
- Technical background- entrepreneur has worked in a technical firm or in the technology sector
- Use NDAs-BA & LP
- Use NDAs-Bus. Associates
- Use NDAs-Licensed Professional
- Vulnerable

I did iterative tabulation of evidence for each code and looked for replication across cases as advised by Eisenhardt (1989). I searched for the evidence of "why" behind relationships to build internal validity. If I found anything that compared with literature, I noted evidence of generalizability of that theory. I reached theoretical closure

with the coding when I could not find significant additions to codes and illustrative quotes.

Data coding also followed guidelines provided by Rubin and Rubin (2005). First, I looked for codes based on theory and then combined familiar codes. Then, I looked for illustrative quotes to categorize under these codes. The process of finding illustrative texts to validate a point is akin to hypothesis testing research. The illustrative texts provide "convincing grounding in the evidence," (Eisenhardt, 1999:532). I provide examples of codes and illustrative texts in Table 43. Appendix D has the codes and the frequencies they appeared in the data.

Table 43

Codes and Illustrations

Code *(n)*	Illustration
Advice not have *(32)*	B- Thinking back, was there any kind of information or advice that you needed that you did not have? E12- Yeah…the advice that I did not which very few people had was that we were launching our business into an unsustainable bubble economy and we could have used some better understandings of economics…
Advisor helps me or Knowledge sharing or Sounding board *(77)*	B – How much do you think this advisor contributed to developing your venture idea? E59- I think he was a good sounding board, let me put it this way. So, good sounding board, definitely helped me.
Ask not discuss *(65)*	B – Did you specifically ask your advisor NOT to discuss your high-tech venture with other people? E42 –Absolutely. I asked him not to discuss it, of course.
Business skills *(96)*	B – Would you say that you depend on this person more because of his business skills or because of your familiarity with him? E59 – Business skills.
Business strategy *(62)*	We strategized about every aspect of the business from employee relations to profit and loss.
Character *(31)*	B - Is there anything about this advisor or your relationship with him that makes him especially trustworthy? Please explain. E1 - Yes. His actions, not just his words, in 25 years of knowing him I can watch what people do and not what they say, over time and what he does is always the right thing and… that's why I trust him.

Competence *(33)*	I would say her professional expertise mattered quite a bit
Complementary skills *(50)*	I have to use these experts. And that's what I used him for. His expertise [is] in a whole different area. I didn't know anything about toys. He did. I didn't know anything about retail. He was an expert in retail and been in it his entire career and he'd probably been in it 22 or 23 years at that time. It's an area that I didn't want to know about and he just showed me, all the ropes, all the right people, all the right avenues to go down.
Contribution-insignificant *(50)*	B – How much do you think this advisor contributed to developing your venture idea? E50 – None at all.
Contribution-moderate *(12)*	B – How much do you think this advisor contributed to developing your venture idea? E59-I won't call it insignificant or significant but moderate….
Contribution-significant *(44)*	B - How much do you think this advisor contributed to developing your venture idea? E2 - A lot
Concerned *(32)*	B - Were you concerned that someone else would get to the market with the concept that you had for the venture more quickly than you did? E3 - Concerned yeah, absolutely.
Coworker not helpful *(11)*	Have any of your previous coworkers advised you when you were planning a new venture? E59 – Coworkers at that time…actually, no, it was no, my brother and my other partner was my cousin.
Difficult Relationship *(30)*	So, he's a subject matter expert and in our technology. I think you know what made it slightly difficult was the fact that he's remote. That

	obviously adds a layer of complexity. Also, because he's super smart in the topic, that can be quite difficult as well as he gets a little frustrated [if] we are not doing things the way he thinks they should be done.
Education not useful *(14)*	B - How has your education helped prepare you for the work you do now or for the jobs that you have had? E59 – It didn't prepare me much.
Familiarity *(93)*	B - Would you say that you depend on this person more because of his business skills or because of your familiarity with him? E59 – I'll say mostly, my familiarity with him. You know you can trust someone because you've known them for many years.
Integrity *(87)*	B - Is there anything about this advisor or your relationship with him that makes him especially trustworthy or untrustworthy? E59 - Trustworthy. Straight shooter since I have known him for, now, 30 years. He was pretty straightforward. So trustworthy.
NDA_not useful *(112)*	B- Did you ask this advisor to sign an NDA? E50- No. Because it was more of friendly context.
Not vulnerable *(13)*	B - Some ventures are particularly vulnerable to being jeopardized if competitors learn about technical, financial, or other aspects of the business plan. Were there any aspects of this particular venture that were sensitive to theft or imitation by competitors? E1 - I didn't think that there was.
Outside help useful *(14)*	B - Are you still in touch with people outside of your company such as suppliers, distributors, or lenders who you met while you worked for another employer?

	E50 – yes. Well, some of them are now my clients. So, I maintain good relationships with people I work with at my old employment and they are clients of mine. Yes, some of the suppliers and distributors as well, I still work with even today but with different contact people but the same contact companies but started with the same contact people.
Repeated personal interactions *(87)*	B- Apart from your business related discussions, what sorts of things do you do together? Golfing, travelling, drinks, coffee, E50- We would go out, me and my girlfriend. Her and her husband. We would go out socially, hang out. Dinners, movies, parties. Birthdays.
Reciprocity *(25)*	B- Do you ever help one another on business or personal issues apart from when you were working together on a specific venture? E50- Yes. She was actually going through a divorce. So I kind of gave her some insight and feedback. I gave her some insight there. She's still in the business there in New York even till this day, I gave her advice on what she's doing in business and she'll give me advice on what's going on in the market and so on.
Technical background *(29)*	B - In what industries have you worked? E59 - I worked in government, healthcare, and in all the technology sectors.

I next present qualitative analysis results that validate the hypotheses and answer the research questions.

Hypothesis testing. I present the results of the content analyses in the next subsections.

Relationship length and affective trust. Hypothesis 1 stated that the length of the relationship between an entrepreneur and an advisor would be positively related to the level of affective trust that the entrepreneur has for that advisor.

To test this hypothesis qualitatively, I used codes "Repeated personal interactions," "Repeated joint projects," "Shared values," "Shared understanding," "Familiarity," "Sounding board," "Positive experiences," "Loyalty," "Reciprocity," "Admiration or respect," and "I trust advisor" to find evidence of affective trust. I then looked at the relationship length between entrepreneurs and advisors. The evidence of affective trust in advisors can be found in entrepreneurs' descriptions of fulfilled obligations and expectations, instances of supportive acts and reciprocity, and evident admiration for advisors. Prior relationships with histories of reciprocity and patterns of fulfilled mutual obligations often lead to loyalty, friendship, and commitment between partners (Coleman, 1990; Pesämaa & Hair, 2007). These attributes engender affective trust between partners (McAllister, 1995). The following is a script of an interview of an entrepreneur who had started an Internet marketing firm describing his relationship with an advisor. I also present the codes evident in the data.

Conversation	Code
B – How long have you known this person?	
E –One of them I know from high school…40 years…	Relationship length

B - Can you tell me a little bit about how your relationship with this person developed? What kinds of things you've done together…	
E- We get to know each other in high school and…we play sports, I mean we are very close friends, social , everything…	Familiarity, Repeated personal interactions
B – Ok. Do you ever help one another out on either business or personal matters apart from the times when you are working together on a specific venture?	
E9 – It's more like exchange of ideas, opinions...he's like my sounding board…he tends to see different angle of things…and he likes to be sounding board….	Sounding board
B – Were you ever concerned that this advisor might take advantage of you in some way?	
E- No.	
B - Is there anything about this advisor or your relationship with him that makes him especially trustworthy?	
E- We grew up, we share a lot of good times and bad times…	Positive experience

I also used relevant sections of the interviews to find support for the relationship between relationship length and affective trust. The interview excerpt shown above for example indicated that the entrepreneur was not concerned that this advisor would take advantage of him in some way. This trust in the advisor is related to their shared history of experiences as the entrepreneur said, "We share a lot of good times and bad times." Another conversation with an entrepreneur who was in the process of starting a mobile communications venture went thus:

B – How long have you known this person?	
E – 15 years.	Relationship length
B- Can you tell me a little bit about how your relationship with this person developed? Like what kind of things have you done in the past?	
E- We've golfed together. We've had dinners, and happy hour and shared social time.	Familiarity, Positive Experience, Repeated personal interactions

B- Do you ever help one another out apart from when you are working on a specific venture?	
E14- Yes. He had questions to me on various investments that he was making that were based on technology and wanted to understand my opinion on where the technology fit within the global economy and the scale of ideas.	Sounding board
B – Were you ever concerned that this advisor might take advantage of you in some way?	
E- I suppose in the early days, you are always concerned that if you didn't know someone since childhood and really know them throughout their life, that you are a little more careful, but time has proven that that's not; he's genuine and that's not his intent and neither is mine; however early on, probably a little more cautious.	Concerned, Character,
B - Is there anything about this advisor or your relationship with him that makes him especially trustworthy?	
E14 – Time. Good advice over a long period of time. Again, a proven track record.	Positive experience, Repeated personal interactions

The underlying attributes of these relationships, as evidenced in the texts, were loyalty and reciprocity in the entrepreneur-advisor relationships. Eighty percent of the time, entrepreneurs responded that they were not concerned that advisors would take advantage of them (Coded No = 114; Yes= 29; *n*=143). See Appendix E for more coding frequencies to the open-ended questions. An advisor that had shown interest, over time, in an entrepreneur's well being and had proven to be reliable, sincere, and genuinely concerned about the entrepreneur's progress gained the entrepreneur's affection. These advisors were sounding boards for entrepreneurs. The entrepreneur developed admiration and respect for the advisor. An entrepreneur that had started a software development said of his advisor that he had know for 30 years,

> … having the opportunity to observe my mother in business as a businesswoman, seeing that she carried her affairs with a certain rectitude and propriety that made it possible for me to trust her even more…

Another entrepreneur who had started a high-tech toy company said of his advisor whom he had know for 40 years,

> Not only was he my father, I saw so many people trust this man and his abilities and capabilities.

An entrepreneur who had started a software company said of an advisor he had known for 25 years,

> Yes. His actions, not just his words, in 25 years of knowing him I can watch what people do and not what they say, over time and what he does is always the right thing and um so that's why I trust him.

The pattern that emerged and was supported was that the entrepreneur consulted the advisor because of a history of repeated positive experiences. In a situation where the positive experience was not repeated, caution arose on the part of the entrepreneur. For example, an entrepreneur described being careful with an advisor he had known for 30 years because of a misunderstanding. When I asked him whether he was concerned that this person may take advantage of him, he responded,

> Towards the end, not in the beginning. Towards the end. Because of the fact that he gave us good advice and he was helping us but he expected a certain percentage in the company without any investment and that wasn't clear from the beginning.

Concerns crept into the relationships when expectations were unfulfilled or an entrepreneur experienced betrayal. However, eighty percent of the time, entrepreneurs did not report any concern of being taken advantage. The dominant pattern that emerged was that over time, an entrepreneur became more comfortable with an advisor and developed affection for the advisor. Even those who reported disappointments described earlier respect and admiration for and positive experiences with these advisors.

The positive experiences engender affection and admiration, which lead to affective trust. Affective trust is trust based on emotional bonding between parties. The

qualitative results from majority of the respondents supported the hypothesis that the length of the relationship between an entrepreneur and an advisor positively related to the level of affective trust the entrepreneur had for that advisor. Based on qualitative evidence, hypothesis 1 was supported (Chi-square, $\chi 2 = 41.73$ $p = .04$). Appendix F has the chi-square outputs.

Advisor type and affective trust. Hypothesis 2 states affective trust varies with advisor type. Specifically, entrepreneurs will express higher levels of affective trust in Close Friends than in either (a) Business Associates or (b) Licensed Professionals.

This hypothesis analyzes the affective trust across advisor types. Affective trust, by definition, develops from mutual understanding and close personal relationships. Relationships extending into personal situations have higher likelihood of developing affective trust between parties (McAllister, 1995). On the contrary, relationships limited to strictly business issues portend limited levels of affective trust between parties.

We can expect loyalty and friendship attributes in relationships with Close Friends. These attributes may be found in relationships with Business Associates but are expected to be rare with Licensed Professionals. The entrepreneur may not even relate with Business Associates and Licensed Professionals outside of venture activities, reducing the likelihood of developing affective trust in them (cf., Chua et al., 2008; Pesämaa & Hair, 2007). Table 44 illustrates the type of relationships entrepreneurs had with their advisors, provide an insightful look at the nature of entrepreneur-advisor relationships, and inherently the implications for affective trust.

Table 44

Entrepreneur Responses to Question tapping into Affective Trust

Question	***Close friend***	***Business associate***	***Licensed professional***
Apart from your business-related discussions, what sorts of things do you and this advisor do together? Like golfing, travelling, drinks, coffee?	[4] Yeah, eventually we got married. 10 years, we got married. And she remains my closest advisor.	Just meetings. There was no friendship type of things. It was just sort of strictly business.	Nothing beyond the occasional business lunch.
	[22] Yeah, we grew up [together], golfing, trekking…	Yeah, golfing…we go out for drinks…	We go to church together…
	[53] She tends to help me. She helps me because I ask her. Recently, I got a chance to help her. I felt very good to reciprocate… hopefully I can reciprocate more.	Drinks and coffee. Talking more than anything. Occasional good dinner. Not too much outside of that.	Absolutely. He wanted full security installations in his office, and I had my technicians go and take care of that. And a variety of other things like that.
	[10] It's more like exchange of ideas, opinions...he's like my sounding board…he tends to see different angle of things…and he likes to be sounding board….	Very little. We visit each other a few times, but we keep it more at a professional level…	Like we socially visit each other. Maybe once a year…
	[12]Absolutely. I'll pick up her dry cleaning, she'll pick up my drycleaning…that sort of thing…	We've met for dinner a few times, drinks,	I see him around at various events…
Summary	Many personal relationships leading to affective trust	Some personal relationships. More business meetings than personal relationships.	Strictly business relationships with little or no personal relationships.

From entrepreneurs' responses, I found close bonds with certain types of advisors that were not evident with other advisor types. The excerpts in Table 44 are some

entrepreneurs' responses to the question for each advisor type, "Apart from your business-related discussions, what sorts of things do you and this advisor do together? Like golfing, traveling, drinks, coffee?" The responses reveal personal relationships with close friends that were as apparent with the other advisor types.

I also analyzed the question, "Would you say that you depend on this person more because of his or her business skills or because of your familiarity with him or her?" to find the dominant trust driving their decisions. 55 percent of entrepreneurs (26 out of 47 Close Friends) acknowledged they confided in their Close Friends because of familiarity, while 15 percent said they confided in their Business Associates for the same reason (seven out of 48 Business Associates) ($\chi 2 = 16.03$, $p < .05$). The affective component in the relationship with Business Associates was not evident in their responses to this question. Ten percent said they confided in Licensed Professionals because of familiarity with these advisors (five out of 48 Licensed Professionals; $\chi 2 = 23.31$; $p < .05$) (see Appendix F for chi-square outputs).

Combining and analyzing their responses to the questions, "Apart from your business-related discussions, what sorts of things do you and this advisor do together? Like golfing, traveling, drinks, coffee?" "Would you say that you depend on this person more because of his or her business skills or because of your familiarity with him or her?" and drawing inferences from other relevant sections of the interviews, I found that entrepreneurs expressed higher levels of affective trust in Close Friends than in Business Associates or Licensed Professionals. Hypothesis 2 was supported.

Advisor type and calculative trust. Hypothesis 3 states calculative trust varies with advisor type. Specifically, entrepreneurs will express lower levels of calculative trust in Close Friends than in either (a) Business Associates or (b) Licensed Professionals. To find evidence of calculative trust, I coded answers for "Would you say that you depend on this person more because of his or her business skills or because of your familiarity with him or her?" Responses that indicated business skills were coded as "Business skills." These responses implied calculative trust as the basis of trust. Entrepreneurs' responses of familiarity were coded as "Familiarity." The "Familiarity" responses suggested affective trust as basis of trust in advisors. Table 45 shows some entrepreneurs' responses to the question.

As illustrated in the table, some entrepreneurs argued that it was really the balance of familiarity and business skills that attracted them to their advisors. They emphasized that without the assurance of competence or evidence of high levels of business skills, they might not have confided even in their Close Friends. Thus, they underscored the significance of calculative trust even in Close Friends. Others, though acknowledging the significance of competence and thus calculative trust in their advisors, underscored the importance of familiarity and emotional closeness to their advisors in choosing them as advisors.

Table 45

Entrepreneur Responses to Question tapping into Calculative Trust

Question	***Close friend***	***Business associate***	***Licensed professional***
Would you say that you depend on this person more because of his or her business skills or because of your familiarity with him or her?	I'd say it's probably both because if she hadn't had the business skills, we might have been close but not necessarily on business matters. I'd say more because of the business skills. She's very skilled, technically, she's more educated than I am and she's had great common sense and a lot of business experience [4]	E4 – Business skills.	Business skills. I have no other relationship with him other than strictly business advisory role, he looks at information, he looks at a case, he gives advice on what to do. I take that advice and act on it. [4]
	Probably, familiarity [22]	Business skills. He was an accountant. He built a business. He had the business experience that I was lacking.	Business skills.
	It's really the balance. If she didn't have the business skills, I don't think we will be engaged in any of the conversations that we do because I don't engage anyone else including my father in any of those conversations. [53]	Business skills. We were looking for a specific mechanic or specific technique on how to build a team, multiple managers and how to effectively grow and scale the organization effectively and we knew he had come from that background.	Because of my familiarity with him. His personality style and his dynamics and his aggressiveness are a valuable asset to us dealing with a lot of things that come up.
	I would say her professional expertise mattered quite a bit then…[12]	Business skills. I expect him to know things that I don't.	E12 –Business skills. I mean, he obviously has the expertise needed to draft the contracts that we needed to execute our financing agreements and such.

Question	*Close friend*	*Business associate*	*Licensed professional*
Would you say that you depend on this person more because of his or her business skills or because of your familiarity with him or her? Please explain.	Familiarity. My answer will have to do with the fact that I I'm really kind of trustworthy and I depend on trust.[8]	I would say sort of both. I was very fortunate to find somebody that I respected their business acumen and also respected their personal integrity and who they are.	With him, I would say, in the context of the venture, I would say, business…he has a very good feel for business.[8]
	Both. She was in the business I was in and so she kind of understood the concept and I knew that she would definitely get it. But that's not to say, the friendship side. Because on the friendship side, she knew me well enough to say you are ready to go on your own, you are ready to do this, you are young enough, you are single at the time, you can move, the encouragement there was also very helpful. You get that? [45]	Because of his business skills. His business skills were just fabulous. Paramount. [45]	His business skills. [45]
Summary	All advisor types expected to be skilled, capable, and reliable and contribute constructively to venture idea development.		

From the responses, I did not find qualitative evidence that entrepreneurs will express higher levels of calculative trust in Business Associates than in Close Friends. Entrepreneurs expected a high level of competence and expertise from their Close Friends. Twenty-six percent acknowledged they confided in their Close Friends because of business skills (12 out of 47 Close Friends) while 67 percent (32 out of 48 Business

Associates) said they confided in Business Associates for the same reason ($\chi 2 = 16.45$; $p < .05$, Table F4). 77 percent (37 out of 48 Licensed Professional) said they confided in Licensed Professionals because of business skills ($\chi 2 = 23.75$; $p < .05$). Appendix E has the details of the coding. Hypothesis 3 was not validated.

Affective trust and the use of NDAs. Hypothesis 4 states the entrepreneur's level of affective trust in an advisor is negatively related to the use of NDAs with that advisor.

The explanation is that with high levels of affective trust between parties, the entrepreneur is less inclined to ask for an NDA. Asking for an NDA may signal low level of trust in the advisor, which may impede knowledge sharing. An entrepreneur who had a software company confirms this theory when he said, "With advisors, I don't use NDAs. Because if I am going to seek their advice, I want to be sure that I can trust them… Plus, I am seeking their advice, why would they sign it?"

Moreover, high level of affection for the other party increases the willingness to be vulnerable to that party (Goel & Sarri, 2006). By not asking for an NDA, the entrepreneur signals high levels of trust in the advisor based on shared understandings and values.

I provide excerpts of conversations that indicate two levels of affective trust. I start with illustrations of relationships indicating a high level of affective trust. Then, I provide illustrations of relationships indicative of low levels of affective trust. The entrepreneurs' attitudes to the use of NDAs are then analyzed from the texts. The following is an excerpt of a conversation with an entrepreneur who had reported high levels of affective trust in an advisor:

> *B - Can you tell me a little bit about how your relationship with this person developed? What kinds of things you've done together…*

E22- The first actual business I actually started on my own was…I was still at school. I did a training course to provide an agricultural service. And so I actually started that and worked with this person. I actually hired him. He was my first employee. This was just summertime in school. So, I guess I worked with him on business from that standpoint. It's truly just been a friendship.

B- Did you ask this advisor to sign an NDA?

E22- No. I trust him.

Following is an excerpt of a conversation with an entrepreneur that did not indicate high levels of affective trust in advisors for example, see below:

B – Apart from your business relationships, what sorts of things do you and this advisor do together. Golfing, drinking, travelling, coffee?

E48- Nothing beyond the occasional business lunch.

B- Did you ask your advisor to sign an NDA?

E48- No.

Table 46 shows the pattern that emerges from entrepreneurs' responses. The first column describes evidence of affective trust and the second column presents the entrepreneurs' responses. Based on their responses, the use of NDAs was not significantly related with the levels of trust in advisors. Hypothesis 4 was not supported ($\chi 2 = 7.26$; $p < .01$).

Table 46

Affective Trust and Use of NDAs

Evidence of high affective trust	Entrepreneur's use of NDA with advisors
B - Is there anything about this advisor or your relationship with him/her that makes her especially trustworthy? . E10- We grew up, we share a lot of good times and bad times…	*B- So, did you ask this advisor to sign an NDA?* E10- No, because our love is stronger than NDA.
B- Apart from your business related discussions, what sorts of things do you do together? Golfing, travelling, drinks, coffee, E45- We would go out, myself and my girlfriend. Her and her husband. We would go out socially, hang out. Dinners, movies, parties. Birthdays.	*B- Did you ask this advisor to sign an NDA?* E45- No. because it was more of friendly context.
B – How long have you known this person? E22 – About 40 years…wish it was less… *B - Can you tell me a little bit about how your relationship with this person developed? What kinds of things you've done together…* E22- The first actual business I actually started on my own was. I did a training course to provide an agricultural service. And so I actually started that and worked with this person. I actually hired him. He was my first employee. This was just summertime in school. So, I guess I worked with him on business from that standpoint. But I have never actually been in a formal business relationship where we created a corporation and work together. It's truly just been a friendship.	*B- Did you ask this advisor to sign an NDA?* E22- No. I trust him.

B - How long have you known this person? E1 - 25 years. *B - Apart from your business-related discussions, what sorts of things do you and this advisor do together?* E1 – We've done much travelling, boating..all kinds of social events, trade shows, *B- Were you ever concerned that this advisor might take advantage of you in some way?* E1- Never.	*B - Did you ask this advisor to sign an NDA?* E1 - No.

Evidence of low affective trust	Entrepreneur's use of NDA with advisors
B – How long have you known this advisor? E42 – I've known him for 35 years. *B – Can you tell me a little bit about how your relationship with this person developed? What kinds of things have you done together?* E42 – It was all business oriented and no personal interaction whatsoever. *B- Golfing, travelling, drinks, coffee?* E42- No, it was all business.	*B – Did you ask this advisor to sign an NDA?* E42 – I never asked him for an NDA because I trusted him implicitly.
B – Apart from your business relationships, what sorts of things do you and this advisor do together. Golfing, drinking, travelling, coffee? E48- Nothing beyond the occasional business lunch.	*B- Did you ask your advisor to sign an NDA?* E48- No.
B - How did you meet this advisor? E1 - 30 years. *B - Apart from your business-related discussions, what sorts of things do you and this advisor do together?* E1 - Nothing, it's strictly business.	*B - Did you ask this advisor to sign an NDA?* E1 - No.

Advisor types and use of NDAs. Hypothesis 5 states Entrepreneurs' use of NDAs varies with advisor type. Specifically, entrepreneurs are more likely to have Business Associates sign NDAs than to have (a) Close Friends or (b) Licensed Professionals sign them.

I analyzed the responses to the questions, "Did you ask this advisor to sign an NDA?" and "Considering the three types of advisors that we have talked about in this interview, would you say that you are most likely to use NDAs with close friends, business associates, or licensed professionals?" to find support for the hypothesis. Table 47 provides the illustrations on the main pattern of responses that emerged.

The responses to the question did not show any inclination on the part of entrepreneurs to discriminate the use of NDAs based on advisor type. Eighty nine percent of entrepreneurs did not ask their Close Friends to sign NDAs; 73 percent did not ask their Business Associates to sign NDAs, while 83 percent did not ask their Licensed Professionals to sign NDAs. See Appendix E for breakdown of codings. Hypothesis 5 was not supported. For Business Associates and Close Friends, Chi-square, $\chi 2$ equals 3.99; p value was .05 (See Table F7). For Business Associates and Licensed Professionals, Chi-square, $\chi 2$, equals 1.40 at p value equals .24 (See Table F8).

Table 47

Advisor Types and Use of NDAs

Question: Did you ask this advisor to sign an NDA?		
Close friend	***Business associate***	***Licensed professional***
E22- No. I trust him.	No. I didn't. Maybe I should have. But I didn't.	I think it's implicit. I think if you are CPA, it's implicit.
E45- No. because it was more of friendly context.	Yeah. That was standard.	No because it was implicit.
E1 – No.	No.	No.
E50- No. Because it was more of a friendly context.	Not in the idea mode.	I think we had an NDA signed with him.
E53 – No. because I wouldn't have pursued her violating the NDA anyway. So, very unlikely that there would have been any malice or any intention to further introduce that information to anybody.	No.	No.
E12- No, because she's my mother.	No. Again, I didn't think it was necessary.	No. As you can see, I am not terribly bothered about that.
E10- No, because our love is stronger than NDA.	E10 – No.	E10 – No. I think with lawyers, you never do that.

Knowledge sharing and affective trust. Hypothesis 6 states Knowledge sharing is positively associated with (a) affective trust and (b) calculative trust.

The theory behind knowledge sharing and trust suggests that entrepreneurs seek advice from trusted associates. A high level of affective trust implies that these advisors are personally close to the entrepreneurs, making them willing to be vulnerable to these associate (Goel & Sarri, 2006). Additionally, these advisors will have the skills and expertise in the entrepreneur that are necessary to pursue venture creation and support the entrepreneur's goal. These qualities engender calculative trust in the entrepreneur.

To test hypothesis 6a, that is, the relationship between knowledge sharing and affective trust, I classified entrepreneurs that expressed low affective trust and high affective trust in their advisors and then analyzed their comments on how much knowledge sharing occurred between the entrepreneurs and their advisors. Table 48 presents their responses to the questions for those who expressed low affective trust in their advisors.

I did not find any situation where entrepreneurs expressed low calculative trust in their advisors. This is expected since the preoperational stage is a period of idea development as entrepreneurs consult experienced advisors to develop the golden idea. Entrepreneurs are not expected to consult those in whom they express low calculative trust.

They sought encouragement with those in whom they expressed high affective trust and attribute little or moderate knowledge sharing with those in whom they expressed higher levels of calculative trust. I observed that entrepreneurs limited their knowledge sharing with their advisor network. They did not attribute extensive knowledge sharing with their advisors as shown in Table 49. They were very careful in describing the contribution of their advisors to idea development. They would use words like “somewhat” to describe the contribution of their advisors. They claimed ownership of the idea and most of the responsibility for its development.

Table 48

Affective Trust and Knowledge Sharing

Question	*Low affective trust*	*High affective trust*
How much do you think this advisor contributed to developing your venture idea?	E3 - nothing.	E59- I think he was a good sounding board, let me put it this way. So, good sounding board, definitely helped me. I won't call it insignificant or significant but moderate….
	E50 – None at all.	E10 – Again, hard to quantify. As a startup person, you have to take lead of your idea, but his participation was to help me understand different angles of that idea.
		E40 – Not the idea itself.
		E50 – to the actual idea, not a lot. No , just encouragement.

Table 49

Calculative Trust and Knowledge Sharing

Question	*Low calculative trust*	*High calculative trust*
How much do you think this advisor contributed to developing your venture idea?		E10 - Idea no. He was not involved in the idea side. He was just involved in the mechanics of the process.
		E40- I would say actually, in the initial stages, maybe 20 percent. Actually, she did do some things here and there. Actually, she might have done more now that I think about it. She did marketing image stuff too.
		E48 – Very very little.
		Somewhat. In bringing the product to market. [45]

As an entrepreneur that started an Internet marketing firm said of the contribution of an advisor he had known for 40 years and consulted as a devil's advocate,

> Again, hard to quantify. As a startup person, you have to take a lead of your idea, but his participation was to help me understand different angles of that idea.

I found that they sought advisors for complementary skills like strategy development and marketing skills. Hypothesis 6a was not supported ($\chi 2 = .72$; $p = .70$; Table F9) but Hypothesis 6b was supported ($\chi 2 = .57$; $p = .75$; Table F10).

Advisor type and knowledge sharing. Hypothesis 7 states Knowledge sharing varies with advisor type. Specifically, entrepreneurs will share more knowledge with Business Associates than either (a) Close Friends or (b) Licensed Professionals.

The theory is that more knowledge sharing will occur with a Business Associate than with a Close friend or a Licensed Professional as entrepreneurs seek this advisor type of strategy formulations and venture building knowledge. The qualitative results, as shown on Table 50, support these propositions. For Business Associates and Close Friends, Chi-square, $\chi 2$, is 8.24 at p value equals .02 (Table F11). For Business Associates and Licensed Professionals, the Chi-square, $\chi 2$, is 27.27 at p value less than .05 (see Table 12).

I present the summary of the result of the quantitative and qualitative analyses in Table 51.

Table 50

Advisor Types and Knowledge Sharing

Question	*Close friend*	*Business associate*	*Licensed professional*
How much do you think this advisor contributed to developing your venture idea?	Not the idea itself.[40]	She was really good at the whole marketing thing. What separates you? What defines you? How are we going to …yeah, she probably did close to 30 percent. She didn't develop the idea but she developed fine-tuning the image….	I think he assisted a little bit. Not as much as the business associate.
	Again, hard to quantify. As a startup person, you have to take a lead of your idea, but his participation was to help me understand different angles of that idea. [10]	That's really hard to judge. It is the evolution where small things can in the long run mean a lot of things…bring value…for example, you don't do wrong thing…or you get piece of information which is you know strategic or important…how would you put value on that one?	Idea no. he was not involved in the idea side. He was just involved in the mechanics of the process.
	I'd say it has more to do with, not so much the idea but the some of the things we do (sic), in the plan, the approach, or thinking through, strategy, …the idea was already developed by my friend and myself [4]	Significantly. High-level. Very high level.	None.
	A huge amount…it was a real partnership in terms of the idea for what we originally started…[12]	Substantially, in the financial sphere. Definitely, in the terms of putting together a business plan, and helping me to raise money.	Legal matters. Generally, with the deals that we were signing and that

That's a tough one. It's probably more psychology than real business help. [22]	I think significantly, particularly in terms of advancing the business into other countries.	No.
He contributed not the idea of the product but the idea of how to strategize, to take it to market. He was much more marketing individual. [42]	As much as myself. A 100 percent. He was right there with me, all the step of the way, although not a partner in that particular venture we talked about earlier, he was there every meeting, every strategic meeting I had.	He helped develop it from a profit and loss viewpoint but not from a marketing or long-term strategic point of view. That was my responsibility.
To the actual idea, not a lot. No, just encouragement. [45]	None. Well, I shouldn't say that. Somewhat because his experience in the market place would give me an idea. The product design that I think it should be, his experience in the market, he'll say, well that may not work. So yes, he did. Somewhat. In bringing the product to market.	None.

Table 51

Summary Results of Quantitative and Qualitative Analyses

Hypothesis	Results	
	Quantitative Analysis	Qualitative Analysis
Hypothesis 1: The length of the relationship between an entrepreneur and an advisor is positively related to the level of affective trust that the entrepreneur has for that advisor.	Supported	Supported
Hypothesis 2a. Entrepreneurs will express higher levels of affective trust in Close Friends than in Business Associates.	Not Supported	Supported
Hypothesis 2b. Entrepreneurs will express higher levels of affective trust in Close Friends than in Licensed Professionals.	Supported	Supported
Hypothesis 3a. Entrepreneurs will express higher levels of calculative trust in Business Associates than in Close Friends during the preoperational stage.	Not supported	Not supported
Hypothesis 3b. Entrepreneurs will express higher levels of calculative trust in Licensed Professionals than in Close Friends during the preoperational stage.	Not supported	Not supported
Hypothesis 4: The entrepreneur's level of affective trust in an advisor is negatively related to the use of NDAs with that advisor.	Not supported	Not supported
Hypothesis 5a: Entrepreneurs are more likely to have Business Associates sign NDAs than to have Close Friends sign them.	Not Supported	Not Supported
Hypothesis 5b: Entrepreneurs are more likely to have Business Associates sign NDAs than to have Licensed Professionals sign them.	Not Supported	Not Supported
Hypothesis 6: Knowledge sharing is positively associated with (a) affective trust and (b) calculative trust.	Supported Not Supported	Not Supported Supported
Hypothesis 7a: Entrepreneurs will share more knowledge with Business Associates than with Close Friends during the preoperational stage.	Supported	Supported
Hypothesis 7b: Entrepreneurs will share more knowledge with Business Associates than Licensed Professionals during the preoperational stage.	Supported	Supported

Research questions. The theory I develop to answer these research questions builds on existing theory using entrepreneurs' illustrative quotes. The illustrations add to existing theory, validate the theory, describe the underlying dynamics of entrepreneur-advisor relationships, and present aspects of these relationships that may hitherto, have remained latent. Additionally, we understand the quantitative results through entrepreneurs' perspectives. Table 52 summarizes the answers to the research questions.

Research question 1. How does relationship length affect affective trust between entrepreneurs and advisors?

Existing research suggests that the longer the relationship, the stronger the affective trust between people (Pesämaa & Hair, 2007). Entrepreneurs in this study confirmed the expectation that repeated positive experiences during engagements with another produces strong emotional attachments to that person. McAllister (1995) and Pesämaa and Hair (2007) observe that loyalty and repeated reciprocities between partners contribute to emotional bonding in relationships. These emotional attachments lead to affective trust. Longer relationships provide opportunities to develop a pattern of repeated reciprocities as partners interact regularly and work on tasks together (Coleman, 1990). Through these repeated engagements, expectations are developed, confirmed, and disconfirmed. Entrepreneurs report that those they have known for a long time and consult are those that have proven faithful, loyal, and supportive. These characteristics are affective trust traits. For example, an entrepreneur describes an advisor he had known for 40 years, and he says this of the advisor, "He likes to know what I am doing so ….he is the one I can tell everything what I am doing."

Table 52

Summary of Results to Research Questions

Research questions	Results
Research question 1. How does relationship length affect affective trust between entrepreneurs and advisors?	Loyalty, respect, and expectations.
Research question 2. How does affective trust in an advisor relate to an entrepreneur's use of NDAs with that advisor?	Respect.
Research question 3. How does advisor type affect an entrepreneur's use of NDAs?	Close friends are trusted. Business associates are regarded. Licensed professionals are restricted. Business types are more likely to have NDAS because of lax professional regulations.
Research question 4. How does an entrepreneur's affective trust in an advisor affect knowledge sharing with that advisor?	It does not.
Research question 5.How does an entrepreneur's calculative trust in an advisor affect sharing with that advisor?	Entrepreneur seeks complementary skills.
Research question 6. What is the relationship between an entrepreneur's use of NDAs with an advisor and knowledge sharing with that advisor?	Knowledge sharing leads to the use of NDAs.

He describes this person as his sounding board and notes that they share good times and bad times together. The relationship has the traits of loyalty, friendship, fulfilled expectations and genuine concern for each other. As noted earlier, these are elements of affective trust.

Entrepreneurs tend to show affective trust in advisors with whom they have long relationships. Their reflections suggest that they were willing to be vulnerable to these advisors simply because they have emotional attachments to these people. They could not detail why exactly they trust these people other than to say they had known these people for a long time and they had certain expectations which these people had maintained. Such relationships, on further examination, are longtime friendships and childhood friends. For example, another entrepreneur describes close personal relationships such as picking spouses up at the airport for some of his advisors. He said this about his relationships with some of his advisors,

> "I depend on trust. I have friends for 15 years; 20 years that I feel are people that I can trust wholeheartedly."

Longer relationships would have had opportunities to apportion responsibilities for tasks and to develop expectations. Another entrepreneur also said this about another advisor,

> "For 10 years….he always seems to me to have high level of integrity. He's always been responsible, he's always got his job done on time and in any kind of situation at work, he's always done the right thing…"

Shared experiences lead to shared values, which define relationships and friendships (Larson, 1992; Pesamaa & Hair, 2007). With longer relationships, assumptions of each other's behavior would develop. An entrepreneur would say that trust was implicit in the relationship when I asked them why they did not monitor their advisor's actions. Deeper analysis of their responses suggests that periods of engagement with advisors led to the establishment of expectations on the terms of relationships. Business and personal exchanges led to established expectations of the other's behavior and confidence in other's sincere motives and actions.

With a long relationship, entrepreneurs and advisors engage in many social and business activities together, consult each other on personal and professional affairs, and develop mutual expectations. A mutual understanding defines the relationship in that one watches out for the other's needs and provides required resources, and support as required, which strengthens the bond between them.

Loyalties develop. Patterns are formed and adhered to maintain and nurture these relationships (Coleman, 1990). Relationship length allows affective trust to develop and mature. This observation supports McAllister's (1995) and Coleman's (1990) theories on how fulfilled expectations would lead to mutual affection and emotional bonding among the parties involved.

I observe that these are advisors they had known for longer periods of time, admire, and like. These advisors are usually mothers, parents, childhood friends, coworkers, and life partners. I surmise that relationship length affects affective trust by providing avenues where unwritten expectations and assumptions are developed, established, and met between entrepreneurs and advisors.

Research question 2. *How does affective trust in an advisor relate to an entrepreneur's use of NDA with that advisor?*

The answer here develops from Research question 1's explanation. The unspoken agreement between entrepreneur and advisor is the framework on which the entrepreneur's security choice decision is based. When asked why they did not ask an advisor to sign an NDA, the confidence in the loyalty of the advisor to the entrepreneur is noted in the following responses. An entrepreneur responds, "… because our love is stronger than NDA." Another responds, "I trust him."

Upon further probing their answers, they answer emphatically in the negative to the question of whether they suspect that the advisor would take advantage of them. When asked why they have such positive affection for their advisors, one entrepreneur responds, "She's my mother! If you can't trust your mother, who can you trust?" Another responds, "Because we've gone through so many things together, you really get to know someone and so and then becoming married, your interests are in alignment, so you don't have any reason to hesitate."

These responses reveal that some entrepreneurs did not acknowledge insecurity with some of their advisors, nor did they nurse fears of being taken advantage of, or that the advisors would act opportunistically. They were fully willing to be vulnerable to these advisors by not asking them to sign NDAs. The idea of asking someone with whom they shared a strong bond with to sign an NDA seemed completely ludicrous to them.

In addition, I observe a tremendous amount of respect for their advisors. Respect and admiration underlies the affective feeling for their advisors that discourages the entrepreneur to ask someone with whom they have strong affect to sign an NDA. There is a sense of honor to consult the advisor on their plans to start a venture. To the entrepreneur, these are the honorable people to engage in the idea development stage. Due to admiration on the entrepreneurs' part, the entrepreneurs did not consider the use of NDAs with the advisors. Not asking them to sign NDAs reflected the high level of respect they had for these advisors. As such, they expressed positive affect for these advisors. Entrepreneur 9 said,

> "[42] I saw so many people trust this man and his abilities and capabilities and if he didn't know the answer, he always found time to find the right person for the people that are asking. So his trust and admiration by others was just beyond example, way beyond my capabilities."

Entrepreneur 7 says, “He’s in a position of financial trust for a lot of people. I would say financial trust is something people expect from him. He generally seems like a person of discretion.”

The theory suggests that familiarity and friendship would evolve into respect and admiration in an advisor (Pesämaa & Hair, 2007). I extend that theory to suggest that entrepreneurs rely more on the advisor’s discretion than on an NDA when they express high levels of affective trust in the advisor. I found support for this line of reasoning: In addition to the emotional bonding, the analysis suggests a high level of respect in entrepreneurial-advisor relationships that discourages the use of NDAs at the preoperational stage.

Loyalty and respect in relationships that have evolved into affective trust are the underlying reasons why entrepreneurs expect that the confidentiality of shared knowledge is assured. In these relationships, entrepreneurs will not ask advisors to sign NDAs, trusting that the advisor would maintain the trust deposed in them.

Research question 3. *How does advisor type affect an entrepreneur’s use of NDA?*

This question seeks to see find the underlying reason why some advisors may be asked to sign an NDA and others would not. I find that lack of familiarity with an advisor would prompt the use of an NDA with that advisor. When I asked Entrepreneur 8 this question, “Compared to the advisors we have talked about, which one are you most likely to use NDAs with?” he replied:

> [50] Close friends, probably not. Why? Because they are close friends and if I don’t trust them, they are not my friend[s]. Business associates, yes. And licensed professional, yes. Because when you start touching the business side of things you never know, so it’s better to be safe than sorry.

Entrepreneur 9, who developed a high-tech toy, responded,

> "[42] Licensed professionals. Only because they have other clients and I don't want them to have the ability to have loose lips."

Another entrepreneur who develops application programs for the real estate industry said,

> [12] " I think more likely with business associate because they are not close friends who I believe … often times may have no reason to disclose what you tell them…and licensed professionals if they are in the business of talking about their clients' business to other clients, that's very poor. They will screw their business over."

Generally, more entrepreneurs signal that they were more likely to ask Business Associates to sign NDAs because these types of advisors did not have any form of institutional control. NDAs provide a level of assurance that shared knowledge would be secure from imitation or involuntary leakage. Close friends are trusted personal advisors while Licensed Professionals are monitored by institutional safeguards. Entrepreneurs show their reliance on a strong institutional environment by not asking their Licensed Professionals to sign NDAs. A Business Associate is more likely to be asked to sign an NDA than the other two types.

I analyzed the responses to the question, "Did you ask this advisor to sign an NDA?" In my data, entrepreneurs asked five Close Friends, 13 Business Associates, and eight Licensed Professionals to sign NDAs. This provides support for the earlier observation. Before now, there is little theory about the advisor type that is more likely to be asked to sign an NDA and why so. This observation adds to our knowledge on the dynamics underlying the preoperational stage and the relationships between entrepreneurs and advisors.

When I asked them why they did not ask their Licensed Professionals to sign an NDA, an entrepreneur who works in the mobile communications industry said,

> Being an attorney, he had obviously has client privileges. There is more protection around that type of relationship than just a standard NDA to be enforced.

Another who owned an internet marketing firm when asked if he asked his Licensed Professionals, a lawyer, to sign an NDA said,

> He knows how to keep his mouth shut. I never do that with my lawyers. I think with lawyers, you never do that. I don't remember him signing an NDA.

Another said of his accountant,

> So there's a confidentiality with an accounting firm.

These statements illustrate the widely held belief that Licensed Professionals can be relied on because of professional ethics and an NDA is not useful with them. The reason is that stable institutional safeguards exist. Licensed Professionals are expected to be consummate professionals who are quite concerned about their reputations, their businesses, would not want to risk their licenses. This belief is underscored in that only 8 out of 50 entrepreneurs said they asked their Licensed Professionals to sign NDAs. The responses to the second question provide their general view on which advisor type they were more inclined to use NDAs with. Generally, the dominant pattern that emerged from their responses indicates that they were more inclined to use NDAs with Business Associates than with the other types. Business Associates were neither emotionally close to them nor were regulated by any professional organizations or the government. The prevailing pattern of their responses shows that business associates are more likely to be asked to sign NDAs. Table 53 provides an insight into some responses regarding which advisor type entrepreneurs were likely to ask to sign NDAs.

Table 53

Entrepreneur's Policy on Use of NDAs

Question Did you ask this advisor to sign an NDA?			*Question* Considering the three types of advisors that we have talked about in this interview, would you say that you are most likely to use NDAs with close friends, business associates, or licensed professionals?
Close friend	*Business associate*	*Licensed professional*	
E22- No. I trust him.	No. I didn't. Maybe I should have. But I didn't.	I think it's implicit. I think if you are CPA, it's implicit.	I'd say licensed professionals if it was appropriate. I gave the example of an accountant where I don't think it's necessary. If it is professional engineer, then I would have used an NDA.
E45- No. because it was more of friendly context.	Yeah. That was standard.	No because it was implicit	I would say, mostly with Business associates. They are probably more prone to potentially starting or running businesses and there could be certain ideas and strategies that I shared with them that they are exposed to that could make the company vulnerable. Whereas with close friends, it may involve more employee relations, but nothing that could be considered harmful or damaging to the company necessarily. And then with licensed professionals because the attorney I mentioned earlier dealt on a transaction-by-transaction basis and therefore weren't really exposed to the interworkings of the business.
E50- No. because it was more of friendly context.	Not in the idea mode.	I think we had an NDA signed with him.	Close friends, probably not. Why? because they are close friend and I don't trust them, they are not my friend. Business associates, yes. And licensed professional, yes. Because when you start touching the business side of things you never know..

E53 – No. because I wouldn't have pursued her violating the NDA anyway. So, very unlikely that there would have been any malice or any intention to further introduce that information to anybody.	No.	No.	Not with advisors.
E12- No, because she's my mother.	No. again, I didn't think it was necessary.	No. as you can see, I am not terribly bothered about that.	I think more likely with business associate because they are not close friends who I believe would have often times may have no reason to disclose what you tell them…and licensed professionals if they are in the business of talking about their clients' business to other clients, that's very poor. They will screw their business over.
E10- No, our love is stronger than NDA.	No.	No. I think with lawyers, you never do that.	Not with advisors.

In summary, compared with other advisor types, a Business Associate is more likely than any other advisor type to be asked to sign an NDA. The underlying dynamics are a less personal relationship with this advisor type than with a Close Friend and the

lack of institutional safeguards in this relationship that is evident in the relationship with Licensed Professionals.

Research question 4. *How does an entrepreneur's affective trust in an advisor affect knowledge sharing with that advisor?*

Entrepreneurs look for sounding boards in advisors that they show high levels of affective trust in. For example, an entrepreneur that expressed high levels of affective trust in advisor and worked in the computer services industry, when asked how much the advisor contributed to the development of the idea, said, "To the actual idea, not a lot. No, just encouragement." An entrepreneur that expressed high levels of affective trust in his advisor said he consulted the advisor "to help me understand different angles of that idea." Another said, "It's probably more psychology than real business help."

People relate often with those they have strong affect for. These interactions lead to more opportunities for interactions, more phone time, and possibly more social activities that provide avenues for knowledge sharing. Entrepreneurs indicated that high levels of affective trust when they described social relationships they had with advisors such as playing sports, taking the families to dinners, and taking vacations together. These social events provided opportunities for knowledge sharing.

However, regarding advisors' contribution to venture idea development, entrepreneurs look to these kinds of advisors they frequently socialized with for emotional support rather than core venture knowledge sharing (cf., Chua et al., 2008). Chua and others (2008) observed that affective trust was not significantly related to seeking task-related advice in their study of professional networks. Moreover, the venture ideas being shared had been simplified to facilitate easier sharing with those they were

affectionately drawn to. The core discussions were for encouragement and general sounding board purposes, not significant knowledge sharing for idea development.

With advisors that have technical expertise or strategic knowledge, they share more intimate details of the venture with them. I find that entrepreneurs work with those they like. Affective trust encourages knowledge sharing with advisors.

Research question 5. *How does an entrepreneur's calculative trust in an advisor affect sharing with that advisor?*

In relationships where high levels of calculative trust exist, I observe a greater willingness to share significant venture knowledge on the part of the entrepreneur. Implicit in their responses were respect for the advisors' experiences, high regard for their skills, and admiration for their competence. An entrepreneur who expressed high calculative trust in his advisor had this to say:

> **[**4] If she hadn't had the business skills, we might have been close but not necessarily on business matters. I'd say more because of the business skills. She's very skilled, technically, she's more educated than I am and she's had great common sense and a lot of business experience.

When I asked this entrepreneur how much the advisor contributed to the venture idea development, he said,

> [4]not so much the idea but the some of the things we do (sic), in the plan the approach, or thinking through, strategy, more than the idea…

The interviews revealed the entrepreneurs' admiration of their advisors. For example, an entrepreneur mentions, "having the opportunity to observe my mother"….indicates that calculative trust developed over time during periods of engagements. These times led to respect and admiration for advisor's skills. The entrepreneur is then encouraged to share knowledge with the advisor.

An entrepreneur that started an aviation company said this contribution to knowledge of an advisor he had expressed high level of calculative trust in:

> E4 – Significantly. High level. Very high level.

Another entrepreneur that was in information management said of an advisor he had high levels of calculative trust in said of the advisor's contribution to idea development,

> E50-He has some contribution. I think …30 percent.

Previous research asserts that entrepreneurs seek complimentary skills and advice from industry veterans (West, 2007). The entrepreneur seeks strategy evaluation and development knowledge from the advisor. I also found confirmation for this explanation in the data. An entrepreneur that had started a high-tech toy business expressed calculative trust in his advisor thus,

> E 42- Business skills. Definitely business skills. I knew he had the expertise. He was the expert. I said, who in my circle of experts do I know that can help me figure this out?

With regards to knowledge sharing with this advisor, he said,

> E42 – He contributed not to the idea of the product but the idea of how to strategize to take it to market. He was much more marketing individual.

This pattern of responses confirms the explanation that entrepreneurs seek advisors for strategy development, idea enhancement, and idea-refinements. The previous entrepreneur had said of this advisor that,

> I don't know everything, so I have to use these experts. And that's what I used him for. His expertise [is] in a whole different area. I didn't know anything about toys. He did. I didn't know anything about retail. He was an expert in retail and been in it his entire career and he'd probably been in it 22 or 23 years at that time. It's an area that I didn't want to know about and he just showed me all the ropes. All the right people, all the right avenues to go down. And it took a lot of strategy.

Generally, the entrepreneur claims ownership of the idea but attributes idea refinement and strategy development to the advisors. To successfully develop an idea and bring it to market, complimentary skills are needed. This entrepreneur talked about the need for more contacts to access more resources and marketing skills in a specific industry as the reason that he tapped into this advisor. Other entrepreneurs similarly described marketing and strategy support of their advisors. These are admired, respected, and experienced advisors.

I found evidence that entrepreneurs' calculative trust in advisors encouraged them to share knowledge for idea enhancement. I also found that this calculative trust was borne out of respect and admiration for the advisor and in the belief that the advisor would fill the need for complimentary skills.

Research question 6. *What is the relationship between an entrepreneur's use of NDAs with an advisor and knowledge sharing with that advisor?*

Entrepreneurs emphasize knowledge sharing over knowledge security in their discussions with me. Though the issue of security may be a concern, this is only a minimal consideration with them. They are more intent on knowledge sharing and improving the golden idea than fretting over potential competitors or poachers. As one of them noted,

> "I've never been worried that someone will take an idea and I've never had in all of the dozen businesses that I have started… nobody has ever taken any of my ideas and competed with me but rather they have engaged with me and we've all worked together and succeeded to grow the business because I don't believe there's any such thing as somebody really stealing an idea. That happens just in the movies."

When asked whether they were concerned about competitors, 95 percent of them said yes they were. When asked what precautions they took, all of them implemented the

use of passwords and physical barriers. These responses indicate that though the issues of theft and imitation exist, these were minor considerations for them.

As the venture development process goes, NDAs may be signed to signal formal business agreements and to protect employees and shareholders. However, in the preoperational stage, knowledge sharing is the top priority. Also, with long relationship and increased familiarity, knowledge sharing occurs more and reduces the tendency to ask for NDAs. The lesser use of NDAs prompts more knowledge sharing.

> [12]I use NDAs when I don't know someone well. Like all three of the advisors did not sign NDAs with me because of the type of work that they do and their professional capacity. I knew that the trust was implicit and the risk of revealing any information that we shared was relatively low."

In some cases where NDAs are being introduced, the person signing the NDA has filtered knowledge and is not aware of the whole picture even though the NDA is designed to ensure full disclosure. Entrepreneurs say that once the matter begins to involve intellectual property, only few associates are in on all the details. Everybody else gets to know or see just a bit of it. As such, NDAs may discourage knowledge sharing in another sense.

> [48]I think sometimes we just didn't let everybody know everything. There are certain parts of the business that one part needs to know. Like even software development, I had it broken down to several different teams. So each one is working on a piece of the puzzle but none of them has all the pieces.

I surmise that knowledge sharing leads to the use of NDAs. The more knowledge sharing, the more the venture concept is developed and refined. This refinement and development advances the concept to the startup stage. At the start up stage, NDAs are then signed with advisors and potential business partners to protect the venture,

stakeholders and employees and to signal the commencement of formal business operations. This stage indicates the end of the preoperational stage.

Summary

This chapter presents the research results. I interviewed 52 entrepreneurs spread across South Florida cities. I used quantitative tests and provided qualitative evidence for seven hypotheses. Three hypotheses were supported, three hypotheses were not supported and one hypothesis had partial support. The hypotheses explore relationships between relationship length and affective trust (supported), advisor types and affective trust (partial support), advisor type and calculative trusts (not supported), advisor types and use of NDAs (not supported), affective trust and use of NDAs (not supported), advisor type and knowledge sharing (supported) and trust and knowledge sharing (supported).

I found qualitative evidence to support the hypotheses. I used content analyses to answer the research questions. The results are valid as I have provided triangulation of results. Interview data show that entrepreneurs open up to advisors they have known for longer periods of time. Content analyses of the entrepreneurs' responses reveal that entrepreneurs' search for help in the refinement of the golden idea discourages the use of NDAs. NDAs may actually serve as a deterrent in getting valuable advice. I find that advisor type does influence the use of NDAs as Business Associates are more likely to be asked to sign an NDA than any other advisor type. Even then, the entrepreneur places idea enhancement ahead of knowledge security. There has to be a level of ease and comfort with an advisor before the entrepreneur can proceed with knowledge sharing without using NDAs which was evident with many of the entrepreneur-advisor relationships.

Additionally, I built theory through the answers to the research questions to explain some latent dimensions of the entrepreneur-advisor relationships. The theory shows how relationship length promotes affective trust through loyalty, friendship, and unwritten rules. With regards to trust, people that are sought for advice were generally considered competent and reliable. As such, there were no significant differences in the levels of calculative trust across advisor types. The next chapter discusses the results and conclusions of this study.

V. Discussions, Conclusions, and Contributions

In analyzing the entrepreneur's support network, Zinger and colleagues (1996) observe "this network consists of formal institutions such as banks, accountants, lawyers and realtors but also informal sources such as family, friends, and advisory boards," (page 355). This network of contacts and colleagues is an entrepreneur's initial support group for concept evaluation and idea enhancement of a new venture. During the preoperational stage where concept evaluation and idea enhancement are the foremost activities, I find three useful main categories of advisors: Close Friends, Business Associates, and Licensed Professionals.

The entrepreneurial relationship with this set of advisors was closely scrutinized in this study to examine the forms of trust driving these relationships, the extent of knowledge sharing, and the use of NDAs with each advisor type. The social aspect of entrepreneurial activity has been given attention in this study. This dissertation provides "insights into the processes and structure of sustained dyadic exchanges" (Larson, 1992:100), and the results reveal a more complete account of activities that define the preoperational stage of a new high-tech venture.

Scholars have also observed entrepreneurs seem to demonstrate preferences for personal sources of advice such as Close Friends rather than impersonal sources of assistance or information such as Licensed Professionals (Zinger et al., 1996: 355). Few studies however examine how different forms of trust, such as the two described by McAllister (1995), characterize the relationship between entrepreneurs and their advisors.

This study develops a conceptual framework for understanding how the forms of trust influence the preoperational stage of venture creation. The entrepreneur seeks to protect the golden idea from theft or imitation by competitors (Choi et al., 2008). Effective knowledge security increases the likelihood of being first to market with the product or service offering, secures revenue stream from the idea, and can even impact consumer loyalty. It then becomes imperative for the entrepreneur to confide in trusted associates as a means to control the dissemination of the golden idea. This study analyzes how the nature of the relationship with trusted associates influences the use of knowledge security documents such as NDAs. I expected that the forms of trust between entrepreneurs and advisors would shape the extent of knowledge sharing and the use of NDAs. The discussions below elaborate on the findings of this study on the entrepreneurs' use of "the head and the heart" (cf., Chua et al., 2008) on knowledge sharing and the use of NDAs during the preoperational stage.

The overall question driving this dissertation was how does trust between an entrepreneur and advisors affect knowledge sharing and the use of NDAs during the preoperational stage of a new high-tech venture? A secondary question related to this was how do trust, knowledge sharing, and the use of NDAs differ (if at all) across advisors? I analyzed the above questions quantitatively and qualitatively. In addition, I analyzed five research questions qualitatively to add to existing theory on relationship length, affective trust, calculative trust, and use of NDAs, and to consider the relationship between knowledge sharing and the use of NDAs. I discuss these findings in this chapter.

I developed the hypotheses using trust, knowledge sharing, and management literatures in Chapter 2, and I presented the results in Chapter 4. I used multiple data

collection methods, called triangulation, to substantiate and increase the validity of results. For the quantitative analysis, I used control variables in hierarchical regression models to limit effects of nested bias in data collection. In the next sections, I discuss the quantitative and qualitative results, the answers to the research questions, the conclusions, theoretical contributions, practical applications, limitations and prospects for future work.

The quantitative and qualitative results are presented in sections dedicated to each hypothesis explaining the relationship between relationship length and affective trust, the forms of trust associated with each advisor type, the effect of advisor type on the use of NDAs, the relationship between trust and knowledge sharing, and how advisor type affects knowledge sharing.

Hypothesis 1: Relationship Length and Affective Trust

Hypothesis 1 states that the length of the relationship between an entrepreneur and an advisor is positively related to the level of affective trust that the entrepreneur has for that advisor. I found empirical support for the hypothesis. From the interview texts, I found evidence that relationship length would influence the level of affective trust between an entrepreneur and an advisor. The repeated interactions over time provided bases to develop confidence in each other's behavior. This supports Coleman's (1990) theory on social capital that repeated interactions between parties would create stable patterns of behavior and shape expectations of future behavior. The parties become friends. Loyalty and reciprocity are then established in these repeated interactions between the parties. These attributes of their relationships allow the entrepreneur to become more confident in trusting an advisor, particularly on a personal level. They share personal stories, personal experiences, and personal hallmarks in each other's lives.

These experiences lead to emotional bonding. Shared values and understanding, familiarity and friendship, and reciprocity and generosity contribute to affective trust between partners. The longer the relationships, the greater the depth of the trust entrepreneurs will have in their advisors. I found empirical and qualitative support that relationship length significantly affects the level of affective trust entrepreneurs have in their advisors.

Hypothesis 2: Advisor Types and Affective Trust

Hypothesis 2 states that affective trust varies with advisor type. Specifically, entrepreneurs will express higher levels of affective trust in Close Friends than in either (a) Business Associates or (b) Licensed Professionals. I did not find statistically significant differences in the level of affective trust between Close Friends and Business Associates. Their descriptions of their Close Friends and Business Associates were replete with admiration and respect. The qualitative evidence showed differences in the degree of personal interactions between the Close Friends and Business Associates. They had repeated personal interactions such as vacations and dinners with their Close Friends but limited personal interactions with their Business Associates.

I found significant differences in the levels of affective trust between Close Friends and Licensed Professionals. Entrepreneurs described repeated personal interactions with their Close Friends but strictly business relationships with Licensed Professionals. In a strictly business relationship, there is a lesser likelihood of the emotional bonding or friendship that leads to affective trust. Strictly business relationships do not afford opportunities to socialize outside of work and discuss personal issues that engender friendships and fondness between parties (Pesämaa & Hair, 2007).

The personal relationships would have engendered affective trust with Close Friends. Consequently, there were significantly different levels of affective trust between Close Friends and Licensed Professionals.

These results begin to illustrate the nature of the entrepreneur's social context during the preoperational stage. The results show that within de Koning and Muzyka's (1999) action set (see page 55, Figures 5 and 6), there are two distinct categories of advisors: the Business Associate and the Licensed Professional. For the former, there is a significant level of affective trust that is not significantly present with the latter advisor type. From the quantitative analysis, affective trust is significant in the relationship with the Business Associate, which suggests close personal and business relationships between entrepreneurs and their Business Associates. (See also Appendix G for ANOVA test of advisor types on affective trust.) There are shared values, shared language, shared perspectives between the entrepreneur and the Business Associate. This is implicitly necessary if the Business Associate is going to help with strategy formulation and building a venture together. By having someone that one feels has the same vision as one bodes well for communication and building a successful venture (Larson, 1992). The functional role of the Business Associate is to bring complimentary skills to venture creation. Because of the repeated engagements over time, there is a development of affective trust between entrepreneurs and Business Associates. These expectations of building a venture together, having a shared vision, or language, or shared understanding are not expected of the Licensed Professional. This explains the significant difference between a Close Friend and Licensed Professional.

So, we observe the makeup of the entrepreneur's social context as the idea refinement and concept evaluations go on. We see that the entrepreneur relies on those he has had positive experiences with for the crux of strategy formulations and being a sounding board, providing encouragement and evaluating concepts. We begin to observe a pattern emerge in the social context that will shape knowledge sharing and use of NDAs. These relationships are discussed in their respective sections.

Furthermore, these results augment de Koning and Muzyka's (1999) work by proving delineations within the action set based on differences in affective trust. By using the heart, the entrepreneur makes a distinction between Close Friends and Licensed Professionals.

Hypothesis 3: Calculative Trust and Advisor Type

Hypothesis 3 states that calculative trust varies with advisor type. Specifically, entrepreneurs will express lower levels of calculative trust in Close Friends than in either (a) Business Associates or (b) Licensed Professionals. I did not find any statistically significant difference in the level of calculative trust between Close Friends and Business Associates. Likewise, there was no statistically significant difference in the level of calculative trust between Close Friends and Licensed Professionals. This showed that the entrepreneur made calculative considerations of potential costs and benefits in choosing all advisor types, thus no significant differences appeared in the levels of calculative trust in the advisor types. The means of calculative trust across advisors were not statistically different and were 6.25, 6.25 and 6.29 for Close Friend, Business Associate, and Licensed Professional respectively (see Appendix G). Accordingly, each advisor type

was expected to be competent, reliable, experienced and skilled in his or her area of expertise.

Calculative trust in advisors played a significant role in choosing all advisor types, as confirmed by the qualitative evidence. As one advisor said of a Close Friend,

> "So, I think that, yes, having the opportunity to observe my mother in business as a businesswoman, seeing that she carried her affairs with a certain rectitude and propriety that made it possible for me to trust her even more…"

The relationships in the social context are characterized by the entrepreneur's higher regard for advisors' skills and accomplishments, regardless of advisor type.

West (2007) notes that entrepreneurs work with a collective group of associates to advance an idea for venture creation purposes. Entrepreneurs' advisors are people whose management, technical, and industry experiences they trust to guide them in their venture creation process. The qualitative analysis reveals that entrepreneurs consulted their advisors, even close friends and family members, because of the advisors' business skills.

These results illustrate the qualities that entrepreneurs prefer in their advisors. These advisors will have the relevant knowledge, industry insights, and experience necessary to successfully launch a venture. The entrepreneur seeks help in strategizing, funding, accounting and legal matters. These results add to the literature about the impact of human capital on the venture creation process proving that cumulative experience is not only desirable for the entrepreneur but actively sought.

Hypothesis 4. Affective Trust and the Use of NDAs

Hypothesis 4 states that the entrepreneur's level of affective trust in an advisor is negatively related to the use of NDAs with that advisor. Empirically, I did not find a significant relationship between the level of affective trust and the use of NDAs with

advisors. The empirical analysis suggests the level of affective trust in an advisor played an insignificant role in the use of NDAs during the preoperational stage. Based on this result, the reason for not using NDAs was not significantly related to the level of likeness, fondness, friendship, or emotional closeness to an advisor.

The qualitative analysis suggests three main reasons for why the relationship between affective trust and the use of NDAs turned out insignificant. First, entrepreneurs did not think that the use of NDAs was necessary. Secondly, it was because they wanted to preserve the relationship with their advisors that they did not use NDAs. Using NDAs would have been considered an insult to the advisor and jeopardize the relationship. The entrepreneur would want to maintain their advisor's dignity. Thirdly, entrepreneurs relied on a strong institutional background that upheld ethics and punished unprofessional behavior of Licensed Professionals. Based on the qualitative analysis, affective trust did have something to do with the non-use of NDAs, but overall what the empirical data did not indicate was that there were societal and personal reasons for why NDAs were used or not used by entrepreneurs. The qualitative analysis provided insights into this result. I now elaborate on each of these reasons.

Not necessary. As one entrepreneur who had started an engineering firm said of all his advisors with regard to asking them to sign NDAs, "I didn't think it was necessary." This type of response suggests a personal reason for not using NDAs based on the relevance of the document to the creation of the venture. In these types of contexts, the reason for not using a NDA was not related to their relationship with the advisor. The trust factor was immaterial to their decision. Entrepreneurs did not consider the use of NDAs because they were not familiar with the document or did not think that the

document was useful for protecting their venture ideas from imitation or theft. Other responses suggested that they considered NDAs useful only if the venture idea was a novel one where they stood to gain substantial economic benefits and peer admiration.

In some situations in this study, entrepreneurs were planning service offerings based on existing technology. For example, an entrepreneur may be planning to open a computer networking venture. This will provide networking and computer services to clients. The entrepreneur quoted above was contemplating providing engineering services to clients at the preoperational stage. Entrepreneurs offering these services argue that their ideas are not novel, hence using a NDA was unnecessary. In these situations, though, they argue that their client lists are sensitive information and are protected usually by not sharing such client lists with advisors. Apart from situations where the venture idea was based on a novel technology idea, NDAs were deemed unnecessary. They did not find NDAs useful for the service offerings or for the technology applications they were contemplating. The use of NDAs was then not predicated on the level of affective trust in an advisor but on the perceived relevance of the document in securing the venture idea.

I know him or her. Some entrepreneurs did not ask their advisors to sign NDAs because they wanted to preserve the relationships they had with these advisors, affective trust would be significant in their decision making process. They are emotionally bound to these advisors and would want to maintain that relationship for future benefits. They also would not want to jeopardize long-standing relationships that have led to affective trust in these advisors. These are advisors that they consider loyal. They have developed histories of reciprocity and mutual obligations with these advisors. These are advisors

that “watch their back” and have their vested interests at heart. A NDA takes away from the relationship by injecting signs of suspicion and fears of opportunism into the cognitive schema. A NDA would suggest years of shared experiences was futile in provide bases to trust the judgment and actions of the advisor. The shared experiences and values would then be for naught. A NDA bodes negative thoughts, not positive. It is then to be avoided, not considered, and not used. Entrepreneurs would prefer to maintain positive relationships with their advisors (cf., Ashkanasy & Daus, 2002).

As such, they rely on their judgment of their advisors’ behaviors based on shared history. For example, one entrepreneur said of his advisor, “I know him and his family and his background and his morals and he is very trustworthy.” The entrepreneur would then be relying on the advisor’s discretion not to share knowledge.

He or she is licensed. Others who were less familiar with their advisors said they did not use NDAs because they relied on some form of institutional security. For example, an entrepreneur that had started an aviation charter company said,

> “I don't ask licensed professionals to sign NDAs. So [an] accountant or a lawyer, I wouldn't ask them to sign an NDA because confidentiality is built into their ethics of their relationships.”

A strong United States institutional environment that enforces ethics and professional standards then becomes a factor in their decisions not to use NDAs. The entrepreneur implicitly relies on his or her option to recourse to the law if he or she feels that a contract or understanding has been breached. The US environment is generally rated high in its protection of intellectual property (IP) (Oxley, 1999). Entrepreneurs in more complex environments with regards to professional standards and IP protection may

tend to rely more on social norms for knowledge security (cf., Peng, 2003). Future work can look into these environments.

In summary, the use of NDAs was not significantly related to the level of affective trust but based on the deemed relevance of the document to the venture idea, the entrepreneur's judgment of the advisor's moral character, or the reliance on some form of institutional security. Accordingly, without the use of NDAs, entrepreneurs were still comfortable with sharing their venture ideas with their colleagues, associates, and family. The results of the use of NDAs with each advisor type are discussed in the next section.

Hypothesis 5: Advisor Type and Use of NDAs

Hypothesis 5 states that entrepreneurs' use of NDAs varies with advisor type. Specifically, entrepreneurs are more likely to have Business Associates sign NDAs than to have (a) Close Friends or (b) Licensed Professionals sign them. This section describes the entrepreneurs' attitudes to the use of NDAs with the three categories of advisors. I found that 89 percent of entrepreneurs in the study did not ask their Close Friends, 73 percent did not ask their Business Associates, and 83 percent did not ask their Licensed Professionals to sign NDAs (see codings in Appendix D). Generally, they considered the use of NDAs with advisors as unconventional.

Quantitative results did not show any statistical differences in the use of NDAs with the three advisor types. First, entrepreneurs stayed within a somewhat close-knit group of advisors during the early stages of creating a new high-tech venture (Zinger et al., 1996). These results support existing research that entrepreneurs would initially start with their inner circle in the process of developing a new venture. My observations confirmed that entrepreneurs relied on advisors in an inner circle and an action set of

associates and friends for idea refinements and encouragement (de Koning & Muzyka, 1999). From Hypothesis 2, we have established that Close Friends and Business Associates are personally close to the entrepreneur. This familiarity with the advisors would limit the use of NDAs with Close Friends and Business Associates. One entrepreneur who had started a medical communications firm said of a Close Friend, "Trust and confidence in this person is beyond an NDA."

Additionally, another factor that influenced the use of NDAs was the potential negative effect on their relationships with their advisors. Introducing NDAs into relationships was considered obstructive and potentially destructive to long-term relationships. The entrepreneur who had started the medical communications venture reflected:

> "There are times that [with] the trust and the initial set of relationships, you do not want to insult anybody by going into the NDA."

Another entrepreneur who had started a computer services firm mused,

> "With advisors, I don't use NDAs. Because if I am going to seek their advice, I want to be sure that I can trust them… Plus, I am seeking their advice, why would they sign it?"

Thus, the entrepreneurs interviewed in this study considered asking advisors to sign NDAs inappropriate.

With regards to Licensed Professionals, and as noted earlier under the subsection, "He or She is licensed," entrepreneurs relied on institutional safeguards that enforce ethics and professional conduct for knowledge security purposes. The reliance on the external form of security meant that use of NDAs was unnecessary. Like an entrepreneur who started an Internet marketing firm said, "I think with lawyers, you never do that."

Another who had started a manufacturing firm for medical products said of his accountant, "No, because it's implicit within his profession."

Rather than use NDAs, entrepreneurs would also have *selective knowledge sharing* with their Licensed Professionals. The entrepreneur that had started the medical communications firm said of the use of NDA with his Licensed Professional as, "I didn't feel that there was a need. I was high-level enough with the details of the venture that I didn't have to go into the NDA." "High-level enough with the details" means he was selective in what he shared with the professional so as not to require the use of NDA. Being careful with disseminated knowledge was the preferred security mechanism to using NDAs, as this entrepreneur commented,

> "You actually frame the situation that you are [going to] talk about. If there's a need to get into the specifics of the invention associated with it, then you formally go into the NDA and that's actually respected by both parties."

In addition, the regard and admiration they had for Business Associates dissuaded them from asking these business advisors to sign NDAs. Business Associates could be regarded as part of the inner circle in 30 percent of the cases in this study. With regards to Licensed Professionals, entrepreneurs were more comfortable with sharing just enough information with this group of advisors that did not require the use of NDAs.

This research validates studies that suggest entrepreneurs rely on an inner circle when it comes to idea evaluation and refinement. Consequently, the use of NDAs with advisors was minimal or insignificant during the preoperational stage.

Hypothesis 6. Trust and Knowledge Sharing

Hypothesis 6 states that knowledge sharing is positively associated with (a) affective trust and (b) calculative trust. I had conflicting results with the quantitative and

qualitative analyses. For the quantitative results, calculative trust was insignificant in predicting knowledge sharing while affective trust was strongly significant in predicting knowledge sharing. The result was the reverse in qualitative analyses where calculative trust was the basis for knowledge sharing and affective trust was not observed to strongly affect knowledge sharing.

The results support the notion and previous research that trust leads to knowledge sharing (cf., Chua et al, 2008; Kale et al., 2000). In addition to earlier work on the relationship between trust and knowledge sharing, this research provides a nuanced result that both forms of trust may contribute significantly to knowledge sharing. To understand the quantitative results in light of the qualitative results, entrepreneurs acknowledge that they sought advisors whose skills sets they respected. Some even noted that the reason they consulted family members such as fathers and mothers was because these people were distinguished in their careers and highly respected among their peers. As such, they approached based on their perceived usefulness of these advisors in building their venture idea. Calculative trust is thus significant in knowledge sharing.

However, the quantitative results suggest entrepreneurs approached advisors they were familiar with and have strong affect for. The quantitative results did not show a significant effect for calculative trust as the strong affect for these advisors accounted for a significant amount of variance in the model. The implications of these results are that the personal fondness, the friendship and camaraderie, the established norms and shared values influence knowledge sharing with those with admirable skills. This provides support for the notion that we rely on those we like and so do entrepreneurs. These results

suggest two attributes entrepreneurs seek in their advisors for knowledge sharing: skills and emotional bond.

Hypothesis 7: **Advisor Type and Knowledge Sharing**

Hypothesis 7 states that knowledge sharing varies with advisor type. Specifically, entrepreneurs will share more knowledge with Business Associates than either (a) Close Friends or (b) Licensed Professionals. Entrepreneurs expressed more knowledge sharing with Business Associates than with the other advisor types. These observations confirmed the hypotheses that Close Friends were primarily sought for moral support and Licensed Professionals for specialized knowledge. Business Associates were sought for their complementary skills in developing the golden idea and the venture. As such, entrepreneurs shared more venture-related knowledge with Business Associates than the other advisor types. The entrepreneur seeks the Licensed Professional for limited knowledge, and it is the most formal relationship of the three advisor types. The entrepreneur needs the specialized knowledge of the Licensed Professional and so thus brings this advisor into the preoperational stage for a primarily limited function of using the advisor's specialized knowledge. This analysis provides an insightful look into not only the structure of the social context but also how entrepreneurs share knowledge within the social context (de Koning & Muzyka, 1999).

Integrating the results of Hypothesis 6 and 7 suggests that the Business Associate is a well-liked, influential, experienced advisor in the entrepreneurs' social context of building a new venture. According to de Koning and Muzyka (1999), this is more likely a business partner, someone who is going to be involved in the startup phase after the preoperational stage is over. The Business Associate is involved for the long term.

Building on West (2007)'s work on the collective team that builds a new venture, I surmised that this team's influential figure is the Business Associate and he or she is not just on the team for his knowledge but because he is very well-liked. The future of the venture then not only lies with the entrepreneur with also with the ability of the Business Associate to provide necessary access to other potential useful contacts for finance, legal, technical resources as well as strategic skills and managerial talent. The entrepreneur comes up with the golden idea. The Business Associate becomes a crucial factor in building the golden venture (West, 2007).

Research Questions

In the next sections, I provide additional insights into the relationship between entrepreneurs and advisors at the preoperational stage. These insights come about as answers to qualitative research questions that are meant to add to existing theories on the subjects.

Relationship length and affective trust. *Research question 1: How does relationship length affect affective trust between entrepreneurs and advisors?*

The results confirm that loyalty and repeated reciprocities between partners contribute to emotional bonding in relationships. These emotional attachments and positive engagements build affective trust. An applicable theory will be the affective effect theory, which states that positive moods over time affect one's behavior and feelings (cf., Ashkanasy & Daus, 2002). Entrepreneurs that have positive experiences with their advisors would have positive attitudes and favorable impressions of these advisors. These experiences, over time, develop into constructive relationships with these entrepreneurs (Ashkanasy & Daus, 2002). The positive experiences lead into friendships.

The friendships provide opportunities to be willing to be vulnerable to these advisors based on personal likeness. This is affective trust, the willingness to be vulnerable to another based on positive experiences with that person.

I find that entrepreneurs rely on their advisors without really thinking about why they rely on these advisors. They say that these advisors had not given them any reason to doubt them. Implicitly, they rely on these advisors because of a history of positive experiences with them. They have come to expect these positive experiences from their advisors. The effect of relationship length is that the period of engagement had set the tone to expect a certain behavior from another, which had reinforced itself over time. There was no basis to doubt the behavior or the attitude would change. Based on this reinforcing scheme of things, entrepreneurs become "rational" in their trust. They rely on these advisors based on a history of positive experiences that had developed into shared understandings and enforced norms of what is expected behavior (Coleman, 1988). Shared values and norms are established and enforced in the network of interacting parties. Accordingly, without being able to immediately describe a cogent basis for trust, they say, "I trust him, I have no reason to doubt him," as the reason or their trust. Some of them were slightly irritated at the thought of challenging their trust in these advisors. Upon further thought on why they trusted these advisors, they gave instances of helping each other out with personal issues, frequent family dinners and engagements, vacations, and advisor actions that indicated vested interest in the entrepreneurs' progress. The implication is that the overriding form of trust over time is based on emotional bonding, personal likeness and fondness, and mutual obligations that had been fulfilled (McAllister, 1995). This is affective trust.

Trust and use of NDAs. *Research question 2: How does affective trust in an advisor relate to an entrepreneur's use of NDAs with that advisor?*

The results show that the emotional bonding and positive experiences with advisors that have led to affective trust in these advisors encourage entrepreneurs to be vulnerable with them and not to ask them to sign NDAs. As noted earlier, an entrepreneur that had started an Internet search company replied when asked why they did not ask an advisor to sign a NDA "because our love is stronger than NDA."

The unwavering affective trust in their advisors was clear as they cited family relationships, previous social engagements, childhood experiences, and their regard and admiration for their advisors. Entrepreneurs want to maintain the positive relationship with their advisors and asking them to sign NDAs would convey distrust. Such negative communication would jeopardize the relationship. They conceived signing NDAs as negative, harmful to the relationship and irrelevant to the venture creation success or effective as a knowledge security tool.

They expected continuous positive experience with their advisors and expected their advisors to work to continue the positive experience. To want to continue the positive affect, advisors in whom they had high levels of affective trust would not jeopardize the relationship by willfully harming the entrepreneur. High affective trust signified mutual expectations that both sides of the relationship would support and protect the other. These are unwritten codes of family, childhood, and close personal relationships. So without a NDA, the expectations are that the advisor would still protect the shared knowledge. The trust was a social contract. And with high levels of affective

trust, the social contract provided a binding and an effective knowledge security mechanism. No NDA was required.

So we observe a cyclical reciprocal relationship where each party keeps the trust the other had in him or her because each party anticipates a future benefit from the relationship. This is the kind of social control described by Coleman (1990) that is often observed in networks. With no formal security mechanism in place in networks, those who are privy to a trust still maintain a code of conduct and expectation. Breaking a confidence may mean that one will lose the confidence of network members. Such loss of confidence in a network can be devastating for one in terms of lost business, tarnished reputation, and social standing.

The reliance on social sanctions is what Coleman (1988) calls a "powerful, though sometimes fragile," (page 104) form of control. He deems this social form of control as effective nonetheless. Losing the confidence of certain influential individuals, access to certain influential members, access to financial resources or managerial talent, or access to potential business can be damaging to one's social standing and reputation (cf., Coleman, 1990: 178).

However, by keeping the trust that the entrepreneur deposes in the advisor, the advisor not only maintains a positive reputation, the advisor enjoys the benefit of being highly regarded in the social network. The advisor will then be sought for advice, while the advisor also receives advice when he or she needs it. So the advisor is motivated to keep the confidences not only to maintain social standing but for expected future benefits in receiving help. By maintaining the entrepreneur's trust, the advisor nullifies the need for a NDA.

Advisor types and use of NDAs. *Research question 3: How does advisor type affect an entrepreneur's use of NDAs?*

Entrepreneurs have different histories with each advisor. The social capital view and the affective effect theory would suggest that repeated positive engagements would discourage the use of NDAs with an advisor. Entrepreneurs use NDAs to protect their venture concept. They are likely to use NDAs with those who will pose the most threat to their ventures. It is not that they do not like this person or that this person had not proven him or herself to be a reliable associate, but compared to the other advisor types, this is the advisor that is most likely to be a threat.

In the hypothetical matchup of which advisor type they would consider using a NDA with (since some of them emphasized they do not use NDAs), they chose the advisor type that would be a challenge for their venture to succeed. This advisor type would be one that was privy to most venture knowledge and had the skills to develop the concept to a venture. The closest person that they were being vulnerable to had the most potential to hurt them in terms of creating imitations or defecting on their relationship. This advisor type would be the Business Associate and this was the advisor type that entrepreneurs would be most inclined to ask to sign NDAs.

Trust and knowledge sharing. *Research question 4: How does an entrepreneur's affective trust in an advisor affect knowledge sharing with that advisor?*

Affective trust in an advisor suggests familiarity. Entrepreneurs rely on familiarity when they want to confide in someone about their venture idea. Applying the affective effect theory to understand this phenomenon suggests that entrepreneurs seek those with whom they have had previous positive experiences.

Entrepreneurs may share limited knowledge, however, if they are simply looking for encouragement or if the advisor's expertise is not in the venture domain. For others, they may share extensive knowledge if they need strategic knowledge or technical expertise from these ones. Overall, they seek those they are familiar with, those who share their values, enjoy the same interests with them, and have shown vested interests in them.

Research question 5: How does an entrepreneur's calculative trust in an advisor affect knowledge sharing?

Entrepreneurs showed significant calculative trust in all advisor types and expected them to contribute to the venture development process. Advisors were skilled and experienced in their fields. They relied on those who had complementary skills for their venture idea development. The venture building part of a venture creation process is the crucial aspect of venture development as it determines the rate to market, the strategies, the competitive or cooperative dynamic, and the funding and the potential partners and employees (Choi et al., 2008). Sometimes, entrepreneurs have exit strategies while developing the venture idea. These strategies are developed with their advisors.

Though most entrepreneurs claimed total ownership of idea development, they leaned on their advisors mainly for strategy formulations. They needed marketing, financial, accounting, legal, human relations, and technical advice. They needed the collective wisdom of a chosen few. They relied on these advisors to make their venture ideas a successful reality. They attributed to themselves the discovery of the idea but they acknowledged that their advisors were crucial to starting the venture.

It is imperative that they have high calculative trust in all their advisors as creating a new venture is a risky process and to mitigate risks, entrepreneurs rely on strong human capital (West, 2007). Strong human capital is strongly related to successful ventures. The entrepreneurial team has properly strategized, prepared for market launch and prepared to handle contingencies. Also, the team is poised to thwart competitive attacks. Research has shown that initial human capital significantly affects venture success (Cooper et al., 1991). It is unlikely that an entrepreneur will consult an advisor in whom he or she has low calculative trust.

Knowledge sharing and use of NDAs. *Research question 6: What is the relationship between an entrepreneur's use of NDAs with an advisor and knowledge sharing with that advisor?*

There is limited research on the relationship between knowledge sharing and the use of NDAs. From the qualitative analysis, I surmise that knowledge sharing leads to the use of NDAs. The preoperational stage gets underway when an entrepreneur shares knowledge. The need to refine an idea and define a concept is overwhelming greater than the need to protect the idea. Definitely, effective knowledge security is significant for the entrepreneur but with regards to priorities, knowledge sharing is the imminent pressing task that entrepreneurs felt had to be accomplished. Without knowledge sharing, the venture idea dies. Entrepreneurs need to work with a collective group to move forward a venture idea (Bhave, 1994; West, 2007). To achieve the simultaneous goal of knowledge sharing and knowledge security, I observe that entrepreneurs stay within a trusted network of colleagues and friends, nullifying the need for formal contracts to maintain control of how knowledge is used. Also the network of associates has managerial,

technical and complementary skills that the entrepreneur needs to move the idea forward. So the entrepreneur achieves two goals within this network of associates: knowledge sharing and knowledge security. However, the main driving objective is to share knowledge.

The introduction of NDAs into the venture creation process usually signifies the creation of a venture, the initiating of formal contracts, the end of the preoperational stage, and the commencement of the startup phase. By the time NDAs are introduced into the discussions, the preoperational stage would be transitioning into the startup stage. The startup stage is the venture creation period where investors are approached and capital, land, and labor are secured (Bhave, 1994). The venture is open for business. Everything at this time is formal and relationships take on a more formal tone. The introduction of NDAs in the relationship at this time will not incur negative feelings from advisors nor jeopardize the relationships because at this time, everybody involved understands that signing NDAs and other formal documents is a requirement and part of the contractual documents that go with starting a new venture. The idea development stage draws to an end. A venture is now created.

Theoretical Contributions

I present the theoretical contributions in sections dedicated to trust research, knowledge sharing and advisor types and the preoperational stage. The theoretical contributions highlight insights drawn from the quantitative and qualitative analyses that add to existing theories on trust, knowledge sharing and the venture creation process. I start with trust research.

Trust research. This research confirms the notion that long-term relationships that provide positive experiences tend to develop into affective trust. Also, high levels of calculative trust were reported in all advisor types. These results support McAllister's (1995) work on both forms of trust, adding to the extensive research using these forms of trust to analyze organizational phenomena. This study applies these forms of trust to the entrepreneurial social context to understand the social environment in starting a new venture. I find that both forms of trust were significant in shaping the entrepreneurial social context

Moreover, entrepreneurs would not want to jeopardize the trust relationship with their advisors (cf., Williams, 2007). This is an emotion management strategy to maintain their trust in their advisors and vice versa. The qualitative analyses show that entrepreneurs want to maintain good relations with their advisors. I draw on managerial psychology research to understand this. Analyzing the relationship, there is an implicit pattern of maintaining positive experiences. The entrepreneur wants to continue to have the basis on which their trust is based. They reason that when relations are good between them and their advisors, they can justify relying on these advisors' discretion to protect the venture knowledge. They then work to maintain positive emotions and positive attitudes with these advisors by fulfilling mutual obligations and reciprocating good gestures. These actions maintain positive experiences. Entrepreneurs cognitively frame advisor situations in a positive light to justify their trust. The entrepreneur wants to preserve a positive climate with advisors by maintaining their expectations. This way, the trust is fostered (cf., Williams, 2007).

People trust those that they feel happy and excited around and distrust those that they feel nervous and even afraid around. One's emotion influences the experience of trust. Positive emotions signify trusting relationships. The good mood and positive feelings toward another makes one infer that the other person can be trusted (Jones & George, 1998). A positive emotion contributes to liking for others. A positive experience would influence the entrepreneur's tendency to trust the advisor. I observe that entrepreneurs describe mainly positive experiences with their advisors. Entrepreneurs want to maintain positive relationships with their advisors so as to continue to have the basis to have affective trust in these advisors. They want to continue to fulfill mutual obligations and maintain expectations and norms.

Research in managerial psychological research studying managers and their subordinates has encouraged managers to maintain a positive work environment to positively influence employee performance (cf., Ashkanasy & Daus, 2002; Brotheridge & Lee, 2008). This work contributes to that area of emotion research by highlighting the influence of the positive emotional environment on trust relationships. Entrepreneurs maintain positive emotional climates by fulfilling expectations and obligations. Consistent positive moods and emotions generate contexts that encourage trust and cooperation between entrepreneurs and advisors. This observation adds to existing research on emotions and trust (cf., Dunn & Schweitzer, 2005).

Moreover, this observation with regards to emotion management underscores another dimension of affective trust—the cognitive influences of parties. McAllister (1995) describes affective as trust that develops after the trustee shows genuine care and concern for the trustor. However, emotions are implicated in the trust relationship, even

though cognitively unscripted. The trustor evaluates the concern of the trustee, develops emotional bonds with the trustee, which results in affective trust. The unscripted cognitive schema is involved when there is no extensive rational consideration of the behavior and motive of the trustee. The cognitive schema behind trust processes, though, not explored in this study was observed when entrepreneurs took moments to reflect when I asked "Is there anything about this advisor or your relationship with him or her that makes him or her especially trustworthy?" or "Would you say that you depend on this person more because of his or her business skills or because of your familiarity with him or her?" Some took moments to analyze why they involved the advisor in their venture development process. This time of reflection signifies an unscripted dimension to the trust process. This observation that the entrepreneurs did not fully consider the basis of their trust indicates that there is an unscripted dimension to affective trust, where the trustee is assumed to be non-opportunistic but genuinely interested in one's welfare. The trust comes automatically without substantive information processing.

Advisor types and the preoperational stage. This study provides a cogent classification of the entrepreneur-advisor network into three categories of advisors. Scholars have noted the influence of a collective group of people who help the entrepreneur but the literature lacked a definite classification of the network of friends, family, business associates and professionals that make up the entrepreneur support network. This study describes three categories of advisors that are mainly used by entrepreneurs and compared them along trust, knowledge sharing and knowledge security patterns. The categories are Close Friends, Business Associates, and Licensed Professionals.

With regards to affective trust, I did not find significant differences between Close Friends and Business Associates. However, entrepreneurs showed significant differences in the level of affective trust in Close Friends and Licensed Professionals. None of the advisors were significantly different with regards to the level of calculative trust expressed in them, signaling that entrepreneurs expect all their advisors to be competent and reliable. This contribution to theory highlights recent research by Chua and others (2008) that people seeking to advance their careers trust their advisors to be competent and experienced to provide such advice. Entrepreneurs emphasized the competence and expertise of their advisors.

Moreover, this research adds to existing work on the venture creation process. Researchers define the preoperational stage as the period of idea evaluation and concept refinement. The start-up phase is the period of labor, capital and land acquisition (Ardichvili et al., 2003; Bhave, 1994). Within the preoperational stage are phases of opportunity recognition, opportunity chosen, and opportunity refinement. Bhave (1994) describes the opportunity chosen phase as the time when entrepreneurs commit to pursue an opportunity for a new venture. This phase was confirmed in this study when I asked entrepreneurs whether advisors contributed to the development of the venture idea and entrepreneurs say, "The idea was my own." The time is personal to the entrepreneur. The opportunity refinement phase is when the entrepreneur elaborates on the venture idea and seeks to clarify and develop it. He or she looks for sounding boards and people with whom he or she can "think while talking." This time has been the focus of this study. I observed the distinction of the opportunity chosen phase from the opportunity refinement phase when the entrepreneur, though claiming total ownership of the idea, acknowledges

that advisors contributed to making the idea better. I have been able to provide evidence of these phases within the preoperational stage with this research.

Knowledge sharing. These results show that these advisors are skilled in their respective professions and are regarded as such. Cooper et al. (1991) observe that initial human capital, that is, the cumulative managerial experience, of the team working on a venture idea significantly affects the venture success. The intellectual capital significantly affects the strategies that are being developed (Choi et al., 2008) and the kind of innovations that are developed (Subramaniam & Youndt, 2005). Researchers have noted that those with education and expertise have higher chances of successful ventures (Shrader & Siegel, 2007). I found qualitative support that trust in advisor's skills and experience, which is the underlying basis for calculative trust, contributes to knowledge sharing.

An advantage of well thought-out ventures is that these ventures are more likely to succeed than ventures that are not based on well-crafted strategies and technical expertise (Choi et al, 2008; Shepherd & DeTienne, 2005). Having experience and expertise is crucial for the entrepreneur. Knowledge sharing is even more important to increase the likelihood of success (West, 2007). These results underscore the significance of calculative trust for knowledge sharing. Also, these results corroborate earlier research on knowledge sharing and venture success.

I observe that entrepreneurs had the most knowledge sharing with the Business Associate. Previous research had noted the significance of knowledge sharing for entrepreneurial activities. West (2007) observes that the collective intellectual contribution of entrepreneurs and advisors, which he calls collective knowledge,

significantly shapes the prospects of a new venture. Choi and others (2008) highlight the significance of having skilled advisors who contribute to building effective strategies for successful ventures. Appleyard (2001) notes that in technology circles, knowledge spills over as engineers and scientists interact at work and at social events. She emphasizes that this knowledge spillover is necessary for innovations.

This work elaborates on the impact of knowledge sharing by showing that entrepreneurs rely on Business Associates for strategy development, marketing assistance and technical skills. The study extends West (2007) and Cooper and colleagues' (1994) research that initial human capital contribution to venture creation impacts the venture's performance. An advisor's reputation was significantly related to knowledge sharing. I found advisors' reputations significantly impacted entrepreneurs' willingness to share knowledge. Entrepreneurs referred to advisors' previous business and career achievements to make the judgment to share knowledge with them. In addition, they relied on others' recommendations about whom to share knowledge with. If someone recommended someone to entrepreneurs, they cited the high repute of the person making the recommendation as the basis on which their trust was based. They trusted the judgment of the person making the recommendation based on that person's reputation. They also assessed the person who was being recommended based on that person's reputation.

This work shows that reputation within a social community impacts knowledge sharing. The social community assesses its members based on their career achievements and their history of fulfilling obligations and maintaining norms of reciprocity and generosity. These assessments of others' actions develop into their reputations.

Entrepreneurs who are members of a social community, say the local community chamber of commerce networking events, become privy to information on others' reputations and rely on this information to make judgments of whom to seek for advice.

Ensign and Hebert (2010) observe frequency of communication among R & D colleagues in pharmaceutical firms lead to reciprocity, which influenced knowledge sharing. They observe that the R & D colleagues assessed the knowledge seekers' reputation before they offered information to accomplish tasks. Information was not freely shared in pharmaceutical research laboratories unless frequent interaction and norms of reciprocity had been established between the source and seeker of knowledge. Within a social community, fulfilling norms of reciprocity and obligations generates affective trust (McAllister, 1995). High levels of affective trust develop from frequent relational experiences that show one is genuinely concerned about one's welfare. In this study, most knowledge sharing was with the Business Associates. Entrepreneurs also reported high levels of affective trust in their Business Associates. As such, affective trust in Business Associates significantly impacts knowledge sharing in the entrepreneur-advisor network. Knowledge sharing is therefore not only based on the skills the Business Associate brings to the venture but also based on the emotional bond between the entrepreneur and the advisor.

Beyond confirming the significance of reputation and affective trust as antecedents to knowledge sharing, this work contributes to research on the type of knowledge shared among advisor types. Chua and colleagues' (2008) explain that knowledge sharing in professional networks can be analyzed based on task advice and career guidance advice. In this context, knowledge sharing was based on career guidance

advice and venture task-related advice. Business Associates were observed to have most knowledge sharing based on venture-related task advice. Close Friends were observed to be involved mainly for career-guidance advice with regards to encouragement, moral support, sounding board, and providing recommendations. Licensed Professionals were observed to be involved for task-related advice. The study illustrates the type of knowledge sharing with each advisor type in the entrepreneur's immediate social context.

The use of NDAs. Though they were sharing more venture knowledge with Business Associates, entrepreneurs were not relying on NDAs with these advisors because they viewed these Business Associates as potential business partners. If they were not personally familiar with an advisor, which could be the case with some Business Associates, they relied on these Associates' reputations. To ask a personal friend or a reputed business consultant to sign an NDA in many cases was considered insulting. Another reason for the non-use of NDAs is the perceived enforceability of the document. Entrepreneurs describe how expensive the process of enforcing the NDA can be and thus discouraging to have one in place.

Entrepreneurs did not regard NDAs as very useful security mechanisms, deeming them unnecessary or obstructive in developing a trusted relationship with advisors. With advisors they were not personally close to, they relied on the institutional environment that stipulates ethical provisions on how Licensed Professionals should conduct their affairs and protect clients' privileges. Also, entrepreneurs preferred selective knowledge sharing to the use of NDAs.

Another factor with the use of NDAs was that entrepreneurs considered them expensive to enforce. I noted earlier in Chapter 2 that research had shown the irrelevance

of NDAs because of difficulty in enforcing them. In my study, one entrepreneur who was working on a mobile communications venture said,

> They are very difficult to enforce and… the way our legal system is structured and works, if they did take it and you try to enforce that NDA, it will be very difficult and very expensive. And if that person has the resources to pay lawyers longer than you, then statistically, you don't have a very good chance of winning.

An entrepreneur that had started an Internet marketing firm said,

> "NDA is … as far as I am aware, is not that very enforceable and every time I've met with my legal counsel because I am upset about something with respect to that, he'll say, it's not worth the effort and time to go and try to enforce that."

Another entrepreneur who had started an Internet sport memorabilia exchange venture said,

> "I think they give people a false sense of security, to be honest with you."

Also technology entrepreneurs are highly skilled programmers, designers, and innovators. Like many of them noted, anybody could create a new design out of an existing design and render a NDA useless. The significance of NDAs for technology entrepreneurs is therefore quite limited. For those using an existing technology, they said that there was nothing proprietary about their business, noting that others had already gotten to the market with the basic technology. They were simply working on creating markets for their services or products. Hence, the use of NDAs for them was considered irrelevant.

Additionally, the results show the effects of knowledge sharing and knowledge security concepts to the preoperational stage. Knowledge sharing is the priority for entrepreneurs and the introduction of NDAs into the venture creation process can signify the initiation of the startup phase.

Practical Contributions

The results of such tests have the potential to improve the quality of small business development center programs by providing knowledge on how entrepreneurs handle knowledge sharing. Entrepreneurs can understand why they seek advice from those they admire and trust and why they seek those they are less familiar with to achieve a desired goal. By better understanding the motives and cognitive reasons on where and how they seek advice, they are positioned to make better decisions on advice seeking. This knowledge can be disseminated during seminars and workshops when experts provide assistance and counsel to aspiring entrepreneurs. As one entrepreneur who had started a technology consulting venture commented,

> There is a real specific need for good advisors to assist entrepreneurs in getting involved and orchestrating a new venture. Many great ideas and inventions go by the way side since people don't know where to turn to get advice and counseling. A mentor protégé program is great if it is implemented to these types of opportunities. Currently the mentor protégé program offered by the SBA is …not functional as designated by the government…to serve the small business community and [to] develop new business to stimulate the economy and promote economical growth.

With this understanding, small business development centers can better guide entrepreneurs on their efforts in seeking assistance to create their new ventures. The results will be useful to small business development centers and support groups.

Conclusion

Few studies have examined how the multidimensional nature of trust affects entrepreneur-advisor relationships. I drew on the empirical and qualitative material to demonstrate how the forms of trust between entrepreneurs and advisors affect knowledge sharing and the use of NDAs during the preoperational stage. Many studies describe the preoperational stage as the period of opportunity recognition and refinement that precede

the start up stage. Fifty-two high-tech entrepreneurs participated in this study. I observe advisors with different functional relevance define the entrepreneurs' inner circle and action set. Entrepreneurs used Close Friends for moral support, encouragement, and sounding boards. Entrepreneurs sought Business Associates for their complementary skills and to access to resources. Entrepreneurs consulted with Licensed Professionals as the specialists with expert knowledge on accounting, legal, technical, and financial issues. Each advisor played different roles-the Close Friend being the encourager, the Business Associate being the strategist, and the Licensed Professional being the specialist—sought to realize an entrepreneur's goal of starting a venture.

These advisors, whatever their category, were reputable and highly regarded by their peers. This high regard was reflected in high levels of calculative trust in all advisor types. I found significant differences in levels of affective trust between Close Friends and Licensed Professionals but not between Close Friends and Business Associates. The significant difference was due to the relationship with Licensed Professionals being a strictly business one while entrepreneurs had repeated personal interactions with both Close Friends and Business Associates.

Concerning the use of NDAs for knowledge security, the qualitative analysis revealed that a relational form of governance underlined these relationships with Close Friends and Business Associates. The entrepreneur relied on advisors' moral character not to jeopardize the venture creation process by leaking the venture plans to potential competitors. This confidence in Close Friends and Business Associates was due to shared personal and business experiences and sometimes, family ties. This research builds on the social capital perspective, on the strength of relationships acting as a social form of

security and governance to maintain contracts. Though no contracts were signed, the mutual expectations that both sides to a relationship would support and encourage each other were enforced and reinforced when privileged venture knowledge was shared with no formal contract.

With regards to Licensed Professionals, I found that the entrepreneur relied on the institutional environment that provided a professional code of ethics that guided these professionals' use of client information.

Three of the hypotheses were supported using quantitative methods: relationship length significantly impacted affective trust, affective and calculative trust contributed to knowledge sharing. Entrepreneurs were observed to share the most knowledge with Business Associates compared to the other advisor types.

Limitations and Suggestions for Future Research

As with just about all studies, there are limitations to this study. The data was generated through entrepreneur referrals. There is a high probability that entrepreneurs recommended those they liked or had positive experiences with, thus biasing the data to a certain network of associates in South Florida. Also, entrepreneurs' moods on interview days are most likely to introduce bias to data. Entrepreneur personal characteristics will also influence the rating of advisors. I tried to correct for this bias by using demographic and industry control variables hierarchical linear regression as suggested by Oppler and colleagues (1992). In future studies, researchers might obtain public records of new business licenses during a relevant period, and then draw a random sample of those entrepreneurs. Also, future work can sample more entrepreneurs to increase sample size and variance, which increases the reliability of results.

The data is also limited by entrepreneurs' personal dispositions to be positive or negative about issues (cf., Ashkanasy & Daus, 2002). Those that are generally in positive disposition are more likely to report positive experiences with their advisors than those that generally have negative dispositions. A larger sample may provide a higher probability of data representative of both moods. Another limitation is that I did not interview advisors on their experiences with working with these entrepreneurs to get two perspectives of entrepreneur-advisor relationships. Thus, I did not validate the entrepreneurs' comments on their advisors. Future research can use two interviewers, one to talk to entrepreneurs and another to talk to advisors. This is to encourage entrepreneurs to candidly describe their experiences with their advisors knowing their interviewer is not their advisors' interviewer. This way a level of anonymity can be maintained in the data collection process. Also, by having two interviewers talking to entrepreneurs and advisors, interviewer bias can be curtailed when analyzing both advisor and entrepreneur data.

There are some controls I left out, as it is not possible to completely avoid omitting some causally important variables. Some controls that were not used in this study are organizational size, education level, and country of origin. Future work can consider these variables in conjunction with other variables in this study.

Future work can also specifically target ventures based on novel ideas and innovations so that the effect of affective trust on the use of NDAs can be examined in that context. This study's results were limited by having data based on ventures that were based on novel ideas (for example, aircraft taxis) and those that were extensions and

applications of existing technology. The product and venture types affect entrepreneurs' attitudes to knowledge security.

I hope that this work stimulates further theoretical and empirical work on the forms of trust underpinning the preoperational stage and how entrepreneurs manage knowledge issues at this time. Only through research can we develop a thorough understanding of how entrepreneurs create and maintain cooperative relationships with their advisors. Research is yet to examine whether the presence of NDAs engenders more or less knowledge sharing and the potential effects of having NDAs on venture success.

Future work can also examine the rates and successes of entrepreneurs with some of these advisors and entrepreneurs with all types of advisors as understanding these processes provides detailed knowledge that drives future research. In addition, future work can consider at what time in the development process entrepreneurs bring in each category of advisor. Would entrepreneurs first get encouragement from Close Friends and then seek out advice from Business Associates or would it be the other way around? Future work can also analyze why some entrepreneurs may not use advisors and what conditions led these entrepreneurs to decide to go it alone.

The three categories of advisors can also be analyzed with other trust forms identified in literature such as deterrence-based trust, knowledge-based trust, and identification-based trust (Shapiro et al., 1992), fragile trust and resilient trust (Ring, 1996), and swift trust (Meyerson et al., 1996). In addition, researchers can examine exactly when NDAs and other contractual documents to protect knowledge come into effect in the venture creation process and also what types of contractual documents are at all useful for entrepreneurs.

Future work can examine cognitive factors influencing trust decisions and development that indicate people trust others based on an unscripted schema. They maintain a pattern of fulfilling mutual obligations without consciously thinking about why they are acting a certain way. They cognitively maintain a pattern of actions to reduce negative emotions between them and their advisors. Goel and Sarri (2006) note this that parties tend to continue to trust others even when the basis for trust is no longer valid. They call these phenomena overtrust. The trustor in this case does not reevaluate the basis for the trust. There are latent aspects to affective trust. People trust others without cognitively analyzing the costs and benefits of trusting these others underscore unscripted aspect to affective trust.

International entrepreneurship researchers can examine the use of contractual documents such as NDAs and the reliance on trust in contexts with weak institutional provisions for client privileges and enforcement of rules and laws.

In summary, this work contributes to research on the social process of entrepreneurship. It serves to complement existing research on the entrepreneurship process, to understand the social context surrounding the creation of a new venture, and to integrate different streams of research on knowledge management, knowledge security, and trust to advance our understanding of the venture creation process.

Appendix A

Questionnaire

ENTREPRENEURS AND ADVISORS

My name is Abiola Fanimokun, and I am a Ph.D. student in the College of Business at Florida Atlantic University. Dr. Mark Peterson and Dr. Gary Castrogiovanni are supervising my project. The project is about the relationships between entrepreneurs and their advisors during the early stages of creating a new high-tech venture. I will be asking questions about three types of advisors—your inner circle of friends and family members, your Business Associates, and your Licensed Professionals. The questions deal with the trust between you and these advisors—why you share ideas with them, and how you protect those ideas when you are developing the business concept and system for a new venture.

This interview will take about an hour. It is completely voluntary, and all your information will remain only with the research group. In publications, I will take care to combine your answers with those of other people so that nobody can identify you. You can decide not to answer any question or we can stop the interview at any time. I am going to record the interview. I will turn off the voice recorder any time you like or erase any part of the interview that you indicate you prefer not recorded. The risks involved in participating in this study are no more than you are likely to encounter in your business activities. If you have any questions about the study, you may call the principal investigator Dr. Mark Peterson at 561-297-3669 or me at 954-428-7125.

Do I have your consent to continue?

Do you have any questions at this time?

A. Getting to Know the Entrepreneur

Before asking about your advisors, I have some questions about your work experience**.**

A1. In what industries have you worked?

A2. What were the main jobs that you had when you worked in those industries?

A3. How has your education helped prepare you for the work you do now or for the jobs that you have had?

A4. How many years did you work as a full-time employee?

A5. While working as a full-time employee, how many years did you work in a managerial or supervisory position?

A6. How many years have you been working on your own without having a paid position with another employer?

I would like to ask you some questions about the kinds of relationships that you developed while you were working for other employers that have helped you in your entrepreneurial ventures

A7. Have any of your previous coworkers advised you when you were planning a new venture?

A7a. (If yes) Can you tell me a little bit more about these people? PROBE: How have these people helped you? Anything else?)

A8. Are you still in touch with people outside of your company such as suppliers and distributors who you met while you worked for another employer? A8a. (If yes) Can you tell me a little bit more about these people? (PROBE: How have these people helped you? Anything else?)

B. First Venture Information

Next, I have some questions about your first major full-time business venture**.**

B1. Is your current business your first major full-time business venture?

B2. When did you found your first major venture?

B3. What were the venture's products or services?

B4. Did you continue working in a paid position while you were starting that first venture?

(If yes) B2b. How many years did you work part-time on your first venture before you left your paid position?

C. High-Tech Venture

For most of the rest of our conversation, I'd like to talk about a high-tech venture that you have started. If you have started more than one high-tech business, please think about one for which you had three types of advisors including a close friend or family member, a business associate who helped you work out the business idea, and a licensed professional such as a lawyer,

accountant or financial analyst. It could be either your current major venture or one that you've done in the past.

C1. Is the venture that you are thinking of the one that we have been discussing so far?

(If no) C2. Can you briefly describe this venture, its products, and services?

C3. When was this venture started?

Now, I would like to ask you three separate sets of questions about three types of advisors with whom you discussed your ideas prior to starting the high-tech venture. First, I will ask some questions about a Close Friend or family member who is in your inner circle of friends. A Close Friend is involved with non-work and work matters. Next, I will ask a similar set of questions about a Business Associate who could be on what you might call a "personal board of advisors." This is a non-paid business advisor. Then I will ask some questions about a Licensed Professional such as a lawyer, an accountant, or a financial analyst with whom you consulted and who is a paid advisor. The Licensed Professional must have a government or professional license. The three people you are thinking about now should be three different people.

C4. Can you think of three such advisors that helped you with this venture?

C5. Do you have any questions about what I mean by each type of advisor?

D. Close Friend

D1. Background/Relationship History/Relationship Tenure

a. How did you meet this advisor?
(PROBE: Was this someone you knew from your work? Is this a family member? Were you introduced by a mutual friend? Was this someone who was recommended by a business associate?)
b. How long have you known this person?
c. Can you tell me a little bit about how your relationship with this person developed? (PROBE What kinds of things have you done together in the past?):
d. Apart from your business-related discussions, what sorts of things do you and this advisor do together? (PROBE: Social activities such as golfing, traveling, having drinks, coffee?)
e. Is the venture you are describing now the only one that you have worked on with this person, or have you worked together on other projects as well? (PROBE: Anything else?)
f. Do you ever help one another out on either business or personal matters apart from the times when you are working together on a specific venture?
g. (If yes) Can you give an example?
h. Are there any similarities or differences in your personal or professional background that made your relationship with this advisor either particularly easy or somewhat difficult? (PROBE: Perhaps about stressful times or misunderstandings.)

D2. Trust

a. Were you ever concerned that this advisor might take advantage of you in some way? (If yes, please explain).
b. Is there anything about this advisor or your relationship with him/her that makes him/her especially trustworthy? Please explain.
(PROBE: Anything else?)

c. Would you say that you depend on this person more because of his or her business skills or because of your familiarity with him or her? Please explain.

D3. Secrecy

a. Did you specifically ask your advisor not to discuss your new project with other people? (PROBE IF NOT CLEAR: Yes or no.)
(PROBE: Please explain.)

D4. Use of NDAs

a. Did you ask this advisor to sign an NDA?
(PROBE IF NOT CLEAR: Yes or no.) (PROBE: Please explain)

D5. Knowledge Sharing

a. What aspects of your venture did you usually talk about with this advisor? (PROBE: Did you share general information, technical knowledge, or strategic issues?)
b. How much do you think this advisor contributed to developing your venture idea?

Please explain.

c. Is there anything about this particular advisor that made it especially easy or difficult for you to get information or share ideas about this venture?

(PROBE: Please explain.)

D6. Other

a. Was this advisor paid anything for his or her services?

Now I would like you to please fill out this short questionnaire about your close friend. When you are done, please let me know and we will talk about the next category of advisor.

ENTREPRENEURS AND ADVISORS

E. Entrepreneur's trust in <u>close friend</u>, knowledge sharing, and reliance on knowledge security mechanisms

E1. Background/Relationship History/Tenure

a. About how often did you meet with this advisor when planning the venture? Circle answer.

1	2	3	4	5
Less than bi-monthly	About bi-monthly	About monthly	Weekly	Daily

Use this rating scale for the next question.
Rating Scale:

1	**2**	**3**	**4**	**5**
Not close at all		**Somewhat close**		**Very close**

b. How close are you with this advisor? 1 2 3 4 5

Use this rating scale for the next few questions.
Rating Scale:

1	**2**	**3**	**4**	**5**
Never		**Sometimes**		**Frequently**

c. How often does this person talk to you about his or her business affairs? 1 2 3 4 5
d. How often does this person talk to you about his or her personal situation? 1 2 3 4 5
e. How often do you talk to this person about your business affairs apart from this particular venture? 1 2 3 4 5
f. How often do you talk to this person about your personal situation? 1 2 3 4 5

E2. Trust

Rating Scale:

1	**2**	**3**	**4**	**5**
Not at all		**Somewhat**		**Completely**

a. How much can you rely on this advisor without any fear that this advisor will take advantage of you? 1 2 3 4 5

Now I am going to ask you a set of questions. Please respond using a 1 to 7 scale. 1 corresponds to **strongly disagree** and 7 means **strongly agree**.

E3. Affective trust:

a. We can both freely share our ideas, feelings and hopes.	1	2	3	4	5	6	7
b. I can talk freely with this individual about difficulties I am having with my venture and know that (s)he will want to listen.	1	2	3	4	5	6	7
c. We would both feel a sense of loss if we could no longer share ideas.	1	2	3	4	5	6	7
d. If I shared my ideas with this person, I know (s)he would respond constructively.	1	2	3	4	5	6	7
e. I would have to say that we have made considerable emotional Investments in our working relationship.	1	2	3	4	5	6	7

E4. Calculative trust

a. This person approaches his/her job with professionalism.	1	2	3	4	5	6	7
b. This person approaches his/her job with dedication.	1	2	3	4	5	6	7
c. Given this person's track record, I see no reason to doubt his/her competence in giving me advice.	1	2	3	4	5	6	7
d. I can rely on this person not to make efforts to start a new venture more difficult by careless work.	1	2	3	4	5	6	7
e. Most people, even those who aren't close friends of this individual, respect him/her as a coworker.	1	2	3	4	5	6	7
f. Other work associates of mine who must interact with this individual consider him/her to be trustworthy.	1	2	3	4	5	6	7
g. If people knew more about this individual and his/her background they would be more concerned and monitor his/her performance more closely.	1	2	3	4	5	6	7

E5. Knowledge sharing

Now I am going to ask you a set of questions about the information you share with this advisor. Please respond using a 1 to 5 scale. ***1 corresponds to*** *strongly disagree****, 2 means*** *disagree****, 3 means*** *neutral****, 4 means agree and 5 means*** *strongly agree.*

Rating Scale:

1	2	3	4	5
Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**

a. I shared crucial information about the venture with this advisor.	1	2	3	4	5
b. This advisor added to my ideas about the venture.	1	2	3	4	5
c. This advisor helped me develop the idea on which the venture is based.	1	2	3	4	5
d. This advisor helped me develop strategies for the venture.	1	2	3	4	5
e. I learned or acquired some new or important information from this advisor.	1	2	3	4	5
f. I learned or acquired some critical capability or skill from the advisor.	1	2	3	4	5
g. This relationship helped me to enhance my capabilities/skills.	1	2	3	4	5

[INTERVIEW] F. Business associate.

Let's talk about a business associate. A Business Associate is someone who could be on what you may call a "personal board of advisors." This person is not paid for his/her services.

F1. Background/Relationship History/Relationship Tenure

a. How did you meet this advisor?
   (PROBE: Was this someone you knew from your work? Is this a family member? Were you introduced by a mutual friend? Was this someone who was recommended by a business associate?)
b. How long have you known this person?
c. Can you tell me a little bit about how your relationship with this person developed?
   (PROBE: What kinds of things have you done together in the past?)
d. Apart from your business-related discussions, what sorts of things do you and this advisor do together?
   (PROBE: Social activities such as golfing, traveling, having drinks, coffee? Activities related to other businesses?)
e. Is the venture you are describing now the only one that you have worked on with this person, or have you worked together on other projects as well?
   (PROBE: Anything else?)
f. Do you ever help one another out on either business or personal matters apart from the times when you are working together on a specific venture?
   g. (If yes) Can you give an example?
h. Are there any similarities or differences in your personal or professional background that made your relationship with this advisor either particularly easy or somewhat difficult?
   (PROBE: Can you give an example? Perhaps about a stressful time or a misunderstanding?)

F2. Trust

a. Were you ever concerned that this advisor might take advantage of you in some way? (If yes) Please explain.
b. Is there anything about this advisor or your relationship with him/her that makes him/her especially trustworthy? Please explain.
   (PROBE: Anything else?)
c. Would you say that you depend on this person more because of his or her business skills or because of your familiarity with him or her? Please explain.

F3. Secrecy

a. Did you specifically ask your advisor NOT to discuss your high-tech venture with other people?
   (PROBE IF NOT CLEAR: Yes or no.)
   (PROBE: Please explain.)

F4. Use of NDAs

a. Did you ask this advisor to sign an NDA?
   (PROBE IF NOT CLEAR: Yes or no.) (PROBE: Please explain)

F5. Knowledge Sharing

a. What aspects of your venture did you usually talk about with this advisor? (PROBE: Did you share general information, technical knowledge, or strategic issues?)
b. How much do you think this advisor contributed to developing your venture idea? Please explain.
c. Is there anything about this particular advisor that made it especially easy or difficult for you to get information or share ideas about your venture? (PROBE: Please explain.)

F6. Other

a. Was this advisor paid anything for his or her services?

Now I would like you to please fill out this short questionnaire about your business associate. When you are done, please let me know and we will talk about the next category of advisor.

ENTREPRENEURS AND ADVISORS

[QUESTIONNAIRE]

G. Entrepreneur's trust in business associate, knowledge sharing, and reliance on knowledge security mechanisms

G1. Background/Relationship History

a. About how often did you meet with this advisor when planning the venture? Circle answer.

1	2	3	4	5
Less than bi-monthly	About bi-monthly	About monthly	Weekly	Daily

Use this rating scale for the next question.
Rating Scale:

1	**2**	**3**	**4**	**5**
Not close at all		**Somewhat close**		**Very close**

b. How close are you with this advisor? 1 2 3 4 5

Use this rating scale for the next few questions.
Rating Scale:

1	**2**	**3**	**4**	**5**
Never		**Sometimes**		**Frequently**

c. How often does this person talk to you about his or her business affairs? 1 2 3 4 5
d. How often does this person talk to you about his or her personal situation? 1 2 3 4 5
e. How often do you talk to this person about your business affairs apart from this particular venture? 1 2 3 4 5
f. How often do you talk to this person about your personal situation? 1 2 3 4 5

G2. Trust

Rating Scale:

1	**2**	**3**	**4**	**5**
Not at all		**Somewhat**		**Completely**

a. How much can you rely on this advisor without any fear that this advisor will take advantage of you? 1 2 3 4 5

Now I am going to ask you a set of questions. Please respond using a 1 to 7 scale. 1 corresponds to **strongly disagree** and 7 means **strongly agree**.

G3. Affective trust

a. We can both freely share our ideas, feelings and hopes.	1	2	3	4	5	6	7
b. I can talk freely with this individual about difficulties I am having with my venture and know that (s)he will want to listen.	1	2	3	4	5	6	7
c. We would both feel a sense of loss if we could no longer share ideas.	1	2	3	4	5	6	7
d. I shared my ideas with this person, I know (s)he would respond constructively.	1	2	3	4	5	6	7
e. I would have to say that we have made considerable emotional investments in our working relationship.	1	2	3	4	5	6	7

G4. Calculative trust

a. This person approaches his/her job with professionalism.	1	2	3	4	5	6	7
b. This person approaches his/her job with dedication.	1	2	3	4	5	6	7
c. Given this person's track record, I see no reason to doubt his/her competence in giving me advice.	1	2	3	4	5	6	7
d. I can rely on this person not to make efforts to start a new venture more difficult by careless work.	1	2	3	4	5	6	7
e. Most people, even those who aren't close friends of this individual, respect him/her as a coworker.	1	2	3	4	5	6	7
f. Other work associates of mine who must interact with this individual consider him/her to be trustworthy	1	2	3	4	5	6	7
g. If people knew more about this individual and his/her background they would be more concerned and monitor his/her performance more closely.	1	2	3	4	5	6	7

G5. Knowledge sharing

Now I am going to ask you a set of questions about the information you share with this advisor. Please respond using a 1 to 5 scale. 1 corresponds to strongly disagree, 2 means disagree, 3 means neutral, 4 means agree and 5 means strongly agree.

Rating Scale:

1	**2**	**3**	**4**	**5**
Strongly disagree	**Disagree**	**Neutral**	**Agree**	**Strongly agree**

a. I shared crucial information about the venture with this advisor.	1	2	3	4	5
b. This advisor added to my ideas about the venture.	1	2	3	4	5
c. This advisor helped me develop the idea on which the venture is based.	1	2	3	4	5
d. This advisor helped me develop strategies for the venture.	1	2	3	4	5
e. I learned or acquired some new or important information from this advisor.	1	2	3	4	5
f. I learned or acquired some critical capability or skill from the advisor.	1	2	3	4	5
g. This relationship helped me to enhance my capabilities/skills.	1	2	3	4	5

SECTION H

Let's talk next about a Licensed Professional. The Licensed Professional must have a government or professional license. A Licensed Professional could be a lawyer, an accountant, or a financial analyst with whom you consulted and who is a paid advisor.

H1. Background/Relationship History/Relationship Tenure

a. How did you meet this advisor?
   (PROBE: Was this someone you knew from your work? Is this a family member? Were you introduced by a mutual friend? Was this someone who was recommended by a business associate?)
b. How long have you known this person?
c. Can you tell me a little bit about how your relationship with this person developed?
   (PROBE: What kinds of things have you done together in the past?)
d. Apart from your business-related discussions, what sorts of things do you and this advisor do together?
   (PROBE: Social activities such as golfing, traveling, having drinks, coffee? Activities related to other businesses?)
e. Is the venture you are describing now the only one that you have worked on with this person, or have you worked together on other projects as well?
   (PROBE: Anything else?)
f. Do you ever help one another out on either business or personal matters apart from the times when you are working together on a specific venture?
   g. (If yes) Can you give an example?
h. Are there any similarities or differences in your personal or professional background that made your relationship with this advisor either particularly easy or somewhat difficult?
(PROBE: Can you give an example? Perhaps about a stressful time or a misunderstanding?)?

H2. Trust

a. Were you ever concerned that this advisor might take advantage of you in some way? (If yes) Please explain.
b. Is there anything about this advisor or your relationship with him/her that makes him/her especially trustworthy? Please explain.
   (PROBE: Anything else?)
c. Would you say that you depend on this person more because of his or her business skills or because of your familiarity with him or her? Please explain.

H3. Secrecy

a. Did you specifically ask your advisor NOT to discuss your high-tech venture with other people?
   (PROBE IF NOT CLEAR: Yes or no.)
   (PROBE: Please explain.)

H4. Use of NDAs

a. Did you ask this advisor to sign an NDA?
(PROBE IF NOT CLEAR: Yes or no.) (PROBE: Please explain)

H5. Knowledge Sharing

a. What aspects of your venture did you usually talk about with this advisor? (PROBE: Did you share general information, technical knowledge, or strategic issues?)
b. How much do you think this advisor contributed to developing your venture idea? Please explain.
c. Is there anything about this particular advisor that made it especially easy or difficult for you to get information or share ideas about your venture? (PROBE: Please explain.)

H6. Other

a. Was this advisor paid anything for his or her services?

Now I would like you to please fill out this short questionnaire about your licensed professional. When you are done, please let me know and we will talk about your general use of NDAs and other topics.

ENTREPRENEURS AND ADVISORS: Licensed Professional
[QUESTIONNAIRE]

I1. Background/Relationship History/Tenure

a. About how often did you meet with this advisor when planning the venture? Circle answer.

1	2	3	4	5
Less than bi-monthly	About bi-monthly	About monthly	Weekly	Daily

Use this rating scale for the next question.
Rating Scale:

1	**2**	**3**	**4**	**5**
Not close at all		**Somewhat close**		**Very close to advisor**

b. How close are you with this advisor? 1 2 3 4 5

Use this rating scale for the next few questions.
Rating Scale:

1	**2**	**3**	**4**	**5**
Never		**Sometimes**		**Frequently**

c. How often does this person talk to you about his or her business affairs? 1 2 3 4 5
d. How often does this person talk to you about his or her personal situation? 1 2 3 4 5
e. How often do you talk to this person about your business affairs apart from this particular venture? 1 2 3 4 5
f. How often do you talk to this person about your personal situation? 1 2 3 4 5

I2. Trust

Rating Scale:

1	**2**	**3**	**4**	**5**
Not at all		**Somewhat**		**Completely**

a. How much can you rely on this advisor without any fear that this advisor will take advantage of you? 1 2 3 4 5

Now I am going to ask you a set of questions. Please respond using a 1 to 7 scale. 1 corresponds to **strongly disagree** and 7 means **strongly agree**.

I3. Affective trust

a. We can both freely share our ideas, feelings and hopes.	1	2	3	4	5	6	7
b. I can talk freely with this individual about difficulties I am having with my venture an know that (s)he will want to listen	1	2	3	4	5	6	7
c. We would both feel a sense of loss if we could no longer share ideas.	1	2	3	4	5	6	7
d. If I shared my ideas with this person, I know (s)he would respond constructively.	1	2	3	4	5	6	7
e. I would have to say that we have made considerable emotional investments in our working relationship.	1	2	3	4	5	6	7

I4. Calculative trust

a. This person approaches his/her job with professionalism.	1	2	3	4	5	6	7
b. This person approaches his/her job with dedication.	1	2	3	4	5	6	7
c. Given this person's track record, I see no reason to doubt his/her . competence in giving me advice.	1	2	3	4	5	6	7
d. I can rely on this person not to make efforts to start a new venture more difficult by careless work.	1	2	3	4	5	6	7
e. Most people, even those who aren't close friends of this individual, respect him/her as a coworker.	1	2	3	4	5	6	7
f. Other work associates of mine who must interact with this individual consider him/her to be trustworthy.	1	2	3	4	5	6	7
g. If people knew more about this individual and his/her background they would be more concerned and monitor his/her performance more closely.	1	2	3	4	5	6	7

I5. Knowledge sharing

Now I am going to ask you a set of questions. Respond using a 1 to 5 scale. ***1 corresponds to*** *strongly disagree****, 2 means*** *disagree****, 3 means*** *neutral****, 4 means agree and 5 means*** *strongly agree.*

Rating Scale:

1	2	3	4	5
Strongly disagree	Disagree	Neutral	Agree	Strongly agree

a. I shared crucial information about the venture with this advisor.	1	2	3	4	5
b. This advisor added to my ideas about the venture.	1	2	3	4	5
c. This advisor helped me develop the idea on which the venture is based.	1	2	3	4	5
d. This advisor helped me develop strategies for the venture.	1	2	3	4	5
e. I learned or acquired some new or important information from this advisor.	1	2	3	4	5
f. I learned or acquired some critical capability or skill from the advisor.	1	2	3	4	5
g. This relationship helped me to enhance my capabilities/skills.	1	2	3	4	5

The next sets of questions are on your general use of NDAs and your competitors. First, I am going to ask you some questions and then ask you to complete the last short questionnaire.

J. Working with Advisors in General [INTERVIEW]

J1. NDA policies

a. Some entrepreneurs use NDAs very frequently, while others use them only occasionally. Are there any kinds of advisors you do not ask to sign NDAs or do you always use NDAs?
b. Why so?
   (PROBE: Please tell me more about your own policy about why and when you use NDAs.)
c. (If any) Considering the three types of advisors that we have talked about in this interview, would you say that you are most likely to use NDAs with close friends, business associates, or licensed professionals?

(PROBE: Please explain why.)

J2. Competitor threats

a. Some ventures are particularly vulnerable to being jeopardized if competitors learn about technical, financial, or other aspects of the business plan. Were there any aspects of this particular venture that were sensitive to theft or imitation by competitors?
   (PROBE: Please explain.)
a. Were you concerned that someone else would get to the market with the concept that you had for the venture more quickly than you did?
b. Did any of your advisors either speed up or delay the process of getting to the market quickly?
a. (PROBE: if yes) Please explain.

J3.Knowledge sharing and knowledge security

a. Thinking about the process of planning this venture as a whole, compared to other ventures you've been involved with, would you say that you were more successful, about as successful, or less successful at getting the information and advice that you needed to start this venture?
   (PROBE: Please explain.)
b. Thinking back, was there any kind of information or advice that you needed that you did not have?
   (PROBE IF YES): Please explain.
c. Apart from relying on the advisor's discretion or asking for an NDA, did you use any other security measures with your advisors as you planned your venture?
d. Have there been any major changes in the way you work with advisors as a result of your experiences with this venture?
e. Did you lock up the flow charts, designs, and other paperwork after your meetings in a safe or burglary proof box?

Now, I am going to give you the last short questionnaire about your competitors and this high-tech venture.

K1.

Rating Scale:

1	2	3	4	5
Strongly Disagree	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**

1. My new venture idea was vulnerable to theft by competitors. 1 2 3 4 5
2. My new venture idea was vulnerable to imitation by competitors. 1 2 3 4 5
3. The competitors did not know of this high-tech venture. 1 2 3 4 5

***K2*.**

Please answer the next few questions using a 1 to 5 scale where 1 corresponds to least successful, 3 means about average, and 5 means most successful.

Rating Scale:

1	2	3	4	5
Least Successful		**Average**		**Most Successful**

a. Thinking about the new ventures that you have started yourself or worked with closely, how do you rate the overall success of this one? Was it one of the most successful, about average, or one of the least successful? 1 2 3 4 5

b. Thinking about the process of planning this venture as a whole, compared to other ventures you've been involved with, how successful were you at getting the information and advice that you needed to start this venture? 1 2 3 4 5

The interview is now completed. Thank you for your time and attention. Do you have any questions?

Do you have any colleagues who you recommend that we include in this project? Would you be willing to contact them on our behalf and provide an introduction?

INTERVIEW DEMOGRAPHIC CODES AND RATINGS

a. Respondent is 1. Male 2. Female

1.	2.	3.	4.	5.	6.

b. Respondent is

1.	2.	3.	4.	5.	6.
<= 20 years	21-30 years	31-40 years	41-50 years	51-60 years	…..61years >

Advisor gender:

Close Friend	1. Male	2. Female
Business Associate	1. Male	2. Female
Professional	1. Male	2. Female

Appendix B

Quantitative Items and Qualitative Questions

Quantitative items

1.Relationship length
Respond using a 1 to 5 scale. 1 is "**Not at all",** 3 is "**Sometimes**" and 5 represents "**Always**."
a.How often does this person talk to you about his or her business affairs?
b.How often does this person talk to you about his or her personal situation?
c.How often do you talk to this person about your business affairs apart from this particular venture?
d.How often do you talk to this person about your personal situation?

2.Affective trust
Respond using a 1 to 7 scale. 1 corresponds to **strongly disagree**, 2 means **disagree**, 3 means **neutral**, 4 means agree and 7 means **strongly agree.**
a.We can both freely share out ideas, feelings and hopes.
b. I can talk freely with this individual about difficulties I am having with my venture and know that (s)he will want to listen.
c. We would both feel a sense of loss if we could no longer share ideas.
d. If I shared my ideas with this person, I know (s)he would respond constructively.
e. I would have to say that we have made considerable emotional investments in our working relationship.

3.Calculative trust
Respond using a 1 to 5 scale. 1 corresponds to **strongly disagree**, 2 means **disagree**, 3 means **neutral**, 4 means agree and 5 means **strongly agree.**
a. This person approaches his/her job with professionalism.
b. This person approaches his/her job with dedication.
c. Given this person's track record, I see no reason to doubt his/her competence in giving me advice.
d. I can rely on this person not to make efforts to start a new venture more difficult by careless work.
e. Most people, even those who aren't Close Friends of this individual, respect him/her as a coworker.
f. Other work associates of mine who must interact with this individual consider him/her to be trustworthy.
g. If people knew more about this individual and his/her background they would be more concerned and monitor his/her performance more closely.

4.Knowledge sharing
Respond using a 1 to 5 scale. 1 corresponds to **strongly disagree**, 2 means **disagree**, 3 means **neutral**, 4 means agree and 5 means **strongly agree.**
a I shared crucial information about the venture with this advisor.
b. This advisor added to my ideas about the venture.
c. This advisor helped me develop the idea on which the venture is based.
d. This advisor helped me develop strategies for the venture.
e. I learned or acquired some new or important information from this advisor.
f. I learned or acquired some critical capability or skill from the partner.
g. This relationship helped me to enhance my capabilities/skills

Interview questions

5.Venture-related questions

a. Can you briefly describe that venture, its products, and services?
b. When was this venture started?

6. Background/Relationship length

a. How did you meet this advisor?
b. How long you have known this advisor?
c. Can you tell me a little bit about how your relationship with this person developed?
d. Apart from your business-related discussions, what sorts of things do you and this advisor do together?
e.Is the venture you are describing now the only one that you have worked on with this person, or have you worked together on other projects as well?
f. Do you every help one another out on either business or personal matters apart from the times when you are working together on a specific venture?
g. (If yes) Can you give an example?
h. Are there any similarities or differences in your personal or professional background that made your relationship with this advisor either particularly easy or somewhat difficult?

7.Trust

a.Were you ever concerned that this advisor might take advantage of you in some way?
b.Is there anything about this advisor or your relationship with him/her that makes him/her especially trustworthy? Please explain.
c. Would you say you trust this person more because of his or her competence or because of your familiarity with him or her?

8.Secrecy

a.Did you specifically ask your advisor not to discuss your high tech venture with other people? Yes or no.

9. NDAs

a. Did you ask this advisor to sign an NDA? Yes or no.

10. Knowledge sharing

a. What aspects of your venture did you usually talk about with this advisor? Did you share general stuff, specialist knowledge, or strategic issues?
b. How much do you think this advisor contributed to developing your business idea?
c. Please explain.
d. Is there anything about this particular advisor that made it especially easy or difficult for you to get information or share ideas about this venture? (PROBE: Please explain.)

11. NDA policies

a.Some entrepreneurs use NDAs very frequently, while others use them only occasionally. Are there any kinds of advisors you do not ask to sign NDAs or do you always use NDAs?
b.Why so?
(PROBE: Please tell me more about your own policy about why and when you use NDAs.)
c.(If any) Based on the classification of close friends, business associates and licensed professionals that we have been talking about in the previous questions, how would you classify the types of advisors with whom you are most likely to use NDAs?

12. Knowledge sharing and choices of security mechanisms

a. Thinking about the process of planning this venture as a whole, compared to other ventures you've been involved with, how successful were you at getting the information and advice that you needed to start this venture? Thinking back, was there any kind of information or advice that you needed that you did not have?

b.Apart from relying on the advisor's discretion or asking for an NDA, did you use any other security measures with your advisors as you planned your venture?
c.Have there been any major changes in the way you work with advisors as a result of your experiences with this venture?

Appendix C

Regression Analysis with Multiple IVs to A DV

Table C1

Affective Trust, Advisor Types, and Use of NDAs (H4 and H5)

	Dependent variable	
	Use of NDAs	
	Model 1	*Model 2*
Close Friend	.72	.19
Business Associate	.59	1.98
Affective Trust		.89
*-2*log likelihood*	130.59	129.72

Note: N=143. *$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Table C2

Relationship Length, Advisor Types, and Affective Trust (H1 and H2)

	Dependent variable	
	Affective Trust	
Variable	*Model 1*	*Model 2*
Relationship Length	.38***	.29***
Close Friend		.34** *
Business Associate		.38***
R^2	.15	.27
ΔR^2		.12
F-statistic	23.81***	16.44***

Note: N=140.*$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Table C3

Trust, Advisor Types, and Knowledge Sharing

	Dependent variable		
	Knowledge Sharing		
Variable	*Model 1*	*Model 2*	*Model 3*
Close Friend	.28**	.02	.03
Business Associate	.48***	.28***	.28***
Affective Trust		.54***	.54***
Calculative Trust			-
R^2	.17	.41	.41
ΔR^2		.24	-
F-statistic	9.18***	14.47***	24.07***

Note: N=143. *$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$

Appendix D

Codes and Frequencies

Code	Frequency
About as successful	6
Admiration or Respect	12
Advice not have	32
Advisor helps me or Knowledge sharing or Sounding board	77
Advisor not helpful	2
Ask discuss	9
Ask not discuss	65
Broad background	32
Business skills	96
Business strategy	62
Changes made	26
Character	31
Competence	33
Complementary skills	50
Concerned	32
Contribution-insignificant	50
Contribution-moderate	12
Contribution-significant	44
Coworker helpful	19
Coworker not helpful	11
Delayed	7
Difficult relationship	30
Easy relationship	83
Education not useful	14
Education useful	32
Electronic security	13
Encouragement	5
Experienced advisor	21
Familiarity	93
Family	30
First joint project	36
First-time entrepreneur	14
I trust advisor	62
Implicit	29
Institutional security	27
Integrity	37
Knowledge sharing or Advisor helps me or Sounding board	23
Less successful	5
Limited personal interaction	51
Loyalty	7
More successful	20
Narrow background	9
NDA not useful	112

NDA useful	38
NDA- somewhat useful	9
NDA-marginally useful	3
Neither sped up or delayed	11
No changes made	9
No secrecy or open	14
Non-technical background	2
Not completely trust advisor	26
Not concerned	115
Not paid	73
Not straddle	14
Not vulnerable	13
Outside help not useful	14
Outside help useful	22
Paid	38
Physical security	7
Positive experiences	31
Reciprocity	25
Recommended	18
Repeated joint projects	55
Repeated personal interactions	87
Reputation	16
Respect or Admiration	7
Selective knowledge sharing	18
Serial entrepreneur	11
Shared understanding	30
Shared values	37
Sounding board	83
Sped up	14
Straddle	16
Strictly business	30
Technical background	29
Technical knowledge	14
Use NDAs-BA LP	5
Use NDAs-Bus Associates	10
Use NDAs-Licensed Professional	7
Vulnerable	21

Appendix E

Qualitative Coding of Entrepreneurs, Ventures, and Advisor Characteristics

Survey no	Definition	Code	Frequencies (N)
Entrepreneur and venture characteristics			
A1	Has entrepreneur worked in a technical industry as an employee? Technical industry encompasses the information technology, engineering, aviation, aerospace, medical research or related fields.	Not technical=0 Technical = 1	Not technical = 5 Technical =47 N= 52
A2	The breadth of the entrepreneur's working experience as a reflection of working in more than one industry. No working experience is coded 0, limited to one industry is coded 1, and experience in more than one industry is coded 2.	None=0 Narrow=1 Broad=2	None = 1 Narrow=16 Broad=35 N=52
A3	The entrepreneur's view on the relevance of his or her education to entrepreneurial experience. No relevance is coded 0, very significant college education to entrepreneurial experience is coded 2. Responses reflecting perspectives in the two extremes are coded 1.	No= 0 Somewhat=1 Yes=2	No= 8 Somewhat=15 Yes=35 N=52
A4	Years entrepreneur worked for someone else.		N = 52 Mean = 10.77 yrs
A5	Years entrepreneur was in a managerial position while working for someone else.		N = 52 Mean = 6.79 yrs
A6	Years entrepreneur has worked on his or her own.		N = 52 Mean = 11.13 yrs
A7	The influence of coworker advice in becoming an entrepreneur.	No=0 Yes=1	No=12 Yes=36 N=48
A8	The support of external stakeholders (suppliers, distributors, and lenders) in firms the entrepreneur worked for in the entrepreneurial experience.	No=0 Yes=1	No=12 Yes=35 N=47

B1	Is the entrepreneur a serial entrepreneur as evidenced in creating of more than one venture?	Yes=0 No=1	Yes=20 No=32 N=52
B2	When was first venture started? May also reflect years as an entrepreneur		
B4	Did entrepreneur continue working in a paid position while starting first venture?	No=0 Yes=1	No =29 Yes=19 N=48
	How many years did entrepreneur work for someone else and try to start own business. Less than one year coded as 1.		N=38 Mean=6.48 months
	Entrepreneur's gender	Female= 0 Male= 1	Female =4 Male=48

Last page of survey	Entrepreneur's age group	0-20=1 21-30=2 31-40=3 41-50=4 51-60=5 >60=6	N=52 Mean cat=41-50yrs
J1a	Are NDAs useful?	Not useful =1 Marginally useful = 2 Somewhat useful= 3 Moderately useful= 4 Very useful=5	Not useful =23 Marginally useful= 7 Somewhat useful= 4 Moderately useful= 6 Very useful=12 N=52
J1c	Which advisor category will entrepreneur be most likely to use NDAs with?	None=0 Close friend =1 Licensed professional=2 Business associate= 3 Other=4	None=0 Close friend =0 Licensed professional=11 Business associate= 15 Other=10 N=50
J2a	Entrepreneur's concern whether venture was vulnerable to competitor threat	No= 0 Yes=1	No= 20 Yes=31 N=51
J2b	Entrepreneur's concern whether competitor will have faster time-to-market metric with regards to venture	Not concerned=0 Concerned=1	Not concerned=26 Concerned= 25 N=51
J2c	Did advisors delay or sped the time-to-market metric?	Neither =0 delay = 1 speed = 2 Both =3	Neither =16 Delayed=7 Sped=22 Both=4 N=49
J3a	Knowledge sharing success indicated by the entrepreneurs' perspective, compared to other ventures involved with, as being more, about as, or less successful in getting advice or information needed to start the venture.	Less= 1 As= 2 More=3	Less=8 As=8 More=31 N=47
J3b	Could entrepreneur have used more advice?	No= 0 Yes =1	No=10 Yes=42 N=52
J3c	Other security measures involved in venture creation beyond the use of NDAs and advisors' discretion?	Other security=0 Security=1	No=27 Yes=24 N=51
J3d	Changes in working relationships with advisors	No change = 0 Change = 1	No=26 Yes=26 N=52

J3e	Emphasis on physical security measures?	No lockup =0 Lock up=1	No=41 Yes=11 N=52
Advisor relationships			
D, F, H: 1b	How many years known advisor at time of starting venture?		Means All =9.17yrs
D, F,H: 1e	Is this the only project they have worked on together?	Only project= 1 Other projects=2	Only= 60 Other = 82 N= 142
D, F,H: 1f	Relationship outside of venture activities?	No= 0 Yes = 1	No = 42 Yes= 101 N=143
D, F,H: 2a	Was entrepreneur ever concerned that advisor might take advantage of him or her?	No= 0 Yes=1	No = 114 Yes= 29 N=143
D, F,H: 2c	What is the motivation for consultation with advisor?	Familiarity = 1 Business skills = 2 Both = 3	Familiarity = 35 Business skills = 83 Both = 22 N=140
D, F,H: 3a	Did entrepreneur specifically ask advisor not to discuss venture with others?	No =0 Yes = 1	No=92 Yes=51 N= 143
D, F,H: 4a	Did entrepreneur ask advisor to sign NDA?	No = 0 Yes = 1	No=115 Yes= 26 N=141
D, F,H: 5a	What are the core discussions based on?	General= 1 Technical= 2 Strategy=3 All=4	General= 24 Technical= 9 Strategy=76 All=6
D, F,H: 5b	How much does entrepreneur think advisor contributed to developing venture concept?	Insignificant (0 to 5%) = 0 Moderate (10 to 20 %) = 1 Significant (30 to 100 %)= 2	Insignificant (0 to 5 %) = 71 Moderate (10 to 20 %) = 25 Significant (30 to 100 %)=47
D, F,H: 5c	Did anything make this relationship difficult?	Difficult=0 Easy=1	Difficult=24 Easy=117
D, F,H: 6a	Was this advisor paid money for advice?	Not paid=0 Paid=1	Not paid=94 Paid=49 N=143
	Advisor's gender	Female= 0 Male= 1	Female=19 Male= 124

Frequencies	Close friend (N)	Business associate (N)	Licensed professional (N)
Advisor gender	Female = 10 Male = 37	Female = 4 Male= 44	Female = 5 Male= 43
Relationship length	17.32 yrs (47)	5.55yrs (47)	4.54 yrs
Is this the only project they have worked on together?	Only project = 18 Other projects = 29	Only project = 20 Other projects = 28	Only project = 22 Other projects = 25
Relationship outside of venture activities?	No = 2 Yes = 45	No = 15 Yes = 33	No = 25 Yes = 23
Was entrepreneur ever concerned that advisor might take advantage of him or her?	No = 35 Yes= 12	No = 37 Yes= 11	No = 41 Yes= 7
What is the motivation for consultation with advisor?	Familiarity = 26 Business skills =12 Both = 8	Familiarity = 7 Business skills = 32 Both = 8	Familiarity =5 Business skills =37 Both = 6
Did entrepreneur specifically ask advisor not to discuss venture with others?	No = 36 Yes =11	No =30 Yes =18	No =26 Yes =22
Did entrepreneur ask advisor to sign NDA?	No = 41 Yes =5	No =35 Yes =13	No = 39 Yes =8
What are the core discussions based on?	General= 18 Technical= 2 Strategy=12 Technical and Strategy=2 All=13	General= 3 Technical=5 Strategy=27 Technical and Strategy=3 All=10	General= 3 Technical=2 Strategy=37 Technical and Strategy=1 All=5
How much does entrepreneur think advisor contributed to developing venture concept?	Insignificant = 24 Moderate = 8 Significant = 15	Insignificant=11 Moderate=11 Significant=26	Insignificant = 36 Moderate = 6 Sig.= 6
Easy	Difficult=6 Easy=41	Difficult=11 Easy=35	Difficult=7 Easy=41
Paid	Not paid =43 Paid=4	Not paid =42 Paid=6	Not paid =9 Paid=39

Appendix F

Chi-Square Results

Table F1

Hypothesis 1: Relationship length and Affective Trust

		Reason _Affective Trust		
		Not Affective Trust	Affective Trust	Total
Relationship Length	Shorter than average 9.71 yrs	72	14	86
	Longer than average 9.71 yrs	33	22	55
	Total	105	36	141

	Value	df	Sig.
Pearson Chi-Square	9.93	1	.00

Table F2

Hypothesis 2a

		Reason _Affective Trust		
		Not Affective Trust	Affective Trust	Total
Advisor Type	Close Friend	21	25	46
	Business Associate	40	7	47
Total		61	32	93

	Value	df	Sig.
Pearson Chi-Square	16.03	1	.00

Table F3

Hypothesis 2b

		Reason _Affective Trust		
		Not Affective Trust	Affective Trust	Total
Advisor Type	Close Friend	21	25	46
	Licensed Professional	44	4	48
	Total	65	29	94

	Value	df	Sig.
Pearson Chi-Square	23.31	1	.00

Table F4

Hypothesis 3a

		Reason _Calculative Trust		
		Not Calculative Trust	Calculative Trust	Total
Advisor Type	Close Friend	34	12	46
	Business Associate	15	32	47
	Total	49	44	93

	Value	df	Sig.
Pearson Chi-Square	16.45	1	.00

Table F5

Hypothesis 3b

		Reason _Calculative Trust		
		Not Calculative Trust	Calculative Trust	Total
Advisor Type	Close Friend	34	12	46
	Licensed Professional	11	37	48
	Total	45	49	94

	Value	df	Sig.
Pearson Chi-Square	24.48	1	.00

Table F6

Hypothesis 4

		Reason _Affective Trust		
		Not Affective Trust	Affective Trust	Total
Ask to sign NDA	No	80	34	114
	Yes	24	1	25
	Total	104	35	139

	Value	df	Sig.
Pearson Chi-Square	7.26	1	.01

Table F7

Hypothesis 5a

		Ask to sign NDA		
		No	Yes	Total
Advisor Type	Close Friend	41	5	46
	Business Associate	35	13	48
	Total	76	18	94

	Value	df	Sig.
Pearson Chi-Square	3.99	1	.05

Table F8

Hypothesis 5b

		Ask to sign NDA		
		No	Yes	Total
Advisor Type	Business Associate	35	13	46
	Licensed Professional	39	8	47
	Total	74	21	95

	Value	df	Sig.
Pearson Chi-Square	1.40	1	.24

Table F9

Hypothesis 6a

		Reason _Affective		
		Not Affective Trust	Affective Trust	Total
Knowledge Sharing	Insignificant	50	20	70
	Moderate	19	6	25
	Significant	36	10	46
Total		105	36	141

	Value	df	Sig.
Pearson Chi-Square	.72	2	.70

Table F10

Hypothesis 6b

		Reason _Calculative		
		Not Calculative Trust	Calculative Trust	Total
Knowledge Sharing	Insignificant	32	38	70
	Moderate	10	15	25
	Significant	18	28	46
Total		60	81	141

	Value	df	Sig.
Pearson Chi-Square	.57	2	.75

Table F11

Hypothesis 7a

		Advisor Type		
		Close Friend	Business Associate	Total
Knowledge Sharing	Insignificant	24	11	35
	Moderate	8	11	19
	Significant	15	26	41
	Total	47	48	95

	Value	df	Sig.
Pearson Chi-Square	8.24	2	.02

Table F12

Hypothesis 7b

		Advisor Type		
		Business Associate	Licensed Professional	Total
Knowledge Sharing	Insignificant	11	36	47
	Moderate	11	6	17
	Significant	26	6	32
	Total	48	48	96

	Value	df	Sig.
Pearson Chi-Square	27.27	2	.00

Appendix G

Affective and Calculative Trust: Descriptives, ANOVAs, Post Hoc Tests

Table G1

Affective Trust Descriptives

Advisor Type	N	Mean	s.d.
Close Friend	47	6.19	1.05
Business Associate	48	5.84	1.07
Licensed Professional	48	4.79	1.56

Table G2

ANOVA Tests of Advisor Types on Affective Trust

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	50.82	2	25.41	16.24	.00
Within Groups	219.07	140	1.57		
Total	269.89	142			

Table G3

Affective Trust: Bonferroni Post Hoc Tests Multiple Comparisons

(I) Advisor Type	(J) Advisor Type	Mean Difference (I-J)	Sig.
Close Friend	Business Associate	.35	.53
	Licensed Professional	1.4*	.00
Business Associate	Close Friend	-.35	.53
	Licensed Professional	1.05*	.00
Licensed Professional	Close Friend	-1.40*	.00
	Business Associate	-1.05*	.00

*The mean difference is significant at the.05 level

Table G4

Calculative Trust: Descriptives

	N	M	s.d
Close Friend	47	6.25	.83
Business Associate	48	6.25	.91
Licensed Professional	48	6.29	.77
Total	143	6.26	.83

Table G5

ANOVA Tests of Advisor Types on Calculative Trust

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.05	2	.02	.03	.97
Within Groups	98.41	140	.70		
Total	98.45	142			

Table G6

Calculative Trust: Bonferroni Post Hoc Tests Multiple Comparisons

(I) Advisor Type	(J) Advisor Type	Mean Difference (I-J)	Sig.
Close Friend	Business Associate	-	1.00
	Licensed Professional	-.04	1.00
Business Associate	Close Friend	-	1.00
	Licensed Professional	-.04	1.00
Licensed Professional	Close Friend	.04	1.00
	Business Associate	.04	1.00

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