



SCHOOL of
GRADUATE STUDIES
EAST TENNESSEE STATE UNIVERSITY

East Tennessee State University
**Digital Commons @ East
Tennessee State University**

Electronic Theses and Dissertations

Student Works

5-2018

Identifying Critical Risk Factors in the Decision-making Process of Angel Investors and Venture Capitalists: A Delphi Research Study

Shawn A. Carson

East Tennessee State University

Follow this and additional works at: <https://dc.etsu.edu/etd>



Part of the [Entrepreneurial and Small Business Operations Commons](#)

Recommended Citation

Carson, Shawn A., "Identifying Critical Risk Factors in the Decision-making Process of Angel Investors and Venture Capitalists: A Delphi Research Study" (2018). *Electronic Theses and Dissertations*. Paper 3360. <https://dc.etsu.edu/etd/3360>

This Dissertation - Open Access is brought to you for free and open access by the Student Works at Digital Commons @ East Tennessee State University. It has been accepted for inclusion in Electronic Theses and Dissertations by an authorized administrator of Digital Commons @ East Tennessee State University. For more information, please contact digilib@etsu.edu.

Identifying Critical Risk Factors in the Decision-Making Process of Angel Investors
and Venture Capitalists: A Delphi Research Study

A dissertation

presented to

the faculty of the Department of Educational Leadership and Policy Analysis

East Tennessee State University

in partial fulfillment

of the requirements for the degree

Doctor of Education in Educational Leadership

by

Shawn A. Carson

May 2018

Dr. Hal Knight, Chair

Dr. Andrew Czuchry

Dr. William Flora

Dr. James Lampley

Keywords: Entrepreneur, Investor, Venture Capitalist, Angel Investor, Risk Factors, Delphi

ABSTRACT

Identifying Critical Risk Factors in the Decision-Making Process of Angel Investors and Venture Capitalists: A Delphi Research Study

by

Shawn A. Carson

Entrepreneurs perceive and manage risk differently than investors (Palich & Bagby, 1995). As a result, entrepreneurs may underestimate the extent to which their ventures are perceived to be risky by a potential investor. Consequently, the entrepreneur is left with making assumptions that could be detrimental in obtaining the necessary capital to launch and grow the business. The purpose of this study was to determine if there is a common set of perceived critical risk factors among a group of experienced investors that would cause them to reject a deal out of hand.

The research methodology chosen for this study was the Delphi Technique, which consisted of three rounds of surveys with a group of 18 experienced Angel Investors and Venture Capitalists. The process identified 82 critical risk factors across 7 categories. Over half of these factors were rated between 'Important' and 'Critically Important' at a consensus rate of greater than 70%. Each participant reported an average of 11 critical risk factors, yet they rated more than 40 as 'Important' or 'Critically Important', suggesting there are conscious and subconscious factors involved in the decision process. Subjective factors such as relationship were rated with higher importance than more objective measurable factors such as revenue or market share. Venture Capitalists, as a group, had higher rates of consensus than the Angel Investors and there were distinct differences between each group regarding which factors are most important.

The study is significant because it rated subjective based factors along with objective factors

showing that investors tend to place more importance on trust and relationship building in the early stages of the investment process. The study also provided a framework for understanding the complexity of investment decision-making for the benefit of investors, entrepreneurs, and those who educate and mentor entrepreneurs. Finally, the study is significant for helping entrepreneurs understand the differences in perspective between Angel Investors and Venture Capitalists.

Copyright 2018 by Shawn A. Carson

All Rights Reserved

DEDICATION

To Alice H. Carson: my wife, my love, my partner for 32 years. Thank you for your support and encouragement on the many paths we have taken together.

ACKNOWLEDGEMENTS

This dissertation represents the end of a four-year journey that began in a discussion with Dr. Andrew Czuchry, who convinced me to take this path and committed to stay with me through the end of it. The other bookend of this adventure is embodied in my Dissertation Chair, Dr. Hal Knight, who encouraged me to try a different approach, who granted me a lot of freedom, and who put up with my occasional rants along the way.

Two people who gave me pivotal advice at the very beginning are Dr. Fred Tompkins and Dr. David Hines. Without their insight and encouragement, I might not have taken the leap.

I hold special appreciation for the rest of the Dissertation Committee: Dr. James Lampley, Dr. William Flora, and of course, Dr. Czuchry. They were all willing to let me color outside the lines a bit and for that, I am grateful.

This dissertation would have headed for a ditch on more than one occasion were it not for Dr. David Williams of the University of Tennessee, who was always available to offer suggestions, opinions, and general guidance.

Many of the participants of this study are personal acquaintances. Their willingness and excitement to participate in the study was inspirational and all of them stuck with the process through three arduous rounds of surveys. I am grateful for their expertise and their willingness to share it.

Finally, I would not have remained on this path had the Creator of the Universe not accompanied me on my long walks through His garden.

Truly, one cannot do this alone!

TABLE OF CONTENTS

	Page
ABSTRACT	2
DEDICATION	5
ACKNOWLEDGEMENTS	6
Chapter	
1. INTRODUCTION	12
Statement of the Problem.....	15
Research Questions.....	15
Significance of the Study	15
Limitations and Delimitations.....	16
Definition of Terms.....	17
Chapter Overview	18
2. LITERATURE REVIEW	19
Risk and the Entrepreneur.....	20
The Entrepreneur	20
Defining Risk, Uncertainty, and Failure.....	21
Attitudes About Risk and Risk Tolerance	22
Risk: An Entrepreneurial Characteristic	23
Entrepreneurs and the Management of Risk.....	24
Investors and the Perception of Risk	25

The Game of Investing	25
Decision Analysis	26
Prediction, Control, and Trust.....	27
Enter: The Use of Heuristics.....	27
The Stages of Investment – The Concept of Timing	29
The Organization of Risk.....	31
The Early Development of Categories.....	31
Later Developments in Risk Categorization.....	33
Quality of the Leadership Team	34
Relationship Risk	35
Failure in the First Meeting: Building or Damaging Trust.....	36
The Double-Sided Moral Hazard.....	38
Telling the Company Story.....	38
Conclusion	39
3. RESEARCH METHOD.....	40
Introduction.....	40
Purpose Statement.....	41
Research Questions.....	41
The Delphi Method.....	41
The Structure of the Delphi Method.....	42
Sampling	44

Sample Size.....	44
Choice of Participants.....	44
Recruitment and Onboarding.....	45
Instrumentation	46
Survey 1	47
Survey 2	47
Survey 3	48
Reliability and Validity.....	49
Data Collection	51
Data Analysis	52
Survey 1	52
Survey 2	53
Survey 3	53
Final Analysis	53
Summary.....	54
4. DATA COLLECTION	55
Introduction.....	55
Purpose Statement.....	55
Research Questions.....	55
Participants and Demographics.....	56
Survey Distributions and Response Rate.....	58
Survey 1: Construction, Methodology and Response Data	58
Survey 2: Construction, Methodology and Response Data	62

Survey 3: Construction, Methodology and Response Data	66
Consensus Effect.....	66
Analysis of Consensus	67
Comparing Angel Investors with Venture Capitalists	70
5. DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS	73
Introduction.....	73
Research Questions.....	73
Conclusions.....	74
Research Question 1	74
Research Question 2	74
Research Question 3	75
Research Question 4	76
Conclusions Regarding the Delphi Method and the Consensus Effect	77
Implications of the Study.....	78
Recommendations for Further Research.....	81
REFERENCES	83
APPENDICES	90
Appendix A: Delphi Surveys.....	90
Appendix B: Total Listing of Critical Risk Factors from Survey #1.....	118
Appendix C: Full Listing of Survey #2 Results – Unranked.....	121
Appendix D: Ranked Consensus Data by Consensus Range.....	124
Appendix E: Angel Investors and Venture Capitalists	129
VITA.....	131

LIST OF TABLES

Table	Page
1. A Summary of Entrepreneurial Characteristics.....	24
2. Risk Perceptions from Angels Who Reject Deals.....	32
3. Summary of Relationship Risk Factors.....	37
4. Participants' Demographics.....	57
5. Critical Risk Factors by Category.....	60
6. Critical Risk Factors Ranked by Mean Values (Top Two Quartiles).....	64
7. Distribution of Critical Risk Factors Across Range of Consensus.....	69
8. Ranking of Critical Risk Factors with at least 70% Consensus.....	69
9. Comparison of Consensus Between Angel Investors and Venture Capitalists.....	71
10. Comparison of Final Consensus Rankings.....	72

CHAPTER 1

INTRODUCTION

Entrepreneurship is hard. It is hard for many reasons but principally, it is hard because for a specific business idea, in a specific place and time, no one has ever done it before. Previous experience does not guarantee success and there are no roadmaps with specific directions to bring one to a destination. Research in entrepreneurship is still in its infancy and the rapid pace of change makes it difficult to find common formulas. But some do exist and more are coming. This study was about developing a framework to help entrepreneurs understand risk from the perspective of potential investors, which can be used in the development of a company presentation and increase the odds of securing funding.

The genesis of this dissertation resulted from a career in assisting entrepreneurs to prepare for the task of raising capital from investors. After observing hundreds of interactions between entrepreneurs and investors in a number of settings, one thing became clear; it is complicated, time consuming, and usually ends in frustration. The process centers around predicting the future with very little information and a high degree of uncertainty. The operative word is risk. But such a simple word carries an endless opportunity for interpretation and observation in so many different contexts.

Entrepreneurship has many definitions. Some people associate entrepreneurship with starting businesses. Other definitions involve the assumption of risk. One that is quite suitable for this study was proposed by Barringer and Ireland (2016). They defined entrepreneurship as “the process by which individuals pursue opportunities without regard to resources they currently control for the purpose of exploiting future goods and services” (p.7). A common scenario might be one where a person observes a problem and conceives a solution. This entrepreneur must find people, materials, skills, services, and processes; not only to develop a prototype, but to also

launch a business entity. All of this eventually takes money to accomplish, which is yet another resource, usually outside the control of the entrepreneur.

Entrepreneurs must attract enough capital to launch a business, develop a product or service, convince customers to buy it, and build out the company so the business can grow to meet the demand. Those who are lucky enough to generate revenue early can grow the company organically or fuel growth with profits based on the company's sales. But for many, the cost to start the business is very high. Patent costs can run over \$15,000 (Quinn, 2015). Business registration and legal documentation can run \$5,000 - \$6,000 (Shulga, 2014). Website development can run from \$7,000 to over \$250,000 (Parr, 2016). Franchise fees range from tens of thousands to \$100,000 or more (Libava, 2017). To open a McDonald's restaurant, one needs a half million dollars in cash, and the total investment is between \$1 and \$2.2 million (Daszkowski, 2017). For most startups, the funding to launch the business is found from personal assets and those of friends and family. But for many, the cost far exceeds those resources.

Entrepreneurs who find themselves in capital intensive ventures often seek funding from investors who provide cash in return for an equity ownership position in the company, and the expectation of a huge return. There are two types of investors that were researched in this study; Angels and Venture Capitalists. Angels are wealthy individuals who invest their own money in startups (Greathouse, 2012; Wiltbank, Read, Dew, & Sarasvathy, 2009). Venture Capitalists, or VC's, invest third party funds in early stage startups (Greathouse, 2012). The Angel Resource Institute (2016) reported the median angel investor deal in 2016 was \$950,000; a substantial increase from \$510,000 in 2014. The odds of getting an investment were about 3%. Hudson (2016) reported there were over 71,000 deals in 2016 in the US. We can extrapolate there were just under 2.4 million entrepreneurs seeking investment funding from investors in 2016.

The process of raising capital is arduous. The entrepreneur must assemble a PowerPoint slide presentation and set about presenting it anywhere and everywhere from pitch competitions to dozens of private meetings. The content of these presentations has long been formulaic. Kawasaki (2004) proposed the famous 10/20/30 rule, which is basically 10 slides in 20 minutes, and nothing smaller than a 30-point font. This became a standard for many who coach and mentor entrepreneurs (Kawasaki, 2014; Yekutieli, 2014; Conrad, 2015). The result was a standard and efficient script however it lacked basic elements of good storytelling and could leave potential investors with the perception of a lack of legitimacy in the new venture (Garud, Schildt, & Lant, 2014).

The audience for these presentations is the investor community and they care about making a return. They are putting their money at risk and it is their desire to understand and evaluate that risk in order to make their investment decisions. The idea that entrepreneurs are risk takers is a commonly held belief. However, Palich and Bagby (1995) proposed that entrepreneurs are not necessarily predisposed toward risk any more than anyone else. They tended to frame an opportunity in context of achieving a positive outcome. Investors, on the other hand, sought to manage their risk by applying an analytically intense process commonly known as due diligence, but that process is time consuming and expensive. In order to filter interesting opportunities worthy of due diligence, investors tended to rely on more subjective measures. Wiltbank, Read, Dew, and Sarasvathy (2007) proposed that investors used a dual set of risk mitigation strategies: predictive (analytical) and control (personal experience). They found that control strategies tended to experience fewer failures than the predictive strategies. Investors too, it seems, deploy a certain amount of decision making based on their gut. But what we have is a gap between perspectives.

Statement of the Problem

Palich and Bagby (1995) indicated that entrepreneurs perceive, process, and manage risk differently than investors. As a result, entrepreneurs may underestimate or disregard the extent to which their ventures are perceived to be risky in the eye of a potential investor. This may lead the entrepreneur to fail to incorporate risk mitigation strategies during the formation of their business plans and company narratives. However, with little or no insight into how investors perceive and identify risks, the entrepreneur is left with making assumptions that could be detrimental to obtaining the necessary capital to launch and grow the business. The purpose of this Delphi study was to determine if there is a common set of perceived critical risk factors among a group of experienced investors that could cause them to reject a deal out of hand.

Research Questions

1. To what extent are critical risk factors involved in the decision-making process of investors in considering an investment?
2. Which critical risk factors (execution, market, technological, financial, regulatory, etc.) do investors consider to be common among most investment decisions?
3. Of these most common critical risk factors, what is the relative weight of importance among them?
4. What differences occur among the critical risk factors between Angel investors and Venture Capitalists?

Significance of the Study

This study is significant to entrepreneurs directly because many identify specific risk categories for developing themes of risk mitigation strategies. A set of weighted risk categories may form a framework with which to compare strategic and tactical elements and to help

identify weaknesses in the business plan. This framework will help strengthen the company narrative to better communicate value to investors, stakeholders, and for marketing purposes.

The study may also be significant to investors, especially as they organize into investment groups, to determine the overall investment profile and preferences of the investors, and to better communicate to potential entrepreneurs these characteristics.

Finally, this study may be significant to the educators, mentors, and coaches who provide guidance and advise to entrepreneurs. The critical risk factors identified in this study may provide a logical framework for these advisors and educators to teach entrepreneur how to increase the odds of winning an investment.

Limitations and Delimitations

Inherent in the Delphi approach is the selection of experts who possess sufficient experience and expertise to offer insight into their investment decision making process. This study will be delimited to the subset of investors who are identified as experts for the purposes of this study. The following set of criteria were developed to determine the participants in the study:

- Five or more years' experience in equity investing. This length of time is considered necessary to have seen a large number of deals across a wide range of potential markets. It is also important for enough deals to have matured or concluded in failure so the investor has a sense of what worked and what failed.
- A minimum of 10 investments. Higgins (2008) found that 20 – 30% of investment deals provide a significant return and roughly the same amount utterly fail. The remainder provide only a moderate return. A minimum of 10 investments insures enough experience to witness these odds come to fruition.
- Primary decision-making authority. Some investors invest through groups or through funds, where the decisions are usually made through majority vote of the group. Having

primary decision-making authority means the investor can act independently on his or her own set of decision criteria.

This study will be further delimited to investors located in the states of Tennessee, Kentucky, Ohio, and Georgia. This region represents the majority of investment sources available to most startups located in the area. The region is also where the researcher has direct access to the population of investors from which to recruit for the study through personal networks and professional associations.

The delimitation to the southeastern US creates a limitation based on economic and industry perceptions of the investors. Average investments in the region tend to be about 75% of those in California and there is a strong preference on the coasts for software and life science companies (Angel Resource Institute, 2016). As a result, entrepreneurs may face a different set of critical risk factors as they seek funding outside the region.

Definition of Terms

1. Entrepreneurship - the process by which individuals pursue opportunities without regard to resources they currently control for the purpose of exploiting future goods and services (Barrenger & Ireland, 2016, p. 13).
2. Angel Investors (Angels) - wealthy individuals who invest their own money in startups (Wiltbank, Read, Dew, & Sarasvathy, 2009; Greathouse, 2012).
3. Venture Capitalists (VC's) – individuals who invest third party funds in early stage startups (Greathouse, 2012).
4. Relationship Risk - the risk that an entrepreneur may not make the same decisions when spending the investor's money as the investor would (Maxwell, Jeffrey, & Lévesque, 2011).

5. Agency Risk - the characteristics of the entrepreneur, principally where the interests of the entrepreneur and the investor diverged (Parhankangas & Hellström, 2007).
6. Market Risk - the unknown market environment that could result in competitive challenges and whether or not market demand supported the growth of the startup venture (Parhankangas & Hellström, 2007).

Chapter Overview

Chapter 1 provides an overview of the research by setting context for the need of frameworks to help guide entrepreneurs through myriad decisions that impact the successful or failed outcomes of their ventures. It also clarified a gap between how entrepreneurs perceive risk differently than investors and it proposed the need for this gap to be closed. The purpose of the study was presented in the Statement of the Problem, which was to determine if there is a common set of perceived critical risk factors among a group of experienced investors that could cause them to reject a deal out of hand. The Significance of the Study suggests the utility for entrepreneurs, investors, and those who educate and mentor them. The research questions were presented followed by the delimitations and limitations.

Chapter 2 is a review of the literature with respect to how entrepreneurs perceive risk, how investors evaluate risks in their decision making and delineating between the subjective and objective aspects of evaluating deals.

Chapter 3 provides a description of the Delphi Technique as well as presents the research questions, instrumentation, data collection and validity.

Chapter 4 presents the detailed analysis of the data.

Chapter 5 provides the findings and conclusions as well as recommendations for practice and future research.

CHAPTER 2

LITERATURE REVIEW

The literature proved to be rich in the study of risk from both the perspective of entrepreneurs and that of investors. A key purpose of this Literature Review was to set a context for these perspectives and highlight the key differences between them. Much of the literature was based on understanding the observed decision processes of investors after the investment decisions had been made. Categorization of risk proved to be a popular topic among researchers and it is clear from this review of research that there are distinct differences in how entrepreneurs perceive and approach risk, and how investors consider risk in their investment decisions. These differences are highlighted in five major sections of this chapter beginning with the entrepreneur perspective and moving toward the investor perspective. This discussion leads to a consolidation of existing research into the categorization of risk to set a backdrop for the research of this dissertation and it ends with the relevance of risk as a topic of the entrepreneur's presentation of the business opportunity to the investment community.

This chapter is presented in five sections to follow the flow mentioned above. The first is *Risk and the Entrepreneur*. It is a review of research into entrepreneurs and how they related to risk, uncertainty, and failure. The second section is *Investors and the Perception of Risk*, where the investment process is introduced and how risk entered into the decision making of investors. The concept of investor-perceived risk is introduced and distinguished from how entrepreneurs perceive risk. *Organization of Risk* reviews research into how subjective and even unconscious evaluations of risk fit into categories, which was useful in designing the research methodology for this study. *Relationship Risk* reviews what may be the most powerful and challenging aspect of the study of risk in investment decision making; the power of the personal relationship. The review of literature concludes with *Once Upon a Time*, a section of how all of this related to the

importance of conveying risk mitigation themes in the stories that entrepreneurs tell about their companies.

Risk and the Entrepreneur

The Entrepreneur

To set a proper context for this study, a reference for the definition of *entrepreneur* was appropriate. Benjamin (2006) provided an excellent, albeit detailed, grounding. He said entrepreneurship is,

...a process of strategic thinking required to maintain an independent belief system that supports discovery, exploration and exploitation of wealth opportunities that destabilize prior market equilibria, demonstrating innovation, creativity and entrepreneurship to generate new flexible, adaptive and responsible market spaces that reward people ready, able and willing to meet emerging individual and societal needs, wants, hopes and expectations (p.6).

Benjamin referred to Legge and Hindle (1997), who stated “Becoming an entrepreneur involves a conscious decision to create more value than you can capture personally; that no matter how well you do, the world at large will be even better off” (p.19). Barrenger and Ireland (2016) defined entrepreneurship as “...the process by which individuals pursue opportunities without regard to resources they currently control for the purpose of exploiting future goods and services (p. 13).”

A theme emerged from these definitions: entrepreneurship is a process, a conscious decision, a lifestyle, a skill, and it involves the desire to create value, usually without access to all the necessary resources. Benjamin, in his effort to establish an integrated theory of entrepreneurship summarized it well by adding that entrepreneurs generally responded positively to both risk and opportunity (Benjamin, 2006). Van Ness and Seifert (2016) used the term risk

in their definition; “entrepreneurs are defined as individuals who have risked or intend to risk their personal capital, personal time, and/or personal reputation in pursuit of business ventures” (p. 90).

Defining Risk, Uncertainty, and Failure

Mullins and Forlani (2005) defined risk as involving the likelihood and magnitude of outcomes falling below target. The motivation for taking risk was the chance for gain but they defined risk more clearly as the likelihood of “realizing some magnitude of loss” (p.48). Hirai (2010) added that risk is, “any situation where there is a possibility of an outcome that we would rather avoid” (p. 1).

As researchers began to look into the concept of risk as it related to entrepreneurship, a distinction between risk and uncertainty developed. Folta (2007) pointed out that risk can be quantified and therefore, be controlled, although controlling for risk may have an impact on innovation. But the big problem with risk, as Folta defined it, is that risk is a quantifiable attribute based on predictions and probabilities from observed historical data and available information. A common characteristic of entrepreneurship is that there is no history and therefore, no data from which to derive probabilities. Schendel (2007) contended that the entrepreneur is not confronted with risk at all, but rather uncertainty. Entrepreneurs must deal with high levels of ambiguity because in most cases there is no information available to adequately render probabilities and calculate risks, (Hmieleski & Baron, 2008).

Uncertainty is at the heart of defining entrepreneurship and the personality characteristics of the entrepreneur. While the technical distinctions between risk (quantifiable) and uncertainty (unquantifiable) are important, for the purpose of this dissertation, the word ‘risk’ was used to cover both concepts.

A discussion of risk in the context of failure is appropriate here. After all, it is the fear of

failure and loss that either impedes or drives the entrepreneurial process. Entrepreneurs have been known to cite the fear of failure as one of the things that inspired their drive and drove their success (Morgan & Sisak, 2016). This idea was supported by Cacciotti, Hayton, Mitchell, and Giazitzoglu (2016), who studied the role fear played in entrepreneurial decision making. Gulst (2011) provided a working definition for failure as “the entrepreneur’s dissatisfaction with the venture’s progression” (p. iii). But Gulst also pointed out that entrepreneurs defined a failed business as one that failed to make a profit and essentially ran out of cash. Another important aspect of failure was that it is such a great teacher. Gulst studied this as did He (2014), who found that entrepreneurs, either by personality trait or by multiple cycles of failure, developed a high tolerance for uncertainty. The willingness to risk failure provided entrepreneurs with opportunities for learning and personal growth and there was anecdotal evidence that investors preferred entrepreneurs who have had at least one catastrophic failure, as long as it was someone else’s money at stake (He, 2014). Ucbasaran, Westhead, Wright, and Flores (2010) found that entrepreneurs who have experienced failure were less likely to be over optimistic about new opportunities, which may have a positive impact on the ability to get funding. Gulst (2011) cited nine key causes of entrepreneurial failure that will become important later in the discussion of specific risk categories. Those causes are management strategy, missing entrepreneurial characteristics, over-optimism and over-confidence, inexperience, lack of key partners, competence of key people, financial issues, unfocused market needs, and opportunity evaluation.

Attitudes About Risk and Risk Tolerance

Risk tolerance is a character trait commonly associated with entrepreneurs. Most formal definitions for entrepreneur included the assumption of risk. He (2014) cited literature dating back to 1987 that put “risk taking” or “risk acceptance” (p. 20) at the top of most every listing of entrepreneur characteristics. Palich and Bagby (1995) tackled this issue head-on by stating how

difficult it was to capture the relationship between risk-taking and other personality characteristics. They proposed an alternate theory based on research that showed that entrepreneurs were not necessarily predisposed toward risk more than anyone else. By applying cognitive theory, the difference came from the way entrepreneurs framed the opportunity for achieving positive outcomes.

Baron (1998) advanced this concept by postulating cognitive conditions which can influence biases and errors when it comes to rational thought. These conditions included information overload, a high degree of uncertainty, intense emotions, time pressures and decreased physical states. These biases tended to push entrepreneurs into taking on opportunities that others would not. Baron also pointed out that it was not so much the innate personality of entrepreneurs that brought on this condition as much as these conditions were an integral part of the entrepreneurial experience.

He (2014) wanted to understand the character traits of entrepreneurs compared to traditional company managers. With regard to taking on risk, He concluded that entrepreneurs were risk tolerant but described their propensity for risk as “sensible” and “calculated” (p. 27). As for pure entrepreneurs who were not considered to be in leadership roles, risk taking ranked high. For traditional leaders, risk taking ranked very low.

Risk: An Entrepreneurial Characteristic

Another key part of He’s (2014) research was to summarize entrepreneurial characteristics found in the literature as observed by a number of researchers. Table 1 shows this summary. It should be noted that some form of risk taking (identified in bold type) appears in all six of the lists.

Table 1

A Summary of Entrepreneurial Characteristics

Begley and Boyd (1987)	Vecchio (2003)	Perren (2002)	Morris et al. (2008)
Need for achievement	Risk taking	Risk acceptance	Drive to achieve
Locus of control	Need for achievement	Innovation	Internal locus of control
Risk taking	Need for autonomy	Personal drive	Calculated risk taking
propensity	Self-efficacy	Belief in control	Ambiguity tolerance
Tolerance of ambiguity	Locus of control	Ambiguity tolerance	Commitment/perseverance
Type A behavior	Overconfidence/hubris	Need for independence	Independence
		Opportunity-seeking	Self confidence
		Intuitive	Tolerance for failure
Carlund et al. (1996)	Kao (1991)	Vision	Problem solving
Risk taking	Commitment	Self confidence	Opportunity orientation
Creativity/innovation	Perseverance	Takes responsibility	Integrity and reliability
Need for achievement	Desire to achieve	Resource marshalling	High energy level
Intuition	Growth orientation	Value adding	Resourcefulness
	Problem solving	Good networks	Creativity
	Realism	Capacity to inspire	Team-building
	Seeking feedback	Growth orientation	
	Locus of control	Diligent	
	Calculated risk taking	Pro-activity	
	Integrity and reliability		

Note. Bold type added for emphasis of risk-taking characteristic. Adapted from “The Perceived Personal Characteristics of Entrepreneurial Leaders” by L. He, 2014, Doctoral Dissertation, p. 20.

Entrepreneurs and the Management of Risk

The review of literature, thus far, has established that the concepts risk tolerance, the ability to deal with ambiguity, and the overall world of uncertainty mark the reality of being an entrepreneur. This is not to say that entrepreneurs go about navigating all this risk blindly. Entrepreneurs do, in fact, have ways of managing and controlling risk (Kuechle, Boulu-Reshef, & Carr, 2016). Kuechle et al. (2016) found that in order to reduce uncertainty, entrepreneurs deployed two strategies, predictive and control based. Predictive strategies are deployed when information is available (in agreement with the classic definition of risk), whereas control based strategies are used when there is more uncertainty.

But the management of risk has a downside. Folta (2007) found that as entrepreneurs

took measures to control risk, they may stifle the very innovation that made their venture a compelling opportunity. Furthermore, they may take measures to control spending at a time when it could have a negative impact on future profits. Burns, Barney, Angus, and Herrick (2016) researched how risk versus uncertainty impacted the way entrepreneurs sold their venture to potential stakeholders such as investors and key partners. They found that under conditions of risk, entrepreneurs were better off to focus on the opportunity, while under conditions of uncertainty, enrolling stakeholders was based on attributes of the entrepreneur.

Investors and the Perception of Risk

The Game of Investing

There are two types of investors in startup companies that were the focus of this study. The first type is Angel Investors (Angels) who are wealthy individuals that invest in startup companies for a variety of reasons. They typically invest early in new ventures and have been successful entrepreneurs themselves (Wiltbank et al., 2009). Angels play more in the uncertainty realm as they invest typically in unproven technologies in unverified markets (Murray & Marriott, 1998). The Angel Capital Association (2016) noted there were over 300,000 Angels in the US who invested a total of \$24 billion. The average investment deal was \$345,000 in over 71,000 deals (Angel Capital Association 2016).

The second type of investors is Venture Capitalists (VC) who manage a fund of other people's money, which they invest in startups. The Angel Capital Association compared Angel activity to VC activity in 2016. That year, VC's invested \$59 billion in over 4,300 deals at an average of \$13.6 million per deal. There were over 700 active firms that year (Angel Capital Association, 2016). Compared to Angels, the VC deals were much larger but far fewer. VC's tend to invest later in the growth stage of startup companies which is itself a risk mitigating factor.

Because of the inherent risk of investing in startups, the expected return among investors is between five and ten times the amount invested. While statistics vary, the general notion was that out of 10 investments, three provided a significant return, four performed moderately, and the rest “evaporated” (Higgins, 2008).

Decision Analysis

Korver (2012) stated “Failure may be the best teacher, but failure in early stage investing comes at a high cost” (para. 1). In order to limit this cost, he implemented a framework used in pharmaceutical research and oil/gas exploration called Decision Analysis. Korver acknowledged that the same cognitive biases that induced entrepreneurs to take risks could be detrimental in the face of uncertainty. Simply put, investors saw risk quite differently than entrepreneurs did. Through Decision Analysis, Korver’s objective was to “marry the art with the science of decision-making through a disciplined process” (para. 11).

Payne (2011) proposed a more detailed method that mitigated risk through a process of valuation. That is, assigning a monetary value to a startup based on comparing several categories to a known standard. Not surprisingly, those categories included team, opportunity (market), product, competition, partnerships and financial. The categories were inclusive of those listed by Korver (2012) but the twist was that rather than probability, the categories were factored as a functional component of monetary value in the company. Consequently, more risky companies carried less potential value. Hirai (2010) introduced a quadrant framework for entrepreneurs and investors alike to evaluate startup risk objectively. The quadrants included the categories of ignorable risk, nuisance risk, insurable risk and company killers. It was the company killers that involved the most attention and they included market, competition, technology (product), financial, people (team), legal and systemic.

Korver (2012), Payne (2011), and Hirai (2010) all proposed evaluating risk according to

a nearly identical set of criteria. There is a consistency that emerged in how investors evaluate risk but when compared to the literature about how entrepreneurs view risk, the perspectives were divergent.

Prediction, Control, and Trust

Wiltbank et al. (2009) studied investment outcomes of a number of Angels with regard to two different decision-making strategies. Predictive strategies included extensive research of data regarding markets and trends. Non-Predictive Control strategies included referring to acquaintances and leveraging personal experience with regard to the potential investment deal. The research found that those deploying control strategies tended to experience fewer failures than those using predictive strategies. Those using predictive strategies tended to make larger investments, but there was no correlation to outcomes, which suggested that within the various frameworks investors used to evaluate and control risk, the best results were derived from the least technical approaches. Investors were using categories, probabilities, and frameworks but they were also, to some extent, measuring with their gut, it seems.

Enter: The Use of Heuristics

The literature reviewed thus far suggests that the evaluation of risk, both on the part of entrepreneurs and investors, was a conscious and deliberate system of defined processes and disciplines, with or without information, where probabilities were carefully considered and outcomes were predicted. Many of the researchers suggested frameworks and best practices to implement a more structured approach to evaluating risk in the early stages of an investment deal. But implementation of structured frameworks early in the process can be problematic, if for no other reason than sheer volume of deals. In 2016, Angels completed over 71,000 deals (Angel Capital Association, 2016). Harrison, Dibben, and Mason (1997) found that over the years up to 97% of entrepreneurial funding deals were rejected. Paul, Whittam and Wyper,

(2007) noted that a typical investor looked at 10 or even 20 deals to do one. An investment deal took anywhere from three to 18 months to close. The problem is not one of strategy or process. It is purely one of time management and focused attention. There are models that suggest how investors can weigh and score potential deals, but typically, they used cognitive short cuts, or *heuristics* to reduce the total number of potential deals down to a manageable level (Maxwell, Jeffrey, & Lévesque, 2011). They outlined two stages early in the decision process: selection and post selection. At both stages, investors were looking for a fatal flaw that would kill the deal early and quickly. The use of heuristics was common in decision making. Maxwell et al. (2011) found the use of heuristics was generally accurate, although they warned that deviation from actual frequency can occur as exemplified by the fact that most people believe they are more likely to die in a plane crash than they are in an automobile accident (Barrabi, 2014; Maxwell et al., 2011). They summarized the concept by noting that some accuracy may be sacrificed for expediency. These researchers also acknowledged that investors tended to use heuristics, but they often developed them subconsciously. Despite that, Maxwell et al. (2011) found eight distinct categories or decision criteria relative to this use of heuristics:

1. Market Potential – measured in terms of market size
2. Product Adoption – the extent to which markets had been penetrated. Commonly known as market share
3. Protectability – intellectual property such as patents and trademarks
4. Entrepreneur Experience – reputation and record of past entrepreneurial experiences
5. Product Status – referring to the stage of product development
6. Route to Market – sometimes known as a go-to-market strategy, or how the product will be found by the customer
7. Customer Engagement – validation that customers will in fact, buy the product

8. Financial Projections – timeline to cash flow of the business and future profitability

In subsequent research the same team determined that Angels tended to aggregate their perceptions of these eight categories into levels of risk and return (Jeffrey, Lévesque, & Maxwell, 2016). If the perceived risk was too high or the anticipated rate of return was too low for any of the eight categories, it was considered a fatal flaw and the deal was rejected early without any further cognitive effort. The risk and return formed thresholds that allowed even quicker rejection of opportunities that held little promise.

The Stages of Investment – The Concept of Timing

Maxwell, Jeffrey, and Lévesque (2011) suggested two distinct stages where the use of heuristics was more likely to influence decisions: the selection and post-selection stages. A closer look into these stages formed a better understanding of the timing. Three stages were identified by Amatucci and Sohl (2004), which were the pre-investment stage, contract negotiation, and the post-investment stage. The screening process normally took place in the pre-investment stage and led to due diligence. The investment stage involved the term sheet and negotiations while the post-investment stage involved future funding and eventual exits. Building on this work, Paul et al. (2007) identified five stages summarized in Figure 1.

Paul et al. (2007) indicated that relationships were forming at the Familiarization Stage, which was where the much of the subjective decision-making took place. The process slowly became more formal as the deal progressed into the Screening Stage. By the time the deal progressed to the Bargaining Stage, the process was largely driven by contracts and negotiations. However, Paul et al. (2007) warned that the process was in no way orderly.

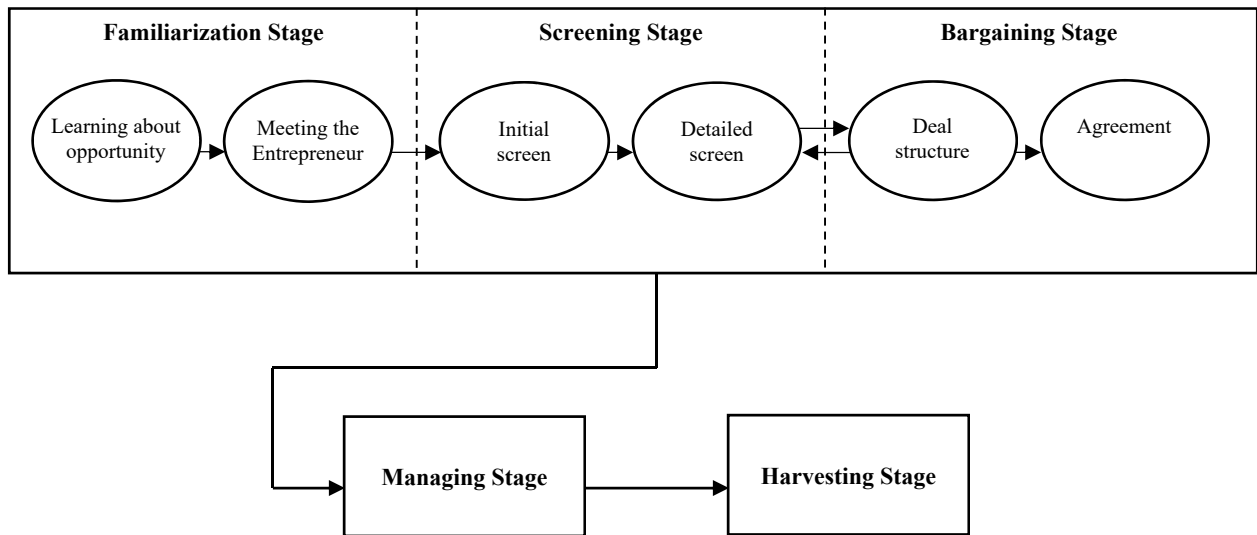


Figure 1. A model of the angel investment process. Adapted from “Towards a model of the business angel investment process,” by S. Paul, G. Whittam, and J. Wyper, 2007, *Venture Capital (9) 2*, p. 114.

Relationship queues could become a factor at any point in the process. They also drew a distinction between Angels and VC’s noting that Angels were more reliant on relationship to hedge risk in those early stages. Cox, Lortie and Gramm (2017) echoed the point by adding that Angels tended to make decisions based on an “array” of non-financial factors more so than VC’s. Carpentier and Suret (2015) found a similar model at play when analyzing the decision-making process of Angel Investment Groups, which are formally organized groups of Angels who work together to review and syndicate deals. Angel Investment Groups tended to have a primary organizer or manager who served as gatekeeper and performed administrative and due diligence activities. The following is a summary of that process (Carpentier & Suret, 2015):

- Step 1 – Prescreen – the gatekeeper assesses each opportunity and typically rejected up to 68% of proposals based on criteria such as location, industry, development stage and size of the investment. These hardly even qualify as subjective but heuristics are definitely in play.

- Step 2 – Initial screening – the gatekeeper, along with a small group of Angels review the opportunity for fit within the group and to determine if the entrepreneur will be invited to pitch to the group. Thirteen percent of the proposals are retained at this point. Survival at this stage involved the subjective opinions of this small group.
- Step 3 – Presentation to the group – short (10 minute) presentations were made at monthly meetings. Only 11% survived this round and it involved recruiting 3 or 4 Angels to lead the project.
- Step 4 – The hour-long presentation – where only 3 were rejected leaving 10% survivors.
- Step 5 – Detailed analysis – This is where the formal objective decision making began. It includes document and financial reviews and a series of meetings. Prior to step 5, the majority of decisions moving entrepreneurs forward relied mostly on opinions and subjectivity. This step jettisoned more until only 4% were left and these were offered term sheets and started negotiations.

This process presented above highlighted a fairly arduous journey for the entrepreneur and it also reinforced how few deals were offered to the population of those seeking funding. In this study, 637 entrepreneurs started but only 26 (4%) received deal offers. Only until Stage 5 did objective decision-making criteria come into play. The mean amount of time to close these deals from start to finish was 4.5 months (Carpentier & Suret, 2015).

The Organization of Risk

The Early Development of Categories

Entrepreneurs and investors have somewhat differing perspectives of risk. Furthermore, it has been noted that investors tended to use subjective shortcuts or heuristics to wade through the sheer volume of potential early stage opportunities to get to those that possess the most fit,

interest and potential for a return. This section focuses on the research into how the concept of risk was segmented and organized into categories.

Parhankangas and Hellström (2007) identified two broad category headers; Agency and Market risks. Agency risk referred to the characteristics of the entrepreneur, principally where the interests of the entrepreneur and the investor diverged. Market risk referred to the unknown market environment that could result in competitive challenges and whether or not market demand supported the growth of the startup venture. Within these two broad categories, they identified a number of characteristics that were rated as perceptions on the part of investors in rejecting deals. These can be seen in Table 2 (Parhankangas & Hellström (2007):

Table 2

Risk Perceptions from Angels Who Reject Deals

Agency Risks	Market Risks
Dishonest Entrepreneurs	Unattractive industry
Different cash flow objectives	Weak customer demand
Contractual ambiguities	Too few buyers
Different profitability objectives	Readily substitutable competitive
Different growth objectives	products
Short-term interest on the part of the entrepreneur	Technical obsolescence
Entrepreneurs not performing their responsibilities	
Manipulation of financial information	

Note: Adapted from “How experience and perceptions shape risky behaviour: Evidence from the venture capital industry,” by A. Parhankangas and T. Hellström, 2007, *Venture Capital* (9) 3, p. 195.

The balance of Parhankangas and Hellström’s research (2007) centered on risk reduction strategies observed from the investors. They found four strategies: syndication, whereby investors spread risk among a portfolio of companies; monitoring of the entrepreneur’s activities through regular contact and reporting; information seeking in the form of detailed research; and

the use of preferred stock which give preferential rights to the investors at the time of liquidation (exit sale or initial public offering of stock.).

Miloud, Aspelund, and Cabrol (2012) studied the investment process of VC's from origination of the deal to the exit of the investment. The process was well defined and it was centered on determining a value of the company, which determined how much equity ownership was required of the company founders in return for the investment. While the investment process was fairly detailed, valuation at the early stages was quite difficult because the valuation algorithms were based on the present value of future cash flows, which were trended from current cash flows. Since there are no cash flows with a startup, valuation was determined by resorting to best guesses (Miloud et al., 2012). Rather than straight out "pure guesses", Miloud et al. (2012) saw how investors focused on inputs such as those listed below:

Industry organization – this was a focus on how the startup's product was differentiated from the other competitors in the market. Also important was an evaluation of how the market is projected to grow in the future.

Entrepreneurial resources – evaluated by the experience of the entrepreneur. Categories of experience included technical experience with the product development, industry experience, experience as a key employee and experience with other startup companies.

Top management team – experience and completeness of the founding team and key management team with regard to market, industry, startups, finance, etc.

External ties and startup valuation – relationships with existing and potential partners. Also evaluated were other relationships with investors, industry stakeholders and industry connections.

Later Developments in Risk Categorization

Streletzki, and Schulte (2013) attempted to link VC selection criteria with new venture

growth and returns at exit. They identified five major groupings of selection criteria as follows:

Founder team – experience in industry and with other startups. Also evaluated was the network of the founding team

Company – criteria included four main topics: development stage of the product, location of the startup with a preference on being geographically close, whether the company is a spin-off of a university or corporation, and existing partnerships.

Product – criteria included patent protection, proof-of-concept (functional prototype), and diversity relative to the number of products available to sell.

Market – included market segments (with a preference on business-to-consumer) and strategy regarding existing markets versus new markets.

Financial Criteria – projections and valuation

Cox et al. (2017) took the work of Maxwell et al. (2011) and reorganized it into four main criteria categories: internal, external, fit, and technology. Internal criteria were related to the management team while external criteria related to market characteristics. Technology criteria were rather obvious, but the risk criteria added to the conversation was that of fit; specifically, two elements: industry fit and entrepreneur fit. Industry fit had to do with the investor's familiarity and expertise in the industry of the venture, and entrepreneur fit had to do with whether or not the investor believed the entrepreneur had to proper experience to operate in the industry. This point came up again in the discussion of relationship risk.

Quality of the Leadership Team

Much of the cited research regarding risk criteria was observed post-deal and identified after the fact. In some cases attempts were made to quantify these risks to see which were given more emphasis in the decision making process. It stood to reason that researchers turned their attention specifically to this quantification problem in order to find what the most important risk

criteria were. The answer is that it depends, but anecdotally, the number one concern among risk criteria for investors has been the management team. One anecdote that persists to this day goes like this: “investors would rather invest in an ‘A’ team with a ‘B’ technology, than an ‘A’ technology with a ‘B’ team.” Franke, Gruber, Harhoff, and Henkel (2008) determined that criteria related to the management team rated consistently in the top three categories. They were also able to trace a possible origin of the above anecdote to Bygrave (1997). Matusik, George and Heely (2008) echoed this sentiment that the quality of the leadership team was a key characteristic. Franke et al. (2008) developed a hierarchy of management team characteristics. They were in order of rating; industry experience, field of education, university degree, leadership experience, mutual acquaintance, age of team members, and prior experience. In a more recent study, Drover, Wood, and Zacharakis (2017) distilled these criteria down to the common “big four”: 1. Management team, 2. Market, 3. Offering (technology or product), and 4. Financial potential.

Toft-Kehler, Wennberg, and Kim (2014) found a “non-linear” relationship between the experience of the team and ultimate financial performance of the venture. Their argument was that experienced entrepreneurs actually did worse because their experience created “barriers to learning,” especially those who had one success before starting the next venture. They posited that entrepreneurship can be learned-by-doing but it takes several experiences to build the instincts necessary for success. Apparently, practice (and some good old failure) does make perfect (or at least better performing startups). Toft-Mehler et al. also concluded that with the use of heuristics and experience, perceptions did not always equal reality.

Relationship Risk

At the outset of this review of literature, it was established that investors tended to use heuristics and subjective influences in their decision-making process in the early stages of an

investment deal. From the work of these researchers, there may be categories that could provide a framework for entrepreneurs to think about how they should approach investors. Some categories, like market size and sales projections, could be addressed objectively (with numbers) so as to reduce perceived uncertainty. However, the review of literature revealed a risk category that is firmly planted in the realm of subjectivity and uncertainty and it could possibly trump all risk criteria within a moment. That criterion is Relationship Risk.

Failure in the First Meeting: Building or Damaging Trust

Maxwell et al. (2011) postulated that an entrepreneur's behavior during an initial meeting with an investor could either build or damage trust, which determined the likelihood of receiving an investment offer. A new risk category was introduced, "relationship risk," which was defined as the risk that an entrepreneur may not make the same decisions when spending the investor's money as the investor would. Relationship risk introduced the concept of 'moral hazard'. The conclusions were that during initial meetings between investors and entrepreneurs, investors tended to "intuitively audit" positive and negative behaviors related to trust as a way of determining relationship risk prior to offering an investment. Put succinctly, they had to like you.

The impact of trust did not end with the first meeting. Bammens and Collewaert (2014) built on the work of Maxwell and Levesque and others to determine how trust impacted the investor's perception of company performance. Trust, it seemed, could be a two-edged sword in a relationship. Trust led to better communication, which led to improved performance as seen by the investor. But the downside was that an emphasis on maintaining trust could lock the players into patterns of expected behavior, which may not be sustainable in a dynamic business environment. In 2014, Maxwell and Lévesque looked into this aspect of trustworthiness. They found that in the initial meeting with an investor, entrepreneurs who conveyed a set of trust-

building behaviors were extend more offers than those who displayed trust-damaging behaviors. Furthermore, trust damaging and trust violating behaviors, even though they were unintentional, were present when the entrepreneur failed to receive an offer, regardless of how well the entrepreneur lined up with the rest of the critical factors discussed (Maxwell & Lévesque, 2014). This all refers back to how investors attempt to control for risk. Maxwell and Lévesque (2014) pointed out that relationship was one of those control strategies and perhaps one of the most powerful. Should the entrepreneur display a behavior that damaged or violated trust, they were in for further control mechanisms if not a flat out rejection. The research team was able to identify specific trust damaging and violating behaviors while directly observing entrepreneurs engaged with investors in the deal making process. These behaviors are provided and ranked in order of occurrence in Table 3.

Table 3

Summary of Relationship Risk Factors

Ranked list of Relationship Risk Factors		
1. Competence	5. Consistency	9. Benevolence
2. Accuracy	6. Judgement	10. Disclosure
3. Explanation	7. Alignment	11. Reliance
4. Openness	8. Receptiveness	

Note: Adapted from “Trustworthiness: A critical ingredient for entrepreneurs seeking investors,” by A. Maxwell and M. Lévesque, 2014, *Entrepreneurship: Theory and Practice* (38) 5, p. 1069.

Drover, Wood, and Payne (2014) built upon the concept. They were studying elements of agency risk and how investors sought to control for it. They pointed out that entrepreneurs preferred to maintain autonomy in decision making and had to be prepared to relinquish some of it when they took other people’s money. This set up the potential for conflict, which as Maxwell and Lévesque (2014) pointed out, could be attenuated through building trust. Drover et al. (2014)

introduced three primary drivers in relationship building: entrepreneurial prestige, opportunity attractiveness, and control. They underscored the fact that these drivers were primarily subjective perceptions and they concluded that entrepreneurs were most likely to receive an offer when these subjective ratings are high.

The Double-Sided Moral Hazard

Fairchild (2011) extended the trust relationship in the other direction by concluding that trust played a role in the entrepreneur's decision to choose a funding partner. VC's generally provided higher level resources and value than Angels. They had access to better networks and more administrative support. But some entrepreneurs opted for the empathy and trust that may be more obvious with Angels. Fairchild suggested that entrepreneurs be aware of this their decision-making to better balance between relational aspect and higher value creating potential.

Telling the Company Story

It was clear from the research literature that entrepreneurs viewed risk differently from investors. Furthermore, investors used a combination of methods, both objective and subjective, to quantify risk in their decision-making process, even down to the level of evaluating relationship risk. Maxwell and Levesque (2011) determined that even the first impression in the initial meeting could make the difference. This brought the discussion to communication. If an entrepreneur had one shot to convey a message of managed risk to an investor who evaluated the business and the behavior, then the story had better be good.

There are a number of resources to assist entrepreneurs in making better presentations, from slide design to presentation techniques, but there is nothing in the mainstream literature that treats the entrepreneur's story as a narrative. Gartner (2007) claimed that narrative approaches could provide a powerful set of tools to understand what entrepreneurs say about themselves and their ventures. This work focused more on how to study entrepreneurs themselves rather than

how entrepreneurs use narrative for their own purposes but the essential findings could apply. Gartner pointed out that “story construction is a process of creating reality” (p. 615), which was at the heart of what an entrepreneur hoped to accomplish in attracting venture capital. He put it all in context: “The narrative of entrepreneurship is the generation of hypotheses about how the world might be: how the future might look and act” (p. 614).

Conclusion

The research literature suggests that entrepreneurs and investors place importance on the mitigation and management of risk and uncertainty. But the literature is also clear that entrepreneurs and investors evaluate risk from divergent perspectives. Investors are exposed to hundreds of potential deals over a year’s time and in order to wade through the sheer volume and reduce the noise, they tend to use heuristics, or mental shortcuts, to identify which deals to disregard quickly and which to pursue. Research in this area has focused largely on outcomes, or the back end of the investment process showing that there are categories of risk factors that may result in a deal failing to go forward. Other research introduced the concept of relationship risk, which is even more subjective than arbitrary judgements about financial and market performance.

CHAPTER 3

RESEARCH METHOD

Introduction

The research methodology chosen for this dissertation was the Delphi Method, Delphi Technique, or simply Delphi. The method was developed in the 1950's by Norman Dalkey, who worked for the Rand Corporation (Skulmoski, Hartman, & Krahn, 2007). The application was a military project in which Dalkey was developing a way to estimate or predict the number of atomic weapons needed to achieve a certain outcome (Dalkey & Helmer, 1963). It was designed as a group communication tool used to achieve convergence of opinion among a group of experts (Hsu & Sandford, 2007). The technique itself has been researched for its fitness as a research tool over the years and, despite some challenges, it has emerged as a fit and useful technique. Delbecq, Van de Ven, and Gustafson (1975) determined that Delphi was particularly useful in the following applications:

1. To determine or develop a range of possible program alternatives,
 2. To explore or expose underlying assumptions or information leading to different judgments,
 3. To seek out information which may generate a consensus on the part of the respondent group,
 4. To correlate informed judgments on a topic spanning a wide range of disciplines, and
 5. To educate the respondent group as to the diverse and interrelated aspects of the topic
- (p. 11).

The Delphi Method was chosen as a research methodology for this dissertation. The applications highlighted above fit well with the purpose and scope for this research.

Purpose Statement

The purpose of this Delphi study was to determine if there is a common set of perceived critical risk factors among a group of experienced investors that could cause them to reject a deal out of hand. The Delphi method was appropriate for this study because the information was uncertain, difficult to quantify, and subject to opinion (Hsu & Standford, 2007; Murray, 1979). Choosing Delphi satisfied at least three of the five applications presented by Delbecq et al. (1975). Knowledge, opinions, and speculation all provided value to the research and Delphi is particularly well suited as a research methodology (Dalkey, 1969).

Research Questions

1. To what extent are critical risk factors are involved in the decision-making process of investors in considering a deal?
2. Which critical risk factors (execution, market, technological, financial, regulatory, etc.) do investors consider to be common among most investment decisions?
3. Of these most common categories, what is the relative weight of importance among them?
4. What differences occur among the critical risk factors between Angel investors and Venture Capitalists?

The Delphi Method

Delphi can be used to quantify subjective judgements from a group of experts on a collective basis in a way that cannot be done through the use of precise analytical techniques (Alder & Ziglio, 1996). Four key features that define the essence of Delphi were offered by Rowe and Wright (1999):

1. Anonymity of participants – allowed the participants to exercise opinions free of any social pressures of conformity,

2. Iteration – the participants were allowed to refine their perspectives in view of the group’s overall consensus as the different rounds continue,
3. Controlled Feedback – Each participant was given feedback on how their responses measure against the median responses of the group, giving them the opportunity to modify their stances on the topics, and
4. Statistical aggregation of the responses – allowed for quantitative analysis and data interpretation.

Linstone and Turoff (1975) presented evidence of the flexibility of the method and its ability to adapt to the specific needs of the study at hand. Skulmoski et al. (2007) presented a number of formal studies that used Delphi research techniques to identify, validate, and forecast a range of research interests, most notably in Information Systems where critical projects needed to be ranked in order of importance and risk. Dalkey (1969) clarified the use of Delphi in decision making involving assertions that come from knowledge of a group of individuals, opinions, which have some basis in belief but fell short of knowledge, and finally speculation, which had little or no backing from evidence. Dalkey concluded that although the lines between these three forms of input are rather blurry, opinion and speculation did have value. Murray (1979) recommend, in a detailed critique of Delphi, that the technique was well suited in researching areas of high uncertainty, where more traditional analytical methods did not apply, such as the area involving opinion.

The Structure of the Delphi Method

A typical Delphi study could be thought of as consisting of three phases: brainstorming, consolidation, and ranking (Okoli & Pawlowski, 2004). During the brainstorming phase, relevant factors are gathered. In the consolidation phase, the long list of factors is analyzed for duplication and relevance, and the list is pared down. In the ranking phase, the items in the list

are rated on a number of criteria that could include importance, relevance, risk, or likelihood. The process essentially involves a series of questionnaires beginning with an open-ended broad question (the Delphi Question) and continues through subsequent rounds of surveys until a consensus is reached among the panel of experts (Delbecq et al., 1975). The earliest Delphi studies used five rounds of surveys (Dalkey & Helmer, 1963), and some Delphi studies can be accomplished with as few as two rounds (Thangaratinam & Redman, 2005). However, there seems to be some consensus that three rounds are usually sufficient (Brooks, 1979; Cyphert & Gant, 1971; Ludwig, 1997).

Hsu and Sandford (2007) provided a suitable description of the various rounds of surveys. Round 1 was typically a questionnaire with one or more open ended questions. In the analysis phase of Round 1, responses were gathered, consolidated, compiled in aggregate, and summarized. From this exercise, the questionnaire for Round 2 was developed. In Round 2, participants were provided the information from Round 1 and asked to rank or otherwise rate the items. Respondents were given the opportunity to provide written rationale for their choices. In Round 3, participants were given the median rankings from Round 2, along with their own personal responses. They were given the opportunity to revise their ratings or keep their position outside the consensus. Based on the work of Hsu and Sandford (2007) the design methodology for this dissertation consisted of a three-round survey process in which critical risk factors are identified by participants using open ended questions in Round 1, weighting each critical risk factor on a 5-point Likert scale for Importance and a 3-point Likert Scale for Frequency in Round 2, and allowing for a revised weighting based on group comparisons in Round 3.

Sampling

Sample Size

The actual number of participants in a Delphi study is a subject still in need of consensus among the research literature (Hsu & Standford, 2007). Delbecq et al. (1975) recommend using a minimal number while Ludwig (1997) found that most Delphi studies used between 15 and 20 participants. Dalkey and Helmer (1963) used as few as seven and in early studies on the method. Dalkey, Rourke, Lewis, and Snyder (1972) reported a dramatic decrease in error as group size increased past 15, and also a steady increase in reliability as group size increased past 11. In early experiments, they reported a correlation coefficient approaching 0.9 with a group of 13 respondents (Dalkey et al., 1972). Okoli and Pawlowski (2004) targeted between 10 and 18 participants for their studies. Baker, Lovell, and Harris (2006) offered that Delphi samples should be less than 20. Based on these ranges the sample size chosen for this project was 20 participants, allowing for potential attrition of up to 5 participants. Twenty participants were recruited to begin the study and 18 ended up completing the process.

Choice of Participants

Fundamental to the reliability of a Delphi study is the choice of experts (Baker et al., 2006). Baker et al. (2006) suggested three themes in defining an expert: knowledge based on professional qualifications, experience based on length of time, and ability to influence policy (make independent decisions). Characteristics and qualifications of desirable panelists should be identified and used to recruit and select the panel participants (Ludwig, 1997). The fundamental criteria used to define experts for this study included the following:

- Primary decision-making authority
- Minimum of 10 investments over 5 years
- At least one positive net return

These criteria were tested and validated by a pilot group of Angel Investors, Venture Capitalists, and entrepreneurship faculty at the University of Tennessee.

Recruitment and Onboarding

A list of 25 potential participants was created through personal networks of the researcher and faculty in the University of Tennessee, the Director of the Knoxville Entrepreneurship Center, and Directors of the Angel Capital Group of Knoxville, TN and the Angel Roundtable of Johnson City, TN. The sample was recruited within a geographical radius of 350 miles centered about Knoxville, Tennessee including Northeast Tennessee, Knoxville, Chattanooga, Nashville, Atlanta, London (KY) and Cincinnati. This region contains the typical population of investors available to most startups in the region. Diversity was a factor in selecting the sample in terms of Venture Capitalists, Angels, and Angel Groups.

Each candidate was contacted individually, either in person or through a phone call where the purpose, scope, and mechanics of the study were explained. The researcher also explained to each candidate that their participation was to be voluntary, their identity and participation in the project were confidential, and their identities would be known only to the researcher.

Once each participant verbally agreed, a follow-up email was sent formally inviting them to participate in the study with a request to reply with their confirmation of willingness to be a part of the expert panel. Upon beginning the survey in Round 1, the conclusion of the Statement of Informed Consent required a positive response to the following set of conditions:

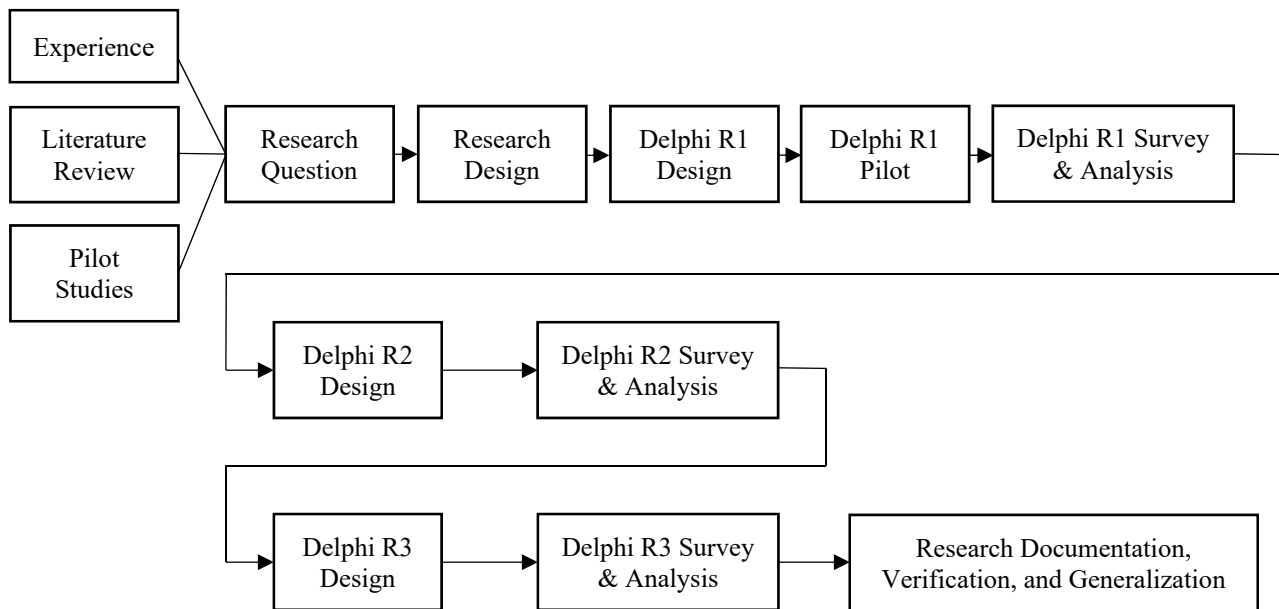
“Clicking the “agree button” below indicates

- I have read the above information
- I agree to volunteer
- I am at least 18 years old
- NOTE: Agreeing to this Informed Consent applies to this and the two subsequent surveys in the study”

Instrumentation

There are four essential features of Delphi: anonymity of participants, iteration, controlled feedback, and statistical aggregation of results (Rowe & Wright 1999). An online survey software application provided utility for the first three. Each participant was invited to sign in online for each of three rounds of surveys (iteration). Only the researcher knew the identities of the respondents (anonymity) and the construction of the surveys provided the controlled feedback. All the resulting raw data were stored in the Cloud within the online survey application. Statistical aggregation of the results was performed using Microsoft Excel, which proved sufficient for the task.

The overview provided by Skulmoski et al. (2007) provided a graphic representation of the process used to design the surveys as shown in Figure 2.



*Figure 2. Typical Delphi Process. Adapted from “The Delphi Method for Graduate Research” by developed by G. Skulmoski, F. Hartman, & J. Krahn, 2007, *Journal of Information Technology Education*, 6, p. 3.*

Survey 1

Survey 1 included some basic demographic information relative to the participant's investment profile, location, and experience. Basic instructions were given regarding how to complete the survey questions. The survey opened up with the following request (Delphi Question):

“Please list all the critical risk factors you look for when evaluating a potential investment deal. To the extent you can, or are willing, please include a measurable quantifier.”

A pilot study was performed upon the completion of the design of Survey 1 in order to test the survey application for utility and clarity. The pilot group consisted of entrepreneurship faculty at the Haslam College of Business at the University of Tennessee. A full copy of Survey 1 can be found in Appendix A.

Survey 2

Survey 2 was derived from the results of Survey 1. The following instructions were given to the participants:

“For your convenience, the critical risk factors have been arranged in categories. As you prepare for this survey, please keep these things in mind:

- **Consider and rate the factors you commonly use *early* in the investment process, during the time prior to due diligence, when you are forming relationships. These should be things that come up during presentations, conversations and early meetings.**
- **Go with your *immediate first reaction*. Do not try to over-analyze a factor.** Your first impression is usually indicative of your judgement.
- This list far exceeds the total number of any individual's responses. If you see a response you did not mention in Survey #1 but would like to rate it, please do so.
- But, do not feel you have to rate every response as important.”

During the analysis of results from Survey 1, concern developed due to the sheer number of critical risk factors. The concern was whether the participants would be able to differentiate the importance of each critical risk factor enough for a suitable ranking to be possible. An

alternative strategy was developed to provide more diversity among the responses in case this concern materialized. The alternative strategy was to include a 3-point Likert rating of “Frequency of Use” in addition the 5-point Likert rating of “Importance”. The following are the instructions given to the participants:

“Each of the following pages contains a list of critical factors organized by overall category. For each critical factor, there are two rating scales; one for importance and the other for frequency of use.

The following definitions correspond to each point of the importance scale:

- **Not Important** - This factor is not considered early in the process
- **Minimally Important** - This factor is worth mentioning
- **Moderately Important** - This factor is considered based on circumstances
- **Important** - This factor is usually considered for most cases
- **Critically Important** - This factor is a sudden death deal breaker

The Frequency of Use scale is pretty self-explanatory:

- **Never** - I never consider this factor
- **Occasionally** - I use this factor from time to time
- **Always** - I never make a decision without considering this factor

Other instructions:

1. Only rate those factors common to your thought process, rate the rest "Not Important". Any skipped questions will be considered "Not Important".
2. You may move back and forth between pages.
3. At the end of the critical risk factors, there is a page for you to list any others you feel were left out or came to mind during the survey.
4. The very last page of the survey asks you if you are ready to complete the survey. If so, then the results will be record. Up until that time, you may leave and come back later.”

A complete copy of Survey 2 can be found in Appendix A, which shows the layout of each critical risk factor, along with the Importance rating and the Frequency of Use rating.

Survey 3

The results from Round 2 were compiled and a statistical analysis was performed, consisting of calculating the mean, median and standard deviation for each critical factor. The

results from the Importance ratings were compared to the results of the combined ratings of Importance and Frequency of Use. Two conclusions were drawn. First, there proved to be significant diversity among the data of the Importance ratings. Second, the addition of the Frequency of Use data provided no significant difference over the results of the Importance ratings alone. The decision was made to proceed to Survey 3 using only the Importance data.

The Qualtrics survey application provided a utility that cross referenced each participant's responses from Survey 2 into the questions for Survey 3. For each critical risk factor from Survey 2, the participants were able to see the median score for the critical risk factor, the range of ratings from the group, and their personal rating, followed by a field in which they could alter their original ranking if they chose to do so. A copy of Survey 3 is included in Appendix A showing the layout of each critical risk factor. The following are the instructions for Survey 3:

“Each of the following pages contains a list of critical risk factors organized by overall category. For each critical risk factor, you will see the median score, the range of scores of the group, and your score highlighted in **Bold Text**.

The space in the column on the right is where you may change or alter your score for that critical risk factor. **If you do not wish to change your score, simply leave the space blank.**

Other instructions:

1. If **Your Score: 0**, it means you did not enter a response for that question in Survey #2. *You may still rate the factor based on your reaction to the group; or you may leave it blank as well.*
2. You may move back and forth between pages.
3. The very last page of the survey asks you if you are ready to complete the survey. If so, then the results will be recorded. Up until that time, you may leave and come back later.”

Reliability and Validity

Hill and Fowles (1975) pointed out that one of the strengths of Delphi was also a weakness with regard to reliability. That is the fact that Delphi is a flexible approach which

excludes the method from standardized procedures. Bearing in mind that this particular critique was contextual to the use of using Delphi as a forecasting tool, much of the reliability claims dealt with the accuracy of said predictions. Nonetheless, Hill and Fowles (1975) provided discussion on how to improve the reliability of Delphi methods; principally in two main areas. First, design of the questionnaire. If wording was ambiguous, it could be interpreted differently by different participants. The second area was in the choice of the participants. Delphi assumes the participant panel was carefully chosen based on relevant criteria over the researcher's familiarity with the individuals. However, when the topic turned to validity, Hill and Fowles (1975) were even less enthusiastic as they questioned the "best guess" approach of the method.

Woundenberg (1991) presented a more positive opinion of the accuracy of Delphi by citing a number of experiments that proved forecasting accuracy improved through the iterative process of multiple rounds and the anonymity of responses. Okoli and Pawlowski (2004) pushed back even harder when they stated that reliability between tests is not relevant because the participants are expected to revise their answers. In addressing validity of the process, they pointed out that Delphi has improved like any other survey method through careful design of the questions, but they added that the process was self-correcting in that the participants validated the researcher's interpretations of the variables.

Baker et al. (2006) summarized the issue of reliability by stating that the use of experts was fundamental to improving reliability and presented a framework for choosing an expert panel. Landeta (2006) summarized the validity of Delphi by suggesting that since the rise in popularity in the 1980s, the novelty of Delphi had worn off and became accepted by the scientific community as a valid research technique.

Based on the research discussed above, the following steps were taken to maximize the reliability and validity of this Delphi based dissertation:

- Careful selection of the expert panel – Criteria were developed by consulting with a pilot group of Venture Capitalists, Angel Investors and Entrepreneurship Faculty from the University of Tennessee to ensure the panelists had sufficient experience and expertise on the research topic.
- Careful consideration of the questionnaires through simplification, review, and piloting with the same pilot group mentioned above.
- Anonymity – All the surveys were conducted with anonymity among the participants. This protected against any undue influence of personality and allowed the participants to evaluate their responses independently of peer group pressure to conform.
- Iteration – Through three rounds, consensus was achieved over a core set of critical factors.
- Statistical aggregation – responses, albeit subjective, were quantified and analyzed statistically.
- Use of online survey tools to maximize the experience and to ensure privacy.

Data Collection

This study was performed using a series of three surveys, all conveyed and recorded in an online based survey application called Qualtrics. Online links to the surveys were each distributed via email to the participants described in the Sampling section above.

In Survey 1, an open-ended question was asked and the responses were collected in the survey tool in a series of critical risk factors relevant to the process of making investment decisions. In the analysis phase of Survey 1 the responses were reviewed, duplicates were removed and a total aggregate list of all critical risk factors was configured in categories grouped for similarity and convenience for the participants in Survey 2.

In Survey 2, the list of critical risk factors was distributed to the same participants, who

were asked to rate each factor on a 5-point Likert scale for Importance and a 3-point Frequency of Use scale. All results were recorded in the online survey application. In the analysis phase of Round 2, each of the Likert ratings were converted to numerical values and analyzed by calculating the mean, median and standard deviation for each critical factor for both Importance and Frequency of Use. Then the Importance ratings were multiplied by the Frequency ratings for each response and the mean, median and standard deviations were calculated for the combined ratings Microsoft Excel was used for the analysis.

In Survey 3, each participant was given a survey with each critical factor listed, along with the median score, range of maximum and minimum scores of the group, and the participant's own score for each factor. Every participant was given the opportunity to revise their scores in light of the group responses. Results were collected and stored in the online survey application.

All personal identity information pertaining to the participants was known only to the researcher. All qualitative comments shared with the participants was cleansed of any identifiable characteristics. There was no direct association from any of the data directly back to the participant in any part of the study.

Data Analysis

Data collection for each of the three rounds of surveys necessitated three different approaches to analysis.

Survey 1

Survey 1 was generally qualitative in approach in that participants were asked to list all critical risk factors that come to mind in their decision-making process, along with a descriptor clarifying each factor. During the analysis phase, the researcher combined the factors from all the lists, grouping them into categories. Obvious duplicates were removed.

Survey 2

In Survey 2, the participants were asked to rate each critical risk factor on a 5-point Likert scale for Importance and a 3-point Likert scale for Frequency of Use. The ratings were converted to numerical values as the results were exported from the online survey application and imported into Microsoft Excel. Mean, median, and standard deviation, minimum, and maximum were calculated for each critical risk factor. Hill and Fowles (1975) recommended the use of median as the preferred measure of central tendency for Delphi studies. For this reason, the median score was used in Survey 3 to convey the central tendency of the group for each critical risk factor. The mean values were used in the analysis of the overall rankings for each critical risk factor.

These results were used to construct Survey 3 and presented along with each individual's personal score for each critical factor so each participant could review the median score against their own rating.

Survey 3

The list of critical risk factors constructed from the analysis of Survey 2 was distributed to the panelists with instructions to review their scores in light of the median and range for the group. The participants were given the opportunity to revise their scores based on the knowledge of how their answers compared with their peers. Analysis for Survey 3 was identical to Survey 2 except that in addition to median and standard deviation, inter-quartile ranges were calculated for each factor (Green, 1982).

Final Analysis

The first phase of final analysis was to determine which critical risk factors achieved consensus among the panel. Ulschak (1983) recommended a criterion whereby 80 percent of ratings fall with two categories of a seven-point Likert scale as a measure of consensus. Green

(1982) suggested that 70 percent should rate at least three or higher on a four point Likert scale with the median being 3.25 or higher. For this study, any response where the rating was outside the range of one Likert point above or below the median was discarded. The percentage of responses within this boundary was calculated. For any critical risk factor where 70% or greater of the responses were within plus or minus one Likert rating from the median, the factor was considered to be in consensus of the group. Critical risk factors that fell below this consensus range of 70% were discarded from the final analysis.

Further analysis was performed within subgroups of the participants; specifically, Angels versus Venture Capitalists (VC's), to determine if there were differences in ranking of critical success factors and consensus.

Summary

The methodology described in this chapter provided a framework to determine specific critical risk factors used heuristically by investors as they make their decisions about which startup companies to invest in. The research methodology was a three-step Delphi study using a group of 18 experienced investors to identify a number critical risk factors with a high degree of consensus. The results allowed the researcher to develop frameworks to assist entrepreneurs in crafting their company narratives to be more attractive to potential investors and avoid pitfalls that could result in being declined for investment based on nothing more than a subjective judgment. Instrumentation for the study included three surveys delivered by the online survey application Qualtrics and analyzed with the use of Microsoft Excel.

Reliability and validity were achieved through use of an expert panel, carefully constructed surveys, anonymity of the participants, iteration of the process, and statistical aggregation of the resultant statistics

CHAPTER 4

DATA COLLECTION

Introduction

The methodology for data collection and analysis was presented in Chapter 3. In Chapter 4, the process of data collection is presented along with summary data results based on the various analysis methods outlined for the Delphi research study. In most cases data are presented using top quartiles for comparative purposes. Full listings of all data results can be found in the following appendices:

- Appendix B – Total Listing of Critical Risk Factors from Survey #1
- Appendix C – Full Listing of Survey #2 Results – Unranked
- Appendix D – Ranked Consensus Data By Consensus Range
- Appendix E – Comparison of Ranked Consensus Data Between Angel Investors and Venture Capitalists

Purpose Statement

The purpose of this Delphi study was to determine if there is a common set of perceived critical risk factors among a group of experienced investors that could cause them to reject a deal out of hand. The Delphi method was appropriate for this study because the information was uncertain, difficult to quantify, and subject to opinion (Hsu & Standford, 2007; Murray, 1979).

Research Questions

1. To what extent are critical risk factors are involved in the decision-making process of investors in considering a deal?
2. Which critical risk factors (execution, market, technological, financial, regulatory, etc.) do investors consider to be common among most investment decisions?

3. Of these most common categories, what is the relative weight of importance among them?
4. What differences occur among the critical risk factors between Angel investors and Venture Capitalists?

Participants and Demographics

For this Delphi Study, 15 participants were chosen as the minimum sample size. In order to allow for possible attrition, 20 potential participants were recruited for the study. Two participants failed to complete the survey process leaving 18 participants who were part of the total Delphi study.

The strength of the Delphi Method is in the expertise of the panelists. The criteria that were developed for recruiting participants include the following:

- A minimum of 5 years experience in investing
- A minimum of 10 deals in which they had primary decision-making authority
- At least one positive net return

Other criteria applied to the selection of participants included a balanced mix between Venture Capitalists and Angel Investors.

There were nine Venture Capitalists and nine Angel Investors (Table 4 provides demographic information about the participants). The group reported total investments of over \$390 million in 745 deals. The Venture Capitalists (VC's) reported investing \$367.7 million in 523 deals for an average of \$702,964 per deal, while the Angel Investors (Angels) invested 23.3 million in 222 deals for an average of \$104,955 per deal. The average experience of the VC's was 16.9 years with a range of 4 to 40 years. The average Angel experience was 13.3 years with a range of 2 to 30 years. The geographic dispersion of the participants was considered to represent the best funding opportunities for entrepreneurs across the state of Tennessee. While

some investors' home offices were located in other states, principally OH, KY, and CA, all these investors have conducted business within Tennessee. The locations from which the investors conducted their investment activities included the following:

Knoxville, TN	Nashville, TN	Oak Ridge, TN
Chattanooga, TN	Johnson City, TN	Cincinnati, OH
Johnson City, TN	Greeneville, TN	London, KY
Memphis, TN	Bristol, TN	San Francisco, CA

Table 4

Participants' Demographics

Participant	Investor Type	Total Investment	Total Deals	Total Years
1	Venture Capitalist	\$25,900,000	85	10
2	Venture Capitalist	\$5,000,000	41	4
3	Venture Capitalist	\$250,000,000	150	33
4	Venture Capitalist	\$35,000,000	150	15
5	Venture Capitalist	\$50,000,000	48	18
6	Venture Capitalist	\$250,000	10	10
7	Venture Capitalist	\$1,500,000	14	5.5
8	Venture Capitalist	*	25	40
9	Venture Capitalist	*	*	*
10	Angel Investor	\$1,000,000	12	20
11	Angel Investor	\$2,400,000	45	17
12	Angel Investor	\$4,400,000	11	21
13	Angel Investor	\$1,500,000	12	7
14	Angel Investor	\$500,000	40	30
15	Angel Investor	\$2,000,000	15	10
16	Angel Investor	\$6,000,000	40	8
17	Angel Investor	\$300,000	22	2
18	Angel Investor	\$5,200,000	25	5
Total		\$390,950,000	745	255.5

Note: * indicates participant did not report data.

Survey Distributions and Response Rate

Survey 1 was the brainstorming stage of the Delphi Method. It identified the critical risk factors that were important to each investor. Survey 1 was distributed via email to all 20 recruited participants on November 5, 2017. Reminders were sent out on November 9, 2017. The survey was concluded on November 13, 2017 with 19 responses for a return rate of 95% and exceeding the minimum threshold of 15.

Survey 2 was the rating stage in the Delphi Study, in which the investors were instructed to rate the critical risk factors for importance. Survey #2 was distributed via email to 19 participants on November 28, 2017 and the survey was concluded on December 13, 2017. There were 18 responses for a return rate of 95%.

Survey #3 was the consensus phase of the study whereby the participants reviewed their responses in context of the group ratings and were allowed to revise their ratings. Survey #3 was distributed via email to 18 participants on December 19, 2017 and concluded on December 23, 2017. All 18 participants responded for a response rate of 100%.

Survey 1: Construction, Methodology and Response Data

Survey #1 was the brainstorming stage of the Delphi Study (see Appendix A). Following a brief introduction and the Statement of Informed Consent, participants were asked for some general demographic information. In the instructions for the survey, the participants were introduced to the concept of Critical Risk Factors and were instructed to list all the critical risk factors that come to mind in the investment stages that lead up to Due Diligence. The survey provided for up to 25 critical risk factors to be listed in an open text field for each. The participants were provided space to include any quantifiers they felt would clarify their choices.

The 18 participants who responded to Survey 1 returned a total of 193 critical risk factors for mean of 11 critical risk factors per person. The full listing of critical risk factors as reported

in the survey appears in Appendix B. The range of responses from participants was 5 to 22 from each participant (see Figure 3). Most participants responded with between 8 and 14 critical risk factors.

Upon initial review of the 193 critical risk factors identified by the participants, it was obvious there were multiple duplicates, although some were worded slightly different. In order to consolidate the total list of critical risk factors and omit repeats, a set of categories was formed based on the nature of each response. For example, factors such as *trustworthiness* and *integrity* were categorized as Relationship Factors while *amount of investment* and *valuation* were considered to be Investment and Finance Factors. When Survey 2 was constructed and tested by the pilot group, it was suggested that the categories made the rating process simpler so the categories remained as part of the listing of results for Survey 1. As shown in Table 5, once consolidated and categorized, there were a total of 82 critical risk factors distributed in 7 categories.

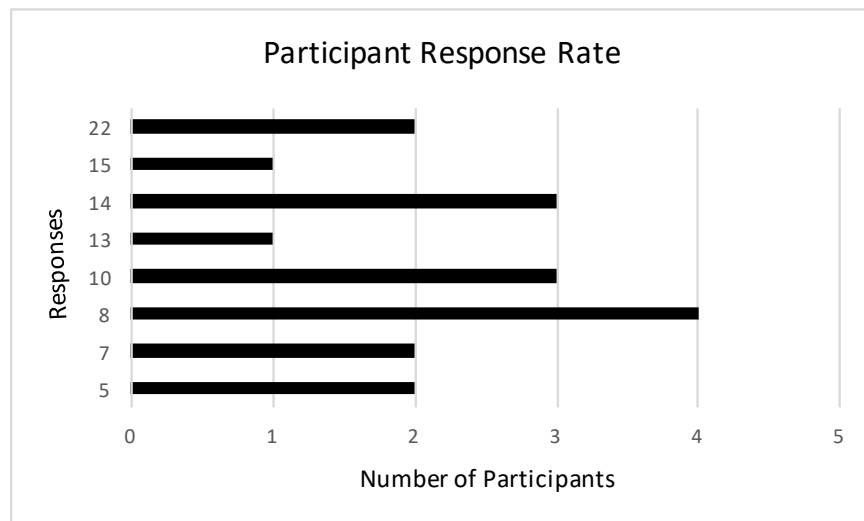


Figure 3. Participant Response Rate

Table 5

Critical Risks Factors by Category

Category	Critical Risk Factors
Founders and Management Team	Founder's Experience – Industry Founder's Experience – Previous Startups Founder's Experience – Leadership Founder's Experience – Technical Founder(s) commitment to startup Founder's Experience – Startups Founder's Experience – Business Model Founder's mindset toward growth Ability to execute Perseverance Founders desirous of liquidation and exit Open position on management team Existence and quality of Advisory Board Strength of the Business Plan Strategic Metrics and Milestones Operational execution relative to supply chain
Relationship	Coachability Relationship between founders Transparency Company/Investor cultural fit Management 'skin in the game' Trustworthiness Passion Ethics/Honesty Integrity Character "X" Factor instincts
Market, Competitive Landscape, Scalability and Early Sales	Total addressable market (size) Market growth rate Market segmentation – Consolidated vs. fractured Go-to-market strategy Product/Market fit Timing in market life cycle Understanding of market trends Understanding of competitive landscape Overall number of competitors Competitor market share

(continued)

Table 5 (continued)

Category	Critical Risk Factors
Market, Competitive Landscape, Scalability and Early Sales (continued)	Ability to scale Strategy for growth Scale with minimal capital Sales strategy Early traction Existing revenues Revenue model
Technology and Value Proposition	Disruptive in the market “Me Too” technology Easily copied or reverse engineered MVP identified and available (Prototype) Development timeline Platform technology Demonstrated customer discovery Problem, not solution focused Clear and unique value proposition
Investment and Financial	Amount of investment Valuation Follow-on funding needed Terms Clean Cap Table Ability to attract co-investors Realistic return expectations M&A Landscape Investment stage – seed, early growth Realistic pro forma Little or no debt Reasonable burn rate Projected gross margins Time to Exit Potential for good return Economic conditions favorable for exit Potential disruptive technology affecting exit Clean balance sheet Exit strategy

Table 5 (continued)

Category	Critical Risk Factors
Regulatory and Legal	No pending or existing litigation Founder’s need for NDA Regulatory barriers Political risks Existing IP Competitive advantage Other barriers to entry
Other Factors	Location of company “Wow” factor Intriguing narrative

Survey 2: Construction, Methodology and Response Data

Survey #2 was the rating stage of the Delphi study. When the list of critical risk factors was determined by the participants, the next step was to have the participants assign importance ratings to each critical factor. However, upon review of the sheer volume of critical risk factors yielded by Survey 1, two concerns emerged. The initial expectation of Survey 1 was that there would be 18 - 24 critical risk factors based on the research reported in the literature review. A simple Likert type rating scale would be sufficient to differentiate the more important factors from those less important. Yet, with 82 critical risk factors, the first concern was whether the participants would be able to distinguish between so many factors. The second concern was whether there would be enough diversity in a 5-point Importance scale to differentiate a smaller number of highly important risk factors from the list of 82.

Two proposed solutions were developed. The first was to simply increase the Likert rating scale from 5 to 10. The second solution was to introduce a matrix type of rating system that would allow rating along two dimensions. Upon consultation with Dr. Timothy Munyon, a survey expert at the University of Tennessee, the researcher decided to implement the second

option. The original 5-point Likert scale was retained as a measure of importance and a 3-point frequency scale was added. For each critical risk factor, the participants were asked to rate each critical risk factor using a 5-point scale for importance and a 3-point scale for frequency of use. Results from this strategy would yield data according to the original intent of the research design, but would provide additional data in case the results did not have enough diversity to differentiate a smaller population of the most important risk factors.

Survey 2 was constructed from the results of Survey 1 using the consolidated list of critical risk factors organized by their respective categories. A copy of the full survey is in Appendix A. Participants were directed to rate each critical risk factor as follows:

The following definitions correspond to each rating of the importance scale with the numerical value of the rating in parentheses:

- **Not Important** - This factor is not considered early in the process (1 point)
- **Minimally Important** - This factor is worth mentioning (2 points)
- **Moderately Important** - This factor is considered based on circumstances (3 points)
- **Important** - This factor is usually considered for most cases (4 points)
- **Critically Important** - This factor is a sudden death deal breaker (5 points)

The Frequency of Use scale defined how often the critical risk factor was considered:

- **Never** - I never consider this factor (1 point)
- **Occasionally** - I use this factor from time to time (2 points)
- **Always** - I never make a decision without considering this factor (3 points)

At the conclusion of Survey 2, The Likert scale ratings were converted to corresponding numerical values using a tool in the Qualtrics survey application. A set of statistical calculations were applied to the data using Microsoft Excel that included, mean, standard deviation, median, minimum, and maximum for the data related to the Importance rating. In addition, the numerical values for the 5-point Importance rating were each multiplied by the 3-point Frequency rating for a Combined rating in case it proved necessary. A full listing of the data results is included in Appendix C.

The data were ranked by mean score in order of highest to lowest and then the listing was separated into quartiles. The mean data range from the Importance data only was 3.24 to 4.94. The data range for Importance and Frequency combined was 6.61 to 14.56. Although there were some differences in actual ranking between the two methods, when analyzed by quartile, there was only one factor that moved from one quartile to the next. Based on the broad range of mean values across the population of data, and the minimal impact on quartile placement, it was determined that mean data for the Importance rating were sufficient for final analysis and in keeping with the original research methodology. The critical risk factors were ranked by mean score for Importance in the top two quartiles (see Table 6).

Table 6

Critical Risk Factors Ranked by Mean Values (Top Two Quartiles)

Critical Risk Factors	Mean Value
Relationship Factors - Trustworthiness	4.94
Relationship Factors - Ethics/Honesty	4.94
Founders and Management Team Factors - Founder(s) commitment to startup	4.89
Relationship Factors - Integrity	4.89
Founders and Management Team Factors - Ability to execute	4.82
Relationship Factors - Coachability	4.82
Founders and Management Team Factors - Perseverance	4.76
Relationship Factors - Character	4.72
Intellectual Property Factors - Competitive Advantage	4.71
Relationship Factors - Passion	4.67
Competitive Factors - Understanding of Competitive Landscape	4.61
Exit Factors - Potential for Good Return	4.61
Relationship Factors - Transparency	4.59
Market Factors - Product/Market Fit	4.59
Value Proposition Factors - Clear and Unique Value Proposition	4.56
Legal Factors - No Pending or Existing Litigation	4.56

Table 6 (continued)

Critical Risk Factors	Mean Value
Relationship Factors - Management 'skin in the game'	4.50
Scaleability Factors - Ability to Scale	4.50
Scaleability Factors - Strategy for Growth	4.47
Market Factors - Go-to-market Strategy	4.39
Traction and Revenue Factors - Revenue Model	4.39
Investment Factors - Terms	4.39
Founders and Management Team Factors - Founder's mindset toward growth	4.35
Technology Factors - MVP identified and available (Prototype)	4.35
Scaleability Factors - Sales Strategy	4.33
Investment Factors - Follow-on Funding Needed	4.29
Intellectual Property Factors - Other Barriers to Entry	4.29
Financial Factors - Reasonable Burn Rate	4.28
Value Proposition Factors - Problem, Not Solution Focused	4.27
Value Proposition Factors - Demonstrated Customer Discovery	4.25
Founders and Management Team Factors - Strategic Metrics and Milestones	4.22
Relationship Factors - Company/Investor cultural fit	4.18
Investment Factors - Investment Stage - Seed, Early Growth	4.18
Market Factors - Total Addressable Market (Size)	4.17
Investment Factors - Valuation	4.17
Technology Factors - Development Timeline	4.13
Relationship Factors - Relationship between founders	4.12
Founders and Management Team Factors - Founder's Experience - Industry	4.11
Exit Factors - Exit Strategy	4.11
Intellectual Property Factors - Existing IP	4.11
Traction and Revenue Factors - Early Traction	4.06

Note: Dotted line represents boundary between the 1st and 2nd quartiles

Among the critical risk factors in the top quartile, two categories emerged more often than others. The relationship category was the most important with 6 in the top ten, and 8 in the top quartile. Founders and Management team followed with 3 in the top ten and 5 in the top quartile. The other categories were fairly well distributed.

Survey 3: Construction, Methodology and Response Data

Survey 3 was the consensus stage of the Delphi process. The participants were shown each critical risk factor, along with its calculated median score and the range of median scores from minimum to maximum. A table was created listing each participant along with their score for each critical risk factor. The Qualtrics survey application cross-referenced each critical risk factor with the individual score of each participant from Survey 2, allowing them to compare their scores with the median and the range of the group. The participants were instructed to consider their original response in comparison to the median of the group and they were offered the opportunity to change their score based on this information. They could either stay within consensus (represented by the median score) or remain outside. It is important to restate that the participants had no knowledge of who the other participants were and no way of knowing how anyone else but themselves responded. A copy of Survey 3 is in Appendix A.

Consensus Effect

A total of 57 ratings were changed during Survey 3 for an average of 3.2 per participant. The number of participants who chose to make changes in their initial ratings as a result of comparing with the group median and range was well distributed (see Figure 4).

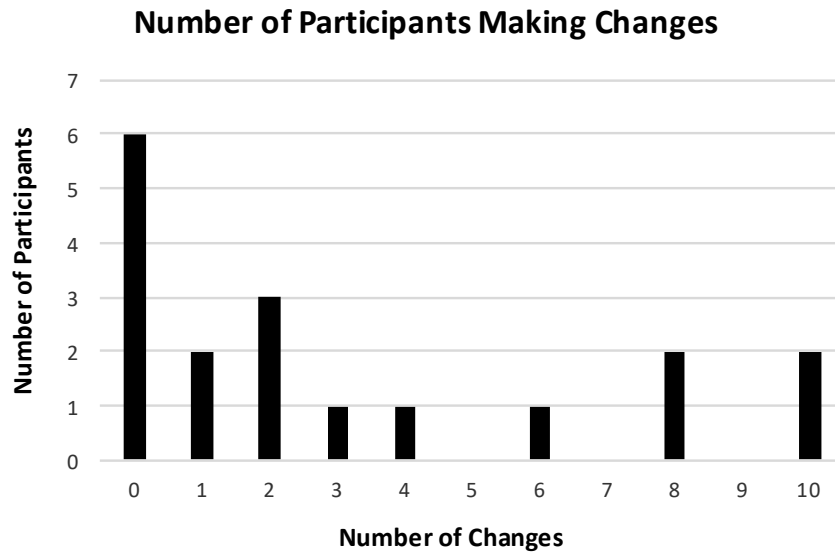


Figure 4. Number of Participants Making Changes

The majority (34) of the changes appeared to change from the participants’ original score to the median. Eleven changes were made to fill in blanks left in Survey #2. Six changes were made away from the median and six were made toward the median but not to match it.

Analysis of Consensus

The data from Survey 2 was used to compare the changes in participant responses in Survey 3. Each response that was a change from the original score was replaced with the new score. New statistics were calculated and the results were ranked. There were several critical risk actors that had movement within the ranked list; all of which only moved one or two places with two exceptions. The critical factor, “Ability to Execute” moved into first position in the top quartile after the consensus phase. The critical factor, “Demonstrated Customer Discovery” moved from mid-quartile two up into the first quartile showing the impact of the group consensus on that one critical risk factor.

Based on the research methodology developed by Ulschak (1983) who recommended a criterion of 80 percent of ratings fall with two categories of a seven-point Likert scale as a measure of consensus; and Green (1982) who suggested that 70 percent should rate at least three or higher on a four point Likert scale with the median being 3.25 or higher, consensus ranges for this research were developed based on one Likert score above and one below the median. For a median score of 5, the consensus range was between 4 and 5. For a median score of 4, the consensus range was between 3 and 5. For a median score of 3, the consensus range was between 2 and 4.

The Importance rating scores for Survey 3 were analyzed against these consensus ranges and any score that fell outside the range was identified. The number of outside-range scores were then totaled for each critical risk factor. The research methodology called for identifying critical risk factors according to the overall consensus of the group of participants based on 70% of the responses being within the Consensus Range. Based on an analysis of the number of critical risk factors within the consensus range, three critical risk factors were below 70% consensus and were discarded from the final ranking. They were Strength of the Business Plan, Existing Revenues, and Founder's Need for non-disclosure agreements. Twenty-two critical risk factors were within 100% consensus of the group (see Table 7). The overall ranked lists for 70%, 80% and 100% consensus are in Appendix D. It should be noted that some deliberation was given to whether the consensus threshold should be 70% or 80% given there were references for either method. Upon review of the data, there was only one critical risk factor in the top two quartiles that was below 80%. Setting the threshold at 80% would have had minimal impact on the most important factors. Therefore, the threshold of consensus remained at 70% for this study.

Table 7

Distribution of Critical Risk Factors Across Range of Consensus

Rate of Consensus	Participants within Range	Critical Risk Factors within Range
100%	18	22
80 – 99%	15 – 17	44
70 – 80%	13 – 14	13
Below 70%	12 or fewer	3

The final ranking of critical risk factors with at least 70% consensus resulted in 39 factors in the top two quartiles ranging in importance from 4.1 to 5.0 (see Table 8).

Table 8

Ranking of Critical Risk Factors with at least 70% Consensus

Critical Risk Factors	Mean Value
Founders and Management Team Factors - Ability to execute	5
Relationship Factors - Trustworthiness	5
Relationship Factors - Ethics/Honesty	4.94
Founders and Management Team Factors - Founder(s) commitment to startup	4.89
Relationship Factors - Integrity	4.89
Relationship Factors - Coachability	4.82
Founders and Management Team Factors - Perseverance	4.76
Relationship Factors - Character	4.72
Intellectual Property Factors - Competitive Advantage	4.71
Relationship Factors - Passion	4.67
Competitive Factors - Understanding of Competitive Landscape	4.67
Exit Factors - Potential for Good Return	4.67
Relationship Factors - Management 'skin in the game'	4.61
Relationship Factors - Transparency	4.59
Market Factors - Product/Market Fit	4.59

Table 8 (continued)

Critical Risk Factors	Mean Value
Value Proposition Factors - Clear and Unique Value Proposition	4.56
Legal Factors - No Pending or Existing Litigation	4.56
Scaleability Factors - Strategy for Growth	4.53
Scaleability Factors - Ability to Scale	4.50
Value Proposition Factors - Demonstrated Customer Discovery	4.44
Founders and Management Team Factors - Founder's mindset toward growth	4.41
Market Factors - Go-to-market Strategy	4.39
Investment Factors - Terms	4.39
Scaleability Factors - Sales Strategy	4.33
Technology Factors - MVP identified and available (Prototype)	4.33
Investment Factors - Follow-on Funding Needed	4.29
Traction and Revenue Factors - Revenue Model	4.28
Financial Factors - Reasonable Burn Rate	4.28
Intellectual Property Factors - Other Barriers to Entry	4.28
Value Proposition Factors - Problem, Not Solution Focused	4.25
Founders and Management Team Factors - Strategic Metrics and Milestones	4.22
Relationship Factors - Relationship between founders	4.18
Relationship Factors - Company/Investor cultural fit	4.18
Investment Factors - Investment Stage - Seed, Early Growth	4.18
Investment Factors - Valuation	4.17
Technology Factors - Development Timeline	4.12
Founders and Management Team Factors - Founder's Experience - Industry	4.11
Market Factors - Total Addressable Market (Size)	4.11
Investment Factors - Clean Cap Table	4.11

Note: Dotted line indicates boundary between Quartile #1 and Quartile #2

Comparing Angel Investors with Venture Capitalists

The final data set from Survey 3 was sorted by “Investor Type” and separated into two data sets, one for Angel Investors and the other for Venture Capitalists. An analysis of consensus was performed using the same parameters previously discussed. The number of participants was evenly split across each Investor Type: nine Angel Investors and nine Venture Capitalists. The consensus within each group was higher than with the one large group as shown

in Table 9. The Venture Capitalists had 47 instances of 100% consensus while the Angels had 31. The Angels had nearly three times the number of factors that fell outside consensus than did the Venture Capitalists.

Table 9

Comparison of Consensus Between Angel Investors and Venture Capitalists

Rate of Consensus	All Participants	Angel Investors	Venture Capitalists
100%	23	31	47
80 – 99%	42	18	21
70 – 80%	13	20	9
Below 70%	4	13	5

The critical risk factors were ranked for each Investor Type based on newly calculated statistics within each group. The total listings are in Appendix E. The respective listings for the top quartiles for Angel Investors and Venture Capitalists were compared in Table 10. Although not identical, the lists are substantially similar in that 12 specific critical risk factors were present in the top quartile of both lists. However, there were some differences as marked in the table.

Table 10

Comparison of Final Consensus Rankings

Angel Investor Consensus Final Data	Venture Capitalist Consensus Final Data
Founders and Management - Ability to execute	Founders and Management - Founder(s) commitment
Relationship - Coachability	Founders and Management Team - Ability to execute
Relationship - Trustworthiness	Relationship - Trustworthiness
Relationship - Ethics/Honesty	Founders and Management Team - Perseverance
Relationship - Integrity	Relationship - Ethics/Honesty
Founders and Management - Founder(s) commitment	Exit Factors - Potential for Good Return***
Relationship - Character	Relationship - Company/Investor cultural fit***
Understanding of Competitive Landscape***	Relationship - Management 'skin in the game'
Intellectual Property - Competitive Advantage	Relationship - Integrity
Relationship - Passion	Traction and Revenue - Revenue Model***
Founders and Management - Perseverance	Relationship - Coachability
Relationship - Transparency***	Relationship - Passion
Market - Product/Market Fit***	Relationship - Character
Investment - Terms***	Market - Go-to-market Strategy***
Legal - No Pending or Existing Litigation***	Scaleability - Ability to Scale***
Relationship - Management 'skin in the game'	Scaleability - Strategy for Growth***
Value Proposition - Unique Value Proposition	Value Proposition - Unique Value Proposition
	Investment - Follow-on Funding Needed***
	Intellectual Property - Competitive Advantage

Note: Fewer critical risk factors appear in the top quartile for Angel Investors because several critical risk factors were removed because of a lack of consensus between the Angel Investors. To highlight differences, critical risk factors were marked with triple asterisks (***) to indicate which factors were unique to their respective lists.

CHAPTER 5

DISCUSSION, IMPLICATIONS AND RECOMMENDATIONS

Introduction

In Chapter 1 of this study, the purpose was presented, which was to determine if there were common categories of critical risk factors among a group of investors and to quantify each category with respect to importance in the decision-making process. The Delphi method was appropriate for this study because the information was uncertain, difficult to quantify, and subject to opinion (Hsu & Standford, 2007; Murray, 1979). Chapter 2 set a context for the study by reviewing the literature, which introduced both objective and subjective methods conveyed by investors during and after the investment processes. The literature revealed that the investment process occurs through stages, with more subjective criteria at play in the early stages, and then more objective measure at the close of a deal. Chapter 3 presented how the Delphi method was chosen and would be implemented for this study. Chapter 4 presented summaries of the data at every phase of the Delphi process used in this study.

In Chapter 5, analyses of these data and conclusions are presented with respect to each of the research questions. A summary of the Delphi approach is presented followed by implications of this study and recommendations for further research.

Research Questions

1. To what extent are critical risk factors are involved in the decision-making process of investors in considering a deal?
2. Which critical risk factors (execution, market, technological, financial, regulatory, etc.) do investors consider to be common among most investment decisions?
3. Of these most common categories, what is the relative weight of importance among them?

4. What differences occur among the critical risk factors between Angel investors and Venture Capitalists?

Conclusions

Research Question 1

A total of 193 critical risk factors were reported by 18 participants for an average of 11 critical risk factors per participant. Although the range of responses was between 5 and 22, most participants reported between 8 and 14 critical risk factors. It is clear these participants were aware of certain criteria they are looking for when engaged in the initial stages of a potential investment. However, judging from the high level of consensus in the consolidated listing of 82 critical risk factors, (only 3 factors were discarded due to a lack of consensus), and the fact that the top two quartiles rated 4.00 (Important) to 5.00 (Critically Important), there is evidence to support the idea that there are far more critical risk factors at play in investment decisions than a mere dozen or so. Even if one considers a consensus threshold of 100%, there were 19 critical risk factors rated above 4.0.

Investors use their own set of critical risk factors in their decision-making process to a great extent. This research pointed out that there are more critical risk factors involved with investors' decision-making process than came to mind when they were initially asked to list them.

Research Question 2

With 82 critical risk factors summarized from 18 participant responses and half of them being rated 4.0 or higher in importance at a high level of consensus, any expectations of a concise listing of a dozen critical risk factors could not be realized. However, if one analyzes the top quartile with a consensus threshold of greater than 80%, a manageable answer to this research question begins to emerge. Of 17 critical risk factors meeting this condition, nearly

half, or 8 factors are related to relationship including Trustworthiness, Transparency, Ethics, Integrity, Coachability, Character, and Passion. The top two factors, each with a mean score of importance of 5 out of 5 are Trustworthiness and Management Ability to Execute. Rounding out the balance of the list are factors that include Founder Commitment, Perseverance, Competitive Advantage with Respect to IP, Potential for a Good Return, Product Market Fit, Clear and Unique Value Proposition, and finally, No Existing Litigation. Surprisingly absent from this listing are any financial related factors. The Revenue Model shows up as a critical factor well down in the second quartile with a mean score of 4.44. Clearly relationship based critical risk factors form the most important and claim the highest consensus as a category of all the other, more objectively based measures.

Research Question 3

In order to assist in the process of consolidating the 193 responses from Survey 1, categories were identified which represented critical risk factors of some similarity. Of the categories in the top two quartiles with a consensus threshold of greater than 70%, there were 10 critical risk factors in the Relationship Category (average mean score: 4.66), followed by 6 factors in each of the Management Team (4.58) and Investment categories (4.19). The category of Market Factors (4.27), followed with 4 while Scalability (4.45), Value Proposition (4.42), and Intellectual Property (4.37) each had 3 factors within the category. Rounding out the top ten categories were Exit, Intellectual Property and Revenue, each with two factors in their respective categories.

Relationship factors carried the most weight as well as the most factors identified as a category, followed by Management Team factors, which were reflected in much of the research literature. It is interesting to note that Scalability Factors ranked next based on average importance (4.45) even though there were half the number of factors than the Investment

category. Value Proposition, with 3 factors ranked next in importance with a category mean of 4.42. Factors related to Exit Strategy completed the top five categories with a category mean of 4.39.

What is striking about this analysis is the profound difference of the Relationship category compared to all the others. The Relationship category consists of the “soft” characteristics that are typically more subjective such as “Trustworthiness”, “Character”, or “Integrity”, whereas the other categories can be evaluated typically by some objective measure. Among all the prior research reviewed, there were studies that focused on one (subjective) or the other (objective) approach but none were found that combined subjective categories with the more objective categories. This study placed the two together and Relationship factors rose to the top of importance among the objectively measured factors.

Research Question 4

The differences between how Angel Investors and Venture Capitalists responded are significant from a number of perspectives. Looking first at the general rankings of critical risk factors between the two groups, there were 12 critical factors shared between the two groups. Of those, 7 were within 3 positions of each other on the ranking scale and the remaining 5 were in completely different positions within the quartile. Of those remaining, there were 5 factors unique to the Angel Investors in their top quartile while the Venture Capitalists had 7 unique critical risk factors in their top quartile. Where there was agreement between the two groups, it was consistent but the divergences were drastic pointing out that as group, Angel Investors and Venture Capitalists have different perspectives from each other. The factors unique to the Angel Investors included Competitive Landscape, Transparency, Product/Market Fit, Investment Terms and No Existing Litigation. Factors unique to the Venture Capitalists include Return Potential, Cultural Fit, Revenue Model, Go-to-Market Strategy, Scalability and follow-on Funding.

The other clear difference between Angel Investors and the Venture Capitalists was the rate of consensus. As for the number of critical risk factors excluded due to falling below 70%, the total group discarded three factors, but the Angels excluded 13 while the Venture Capitalists only excluded 5. Among those critical risk factors rated 100% consensus, the Angel Investors had only 31 while the Venture Capitalists had 47. In fact, all the critical risk factors in the first quartile of the Venture Capitalists rated 100% while the Angel Investors only had 9 critical risk factors rated at 100% consensus in their top quartile. In summary, the Venture Capitalists were much more aligned as a group than the Angel Investors, and there were distinct differences among the critical risk factors rated most important between the two groups. This indicated that Angel Investors tended to think more independently as a group and between each other.

Conclusions Regarding the Delphi Method and the Consensus Effect

The Delphi Method was chosen for this study because the information was uncertain, difficult to quantify, and subject to opinion (Hsu & Standford, 2007; Murray, 1979). It would have been much simpler to aggregate a comprehensive list of critical risk factors from other studies and engage a population of investors to rate them on relative importance. But that method would have potentially excluded critical risk factors not discovered by those researchers. This was evidenced in the results of Survey 1. When asked the open-ended question, “Please list all the critical risk factors you look for when evaluating a potential investment deal,” the participants responded with anywhere from 5 to 22 responses for a total of 193 responses. After the ranking process of Survey 2, it was clear they valued more critical risk factors as important than what came to mind during the brainstorming in Survey 1. Over 40 of the critical risk factors in the top two quartiles were rated between 4.0 (Important) and 5.0 (Critically Important). The consensus of these ratings almost doubles the highest number of critical risk factors envisioned

by any individual alone. Clearly, as a group, these investors identified more important risk factors than they came up with individually.

The consensus phase of Survey 3 had a direct influence on the individual participants in more than one respect. First, a number of responses in Survey 2 were left blank for reasons known only to the participants. When given the opportunity to review the data a second time, there were 11 cases where previously blank ratings were filled in. In 34 cases, the original rating for the participant was changed to match the median score. Out of a total of 1,476 individual responses, 4% (57) rankings were changed as a result of reflection on the group responses. But this belies another effect of consensus at the Investor Type level, especially among the Angel Investors who excluded 13 of 82 critical risk factors (18%) as a result of the consensus phase of the study.

The consensus scores for each critical risk factor underscored the importance rating, especially for those factors where there was 100% consensus. One can be sure that Political Risks with an importance rating of 3.3 was significantly less important to the investor than Trustworthiness, which was rated a perfect 5.0, each at 100% consensus.

In summary, the investors were more creative as a group and within their respective Investor Types than they were as individuals and their collective, consensus-forming collaboration underscored the validity of the importance ratings they determined.

Implications of the Study

At least three participants are active in Angel Capital Groups, which are groups of Angel Investors who come together to review and evaluate potential deals. These individuals are interested, not only in the results of this study as it might pertain to their own groups, but they may be interested in conducting Delphi studies of their own within their groups.

For this group of investors, the impact of this survey could assist them in gaining a better understanding of how decisions are made within the group, allowing them to place more weight on those factors seen as more critical to the investment process than others. For individual investors, this research will provide an evidence based framework for them to compare their own decision-making process. The fact that the Relationship based factors proved to be more important than objectively measured factors, coupled with the finding that these two types of factors are in play at the same time, shows the complexity of decision making in early stage investments, which cannot be distilled into a simple checklist for the benefit of either investor or entrepreneur. This research does provide some definition to this complexity. The relative high degree of consensus within the most important factors may bring confidence to individual investors that their experience is confirmed by their peers and affords them an opportunity to review their biases in light of how they rate against their peers.

Unfortunately, for entrepreneurs, this study did not result in a concise, 5-point checklist or framework they can use to help guarantee they secure an investment. Despite any clarity this study brings to the process, there will still be a fraction of funding resources available to all who are seeking it. Investors will still have to decide to decline far more investment deals than they will close. But what this study does for entrepreneurs is document how complex the process is, with all the variables that come into play. The consensus effect underscored this reality and should provide a more realistic alternative to all the Top Ten Things Investors Look For that show up in ubiquitous blogs on the subject. The other implication for entrepreneurs is the fact that there are dual/parallel tracks of critical risk factors at play: those related to relationship and those related to more objective, measurable factors. Much attention is currently given to constructing financial statements and business models, backed by market research, founder's experience and technology. Relationships take time to build, which helps in part to explain why

invest deals take such a long time. This research suggests that among all the capabilities and personality traits ascribed to entrepreneurs, yet another, very important skill must be developed by the CEO of entrepreneurial startups, and this is the ability to form strong relationships over time with those who have the financial capital to help grow the company.

For instructors, advisors, and coaches of entrepreneurs (as well as entrepreneurs themselves), this study identified seven major categories and up to a dozen sub-categories that could be used to develop a framework to begin tackling the task of teaching how investors make their decisions.

One remaining fact that challenges the findings of this research is that most startups have to find a way to grow without the funding from equity investors; either through self-funding or organic growth from reinvesting proceeds from the business. In other words, most startups will never engage with investors. However, the implications for these businesses, although subtle, are quite relevant. Investors are interested in a substantial return on investment and this research categorized a complex set of factors, any of which could render the investment opportunity worthless should the perceived risk outweigh the potential returns. Investors are interested in what will add value to a new venture and enable it to grow, which are two conditions that should be of vital importance to the CEO of a startup company. Investors see hundreds of deals and evaluate them quickly against this complex set of risk criteria. This research has shown these criteria have a high level of consensus among a diverse set of investors. This cumulative expertise suggests that what is good for the investor is good for the entrepreneur and vice versa. Entrepreneurs, and those who advise and teach them, would do well to consider and apply the risk factors identified in this research as a measure of overall risk to the business, regardless of their need to raise equity based capital. A company that is in a good position to raise money,

should they need it, is better off than one that needs funding and cannot attract it due to a high perceived level of risk.

Recommendations for Further Research

This study was conducted with participants primarily from Tennessee, although the group included one from Kentucky, two from Ohio and one from California. One cannot assume these findings apply to other geographic locations. Entrepreneurial ecosystems across different regions are often influenced by past successes in specific industries. Successful entrepreneurs may become investors in other startups as a way to give back, as well as increase their personal fortunes, and they tend to invest in business similar to those they have experience. For that reason alone, one should conclude there are potentially different critical risk factors at play in different geographical regions. For example, a region where medical devices and drug discovery are common might render more importance to regulatory and legal factors than the participants for this study. In regions where equity capital is abundant, investors may have higher risk tolerances than in regions where capital is scarcer.

A recommendation for further study would be to replicate this Delphi study across different regions to identify common critical risk factors across a broader geography. The research technique could be applied within homogenous groups like Angel Funds and Investment Groups to determine if there are specific factors important to the group as a whole.

The 82 critical risk factors identified in this study could be tested in a quantitative study across a large geographical region through a nationwide member-based organization such as the Angel Capital Association or the National Venture Capital Association to correlate more demographic criteria with relative importance of the critical risk factors. This would determine if there are differences in how investors view risk based on geography, economy, and industry sectors in different regions of the US.

Of the objective based critical risk factors revealed in this research, many if not most have a range of measure within each criterion. For example, Return Potential is a factor that could be measured in dollars or percentage or multiples of return. This research did not determine the boundaries of those ranges for critical risk factors that can be measured numerically. It would be useful to know if Angel Investors' expectations for return differ from those of Venture Capitalists. Further research could identify the ranges of expectation among the numerically measurable critical risk factors.

Of those critical risk factors that are more subjective, especially among the Relationship category, there is little known about how, or even if these factors can be quantified in any way. Trustworthiness is important but just how investors evaluate this factor would be a topic for further qualitative research. The list of Relationship based critical risk factors could be studied qualitatively to more deeply understand what investors are looking for as they build relationship in potential investment deals

Another recommendation for further study is to perform higher level statistically based consensus analyses on this data set to look for correlations. Of particular interest would be to investigate the interplay between relationship and non-relationship factors. Finally, a qualitative debrief of the participants in this study might reveal additional relevance in the use of the Delphi Method for this kind of research.

REFERENCES

- Adler, M., & Ziglio, E. (1996). *Gazing into the oracle: The Delphi method and its application to social policy and public health*. London, England: Jessica Kingsley.
- Amatucci, F. Sohl, J. (2004). Women entrepreneurs securing business angel financing: Tales from the field. *Venture Capital* 6, (2-3), 181-196. doi: 10.1080/1369106042000223579
- Angel Capital Association. (2016). Angel investment in the US: Trends and best practices. Retrieved June 7, 2017 from <https://search.yahoo.com/yhs/search?p=ANGEL+INVESTMENT+IN+THE+U.S.+%E2%80%93TRENDS+%26+BEST+PRACTICES&ei=UTF-8&hspart=mozilla&hsimp=yhs-002>
- Angel Resource Institute, (2016). Halo report: Annual report on angel investments. Retrieved June 6, 2017 from: <http://angelresourceinstitute.org/research/report.php?report=106&name=2016%20Annual%20Halo%20Report>
- Baker, J., Lovell, K., & Harris, N. (2006). How expert are the experts? An exploration of the concept of 'expert' within Delphi panel techniques. *Nurse Researcher*, 14(1), 59-70.
- Bammens, Y., & Collewaert, V. (2014). Trust between entrepreneurs and angel investors : Exploring positive and negative implications for venture performance assessments. *Journal of Management*, 40(7), 1980-2008. doi:10.1177/0149206312463937
- Baron, R. A. (1998). Cognitive mechanisms in entrepreneurship: Why and when entrepreneurs think differently than investors. *Journal of Business Venturing*, 13(4), 275-294.
- Barrabi, T. (2014, July 24). After Air Algeria AH5017 incident, a statistical look at the probability and chances of dying in a plane crash. *International Times Business*, Retrieved April 16, 2015 from <http://www.ibtimes.com/after-air-algerie-ah5017-incident-statistical-look-probability-chances-dying-plane-crash-1638206>
- Barringer, B.R., & Ireland, R.D. (2016). *Entrepreneurship: Successfully launching new ventures (5th Ed)*. Boston, MA: Pearson.
- Benjamin, C. G. (2006). *Towards an integrated theory of entrepreneurship* (Doctoral dissertation) Retrieved July 9, 2017 from <https://researchbank.swinburne.edu.au/items/63f153c1-0c7e-49ee-b26a-7f7fd8868a20/1/>
- Brooks, K. W. (1979). Delphi technique: Expanding applications. *North Central Association Quarterly*, 54 (3), 377-385.
- Burns, B. L., Barney, J. B., Angus, R. W., & Herrick, H. N. (2016). Enrolling stakeholders under conditions of risk and uncertainty. *Strategic Entrepreneurship Journal*, 10(1), 97-106. doi:10.1002/sej.1209

- Bygrave, W.D. (1997). The entrepreneurial process. In W.D. Bygrave (Ed.), *The portable MBA in entrepreneurship* (pp. 1–26). New York, NY: John Wiley.
- Cacciotti, G., Hayton, J. C., Mitchell, J. R., & Giazitzoglu, A. (2016). A reconceptualization of fear of failure in entrepreneurship. *Journal of Business Venturing*, *31*(3), 302-325. doi:10.1016/j.jbusvent.2016.02.002
- Carpentier, C., & Suret, J. M. (2015). Angel group members' decision process and rejection criteria: A longitudinal analysis. *Journal of Business Venturing*, *30*(6), 808-821. doi:10.1016/j.jbusvent.2015.04.002
- Conrad, T., (2015, September 16). The 5 slides you must have in your pitch deck. Retrieved August 12, 2017 from <https://www.entrepreneur.com/article/250679>
- Cox, K. C., Lortie, J., & Gramm, K. (2017). The investment paradox: Why attractive new ventures exhibit relatively poor investment potential. *Venture Capital*, *19*(3), 163-181. doi:10.1080/13691066.2016.1247982
- Cyphert, R. R., & Gant, W. L. (1971). The Delphi technique: A case study. *Phi Delta Kappan*, *52*, 272 – 273.
- Dalkey, N. (1969). The Delphi method: An experimental study of group opinion. *The Rand Corporation, RM-5888-PR*. Santa Monica, CA: The Rand Corporation
- Dalkey, N. C., Rourke, D. L., Lewis, R., & Snyder, D. (1972). *Studies in the quality of life: Delphi and decision-making*. Lexington, MA: Lexington.
- Dalkey, N., & Helmer, O. (1963). An experimental application of the Delphi method to the use of experts. *Management Science*, *9*(3), 458–467.
- Daszkowski, D., (2017, April 27). Requirement to open a McDonalds franchise. Retrieved August 12, 2017 from <https://www.thebalance.com/requirements-to-open-a-mcdonald-s-franchise-1350970>
- Delbecq, A. L., Van de Ven, A. H., & Gustafson, D. H. (1975). *Group techniques for program planning : A guide to nominal group and Delphi processes*. Glenview, IL: Scott, Foresman.
- Drover, W., Wood, M. S., & Payne, G. T. (2014). The effects of perceived control on venture capitalist investment decisions: A configurational perspective. *Entrepreneurship Theory and Practice*, *38*(4), 833-861. doi:10.1111/etap.12012
- Drover, W., Wood, M. S., & Zacharakis, A. (2017). Attributes of angel and crowdfunded investments as determinants of VC screening decisions. *Entrepreneurship Theory and Practice*, *41*(3), 323-347. doi:10.1111/etap.12207

- Fairchild, R. (2011). An entrepreneur's choice of venture capitalist or angel-financing: A behavioral game-theoretic approach. *Journal of Business Venturing*, 26(3), 359-374. doi:10.1016/j.jbusvent.2009.09.003
- Fletcher, D. (2007). ' Toy Story ' : The narrative world of entrepreneurship and the creation of interpretive communities. *Journal of Business Venturing*, 22(5), 649-672. doi:10.1016/j.jbusvent.2006.10.001
- Folta, T. B. (2007). Uncertainty rules the day. *Strategic Entrepreneurship Journal*, 1(1-2), 97-99. doi:10.1002/sej.7
- Franke, N., Gruber, M., Harhoff, D., & Henkel, J. (2008). Venture capitalists' evaluations of start-up teams: Trade-offs, knock-out criteria, and the impact of VC experience. *Entrepreneurship Theory and Practice*, 32(3), 459-483. doi:10.1111/j.1540-6520.2008.00236.x
- Gartner, W. B. (2007). Entrepreneurial narrative and a science of the imagination. *Journal of Business Venturing*, 22(5), 613-627. doi:10.1016/j.jbusvent.2006.10.003
- Garud, R., Schildt, H. A., & Lant, T. K., (2014). Entrepreneurial storytelling, future expectations, and the paradox of legitimacy. *Organization Science*, 25(5) 1479-1492.
- Greathouse, J., (2012, September 18). Psst...here's how to become a venture capitalist. Retrieved August 12, 2017 from <https://www.forbes.com/sites/johngreathouse/2012/09/18/pssst-heres-how-to-become-a-venture-capitalist/#1845cf561de1>
- Green, P. J. (1981). The content of a college-level outdoor leadership course. (Unpublished doctoral dissertation). University of Oregon, Eugene, OR. Retrieved July 16, 2016 from <https://search-proquest-com.proxy.lib.utk.edu:2050/docview/303187505/fulltextPDF/D35FA424449246B9PQ/2?accountid=14766>
- Gulst, N. (2011). *The Paradoxical Nature of New Venture Failure*. (Doctoral dissertation) Retrieved April 8, 2015 from http://search.proquest.com/docview/1018189385?accountid=42750%5Cnhttp://link.periodicos.capes.gov.br/sfxlcl41?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&genre=article&sid=ProQ:ProQ:pqrl&title=THE+PARADOXICAL+NATURE+OF+VENTURE+FAILURE&ti
- Harrison, R., Dibben, M., & Mason, C. (1997). The role of trust in the informal investor's investment decision: An exploratory analysis. *Entrepreneurship: Theory and Practice* 21 (4), 83-92. Retrieved July 10, 2017 from http://go.galegroup.com.proxy.lib.utk.edu:90/ps/retrieve.do?tabID=T002&resultListType=RESULT_LIST&searchResultsType=SingleTab&searchType=AdvancedSearchForm¤tPosition=1&docId=GALE%7CA20929923&docType=Article&sort=RELEVANC

- Hasson, F., Keeney, S., & McKenna, H. (2000). Research guidelines for the Delphi survey technique. *Journal of Advanced Nursing*, 32(4), 1008–1015. <https://doi.org/10.1046/j.1365-2648.2000.t01-1-01567.x>
- He, L. (2014). *The perceived personal characteristics of entrepreneurial leaders*. (Doctoral dissertation) Retrieved April 8, 2015 from <http://ro.ecu.edu.au/theses/1338>
- Hill, K. Q., & Fowles, J. (1975). The methodological worth of the Delphi forecasting technique. *Technological Forecasting and Social Change*, 7(2), 179–192. [https://doi.org/10.1016/0040-1625\(75\)90057-8](https://doi.org/10.1016/0040-1625(75)90057-8)
- Higgins, P. A. (2008). Reducing uncertainty in new product development. (Doctoral dissertation). Retrieved July 6, 2017 from https://eprints.qut.edu.au/20273/1/Paul_Higgins_Thesis.pdf
- Hirai, A. (2010). What kills startups? *Cheyenne Consulting*, Retrieved April 16, 2015 from <http://www.caycon.com/what-kills-startups.php>
- Hmieleski, K. M., & Baron, R. A. (2008). Regulatory focus and new venture performance: A study of entrepreneurial opportunity exploitation under conditions of risk versus uncertainty. *Strategic Entrepreneurship Journal*, 2(4), 285-299. doi:10.1002/sej.56
- Hsu, C. & Sandford, B. (2007). The Delphi technique: Making sense of consensus. *Practical Assessment, Research & Evaluation*, 12(10), 1–8. [https://doi.org/10.1016/S0169-2070\(99\)00018-7](https://doi.org/10.1016/S0169-2070(99)00018-7)
- Hudson, M. (2016). *Angel investment in the US: Trends and best practices*. Retrieved June 6, 2017 from <https://www.google.com/search?q=Hudson%2C+M.+%282016%29.++Angel+investment+in+the+US%3A+Trends+and+best+practices.++&ie=utf-8&oe=utf-8&client=firefox-b-1-ab>
- Jeffrey, S. A., Lévesque, M., & Maxwell, A. L. (2016). The non-compensatory relationship between risk and return in business angel investment decision making. *Venture Capital*, 18(3), 189-209. doi:10.1080/13691066.2016.1172748
- Kao, R. (1995) *Entrepreneurship - A wealth creation and values adding process*. Singapore: Prentice Hall/Simon and Schuster.
- Kawasaki, G., (2004) *The art of the start: The time-tested, battle-hardened guide for anyone starting anything*. New York, NY: Portfolio.

- Korver, C. (2012). Applying decision analysis to venture investing. *Kauffman Fellows Report 3*. Retrieved April 16, 2015 from https://www.kauffmanfellows.org/journal_posts/applying-decision-analysis-to-venture-investing/
- Kuechle, G., Boulu-Reshef, B., & Carr, S. D. (2016). Prediction and control-based strategies in entrepreneurship: The role of information. *Strategic Entrepreneurship Journal*, 10(1), 43-64. doi:10.1002/sej.1211
- Landeta, J. (2006). Current validity of the Delphi method in social sciences. *Technological Forecasting and Social Change*, 73(5), 467–482. <https://doi.org/10.1016/j.techfore.2005.09.002>
- Legge, J., & Hindle, K. (1997) *Entrepreneurship: How innovators create the future*, South Melbourne, Australia: MacMillan Education.
- Libava, J. (2017) Franchise fees: Why do you pay them and how much are they? Retrieved August 12, 2017 from <https://www.sba.gov/blogs/franchise-fees-why-do-you-pay-them-and-how-much-are-they>
- Lines, M., & Ambler, S. (2017). *Disciplined Agile 2.X: A process decision framework*. Retrieved June 6, 2017 from: <http://www.disciplinedagiledelivery.com/process/risk-value-lifecycle/>
- Linstone, H. A., & Turoff, M. (1975). *The Delphi method: Techniques and applications*. London, England: Addison-Wesley
- Ludwig, B. (1997). Predicting the Future: Have you considered using the Delphi methodology? *Journal of Extension*, 35(5), 5TOT2. <https://doi.org/10.1161/CIRCULATIONAHA.111.023879>
- Matusik, S. F., George, J. M., & Heeley, M. B. (2008). Values and judgment under uncertainty: Evidence from venture capitalist assessments of founders. *Strategic Entrepreneurship Journal*, 2(2), 95-115. doi:10.1002/sej.45.
- Maxwell, A. L., Jeffrey, S. A., & Lévesque, M. (2011). Business angel early stage decision making. *Journal of Business Venturing*, 26(2), 212-225. doi:10.1016/j.jbusvent.2009.09.002
- Maxwell, A. L., & Lévesque, M. (2014). Trustworthiness: A critical ingredient for entrepreneurs seeking investors. *Entrepreneurship Theory and Practice*, 38(5), 1057-1080. doi:10.1111/j.1540-6520.2011.00475.x
- Miloud, T., Aspelund, A., & Cabrol, M. (2012). Startup valuation by venture capitalists: An empirical study. *Venture Capital*, 14(2-3), 151-174. doi:10.1080/13691066.2012.667907
- Morgan, J., & Sisak, D. (2016). Aspiring to succeed: A model of entrepreneurship and fear of failure. *Journal of Business Venturing*, 31(1), 1-21. doi:10.1016/j.jbusvent.2015.09.002.

- Mullins, J. W., & Forlani, D. (2005). Missing the boat or sinking the boat : A study of new venture decision making. *Journal of Business Venturing*, 20(1), 47-69.
doi:10.1016/j.jbusvent.2003.08.001
- Murray, G., & Marriott, R. (1998). Why has the investment performance of technology - specialist, European venture capital funds been so poor? *Research Policy*, 27, 947-976.
- Murray, J. (1979). Delphi methodologies: A review and critique. *Urban Systems*, 4(2), 153–158.
- Okoli, C., & Pawlowski, S. D. (2004). The Delphi method as a research tool: An example design considerations and applications. *Information & Management*, 42, 15–29.
<https://doi.org/10.1016/j.im.2003.11.002>
- Palich, L., & Bagby, D. R. (1995). Using cognitive theory to explain entrepreneurial risk taking: Challenging conventional wisdom. *Journal of Business Venturing* 10(6), 425-438.
- Parhankangas, A., & Hellström, T. (2007). How experience and perceptions shape risky behaviour: Evidence from the venture capital industry. *Venture Capital*, 9(3), 183-205.
doi:10.1080/13691060701324478
- Parr, R., (2016). How much does a website cost in 2016? Retrieved August 12, 2017 from <https://www.executionists.com/much-website-cost-2016/>
- Paul, S., Whittam, G., & Wyper, J. (2007). Towards a model of the business angel investment process. *Venture Capital*, 9(2), 107-125. doi:10.1080/13691060601185425
- Payne, B. (2011). *Scorecard valuation methodology: Establishing the valuation of pre-revenue, startup companies*. Retrieved April 16, 2015 from <http://blog.gust.com/valuations-101-scorecard-valuation-methodology/>
- Quinn, G., (2015). The cost of obtaining a patent in the US. Retrieved August 12, 2017 from <http://www.ipwatchdog.com/2015/04/04/the-cost-of-obtaining-a-patent-in-the-us/id=56485/>
- Rowe, G., & Wright, G. (1999). The Delphi technique as a forecasting tool: Issues and analysis. *International Journal of Forecasting*, 15(4), 353-375.
- Sauner-Leroy, J. (2004). Managers and productive investment decisions: The impact of uncertainty and risk aversion. *Journal of Small Business Management*, 42(1), 1-18.
- Schendel, D. (2007). Risk and uncertainty. *Strategic Entrepreneurship Journal*, 1(1-2), 53-55.
doi:10.1002/sej.17
- Shulga, A., 2014. How much should startup pay in legal fees? Retrieved August 12, 2017 from <https://www.lexisnexis.com/legalnewsroom/banking/b/venture-capital/archive/2014/01/24/how-much-should-a-startup-pay-in-legal-fees.aspx>

- Skulmoski, G. J., Hartman, F. T., & Krahn, J. (2007). The Delphi method for graduate research. *Journal of Information Technology Education*, 6, 1–21.
- Streletzki, J.-G., & Schulte, R. (2013). Which venture capital selection criteria distinguish high-flyer investments? *Venture Capital*, 15(1), 29-52. doi:10.1080/13691066.2012.724232
- Thangaratinam, S., & Redman, C. W. (2005). The Delphi technique. *The Obstetrician & Gynecologist*, 7(2), 120–125. Retrieved July 3, 2016 from <http://onlinelibrary.wiley.com/doi/10.1576/toag.7.2.120.27071/abstract;jsessionid=317CE4D85B522C38452A00A28FCEF838.f03t03>, doi.org/10.1576/toag.7.2.120.27071
- Toft-Kehler, R., Wennberg, K., & Kim, P. H. (2014). Practice makes perfect: Entrepreneurial-experience curves and venture performance. *Journal of Business Venturing*, 29(4), 453-470. doi:10.1016/j.jbusvent.2013.07.001
- Ucbasaran, D., Westhead, P., Wright, M., & Flores, M. (2010). The nature of entrepreneurial experience, business failure and comparative optimism. *Journal of Business Venturing*, 25(6), 541-555. doi:10.1016/j.jbusvent.2009.04.001
- Ulschak, F. L. (1983). *Human resource development: The theory and practice of need assessment*. Reston, VA: Reston.
- Van Ness, R. K., & Seifert, C. F. (2016). A theoretical analysis of the role of characteristics in entrepreneurial propensity. *Strategic Entrepreneurship Journal*, 10(1), 89-96. doi:10.1002/sej.1205
- Wiltbank, R., Read, S., Dew, N., & Sarasvathy, S. D. (2009). Prediction and control under uncertainty: Outcomes in angel investing. *Journal of Business Venturing*, 24(2), 116-133. doi:10.1016/j.jbusvent.2007.11.004
- Woundenberg, F. (1991). An evaluation of Delphi. *Technological Forecasting and Social Change*, 40(2), 131–150.
- Yekutieli, R. (2014, Novemebr 25). A pitch deck containing these 15 slides is more likely to get the money. Retrieved August 12, 2017 from <https://www.entrepreneur.com/article/240065>

APPENDICES

Appendix A: Delphi Surveys

Qualtrics Survey Software

<https://utk.co1.qualtrics.com/ControlPanel/Ajax.php?action=GetSur...>

Default Question Block



Thank you for participating in this research project. This study is the subject of a dissertation in fulfillment of the requirements for the degree of Doctor of Education from East Tennessee State University. I hope you will find this process enjoyable and informative. This survey is in three basic parts.

- The first is the compulsory Statement of Informed Consent, which is typical with any academic research project where participants are involved.
- The second part is some very basic demographic information, which will be held strictly confidential and used to understand trends and categories in the analysis phase of the project.
- The third part is a basic open survey question.

The entire survey should take 10 - 15 minutes.

When you are ready, click on the orange arrow box to continue.

Statement of Informed Consent

Dear Participant:

My name is Shawn Carson, and I am a Graduate Student at East Tennessee State University (ETSU). I am working on a Doctorate in Education. The name of my research study is **Identifying Critical Risk Factors in the Decision-making Process of Angel Investors and Venture Capitalists: A Delphi Study**.

The purpose of this study is to determine a set of perceived critical risk factors among a group of experienced investors. The Delphi Method is a process of 3 surveys. In the first, you will provide a personal set of criteria or risk factors you use to make decisions. The second survey is a comprehensive list of all responses, which you will provide importance ratings. The third is a consensus round comparing your responses to the mean responses of the group. The process will use a secure online survey application called Qualtrics.

Since this study deals with personal opinions, the risks are minimal and deal primarily with the loss of confidentiality. The benefits to whom this study is relevant include entrepreneurs, investors and those who educate entrepreneurs. The research will provide frameworks to educators and mentors to better guide entrepreneurs toward more fundable business models.

Your confidentiality will be protected as best we can. Since we are using technology, no guarantees can be made about interception of data sent over the Internet. We will make every effort to ensure that your name is not linked with your answers. Qualtrics has security features that will be used such as passwords and SSL encryption. Although your rights and privacy will be protected, the ETSU Institutional Review Board (IRB), myself and my dissertation chair, Dr. Hal Knight will be able to view the data.

Taking part in this study is voluntary. You may decide not to take or you can quit at any time. You may skip any questions you do not want to answer, or you can exit the online survey form if you want to stop completely. If you quit or decide not to take part, the benefits that you would otherwise get will not be changed.

Reasons to be excluded from this study include inability to comply with eligibility criteria as stated in your initial recruitment email and voluntary exit from the study.

If you have any research-related questions, you may contact me, Shawn Carson at 865-773-8974 or by email at scarson2@utk.edu. My dissertation advisor is Dr. Hal Knight. You may reach him at 423.439.6081. Also, you may call the chairperson of the IRB at ETSU at (423) 439-6054 if you have questions about your rights as a research subject. If you have any questions or concerns about the research and want to talk to someone who is not with the research team or if you cannot reach the research team, you may call an IRB Coordinator at 423/439-6055 or 423/439-6002.

Sincerely,
Shawn Carson

Block 4

General Demographic Information

Please provide answers to the following questions:

Choose from the following, which best describes your investment activities

Angel Investor

Venture Capitalist

Please state the city that is the base of your investment activities

Please indicate to the nearest \$100,000, the total amount of investments you have made

Please state approximately how many investment deals you have made

How many years have you been investing in startups?

Please click on the arrow below to continue:

Block 1

Survey Background and Instructions

Research has shown that investors tend to use heuristics, or mental shortcuts in the early stages of the investment process to help them quickly and efficiently disqualify deals that fail to meet certain investment criteria. Through experience, some investors may develop an extensive list of critical risk factors that could trigger a red flag warning at any time in the investment process that stops the deal without further analysis or due diligence. These critical risk factors may be objective and quantifiable like market growth rate or industry sector; or they may be more qualitative such as trustworthiness of the entrepreneur.

In the first round of this process, you will be asked to list all the critical risk factors that you look for, prior to financial analysis and due diligence, that would indicate the level of risk is too high for the potential return on investment. To the extent possible, you may include any quantifiable measures of the risk factor but that is not necessary. List as many as you can or that come to mind, no matter how important or often they come up. The following example may provide guidance:

Critical Risk Factor 1:	Number of staff that use iPhones
Quantifier for CRF 1:	5
Critical Risk Factor 2:	Familiar with kayaking
Quantifier for CRF 2:	(blank)

At the point you feel you have a complete list, you may leave the rest blank, scroll down to the bottom of the list and click on the arrow to conclude the survey. The survey will remain open for seven days, during which you may return and add to your list.

When you are ready to proceed, click on the arrow below.

Block 2

Survey Question

Please list all the critical risk factors you look for when evaluating a potential investment deal. To the extent you can, or are willing please include a measurable quantifier.

Critical Risk Factor 1:	<input type="text"/>
Quantifier 1:	<input type="text"/>
Critical Risk Factor 2:	<input type="text"/>
Quantifier 2:	<input type="text"/>
Critical Risk Factor 3:	<input type="text"/>
Quantifier 3:	<input type="text"/>
Critical Risk Factor 4:	<input type="text"/>
Quantifier 4:	<input type="text"/>
Critical Risk Factor 5:	<input type="text"/>
Quantifier 5:	<input type="text"/>
Critical Risk Factor 6:	<input type="text"/>
Quantifier 6:	<input type="text"/>
Critical Risk Factor 7:	<input type="text"/>
Quantifier 7:	<input type="text"/>
Critical Risk Factor 8:	<input type="text"/>
Quantifier 8:	<input type="text"/>
Critical Risk Factor 9:	<input type="text"/>
Quantifier 9:	<input type="text"/>
Critical Risk Factor 10:	<input type="text"/>
Quantifier 10:	<input type="text"/>
Critical Risk Factor 11:	<input type="text"/>
Quantifier 11:	<input type="text"/>
Critical Risk Factor 12:	<input type="text"/>
Quantifier 12:	<input type="text"/>
Critical Risk Factor 13:	<input type="text"/>

Default Question Block



Welcome to Survey #2.

In this survey, you will see a comprehensive listing of all the responses from all participants. Every effort was made to carefully consolidate this list by combining obvious duplicates. In some cases certain terms were interpreted to mean the same; such as Total Addressable Market, Market Size, Market sufficient to achieve scale, etc. Your efforts produced a very impressive set of critical risk factors as you will see.

Your task now is to rate each critical risk factor based on its importance **to you**.

For your convenience, the critical risk factors have been arranged in categories. As you prepare for this survey, please keep these things in mind:

- Consider and rate the factors you commonly use **early** in the investment process, during the time prior to due diligence, when you are forming relationships. These should be things that come up during presentations, conversations and early meetings.
- Go with your **immediate first reaction**. Do not try to over-analyze a factor. Your first impression is usually indicative of your judgement.
- This list far exceeds the total number of any individual's responses. If you see a response you did not mention in Survey #1 but would like to rate it, please do so.
- But, do not feel you have to rate every response as important.

Thanks for for getting us this far. The results from this stage should be interesting.

Block 1

Survey Instructions

Each of the following pages contains a list of critical factors organized by overall category. For each critical factor, there are are two rating scales; one for importance and the other for frequency of use.

The following definitions correspond to each point of the importance scale:

- **Not Important** - This factor is not considered early in the process
- **Minimally Important** - This factor is worth mentioning
- **Moderately Important** - This factor is considered based on circumstances
- **Important** - This factor is usually considered for most cases
- **Critically Important** - This factor is a sudden death deal breaker

The Frequency of Use scale is pretty self explanatory:

- **Never** - I never consider this factor
- **Occasionally** - I use this factor from time to time
- **Always** - I never make a decision without considering this factor

Other instructions:

1. Only rate those factors common to your thought process, rate the rest "Not Important". Any skipped questions will be considered "Not Important".
2. You may move back and forth between pages.
3. At the end of the critical risk factors, there is a page for you to list any others you feel were left out or came to mind during the survey.
4. The very last page of the survey asks you if you are ready to complete the survey. If so, then the results will be recorded. Up until that time, you may leave and come back later.

Thank you for your time! Click on the orange arrow at the right when you are ready to proceed.

Block 2

Founder(s) and Management Team

	Founders and Management Team Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Founder's Experience - Industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Founder's Experience - Previous Startups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Founder's Experience - Leadership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Founder's Experience -Technical	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Founder(s) commitment to startup	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Founder's Experience - Startups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Founder's Experience - Business Model	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Founder's mindset toward growth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Ability to execute	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Perseverance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Founders desirous of liquidation and exit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open positions on management team	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Existence and quality of Advisory Board	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Block 3

Relationship

Please rate each critical risk factor based on its importance to you

	Relationship Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Ocasionaly	Always
Coachability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Relationship between founders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transparency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Company/Investor cultural fit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Management 'skin in the game'	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trustworthiness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Ocasionaly	Always
Passion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Ethics/Honesty	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Integrity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Character	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"X" Factor Instincts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Block 4

Market, Competitive Landscape, and Scaleability and Early Sales

Please rate each critical risk factor based on its importance to you

	Market Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Total Addressable Market (Size)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Market Growth Rate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Market Segmentation - Consolidated vs. Fractured	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Go-to-market Strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Product/Market Fit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Timing in Market Life Cycle	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Understand of Macro Trends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate each critical risk factor based on its importance to you

	Competitive Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	ALways
Understanding of Competitive Landscape	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall Number of Competitors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Competitor Market Share	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Click to write the question text

	Scaleability Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Ability to Scale	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strategy for Growth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scale with Minimal Capital	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sales Strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate each critical risk factor based on its importance to you

	Traction and Revenue Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Early Traction	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Existing Revenues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Revenue Model	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Block 5

Technology and Value Proposition

Please rate each critical risk factor based on its importance to you

	Technology Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Disruptive in the Market	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
"Me too" Technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Easily copied or reverse engineered	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MVP identified and available (Prototype)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Development Timeline	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Platform Technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate each critical risk factor based on its importance to you

	Value Proposition Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Demonstrated Customer Discovery	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Problem, Not Solution Focused	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clear and Unique Value Proposition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Block 6

Investment and Financial

Please rate each critical risk factor based on its importance to you

	Investment Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Amount of Investment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Valuation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Follow-on Funding Needed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Terms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clean Cap Table	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Ability to attract co-investors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Realistic Return Expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
M&A Landscape	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Investment Stage - Seed, Early Growth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate each critical risk factor based on its importance to you

	Financial Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Realistic Pro Forma	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Little or No Debt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reasonable Burn Rate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Projected Gross Margins	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Clean Balance Sheet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate each critical risk factor based on its importance to you

	Exit Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Exit Strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Time to Exit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Potential for Good Return	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Economic Conditions Favorable for Exit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Potential Disruptive Technology Affecting Exit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Block 7

Regulatory and Legal

Please rate each critical risk factor based on its importance to you

	Legal Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
No Pending or Existing Litigation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Founder's Need for NDA	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate each critical risk factor based on its importance to you

	Regulatory Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Regulatory Barriers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Political Risks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please rate each critical risk factor based on its importance to you

	Intellectual Property Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Existing IP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Competitive Advantage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Barriers to Entry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Block 8

Other Factors

Please rate each critical risk factor based on its importance to you

	Other Factors					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Location of Company	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wow Factor	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intriguing Narrative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Block 9

Additional Critical Risk Factors Not Listed

Critical Risk Factor #1

Please rate each critical risk factor based on its importance to you

	Critical Risk Factor #1					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Critical Risk Factor #1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Critical Risk Factor #2

Please rate each critical risk factor based on its importance to you

	Critical Risk Factor #2					Frequency of Use		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Critical Risk Factor #2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Critical Risk Factor #3

Please rate each critical risk factor based on its importance to you

	Critical Risk Factor #3					Click to write Column 2		
	Not Important	Minimally Important	Moderately Important	Important	Critically Important	Never	Occasionally	Always
Critical Risk Factor #3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Block 11

Block 10

Congratulations! You are finished. If you are ready to exit and have your responses recorded, you may click the orange arrow on the right. If you would like to go back and review your responses, please click on the orange arrow on the left.

Thank you so much for completing Stage 2. Stay tuned for the 3rd and final stage!

Default Question Block



Welcome to Survey #3.

This is the Consensus phase of the Delphi process. In this 3rd and final survey, you have the opportunity to see your responses to Survey #2 and compare them to how the rest of the participants responded as a group to each critical risk factor. For each factor, you will see the median score, the range, and your score. You may consider your response within the range of the group and you have the opportunity to change your score **if you choose to do so**. The analysis of this phase will determine the group consensus of the most important critical risk factors.

The median is the middle value of all the responses of the group. For example in the following range of numbers, the median is **4** and the range is 3 - 5:

3, 4, 4, **4**, 4, 5, 5

If your score was a 3, you know your rating was at the low end of the group. If your score was a 5, you know you were among the higher scores, and if your score was a 4, you were right in the middle of the pack.

Your choice to change or not to change your score is completely up to you. There is no influence to either stay within consensus or remain outside.

Block 1

Survey Instructions

Each of the following pages contains a list of critical risk factors organized by overall category. For each critical risk factor, you will see the median score, the range of scores of the group, and your score highlighted in **Bold Text**.

The space in the column on the right is where you may change or alter your score for that critical risk factor. **If you do not wish to change your score, simply leave the space blank.**

Other instructions:

1. You may move back and forth between pages.
2. The very last page of the survey asks you if you are ready to complete the survey. If so, then the results will be recorded. Up until that time, you may leave and come back later.

Thank you for your time! Click on the orange arrow at the right when you are ready to proceed.

Block 2

Founders and Management Team Factors

	Founders and Management Team Factors
	Revised Score
<u>Founder's Experience - Industry</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Founder's Experience - Previous Startups</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Founder's Experience - Leadership</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Founder's Experience - Technical</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Founder(s) commitment to startup</u> Median: 5 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Founder's Experience - Startups</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Founder's Experience - Business Model</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Founder's mindset toward growth</u> Median: 5 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Ability to execute</u> Median: 5 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Perseverance</u> Median: 5 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Founders desirous of liquidation and exit</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>Open positions on management team</u> Median: 3 Range: 2 - 4 Your Score:	<input type="text"/>
<u>Existence and quality of Advisory Board</u> Median: 3 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Strength of Business Plan</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>Strategic Metrics and Milestones</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Operational execution relative to supply chain</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>

Block 3

Relationship Factors

	Relationship Factors
	Revised Score
<u>Coachability</u> Median: 5 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Relationship between founders</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Transparency</u> Median: 5 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Company/Investor cultural fit</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>Management 'skin in the game'</u> Median: 5 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Trustworthiness</u> Median: 5 Range: 5 - 5 Your Score:	<input type="text"/>
<u>Passion</u> Median: 5 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Ethics/Honesty</u> Median: 5 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Integrity</u> Median: 5 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Character</u> Median: 5 Range: 3 - 5 Your Score:	<input type="text"/>
<u>"X" Factor Instincts</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>

Block 4

Market Factors

	Market Factors
	Revised Score
<u>Total Addressable Market (Size)</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Market Growth Rate</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Market Segmentation - Consolidated vs. Fractured</u> Median: 4 Range: 1 - 4 Your Score:	<input type="text"/>
<u>Go-to-market Strategy</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Product/Market Fit</u> Median: 5 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Timing in Market Life Cycle</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>Understand of Macro Trends</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>

Competitive Factors

	Competitive Factors
	Revised Score
<u>Understanding of Competitive Landscape</u> Median: 5 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Overall Number of Competitors</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>Competitor Market Share</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>

Scaleability Factors

	Scaleability Factors
	Revised Score
<u>Ability to Scale</u> Median: 5 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Strategy for Growth</u> Median: 5 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Scale with Minimal Capital</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>Sales Strategy</u> Median: 4 Range: 4 - 5 Your Score:	<input type="text"/>

Traction and Revenue Factors

	Traction and Revenue Factors
	Revised Score
<u>Early Traction</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Existing Revenues</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Revenue Model</u> Median: 5 Range: 2 - 5 Your Score:	<input type="text"/>

Block 5

Technology Factors

	Technology Factors
	Revised Score
<u>Disruptive in the Market</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>"Me too" Technology</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>Easily copied or reverse engineered</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>MVP identified and available (Prototype)</u> Median: 4 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Development Timeline</u> Median: 4 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Platform Technology</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>

Value Proposition Factors

	Value Proposition Factors
	Revised Score
<u>Demonstrated Customer Discovery</u> Median: 5 Range: 1 - 5 Your Score:	<input type="text"/>
<u>Problem, Not Solution Focused</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Clear and Unique Value Proposition</u> Median: 5 Range: 3 - 5 Your Score:	<input type="text"/>

Block 6

Investment Factors

	Investment Factors
	Revised Score
<u>Amount of Investment</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>Valuation</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Follow-on Funding Needed</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>Terms</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Clean Cap Table</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Ability to attract co-investors</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>Realistic Return Expectations</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>M&A Landscape</u> Median: 3 Range: 1 - 4 Your Score:	<input type="text"/>
<u>Investment Stage - Seed, Early Growth</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>

Financial Factors

	Financial Factors
	Not Important
<u>Realistic Pro Forma</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Little or No Debt</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Reasonable Burn Rate</u> Median: 4 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Projected Gross Margins</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Clean Balance Sheet</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>

Exit Factors

	Exit Factors
	Not Important
<u>Exit Strategy</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Time to Exit</u> Median: 4 Range: 2 - 5 Your Score:	<input type="text"/>
<u>Potential for Good Return</u> Median: 5 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Economic Conditions Favorable for Exit</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Potential Disruptive Technology Affecting Exit</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>

Block 7

Legal Factors

	Legal Factors
	Revised Score
<u>No Pending or Existing Litigation</u> Median: 5 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Founder's Need for NDA</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>

Regulatory Factors

	Regulatory Factors
	Revised Score
<u>Regulatory Barriers</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Political Risks</u> Median: 2 Range: 2 - 4 Your Score:	<input type="text"/>

Intellectual Property Factors

	Intellectual Property Factors
	Revised Score
<u>Existing IP</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>
<u>Competitive Advantage</u> Median: 5 Range: 4 - 5 Your Score:	<input type="text"/>
<u>Other Barriers to Entry</u> Median: 4 Range: 3 - 5 Your Score:	<input type="text"/>

Block 8

Other Factors

	Other Factors
	Revised Score
<u>Location of Company</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>
<u>Wow Factor</u> Median: 3 Range: 1 - 5 Your Score:	<input type="text"/>
<u>Intriguing Narrative</u> Median: 4 Range: 1 - 5 Your Score:	<input type="text"/>

Block 10

Congratulations! You are finished. If you are ready to exit and have your responses recorded, you may click the orange arrow on the right. If you would like to go back and review your responses, please click on the orange arrow on the left.

Thank you so much for completing Stage 3. We are done with the survey process! I will be analyzing the data over the next several weeks and I will let you know when I have the results ready to share with you.

Thank you so much for your time!

Powered by Qualtrics

Appendix B: Total Listing of Critical Risk Factors from Survey #1

Founders Experience	Reasonable deal structure, including pre-money
Intellectual Property	Understanding of market and competitors
Total Addressable Market	Reasonable financial projections
# of competitors, fractured market	Reasonable stated metrics that will lead to new funding round
Regulatory hurdles	Advisors working with the company
Time to market	Early traction in the market
Exit strategies	Does company have a reasonable burn rate
Time to exit	Trustworthiness
Ability to scale	Management team willingness to take advice
How much investment	Realistic growth potential of investment
Can we attract co-investors	Competitive risks
Could Google destroy us with 50 engineers in a room for a month	Resources contributed by founder/CEO
Other team members needed	Understanding of the product/service
when will we know if this will succeed or fail	Ability of founder/CEO to communicate
Growth mindset of founders	Amount of my time/additional investment required
Relationship between founders	Ability to execute or past performance to benchmarks
Source of investment	Ability to build team
Motivation of founders to work on startup	CEO's ability to sell "ice cream to eskimos"
Focus on problem, not solution	Clearly identified customer/market problem
The Entrepreneur -	Solution well defined that fits a specific market need
Is the entrepreneur investing in the proposed deal	Large, growing market
Quality of management team	Clear value proposition for customer that compels a purchase
Quality of the proposed deal	Intellectual property
how doe it fit in the proposed market place	Management team who is committed w/skin in the game
who is competition	Good assessment of competition + defined way to successfully compete
what is size of the individual competitor	unique idea
marketing strategy	validated customers
sales strategy	compelling value proposition
plan to scale up the proposed business	big achievable market
How realistic is Business Plan with Pro Forma Financials	competent, experienced, engaging founder, leader
Did entrepreneur prepare the Business Plan	well rounded, COACHABLE management team
Can entrepreneur fluently discuss the Business Plan	revenue/traction
What is proposed exit strategy	"reasonable", defensible valuation
How long will money be invested before proposed exit	smart raise amount and terms
market risk	exciting exit potential
team	Debt load
industry expertise	Management experience/prior success

total cash needed	Product sector and likelihood of success
competition	Comparison of cultures
technology risk	Extent to which management is organized and has a plan
Stage of Startup	macro trends of the market being entered
Industry Sector	technical co-founder assuming it's a tech enabled business
Location	leadership experiences of the founder
Addressable Market	is the founder coachable?
Foundational Team	reality check w/ the founder of the difficult task ahead
Advisory Board	customer discovery that has taken place
Revenue	future capital needed
Debt	competitive landscape
Board Observer and Information Rights Required Regardless of Investment Level	Perceived Integrity and Trustworthiness of the team
Founders Open to and Desirous of Liquidation Event	Experience or lack of experience of the team
Founders do Not Require NDA	Is this an app with all revenue derived from advertising
Logical "Go to Market" Strategy	Is this a "me too" investment or a true innovation
Focused Product or Services Offering	What is expected capital required to scale?
Clean BS with "Accredited Investors"	Does the initial presentation demonstrate a fundamental understanding of the market?
No Third Party Brokers or Intermediaries	Is the valuation reasonable?
Team is Coachable	Single founder vs. team?
No Litigation in Process	market size is sufficient to achieve scale
Valuation	Does the company have a feature or is it capable of being a complete business?
Transparent Management Discussions	Experience of the founder
Minimal Regulation	Valuation
Must be Scalable with Minimal Capital	Deal terms
Prefer MVP Product Already Developed	Product-market fit and supporting data, especially sales
Industry knowledge of the venture	Size of addressable market
Understanding of the Risks	Proprietary position/competitive advantage
Entrepreneurial experience	Management team
Intriguing narraative	Location
Disruptive idea or technology	Experience of the founder
Passion for the project	Valuation
Entrepreneur Risk 1: Will they stick with it when going gets tough?	Deal terms
Entrepreneur Risk 2: Do they have experience in the industry?	Product-market fit and supporting data, especially sales
Market Risk 1: Does anyone want the product? Are they really solving a problem?	Size of addressable market
Technology/Product Risk: Can they build the product?	Proprietary position/competitive advantage
Defensibility: If they get traction, can they keep out competitive pressures?	Management team
Timing Risk: Is it too early? Too late?	Location
Entrepreneur Risk 3: Can they lead and recruit a team?	Execution Risk -- Experience with Start-Ups

Entrepreneur Risk 4: Can they execute?
 Market Size: Is the market big enough to grow?
 Market Risk 2: Market competition
 Market Risk 3: Political/Regulatory risks
 Exit Risk: How will we see our return? Exit/dividend, etc.?
 Stage Risk: Is it too early to invest?
 Business Model Risk: Will people pay what entrepreneur thinks?
 Technology, product, or industry I don't understand
 Exit strategy is unclear
 Experience level or track record of entrepreneur
 Ethics or honesty concerns with entrepreneur
 Fundamental concerns with business plan
 Intellectual property position
 Limited market
 Inadequate funding to reach next milestone
 Known business problem is being solved
 Reasonable stated value proposition offered to customers
 Reasonable management team in place depending on stage
 Reasonable overall market opportunity
 Appropriate IP protection; barriers to entry
 Great leader in place
 Reasonable MVP available

Execution Risk -- Experience with Business Model
 Execution Risk -- Experience with Industry
 Execution Risk -- Experience with Company Leadership
 Execution Risk -- Skin in the Game
 Execution Risk -- Character of Principals
 Execution Risk -- "X" Factor Instinct
 Market Risk -- Value Proposition
 Market Risk -- Product/Service
 Market Risk -- Marcoeconomic
 Technology/Innovation Risk
 Competitive risk
 Market Risk -- Business Model
 Financial risk -- Long term
 Financial risk -- Current raise
 Supply chain risk -- production
 Supply chain risk -- marcoeconomic
 Market Risk -- Value proposition
 Financial risk -- profitability
 Exit risk -- Strategy
 Exit risk -- Marco
 Exit Risk -- Technology/Innovation

Appendix C: Full Listing of Survey #2 Results – Unranked

<u>Critical Risk Factor</u>	<u>Imp. + Frequency</u>	<u>Importance</u>
Founders and Management Team Factors - Founder's Experience - Industry	11.22	4.11
Founders and Management Team Factors - Founder's Experience - Previous Startups	8.39	3.76
Founders and Management Team Factors - Founder's Experience - Leadership	9.89	3.89
Founders and Management Team Factors - Founder's Experience - Technical	8.61	3.44
Founders and Management Team Factors - Founder(s) commitment to startup	14.39	4.89
Founders and Management Team Factors - Founder's Experience - Startups	8.78	3.5
Founders and Management Team Factors - Founder's Experience - Business Model	9.06	3.65
Founders and Management Team Factors - Founder's mindset toward growth	11.72	4.35
Founders and Management Team Factors - Ability to execute	13.5	4.82
Founders and Management Team Factors - Perseverance	12.83	4.76
Founders and Management Team Factors - Founders desirous of liquidation and exit	9.47	3.83
Founders and Management Team Factors - Open positions on management team	7.11	3.29
Founders and Management Team Factors - Existence and quality of Advisory Board	7.33	3.28
Founders and Management Team Factors - Strength of Business Plan	8.61	3.39
Founders and Management Team Factors - Strategic Metrics and Milestones	11.22	4.22
Founders and Management Team Factors - Operational execution relative to supply chain	6.61	3.24
Relationship Factors - Coachability	13.22	4.82
Relationship Factors - Relationship between founders	10.39	4.12
Relationship Factors - Transparency	12.39	4.59
Relationship Factors - Company/Investor cultural fit	10.17	4.18
Relationship Factors - Management 'skin in the game'	12.17	4.5
Relationship Factors - Trustworthiness	14.56	4.94
Relationship Factors - Passion	13.11	4.67
Relationship Factors - Ethics/Honesty	14.33	4.94
Relationship Factors - Integrity	14.44	4.89
Relationship Factors - Character	13.56	4.72
Relationship Factors - "X" Factor Instincts	7.94	3.63
Market Factors - Total Addressable Market (Size)	11.67	4.17
Market Factors - Market Growth Rate	9.56	3.82
Market Factors - Market Segmentation - Consolidated vs. Fractured	7.83	3.47
Market Factors - Go-to-market Strategy	12.72	4.39
Market Factors - Product/Market Fit	12.5	4.59
Market Factors - Timing in Market Life Cycle	9.22	3.71
Market Factors - Understand of Macro Trends	8.78	4
Competitive Factors - Understanding of Competitive Landscape	13.39	4.61
Competitive Factors - Overall Number of Competitors	8.5	3.47
Competitive Factors - Competitor Market Share	8.56	3.65

Scaleability Factors - Ability to Scale	12.39	4.5
Scaleability Factors - Strategy for Growth	11.61	4.47
Scaleability Factors - Scale with Minimal Capital	9.06	3.71
Scaleability Factors - Sales Strategy	11.61	4.33
Traction and Revenue Factors - Early Traction	10.61	4.06
Traction and Revenue Factors - Existing Revenues	7.83	3.35
Traction and Revenue Factors - Revenue Model	12.67	4.39
Technology Factors - Disruptive in the Market	8.89	3.65
Technology Factors - "Me too" Technology	7.22	3.4
Technology Factors - Easily copied or reverse engineered	9.39	3.72
Technology Factors - MVP identified and available (Prototype)	11	4.35
Technology Factors - Development Timeline	9.5	4.13
Technology Factors - Platform Technology	8.67	3.82
Value Proposition Factors - Demonstrated Customer Discovery	10.44	4.25
Value Proposition Factors - Problem, Not Solution Focused	9.67	4.27
Value Proposition Factors - Clear and Unique Value Proposition	12.83	4.56
Investment Factors - Amount of Investment	9.17	3.71
Investment Factors - Valuation	11.44	4.17
Investment Factors - Follow-on Funding Needed	11.61	4.29
Investment Factors - Terms	12	4.39
Investment Factors - Clean Cap Table	10.11	4.06
Investment Factors - Ability to attract co-investors	9.78	3.83
Investment Factors - Realistic Return Expectations	10.33	4
Investment Factors - M&A Landscape	6.83	3.29
Investment Factors - Investment Stage - Seed, Early Growth	11.28	4.18
Financial Factors - Realistic Pro Forma	9.33	3.76
Financial Factors - Little or No Debt	8.28	3.53
Financial Factors - Reasonable Burn Rate	11.78	4.28
Financial Factors - Projected Gross Margins	10.22	3.89
Financial Factors - Clean Balance Sheet	9.33	3.82
Exit Factors - Exit Strategy	11.33	4.11
Exit Factors - Time to Exit	9.39	3.83
Exit Factors - Potential for Good Return	13.67	4.61
Exit Factors - Economic Conditions Favorable for Exit	8.56	3.71
Exit Factors - Potential Disruptive Technology Affecting Exit	6.94	3.53
Legal Factors - No Pending or Existing Litigation	12.44	4.56
Legal Factors - Founder's Need for NDA	7.11	3.28
Regulatory Factors - Regulatory Barriers	9.39	4
Regulatory Factors - Political Risks	7.33	3.39
Intellectual Property Factors - Existing IP	10.17	4.11
Intellectual Property Factors - Competitive Advantage	12.89	4.71

Intellectual Property Factors - Other Barriers to Entry	10.44	4.29
Other Factors - Location of Company	8.33	3.47
Other Factors - Wow Factor	6.94	3.25
Other Factors - Intriguing Narrative	8.39	3.81

Appendix D: Ranked Consensus Data by Consensus Range

Ranked Consensus Data > 70%

94%	Founders and Management Team Factors - Ability to execute	5.00
100%	Relationship Factors - Trustworthiness	5.00
100%	Relationship Factors - Ethics/Honesty	4.94
100%	Founders and Management Team Factors - Founder(s) commitment to startup	4.89
100%	Relationship Factors - Integrity	4.89
94%	Relationship Factors - Coachability	4.82
94%	Founders and Management Team Factors - Perseverance	4.76
94%	Relationship Factors - Character	4.72
94%	Intellectual Property Factors - Competitive Advantage	4.71
100%	Relationship Factors - Passion	4.67
100%	Competitive Factors - Understanding of Competitive Landscape	4.67
94%	Exit Factors - Potential for Good Return	4.67
100%	Relationship Factors - Management 'skin in the game'	4.61
94%	Relationship Factors - Transparency	4.59
94%	Market Factors - Product/Market Fit	4.59
94%	Value Proposition Factors - Clear and Unique Value Proposition	4.56
89%	Legal Factors - No Pending or Existing Litigation	4.56
89%	Scaleability Factors - Strategy for Growth	4.53
94%	Scaleability Factors - Ability to Scale	4.50
94%	Founders and Management Team Factors - Founder's mindset toward growth	4.47
89%	Traction and Revenue Factors - Revenue Model	4.44
78%	Value Proposition Factors - Demonstrated Customer Discovery	4.44
100%	Market Factors - Go-to-market Strategy	4.39
100%	Investment Factors - Terms	4.39
100%	Scaleability Factors - Sales Strategy	4.33
100%	Technology Factors - MVP identified and available (Prototype)	4.33
89%	Investment Factors - Follow-on Funding Needed	4.29
100%	Financial Factors - Reasonable Burn Rate	4.28
100%	Intellectual Property Factors - Other Barriers to Entry	4.28
94%	Value Proposition Factors - Problem, Not Solution Focused	4.25
100%	Founders and Management Team Factors - Strategic Metrics and Milestones	4.22
94%	Relationship Factors - Relationship between founders	4.18
83%	Relationship Factors - Company/Investor cultural fit	4.18
89%	Investment Factors - Investment Stage - Seed, Early Growth	4.18
94%	Investment Factors - Valuation	4.17
94%	Technology Factors - Development Timeline	4.12

100%	Founders and Management Team Factors - Founder's Experience - Industry	4.11
100%	Market Factors - Total Addressable Market (Size)	4.11
94%	Investment Factors - Clean Cap Table	4.11
100%	Exit Factors - Exit Strategy	4.11
100%	Intellectual Property Factors - Existing IP	4.11
94%	Market Factors - Understand of Macro Trends	4.00
89%	Traction and Revenue Factors - Early Traction	4.00
89%	Investment Factors - Realistic Return Expectations	4.00
100%	Regulatory Factors - Regulatory Barriers	4.00
100%	Technology Factors - Platform Technology	3.94
100%	Exit Factors - Time to Exit	3.94
89%	Financial Factors - Clean Balance Sheet	3.94
89%	Founders and Management Team Factors - Founder's Experience - Leadership	3.89
89%	Technology Factors - Easily copied or reverse engineered	3.89
94%	Financial Factors - Projected Gross Margins	3.89
94%	Market Factors - Market Growth Rate	3.88
94%	Investment Factors - Ability to attract co-investors	3.83
83%	Financial Factors - Realistic Pro Forma	3.82
83%	Founders and Management Team Factors - Founders desirous of liquidation and exit	3.78
94%	Exit Factors - Economic Conditions Favorable for Exit	3.76
83%	Other Factors - Intriguing Narrative	3.76
83%	Founders and Management Team Factors - Founder's Experience - Previous Startups	3.71
78%	Market Factors - Timing in Market Life Cycle	3.71
89%	Scaleability Factors - Scale with Minimal Capital	3.71
78%	Investment Factors - Amount of Investment	3.71
78%	Founders and Management Team Factors - Founder's Experience - Business Model	3.65
78%	Competitive Factors - Competitor Market Share	3.65
78%	Technology Factors - Disruptive in the Market	3.65
83%	Financial Factors - Little or No Debt	3.65
72%	Exit Factors - Potential Disruptive Technology Affecting Exit	3.56
72%	Relationship Factors - "X" Factor Instincts	3.53
78%	Technology Factors - "Me too" Technology	3.53
78%	Founders and Management Team Factors - Founder's Experience - Startups	3.50
89%	Market Factors - Market Segmentation - Consolidated vs. Fractured	3.47
83%	Other Factors - Location of Company	3.47
94%	Founders and Management Team Factors - Founder's Experience - Technical	3.44
72%	Competitive Factors - Overall Number of Competitors	3.41
100%	Regulatory Factors - Political Risks	3.33
89%	Investment Factors - M&A Landscape	3.29
89%	Founders and Management Team Factors - Existence and quality of Advisory Board	3.28

94%	Founders and Management Team Factors - Open positions on management team	3.24
72%	Founders and Management Team Factors - Operational execution relative to supply chain	3.24
78%	Other Factors - Wow Factor	3.18

Ranked Consensus Data > 80%

94%	Founders and Management Team Factors - Ability to execute	5.00
100%	Relationship Factors - Trustworthiness	5.00
100%	Relationship Factors - Ethics/Honesty	4.94
100%	Founders and Management Team Factors - Founder(s) commitment to startup	4.89
100%	Relationship Factors - Integrity	4.89
94%	Relationship Factors - Coachability	4.82
94%	Founders and Management Team Factors - Perseverance	4.76
94%	Relationship Factors - Character	4.72
94%	Intellectual Property Factors - Competitive Advantage	4.71
100%	Relationship Factors - Passion	4.67
100%	Competitive Factors - Understanding of Competitive Landscape	4.67
94%	Exit Factors - Potential for Good Return	4.67
100%	Relationship Factors - Management 'skin in the game'	4.61
94%	Relationship Factors - Transparency	4.59
94%	Market Factors - Product/Market Fit	4.59
94%	Value Proposition Factors - Clear and Unique Value Proposition	4.56
89%	Legal Factors - No Pending or Existing Litigation	4.56
89%	Scaleability Factors - Strategy for Growth	4.53
94%	Scaleability Factors - Ability to Scale	4.50
94%	Founders and Management Team Factors - Founder's mindset toward growth	4.47
89%	Traction and Revenue Factors - Revenue Model	4.44
100%	Market Factors - Go-to-market Strategy	4.39
100%	Investment Factors - Terms	4.39
100%	Scaleability Factors - Sales Strategy	4.33
100%	Technology Factors - MVP identified and available (Prototype)	4.33
89%	Investment Factors - Follow-on Funding Needed	4.29
100%	Financial Factors - Reasonable Burn Rate	4.28
100%	Intellectual Property Factors - Other Barriers to Entry	4.28
94%	Value Proposition Factors - Problem, Not Solution Focused	4.25
100%	Founders and Management Team Factors - Strategic Metrics and Milestones	4.22
94%	Relationship Factors - Relationship between founders	4.18
83%	Relationship Factors - Company/Investor cultural fit	4.18
89%	Investment Factors - Investment Stage - Seed, Early Growth	4.18

94%	Investment Factors - Valuation	4.17
94%	Technology Factors - Development Timeline	4.12
100%	Founders and Management Team Factors - Founder's Experience - Industry	4.11
100%	Market Factors - Total Addressable Market (Size)	4.11
94%	Investment Factors - Clean Cap Table	4.11
100%	Exit Factors - Exit Strategy	4.11
100%	Intellectual Property Factors - Existing IP	4.11
94%	Market Factors - Understand of Macro Trends	4.00
89%	Traction and Revenue Factors - Early Traction	4.00
89%	Investment Factors - Realistic Return Expectations	4.00
100%	Regulatory Factors - Regulatory Barriers	4.00
100%	Technology Factors - Platform Technology	3.94
100%	Exit Factors - Time to Exit	3.94
89%	Financial Factors - Clean Balance Sheet	3.94
89%	Founders and Management Team Factors - Founder's Experience - Leadership	3.89
89%	Technology Factors - Easily copied or reverse engineered	3.89
94%	Financial Factors - Projected Gross Margins	3.89
94%	Market Factors - Market Growth Rate	3.88
94%	Investment Factors - Ability to attract co-investors	3.83
83%	Financial Factors - Realistic Pro Forma	3.82
83%	Founders and Management Team Factors - Founders desirous of liquidation and exit	3.78
94%	Exit Factors - Economic Conditions Favorable for Exit	3.76
83%	Other Factors - Intriguing Narrative	3.76
83%	Founders and Management Team Factors - Founder's Experience - Previous Startups	3.71
89%	Scalability Factors - Scale with Minimal Capital	3.71
83%	Financial Factors - Little or No Debt	3.65
89%	Market Factors - Market Segmentation - Consolidated vs. Fractured	3.47
83%	Other Factors - Location of Company	3.47
94%	Founders and Management Team Factors - Founder's Experience -Technical	3.44
100%	Regulatory Factors - Political Risks	3.33
89%	Investment Factors - M&A Landscape	3.29
89%	Founders and Management Team Factors - Existence and quality of Advisory Board	3.28
94%	Founders and Management Team Factors - Open positions on management team	3.24

Ranked Consensus Data = 100%

100%	Relationship Factors – Trustworthiness	5.00
100%	Relationship Factors - Ethics/Honesty	4.94
100%	Founders and Management Team Factors - Founder(s) commitment to startup	4.89
100%	Relationship Factors – Integrity	4.89
100%	Relationship Factors – Passion	4.67
100%	Competitive Factors - Understanding of Competitive Landscape	4.67
100%	Relationship Factors - Management 'skin in the game'	4.61
100%	Market Factors - Go-to-market Strategy	4.39
100%	Investment Factors – Terms	4.39
100%	Scaleability Factors - Sales Strategy	4.33
100%	Technology Factors - MVP identified and available (Prototype)	4.33
100%	Financial Factors - Reasonable Burn Rate	4.28
100%	Intellectual Property Factors - Other Barriers to Entry	4.28
100%	Founders and Management Team Factors - Strategic Metrics and Milestones	4.22
100%	Founders and Management Team Factors - Founder's Experience - Industry	4.11
100%	Market Factors - Total Addressable Market (Size)	4.11
100%	Exit Factors - Exit Strategy	4.11
100%	Intellectual Property Factors - Existing IP	4.11
100%	Regulatory Factors - Regulatory Barriers	4.00
100%	Technology Factors - Platform Technology	3.94
100%	Exit Factors - Time to Exit	3.94
100%	Regulatory Factors - Political Risks	3.33

Appendix E: Angel Investors and Venture Capitalists

Angel Investor Consensus Final Data

89%	Founders and Management Team Factors - Ability to execute	5.00
89%	Relationship Factors - Coachability	5.00
100%	Relationship Factors - Trustworthiness	5.00
100%	Relationship Factors - Ethics/Honesty	5.00
100%	Relationship Factors - Integrity	5.00
100%	Founders and Management Team Factors - Founder(s) commitment to startup	4.78
100%	Relationship Factors - Character	4.78
100%	Competitive Factors - Understanding of Competitive Landscape	4.78
78%	Intellectual Property Factors - Competitive Advantage	4.75
100%	Relationship Factors - Passion	4.67
89%	Founders and Management Team Factors - Perseverance	4.63
89%	Relationship Factors - Transparency	4.63
89%	Market Factors - Product/Market Fit	4.63
100%	Investment Factors - Terms	4.56
89%	Legal Factors - No Pending or Existing Litigation	4.56
100%	Relationship Factors - Management 'skin in the game'	4.44
89%	Value Proposition Factors - Clear and Unique Value Proposition	4.44
89%	Exit Factors - Potential for Good Return	4.44
78%	Scaleability Factors - Strategy for Growth	4.38
89%	Scaleability Factors - Ability to Scale	4.33
89%	Investment Factors - Valuation	4.33
100%	Investment Factors - Realistic Return Expectations	4.22
100%	Intellectual Property Factors - Existing IP	4.22
100%	Founders and Management Team Factors - Founder's Experience - Industry	4.11
100%	Market Factors - Total Addressable Market (Size)	4.11
100%	Market Factors - Go-to-market Strategy	4.11
100%	Scaleability Factors - Sales Strategy	4.11
100%	Traction and Revenue Factors - Revenue Model	4.11
100%	Technology Factors - MVP identified and available (Prototype)	4.11
100%	Financial Factors - Reasonable Burn Rate	4.11
100%	Exit Factors - Exit Strategy	4.11
100%	Intellectual Property Factors - Other Barriers to Entry	4.11
100%	Founders and Management Team Factors - Strategic Metrics and Milestones	4.00
100%	Technology Factors - Platform Technology	4.00
100%	Value Proposition Factors - Problem, Not Solution Focused	4.00
100%	Investment Factors - Clean Cap Table	4.00
100%	Financial Factors - Projected Gross Margins	3.89

Venture Capitalist Consensus Final Data

100%	Founders and Management Team Factors - Founder(s) commitment to startup	5.00
100%	Founders and Management Team Factors - Ability to execute	5.00
100%	Relationship Factors - Trustworthiness	5.00
100%	Founders and Management Team Factors - Perseverance	4.89
100%	Relationship Factors - Ethics/Honesty	4.89
100%	Exit Factors - Potential for Good Return	4.89
100%	Relationship Factors - Company/Investor cultural fit	4.78
100%	Relationship Factors - Management 'skin in the game'	4.78
100%	Relationship Factors - Integrity	4.78
100%	Traction and Revenue Factors - Revenue Model	4.78
100%	Relationship Factors - Coachability	4.67
100%	Relationship Factors - Passion	4.67
100%	Relationship Factors - Character	4.67
100%	Market Factors - Go-to-market Strategy	4.67
100%	Scaleability Factors - Ability to Scale	4.67
100%	Scaleability Factors - Strategy for Growth	4.67
100%	Value Proposition Factors - Clear and Unique Value Proposition	4.67
100%	Investment Factors - Follow-on Funding Needed	4.67
100%	Intellectual Property Factors - Competitive Advantage	4.67
89%	Value Proposition Factors - Demonstrated Customer Discovery	4.63
89%	Founders and Management Team Factors - Founder's mindset toward growth	4.56
89%	Relationship Factors - Transparency	4.56
100%	Market Factors - Product/Market Fit	4.56
100%	Competitive Factors - Understanding of Competitive Landscape	4.56
100%	Scaleability Factors - Sales Strategy	4.56
100%	Technology Factors - MVP identified and available (Prototype)	4.56
89%	Legal Factors - No Pending or Existing Litigation	4.56
89%	Value Proposition Factors - Problem, Not Solution Focused	4.50
100%	Founders and Management Team Factors - Strategic Metrics and Milestones	4.44
89%	Relationship Factors - Relationship between founders	4.44
89%	Investment Factors - Investment Stage - Seed, Early Growth	4.44
100%	Financial Factors - Reasonable Burn Rate	4.44
100%	Intellectual Property Factors - Other Barriers to Entry	4.44
100%	Technology Factors - Development Timeline	4.33
100%	Regulatory Factors - Regulatory Barriers	4.33
100%	Founders and Management Team Factors - Founder's Experience - Leadership	4.22
100%	Traction and Revenue Factors - Early Traction	4.22

89%	Relationship Factors - Relationship between founders	3.88	100%	Investment Factors - Terms	4.22
89%	Market Factors - Market Growth Rate	3.88	89%	Investment Factors - Clean Cap Table	4.22
89%	Market Factors - Understand of Macro Trends	3.88	100%	Exit Factors - Time to Exit	4.22
89%	Technology Factors - Development Timeline	3.88	100%	Founders and Management Team Factors - Founder's Experience - Industry	4.11
78%	Investment Factors - Follow-on Funding Needed	3.88	100%	Market Factors - Total Addressable Market (Size)	4.11
78%	Investment Factors - Investment Stage - Seed, Early Growth	3.88	100%	Market Factors - Understand of Macro Trends	4.11
100%	Founders and Management Team Factors - Founder's Experience - Previous Startups	3.78	89%	Financial Factors - Clean Balance Sheet	4.11
78%	Founders and Management Team Factors - Founders desirous of liquidation and exit	3.78	100%	Exit Factors - Exit Strategy	4.11
89%	Technology Factors - Easily copied or reverse engineered	3.78	89%	Technology Factors - Easily copied or reverse engineered	4.00
100%	Investment Factors - Ability to attract co-investors	3.78	100%	Investment Factors - Valuation	4.00
78%	Traction and Revenue Factors - Early Traction	3.75	100%	Intellectual Property Factors - Existing IP	4.00
89%	Financial Factors - Clean Balance Sheet	3.75	100%	Other Factors - Intriguing Narrative	4.00
100%	Exit Factors - Time to Exit	3.67	100%	Market Factors - Market Growth Rate	3.89
100%	Regulatory Factors - Regulatory Barriers	3.67	89%	Competitive Factors - Competitor Market Share	3.89
78%	Founders and Management Team Factors - Founder's Experience - Business Model	3.63	89%	Scaleability Factors - Scale with Minimal Capital	3.89
78%	Market Factors - Timing in Market Life Cycle	3.63	100%	Technology Factors - Platform Technology	3.89
78%	Technology Factors - Disruptive in the Market	3.63	89%	Investment Factors - Ability to attract co-investors	3.89
78%	Investment Factors - Amount of Investment	3.63	100%	Financial Factors - Realistic Pro Forma	3.89
78%	Exit Factors - Economic Conditions Favorable for Exit	3.63	89%	Financial Factors - Little or No Debt	3.89
78%	Exit Factors - Potential Disruptive Technology Affecting Exit	3.63	89%	Financial Factors - Projected Gross Margins	3.89
78%	Founders and Management Team Factors - Founder's Experience - Leadership	3.63	100%	Exit Factors - Economic Conditions Favorable for Exit	3.89
100%	Founders and Management Team Factors - Founder's Experience - Technical	3.56	89%	Founders and Management Team Factors - Founders desirous of liquidation	3.78
78%	Founders and Management Team Factors - Founder's Experience - Startups	3.56	78%	Market Factors - Timing in Market Life Cycle	3.78
78%	Scaleability Factors - Scale with Minimal Capital	3.50	78%	Traction and Revenue Factors - Existing Revenues	3.78
78%	Founders and Management Team Factors - Strength of Business Plan	3.50	78%	Investment Factors - Amount of Investment	3.78
78%	Market Factors - Market Segmentation - Consolidated vs. Fractured	3.44	78%	Investment Factors - Realistic Return Expectations	3.78
78%	Investment Factors - M&A Landscape	3.38	78%	Founders and Management Team Factors - Founder's Experience - Business Model	3.67
89%	Financial Factors - Little or No Debt	3.38	78%	Technology Factors - Disruptive in the Market	3.67
89%	Founders and Management Team Factors - Open positions on management team	3.33	89%	Regulatory Factors - Political Risks	3.67
78%	Founders and Management Team Factors - Existence and quality of Advisory Board	3.25	89%	Other Factors - Location of Company	3.67
100%	Regulatory Factors - Political Risks	3.00	78%	Relationship Factors - "X" Factor Instincts	3.56
78%	Traction and Revenue Factors - Existing Revenues	2.88	100%	Market Factors - Market Segmentation - Consolidated vs. Fractured	3.56
		2.75	89%	Competitive Factors - Overall Number of Competitors	3.56
			78%	Founders and Management Team Factors - Founder's Experience - Startups	3.44
			78%	Technology Factors - "Me too" Technology	3.44
			89%	Other Factors - Wow Factor	3.44
			100%	Founders and Management Team Factors - Founder's Experience Technical	3.33
			89%	Founders and Management Team Factors - Existence and quality of Advisory Board	3.33
			100%	Founders and Management Team Factors - Open positions on Mgmt. team	3.22
			100%	Investment Factors - M&A Landscape	3.22

VITA

SHAWN A. CARSON

- Education: Public Schools, Greenville, North Carolina
B.S. Industrial Technology, East Carolina University,
Greenville, North Carolina, 1986
M.B.A, University of Tennessee, Knoxville, Tennessee, 2002
Ed.D. East Tennessee State University, Johnson City,
Tennessee, 2018
- Professional Experience: Process Improvement Specialist, Milliken & Company,
Spartanburg, South Carolina, 1986-1989
Director of Customer Services, Computational Systems, Inc.,
Knoxville, Tennessee, 1989 – 2002
Director of Field Services, Emerson Electric, Knoxville,
Tennessee, 2002 – 2005
Director of Client Services and Entrepreneurial Education,
Technology 2020, Knoxville, Tennessee, 2005 – 2016
Director Advisory Services, 3 Roots Capital, Knoxville,
Tennessee, 2016 – Current
Lecturer, Haslam College of Business, University of Tennessee,
Knoxville, Tennessee 2016 - Current