ABSTRACT

Title of dissertation: REPUTATION BUILDING BY NEW VENTURES: THREE ESSAYS ON PROCESSES AND PERFORMANCE

Antoaneta Petkova Petkova, Doctor of Philosophy, 2006

Dissertation directed by: Professor Anil K. Gupta and Professor Violina P. Rindova
Department of Management and Organization

Management scholars have established the importance of reputation for firm performance but the mechanisms through which reputation can be accumulated are still to be explored. While some researchers have proposed that reputation accumulates through causally ambiguous social processes and can be built through continuous investments over time, there is little evidence regarding the nature of firm activities that may serve as strategic investments in reputation building. Prior research has focused primarily on studying reputation in large established firms that have both their prior performance, which can guide public perceptions and opinions, and substantial resources to make costly investments in product quality and advertising, which serve to increase their reputation. The tendency to study reputation among firms that already have accumulated some reputation does not allow for examining how this critical intangible asset comes into being and what factors account for the variance in the levels of reputation among young firms in an industry. This gap in the literature can be addressed by studying the process of reputation building in the context of new ventures (NVs), because such a

context allows for examining the processes and different paths that may evolve from day one in the life of a firm. Specifically, my dissertation addresses these gaps in the current state of knowledge by examining the critical factors that determine the variations among NVs in their reputation building efforts, the factors that account for the relative efficiency of these efforts, and the performance implications of reputation building activities and reputational capital at different stages of the life of NVs.

The dissertation is composed of three essays. The first essay describes the exploratory stage of this dissertation and provides initial insights regarding the activities that help NVs develop reputation early in their lives. The second essay provides a theoretical framework to understand the process of reputation building by NVs. I propose that NVs can build their initial reputations by investing in symbolic activities and critical resources that serve as signals of NVs' underlying quality and potential. The patterns and efficiency of such investments are likely to vary systematically depending on the founders' entrepreneurial experience and the technology and market uncertainty faced by NVs and their stakeholders. The third essay tests and provides empirical supports to the hypothesized model of reputation building in a sample of 415 information technology NVs.

REPUTATION BUILDING BY NEW VENTURES: THREE ESSAYS ON PROCESSES AND PERFORMANCE

by

Antoaneta Petkova Petkova

Dissertation submitted to the Faculty of the Graduate School of the
University of Maryland, College Park in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
2006

Advisory Committee:

Professor Anil K. Gupta, Co-Chair
Professor Violina P. Rindova, Co-Chair
Professor Brent Goldfarb
Professor James E. Grunig
Professor Ian O. Williamson

DEDICATION

I dedicate this dissertation to my family: my loving parents, Maria and Petko Petkovi, my sister Desislava Petkova and my brother Atanas Petkov, who have supported and encouraged all my endeavors up until now and have helped tremendously for completing this dissertation.

ACKNOWLEDGEMENTS

I would like to thank everybody who helped and supported me throughout working on this dissertation and finishing my doctoral studies.

First and foremost, I would like to thank my advisors, Anil Gupta and Violina Rindova, for their deep involvement with my dissertation and for all the efforts they invested in my development as an academic professional. Specifically, I am indebted to Anil for all the time he spent helping me shape the exploratory stage of this study and challenging me to think critically about the theoretical framework of this dissertation, as well as for being my coauthor on other projects and my mentor on all issues related to the academic profession. I must also thank Anil for securing the funds for the dissertation data collection, which made the empirical study of this dissertation possible.

Very special thanks to Violina, who has been my best friend and my role model during the last five years. She not only encouraged my interests in studying the intangible firm assets but also opened my eyes to new directions, research ideas, contexts, and methods. Most of what I know about conducting qualitative research and holding the highest standards in academic writing I learned from Violina. I am also very deeply indebted to her for teaching me how to make academic research exciting by combining rigor and persistence with inspiration and creativity. I must also acknowledge Violina's generosity and patience during the three years she adopted me to work in her office.

Also, special thanks to the members of my dissertation committee, Ian Williamson, Brent Goldfarb, and James Grunig, for taking the time to provide the thoughtful criticism and suggestions that pushed this work ahead. I greatly enjoyed working with Ian, who has been a great coauthor, a mentor, and a good friend. I am

particularly grateful to him for helping develop my ideas about the role of human capital in the reputation building process, as well as for providing the LISREL software and teaching me how to use it for the statistical analysis of this dissertation. Brent's constant doubts and criticism regarding my methods made me think very carefully about everything I did, which eventually led to much more compelling arguments and explanations. Jim helped make the dissertation stronger by providing his great insights from communications research as well as very helpful interpretations and explanations for my empirical results.

I would like to thank my sister Desislava Petkova and my brother Atanas Petkov for their tremendous efforts in helping me collect and organize the data for this dissertation. I also thank Dean Howard Frank and my colleagues Pat Maggitti and Mike Provance for their genuine help and feedback on developing the early ideas of this dissertation. Let me also acknowledge my undergraduate research assistants, Debby Man, Abdul Ahmad, Andi Levine, Robyn Stern, and Bisi Adeyemo.

Further, I would like to thank my professors and my colleagues from the Management and Organization department who provided feedback and advice on my dissertation and on my other projects: Tim Pollock, Cindy Stevens, Scott Turner, Hank Sims, Ken Smith, Rhonda Reger, Dave Kirsch, Myeong-Gu Seo, Curt Grimm, Pat Maggitti, Dax Basdeo, Long Jiang, Mike Pfarrer, Mike Provance, and Qing Cao. Also, I would like to acknowledge my more senior colleagues who have been my mentors, role models, and supporters throughout my doctoral studies and work on this dissertation: Sophia Marinova, Lisa Dragoni, Jon Eckhardt, Riki Takeuchi, Amanuel Tekleab, and Jennifer Marrone.

Special thanks to my Bulgarian friends and colleagues, Sophie Marinova, Ivan Anastasov, Nevena Koukova, Dan Cheaburo, Natalia Lorinkova, and George Panayotov, who helped maintain a sense of 'homeliness' during the most difficult moments in my Ph.D. studies. Also, many thanks to my other friends in the Ph.D. program who made my time as a Ph.D. student really enjoyable: Holly Slay, Gosia Langa, Flore Bridoux, Azi Gera, Dave Major, Scott Livengood, Dmitry Khanin, Lori Kiyatkin, Chris Hofer, Adriana Rossiter, Tashfeen Sohail, Nerissa Brown, Shweta Oza, Debora Viana, Animesh Animesh, and Vandana Ramachandran.

Last but not least, I would like to thank my mother, Maria Petkova, and my father, Petko Petkov, for their tremendous love and support throughout my Ph.D. studies.

And above all, thank God, the Father in Heaven who always cares for us, for giving me talent, inspiration and endurance!

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

DISSERTATION OVERVIEW

The concept of reputation has received considerable attention from scholars in strategy and organization theory (Deephouse, 2000; Elsbach & Kramer, 1996; Fombrun & Shanley, 1990; Fombrun, 1996; Hall, 1992, 1993; Martins, 1998, 2005; Rindova, Williamson, Petkova & Sever, 2005). Reputations are valuable assets because they influence stakeholders' economic choices vis-à-vis organizations and lead to differences in organizational performance (Benjamin & Podolny, 1999; Deephouse, 2000; Dollinger, Golden & Saxton, 1997; Rindova et al., 2005). Numerous studies have documented a positive relationship between a firm's reputation and its financial performance (Fombrun & Shanley, 1990; Herremans, Akathaporn, & McInnes, 1993; Landon & Smith, 1997; McGuire, Schneeweis, & Branch, 1990; Podolny, 1993; Roberts & Dowling, 2002). Firms compete for favorable reputation among their stakeholders, because reputation can bring them benefits in addition to those explained by their objective financial performance (Fombrun & Shanley, 1990) or product quality (Benjamin & Podolny, 1999). Reputation not only brings financial benefits to the firm, but also can contribute to its sustained profitability. For example, in a study of Fortune 1000 firms, Roberts and Dowling (2002) found that firms with higher reputations are better able to sustain superior profitability over time.

There is a general agreement among scholars that reputation is a valuable intangible resource, which contributes to a firm's competitive advantage (Barney, 1991; Dierickx & Cool, 1989; Hall, 1992). However, the ways this critical resource emerges or can be created by the firm are much less understood. Reputation literature in strategy has

focused extensively on the role of reputation for old and well-established corporations, primarily Fortune 500 firms (Fombrun, 1997; Fombrun & Shanley, 1990; Martins, 2005; Roberts & Dowling, 2002; Wartick, 2002). The tendency to study reputation among firms that already have accumulated certain level of reputation does not allow for examining how this critical intangible asset is developed and what factors account for the variance in the level of reputational capital among young firms in an industry. While acknowledging that it is important to know what factors predict the firms' reputation and how reputation relates to their future performance, most studies by design overlook the fact that firms begin their life with no reputation and many of them never accumulate sufficient levels of this critical intangible asset.

Extant research suggests that firm reputation is predicted by past financial performance (Fombrun & Shanley, 1990), as well as by some deliberate investments in reputation signals, such as pricing and advertising (Milgrom & Roberts, 1986; Shapiro, 1983). However, new ventures (NVs) not only lack performance history but also most of them start their life with limited resources and few or no products to offer, which makes traditional investments in reputation difficult to access and use. In the absence of reliable signals of product quality, such as advertising expenditures, brand-name and pricing, it is not clear what the cues used by stakeholders to construct reputations are, and how this fact ultimately impacts firm performance. One viable way to address these limitations of previous research is to study the emergence and accumulation of reputation in NVs, in order to capture the reputation-building process from its beginning.

Reputation of New Ventures

Reputation reflects collective perceptions and evaluations regarding a firm's ability to create value for various stakeholders (Fombrun, 1996; Fombrun & Shanley, 1990; Rindova & Fombrun, 1999). Reputation has been identified as a valuable intangible asset (Barney, 1991; Dierickx & Cool, 1989), because it can influence stakeholders' economic choices vis-à-vis a firm and their willingness to exchange resources with it (Rao, 1994; Rindova & Fombrun, 1999; Rindova et al., 2005). Reputation is particularly valuable under conditions of high uncertainty (Shapiro, 1983; Weigelt & Camerer, 1988), such as the early days in a NV's life. Favorable reputation can help stakeholders make resource allocation decisions that favor the NV by investing in it, by buying its products and recommending them to their friends, or by pursuing employment with the venture. NVs with higher reputations have easier access to capital, even when uncertainty about their quality is high (Stuard, Hoang & Hybels, 1999). Therefore, building reputation early on can increase a NV's chances for survival and success by improving its ability to attract key stakeholders and to establish exchange relationships with them.

The resource scarcity that characterizes most entrepreneurial settings makes NVs even more dependent on their stakeholders for various resources than established firms (Aldrich, 2000), which in turn increases the importance of reputation as a factor that can attract stakeholders to the NV. Even NVs that begin their lives sponsored by a parent firm or angel investors face the need to develop strong reputation rapidly because higher levels of resource commitments by initial stakeholders are accompanied by higher expectations for economic returns. The perceptions and beliefs that constitute a firm's

reputation develop as stakeholders observe and evaluate the actions and performance of firms and form summary impressions about the underlying strategic characteristics of a firm (Rindova & Fombrun, 1999; Weigelt & Camerer, 1988). However, most NVs lack the history and performance records to guide stakeholders' evaluations and opinions about them. Often the potential stakeholders are not even aware of the existence and activities of a NV, which makes it impossible for them to form impressions or opinions. Moreover, because NVs often create value in novel ways by bringing to the market previously unavailable products or services, they face the additional challenge to prove that their activities fit with the norms and rules of the industry (Aldrich & Fiol, 1994; Rao, 1994). Overall, the need to develop reputation rapidly in the absence of enough resources, consistent performance histories, and interaction patterns, presents NVs with a number of unique challenges not encountered by established firms in an industry (Aldrich, 2000). Thus, studying NVs' reputations provides a unique opportunity to understand the early reputation building dynamics, which occur when fewer performance indicators are available. More specifically, with this dissertation I am addressing the following **research questions**:

1. What factors explain differences in the intensity and mode of reputation accumulation by NVs?

2. How do initial conditions shape investments in future reputation building by the NV?

3. What is the impact of (a) investments in reputation building, and (b) actual change in reputation stock on NV performance?

I address these questions in three essays, using a two-phase design that blends qualitative and quantitative research methods (Lee, 1999). The first essay describes the exploratory stage of this dissertation and provides initial insights regarding the activities that help NVs develop reputation early in their lives. The second essay provides a theoretical framework to understand the process of reputation building by NVs. I propose that NVs can build their initial reputations by investing in symbolic activities and critical resources that serve as signals of NVs' underlying quality and potential. The patterns and efficiency of such investments are likely to vary systematically depending on the founders' entrepreneurial experience and the technology and market uncertainty faced by NVs and their stakeholders. The third essay tests and provides empirical support to the hypothesized model of reputation building in a sample of 415 information technology NVs.

Contributions of the Dissertation

This dissertation makes several important contributions to management theory and practice by expanding the existing knowledge on one important, yet understudied issue – reputation building by NVs. Below, I outline the major contributions to research and practice and I elaborate more on each of them in the discussion sections of the three essays.

Contributions to research. This dissertation contributes to several bodies of research, including reputation research in management and organization theory, the resource-based view in strategy, and entrepreneurship research. First, the dissertation contributes to reputation research by uncovering the process of reputation building from

its very beginning. It addresses an important gap in current research on organizational reputations, which has focused primarily on established firms and has overlooked the uniqueness of the process of reputation building by NVs. Specifically, I develop and test a novel theoretical framework, which explains the processes of reputation accumulation by NVs. The theory I propose addresses a major gap in current state of knowledge: while scholars from a variety of disciplines, such as management, economics, and sociology unanimously agree that reputation is critically important for all firms, the process through which firms can accumulate reputation has received limited attention by prior research.

Second, I extend the resource-based view of the firm (a) by refining scholarly understanding of reputation as a valuable intangible asset and by examining the processes through which this asset can be developed; and (b) by demonstrating that early in a firm's life the process of reputation-building is less causally ambiguous and more predictable than RBV implies. Third, my dissertation contributes to a growing body of research on NVs. My findings provide specific ideas how new ventures can build reputation early in their lives – an issue that is critically important for their ability to attract stakeholders and improve their chances for survival and success. More generally, this dissertation addresses the need for cross-disciplinary research in management, which has been repeatedly emphasized in the last few years. The theory I develop brings together two theoretical perspectives that have not been linked by prior research – signaling theory in economics and symbolic research in management – to explain the interplay between NV resources and symbolic activities.

Contributions to practice. This dissertation also has important practical implications. First, it provides entrepreneurs with very specific steps they can take in

order to build reputation for their ventures and thus to improve their chances for survival and success. Second, the qualitative phase of this research provides practitioners with a summary of the 'best practices' in reputation building for NVs, which can be used to guide their reputation-building efforts. For example, the descriptions of specific symbolic activities undertaken by the experienced entrepreneurs I interviewed could be used by founders as examples to follow. Finally, the results of the large sample study show the relative magnitude of the effects of each type of reputation-building activity. This information can guide NV founders when they make decisions on how to invest in reputation strategically, by allocating the limited resources available to the NV in the most efficient ways.

ESSAY 1

HOW CAN NEW VENTURES BUILD REPUTATION?

AN EXPLORATORY STUDY

ABSTRACT

In this essay I use a grounded theory-building approach to explore the processes and mechanisms of reputation-building by new ventures. Specifically, I focus on the factors that determine variations among NVs in their reputation-building efforts and outcomes. Based on exploratory interviews with nine experienced entrepreneurs, supplemented by secondary data on 25 of the NVs they founded, I identify several types of activities that play the role of investments in NV reputations. I identify two paths that lead to the accumulation of two different types of reputation – direct and generalized. Which path a NV would take appears to be strongly related to the type of products that the NV offers. High levels of reputation tend to be related to better performance. However, the relationship between reputation and performance appears to be less tightly coupled than previously believed, which suggests that prior research using financial performance as a proxy for reputation needs to be refined.

MOTIVATION FOR THIS STUDY

There is a general agreement among scholars that reputation is a valuable intangible resource, which contributes to a firm's competitive advantage (Barney, 1991; Dierickx & Cool, 1989; Hall, 1992). Multiple studies have demonstrated that reputation is related to future financial performance (Fombrun & Shanley, 1990; Roberts & Dowling, 2002; Rindova, Williamson, Petkova & Sever, 2005), which makes reputation a desirable resource for any firm to have. However, the ways this critical resource emerges or can be created by the firm are much less understood. Reputation research has focused extensively on studying reputation of old and well-established organizations, primarily Fortune 500 firms, which have already accumulated certain level of reputation (Fombrun, 1997; Fombrun & Shanley, 1990; Martins, 2005; Roberts & Dowling, 2002; Wartick, 2002).

Extant research suggests that firm reputation is predicted by past performance (Fombrun & Shanley, 1990), as well as by costly investments in pricing and advertising (Milgrom & Roberts, 1986; Shapiro, 1983). This expectation to have performance track record and substantial resources available for reputation building investments make reputation appear a difficult target for many new ventures (NVs). NVs not only lack performance history but also most of them start their life with limited resources and few or no products to offer, which makes traditional predictors of reputation irrelevant for them. In the absence of reliable signals of product quality, such as advertising expenditures, brand-name and pricing, it is not clear what cues stakeholders use to construct reputations. One viable way to address these limitations of previous research is

to study the emergence and accumulation of reputation in NVs, in order to capture the reputation-building process from its beginning.

There are several reasons why the reputation-building processes of NVs are likely to differ from those of established firms: (1) past financial performance is not available to guide stakeholder opinions about NVs; (2) advertising and branding are quite costly for a start-up with limited resources and other more urgent needs to meet; (3) pricing strategies have limited applicability at the beginning, especially if there are no ready products to sell or a technology is still under development. The few studies concerned with reputation of young firms have converged around the idea that NVs' reputation is a function of the prestige of affiliations they have (Stuart, 2000; Stuart et al., 1999). Further, these studies assume that reputational mechanisms lead to the observed performance outcomes without measuring reputation directly (e.g., Sine, Shane, & DiGregorio, 2004; Stuart, 2000; Stuart et al, 1999).[1] However, these studies suggest that reputation is of critical importance for NVs, because it determines their survival and success, which makes further exploration of reputation accumulation by NV an important research goal.

To sum up, there are two major gaps in reputation research that need to be addressed: first, the process of reputation accumulation remains largely unexplored; and second, predictors of reputation established by extant research may have limited applicability to new ventures. The tendency to study reputation among firms that already have accumulated certain level of reputation does not allow for examining how this critical intangible asset comes into being and what factors account for the variance in the level of reputational capital among young firms in an industry. Whereas scholars

[1] The notable exception that did measure NV reputation using a specially developed three-item scale (Shane & Cable, 2002) incorporate reputation as mediator of the relationship between social ties of VC to a NV and their decision to invest in it.

consistently acknowledge the importance of knowing what factors predict the firms' reputation and how reputation relates to their future performance, most studies by design overlook the fact that many firms not only start with no reputation but also never accumulate sufficient levels of this critical asset. Both of these gaps can be addressed by studying the process of reputation accumulation in NV context, so that the processes can be traced from their beginning and relevant factors that impact a NV's reputation can be identified.

Given the limited insights by prior research into the strategies through which a NV can accumulate reputation early in its life, a grounded theory-building approach is most appropriate for exploring this phenomenon (Eisenhardt, 1989; Glasser & Strauss, 1994). The research question I am going to address with this essay is: How do entrepreneurs build reputation for their ventures? To address this question, I interviewed nine experienced entrepreneurs and compiled the complete histories of 25 of their ventures.

METHOD

This study uses an inductive, multiple-case, embedded research design. Multiple cases typically result in a better-grounded and more general theory than single cases (Eisenhardt, 1989; Glaser & Strauss, 1994), because they allow for using replication logic to confirm or disconfirm inferred patterns of relationships across cases (Yin, 1994). The embedded design allows for developing a richer and more accurate theory by uncovering aspects of the phenomenon of interest that occur at different levels (Yin, 1994). This study is designed to incorporate analysis at three interrelated levels: entrepreneur, NV,

and reputation-building activities. Reputation-building activities are broadly defined as any type of activity that informants reported as either being relevant for the reputation of their ventures or not implementing the activity as being a strategic mistake that harmed the reputation of the venture.

Data Collection

There are two major sources of data for the cases – exploratory interviews and archival sources (internal and external to the NVs). I conducted eleven interviews with nine entrepreneurs, each of whom has been involved as a founder in at least one venture and as a founder, a CEO, a founding team-member, or a first employee in at least one other venture. In selecting my informants, I tried to find entrepreneurs with both positive and negative startup experiences, from diverse nationality, age, and number of NVs started or being involved in. Table 1.1 presents the summary characteristics of the informants, their ventures, and the capacity in which they were involved.[2] In addition, I used insights from three industry experts and one venture capitalist to better understand and interpret my observations.

Following the University of Maryland policy and procedures for research involving human subjects, each informant and I signed an Informed Consent Form, which provides information on the purpose of this research and guarantee the informants full confidentiality of their own and their ventures' identity. In order to keep the informants' identity confidential I assigned a code to each informant (e.g., E1, E2, etc.) and to each venture (e.g., E1V1, E2V3, etc.), which I use whenever I refer to an informant or a particular venture.

[2] The relatively large proportion of young entrepreneurs is representative of the population of serial entrepreneurs, who are found to often start their second NV before 30 years of age (Ronstadt, 1988).

Table 1.1
Summary Characteristics of the Entrepreneurs and Ventures Described

Informants / Venture Characteristics	Total	E1	E2	E3	E4	E5	E6	E7	E8	E9
Age		35	62	48	63	35	35	36	40	63
Number of NVs in which the Entrepreneurs were involved	32	2	5	3	6	3	5	2	2	4
Of them as: - a founder	25	1	5	3	6	2	1	2	2	3
- a non-founder CEO, VP, or the 1st employee	7	1				1	4			1
NVs described in detail	26* (25 NVs)	2	5	3	4	2	3	2	2	3
of them:										
highly successful	8* (7 NVs)		2	1	1		2		1	1
moderately successful	8	1	2		1	1		1	1	1
under-performing	4		1	1	1					1
failure	6	1		1	1	1	1	1		

Note: One highly successful venture was described by two informants independently, leaving 25 distinct venture cases for analysis.

The interviews were semi-structured, allowing both for clarification questions and giving the informants the opportunity to discuss additional issues, which they considered relevant for the reputation of their ventures and for their interactions with critical stakeholders. Examples of interview questions are attached in Appendix 1.A. It should be noted that the first two informants were used to pretest the questions – they were asked more general questions and given the opportunity to discuss activities they considered relevant for NV reputation. After receiving feedback from them, I revised the questionnaire by making some questions more specific and adding additional ones as

suggested by the informants. The interview design provided two major benefits: First, interviewing allowed me to learn not only what informants and their teams did – information that can be also cross-validated from secondary sources – but also what they *did not do* or what they *wish they had done*, as well as *why*. Second, the semi-structured interviews allowed me to gain additional insights by obtaining information about facts or events which the informants considered relevant even though I would not explicitly ask about them. Each interview lasted between 40 minutes and 3 hours, for an average of 1 hour and 20 minutes per interview.

In addition to the interviews, I used both internal and external archives to obtain supplementary materials about the NVs discussed. First, during the interviews I requested from informants archival materials such as company and product-related brochures, articles and interviews with the founders published in local or national press, case-studies or other materials written about the NVs. Second, I collected the informants' resumes and various types of secondary data about their ventures, such as press releases, media publications, case studies published on the Internet, and other documents available from independent sources, to validate the activities and outcomes the informants described during the interviews.

Across all the informants, I was able to obtain information on 32 NVs, 25 of which were described in enough detail to allow for in-depth analysis. As Table 1.1 shows, there was substantial variance in the success of different ventures (as assessed qualitatively by their founders) and all but one informant had both successful and unsuccessful experiences. Specifically, six informants described at least one highly successful venture; seven informants described at least one moderately successful

venture; four informants described one under-performing venture each; and six informants described one failed venture each. As a result, I have for further analysis seven highly successful NVs, eight moderately successful NVs, four under-performing, and six failed NVs. This variation in performance is important for being able to link different reputation-building activities to performance outcomes (Yin, 1994). The NVs also vary by industry, type of products, and time period when they were started, which allows for deriving more generalizable observations and conclusions.

Analysis

Following recommendations by prior research, I grouped the data into different arrays to extract relevant patterns. As the categories emerged, I went back and forth between data and theory looking for confirming or disconfirming evidence. After three iterations of coding and analyzing the interviews, I was able to extract some preliminary observations. I analyzed the data at three levels: activities, entrepreneurs, and NVs. Below, I describe each of these analyses and the outputs obtained from them.

Analysis at the level of NV activities. Based on the exploratory interviews, I developed a coding scheme for identifying and categorizing the investments in reputation building by different NVs. Table 1.2 presents a list of reputation-building activities extracted from the interviews. A detailed table with quotes for each type of activity is provided in Appendix 1.B. Two groups of activities emerged: First, direct reputation-building activities intended to increase public awareness of the NV, to legitimate the NV, or to induce positive evaluations of the NV, which I labeled as "symbolic activities", and

second, investments in new product development, building human capital and developing relationships for the NV are considered resource investments that contribute to a NV's reputation, because informants identified them as alternative ways to reputation accumulation.[3] Consistent with the signaling approach to reputation, I concluded that the accumulation of such resources also serves as signals, because they can inform observers about the potential of the NV to produce high-quality outputs.

Table 1.2 also lists some indicators of the NV reputation discussed by informants, such as industry awards, coverage by specialized and general business press, featuring in books and case studies (see also Appendix 1.B). I use these specific suggestions to operationalize the concept of reputation in the third essay of this dissertation.

Analysis at the level of the entrepreneur. The second type of analysis was performed at the level of the entrepreneur, in order to compare different ventures started by the same founder. This analysis allows to control for idiosyncratic founder effects and to trace what aspects of the reputation-building process (if any) tend to improve as the founders become more experienced. This analysis also allowed me to examine if there is effect of prior NVs' success or failure on the reputation of the next NV by the same founder.

[3] Some informants acknowledged that they performed these activities not only to build positive impressions about their NVs but also to develop a more viable company.

Table 1.2
Reputation-Building Activities

Activities	Indicators suggested by the informants
Symbolic activities that increase public awareness of the NV	Make people notice the NV by high level of activity
	Attending trade-shows, conventions, etc.
	Presented/ gave speeches at professional conferences
	Hired VP of public relations
	Published tech papers, books, industry newsletters
Symbolic activities that legitimate the NV	Act as a "real" company: • hired professional PR-agency • hired professional Ad-agency
	Efforts to educate customers about the new tech – express authoritative opinions, provide explanations about the new technology
Symbolic activities that induce positive evaluations of the NV and its activities	Communicating clear vision to external parties – how the NV creates unique value for customers
	Brochures and handouts that illustrate the NV team's skills and capabilities
Investments in NV team size	Building a TMT (adding team members) early in the life of a NV
Investments in NV team quality	Recruit a TMT member or other experts from a prominent organizations
	Recruit an expert with a degree from a top university
	Recruit a TMT member or other expert with proven track record
	Recruit a TMT member with prior start-up experience
Investments in NV team diversity	Recruiting TMT to fill-in missing skills
Building relationships with critical stakeholders	Investment in building SC as a substitute for investment in traditional branding & advertising
	Building a customer network
	Secure a few big customers and use them for credential purposes
	Building strategic alliances/ partnerships
	Partnerships with prominent industry players (e.g., Microsoft, IBM, SAP)
	Relationships with VCs
	Relationships with prominent VCs
Technology Development	Quality of the NV's potential products/ services/ technology
	Have a pipeline (2nd product/ upgrade of technology)
	Mergers with existing firms
	Acquisition of technology
Reputation	• Media coverage in general, business, and industry press • Covered in TV news or other reports
	• Industry/ market awards for innovation, pioneering, etc.
Performance Criteria	• Successfully sold the NV to a big firm • Market valuation when sold the NV • Growing number of employees

Analysis at the level of the NV. I grouped NVs in different arrays: NVs started by each informant, NVs by 1st time entrepreneurs, 2nd time entrepreneurs, etc., and NVs that

have different types of products – more vs. less 'observable'. For example, based on their founders' experience, I divided the ventures in 1st time NVs, 2nd time NVs, etc. I then assessed NVs' reputations based on the verbal descriptions and the secondary materials provided by their founders, such as media coverage, industry awards, repeated customers, and people who contacted the founders because they heard about the NV from third parties. After careful consideration I grouped them in high-reputation, medium reputation and low reputation ones for the NVs that aimed at reputation with large number of relatively distant stakeholders and good reputation vs. no reputation for the NVs that tried to develop positive reputation through a limited number of direct interactions with stakeholders.

Of the eight 1st time NVs, one had no reputation, two – good reputation with local customers, three – moderate level of reputation with a broader range of stakeholders, two – high reputation at industry level. Of the nine 2nd time NVs, one had low reputation, three had good reputation with local customers, one – moderate level of reputation with broader range of stakeholders, two – high industry-wide reputation, one NV did not need to build reputation, because it was started to serve only one big customer. Of the rest of the NVs (five – 3rd time, two – 4th time, and one – 5th time), one had low reputation, two – good reputation with local customers, one – moderate level of reputation with broader range of stakeholders, three – high industry-wide reputation, one NV did not need to build reputation, because it was started to serve only one big customer. The two NVs that did not have to build reputation and thus made no efforts to do so were removed from subsequent analysis. It should be noted that the proportion of NVs that were able to accumulate high reputation among the ones I studied might be greater than the average

for the population of NVs. This over-representation of successful NVs could be explained with my sapling approach, which involved experienced founders, because my goal was to learn what reputation activities are most effective for NVs. Arguably, less experienced founders may have lower reputation NVs, as well as lower performing ones. However, my goal is to study the processes through which NVs accumulate reputation and, therefore, the more NVs in my study have accumulated reputation, the higher the number of observation and the more reliable conclusions I can draw about the relationships between relevant predictors and NV reputation.

Because I did not find any systematic difference among NV reputation based on the number of prior start-ups by their founders, for most other analysis I pooled the NVs together to compare them. For example, I mapped each venture on each of the activities identified at the first level of analysis, to investigate potential relationships between different activities and levels of reputation. In order to draw conclusions about the relationships between different activities and the reputation accumulation by NVs, similar activities have to be related to similar outcomes and different activities – to different outcomes (Yin, 1994). For this purpose, I compiled several tables, which compared NVs along various activity dimensions, as well as along their ultimate outcome. I introduce these tables below, when discussing the key observations from the data. Also, I looked at pairs of NVs that were similar in type of outputs but accumulated different levels of reputation, and searched for similarities and differences in their activities. These analyses resulted in several key observations, discussed next.

OBSERVATIONS

Observation 1: Limited Applicability of Branding and Advertising for New Ventures

The exploratory interviews suggest that the traditional brand building and advertising strategies used by established firms to build or increase their reputation are seldom used by NVs. As the two quotes below illustrate, entrepreneurs consistently pointed to the fact that they consider launching an advertising campaign beyond the options a NV has.

> "… we were so far behind in terms of branding, that it was useless to try to brand in this region" (E5: 10)

> "It's a small company, no way a company like that can actually really purchase enough promotion and advertising to become famous." (E4: 7)

Further, none of the informants mentioned any attempt to use traditional marketing and advertising strategies for their venture early on, which indicated that reputation accumulation by NVs might be driven by different factors than the ones identified by prior research as relevant for established firms (Kihlstrom & Riordan, 1984; Milgrom & Roberts, 1986).

Observation 2: Reputation-Building Activities Relevant for New Ventures

More detailed analysis and coding of the interviews suggested that entrepreneurs pursued two complementary approaches for attracting stakeholders' attention and creating positive opinions about their NVs in order to build the NVs' initial reputations. First, informants explained in great detail a large variety of activities, which were directly

intended to attract stakeholders' attention, to legitimate the NV, or to explain the purpose of the NV. These activities did not involve substantive changes in the NV assets or practices but instead were intended to influence stakeholders' perceptions of the NV and to creating desirable interpretations of its more substantive activities. Thus, consistent with prior sociology and management research, I call these activities "symbolic" activities (Pfeffer, 1981; Westphal & Zajac, 1994, 1998). Second, informants identified different types of investments in developing their NVs, which they believed had an impact on the NVs' reputation. As Table 1.2 shows, these activities can be grouped into three categories – investments in product development, investments in human capital (HC), and investments in social capital (SC).

Symbolic Activities. Several informants emphasized the role of various types of communications and other activities, which were targeted to impress desired images and opinions about the NV. Such activities include: attending trade shows and conventions; presenting papers and giving speeches at professional conferences; publishing papers, books, and industry newsletters; hiring VP of public relations or a professional PR-agency very early in the life of the NV; efforts to educate customers about the new technology by expressing authoritative opinions and providing explanations about the new technology; communicating clear vision to external parties about how the NV creates unique value for customers; distributing brochures and handouts that illustrate the NV team's skills and capabilities (see Appendix 1.B for details). For example, one informant highlighted the importance of communications for attracting public attention and conveying the NV's vision to critical stakeholders:

> "You need to set a vision of where you're going to be and that vision just can't be painted in words by the senior executive. It has to be embodied in sort of like the literature of and the images of the place, and the vision itself of where you're going to be helps people get there. This is as important for the internal people as for external people. It is one of the transforming vehicles." (E4: 27)

A total of nine NVs used one or more types of symbolic activities to build reputation. Further, symbolic activities were used to draw stakeholders' attention to the less observable resources a NV has, such as human capital and relationships. As one informant observed, "You have to be very active in this, you know … if you're great and nobody knows that, you're not great" Another informant explained how he and his team used symbolic activities to broadcast their knowledge and capabilities, i.e. the human capital of their NV:

> "What we did was, for example, we built what we called 'a capabilities brochure' and we took the resumes of all of the individuals who were associated with us and we were academics ok, so we had written many, many papers and some of those papers had very interesting titles and so we built a brochure that was by subject matter, Design and Computer Communications Network, for example, and we took the papers and we wrote down the names of the papers that we'd written on that, so we built this brochure out of capabilities including us as individuals, our resumes, a description of the business, challenges, up front big world of networking, then the backword applications." (E4: 4)

Finally, informants believed that symbolic activities were most effective when they were backed up by underlying 'true' quality. Specifically, informants pointed to the fact that symbolic activities are pretty useful in attracting stakeholders' attention to the NV and making them interested in it. However, once people sign up for engaging in closer interactions with the NV, they usually want to find out more about the product that the NV is going to offer and expect to see some proof that the NV can perform the intended activities. For example, one informant noted:

> "You have to make it known. You need public relations. In other words, you need all that other stuff, right? They won't come if they don't know so, but if you

> don't have those then it doesn't really matter because you see, the thing is, public relations is good to get a quick start. It's essential to deliver an impression of what you have but it can't requite, the best quality of public relations with a lousy quality product is sort of like the advertising that goes on for a movie before the movie comes out. But when the movie comes out, all of a sudden people know if it's any good or not. You can get people into the movie the first weekend based on public relations but you can't get them to come back and you can't get the next weekend so you have to have the quality. If you don't have the quality, then the public relations is sort of a sham and people figure it out. People aren't dumb." (E4: 33)

As the above example illustrates, in the presence of substantive NV resources, such as human capital, symbolic activities can be used to make those resources more visible to stakeholders and to focus stakeholders' attention on them.

Overall, it appears that symbolic activities play two critical functions: first, symbolic activities attract attention to the NV and increase stakeholders' interest in it; second, symbolic activities help stakeholders better appreciate the critical resources that the NV possesses. These various functions of symbolic activities that I identified are generally consistent with prior research proposing that NVs can use symbolic actions and communications to establish their position in the organizational field (Aldrich & Fiol, 1994). For example, Howell and Higgins (1990) concluded that clearly stated and compelling vision of an innovation's potential is one of the fundamental components of a champion's capacity to introduce innovations successfully. Also, activities such as membership in professional organizations and lobbying have been proposed to increase young firms' legitimacy (Aldrich & Fiol, 1994).

Investments in Human Capital. Informants reported on various steps they took to increase the quality of their human capital. The most typical examples include adding

more members to the NV team, adding team members with complementary skills and competences, and hiring a team member from an established corporation that is well known to the target customers. One of the informants was rather explicit about the motivations that drove his decision to recruit two of the TMT members for his NV team soon after the founding:

> "I felt confident in my own consulting abilities, but I didn't have a blue chip management consulting resume. You know, having worked for Diamond Technology Partners, or Cambridge … So the two places I hired in, it wasn't so much I felt weak in the consulting, as I knew how I needed the right reputation." (E5: 7-8)

Overall, for 13 NVs informants described explicit investments in human capital, such as building a TMT from the very early days in the life of the NV, as well as recruiting an expert with specific skills (e.g., managerial, technological), with proven track-record (e.g., top-managerial experience), with prior start-up experience (e.g., having started previous ventures), from a prominent firm in the same industry, or having a degree from a top university (see Appendix 1.B for examples of each type).

Investments in Social Capital. All informants stressed the critical importance of relationships for their NVs, especially when the NVs were technology-based. This is not surprising, given the recent empirical findings that strategic alliances and partnerships are ubiquitous in high technology sectors (Kotha, Rindova & Rothaermel, 2001; Stuart, 2000). As one informant says:

> "This business is all about relationships. It's beyond the price, beyond everything. You know, because next time someone will come and try to bid, and if their bid is going to be close to us, the only reason the customer will stay with us is the relationship. So in a sense, we need to get over the relationship they have right now with their own suppliers. So we're banking on the fact that, you know, for some of the customers, the relationship is not that good. And for some

> of them, it's just a pure economics. We can do it for less money, and we seem to be doing things right, and it's not a headache to talk to us, so they will work with us." (E1: 7-8)

Several entrepreneurs perceived building social relationships as a much more efficient reputation building strategy than advertising. For example, one informant said:

> "So instead we went on the path of having a better network. So my whole management team spent a lot of time networking, spent a lot of time out, going to conferences, meeting people, really developing a personal connection to different people. And that helped develop the reputation more than any branding or marketing ever did." (E5: 10)

Further, some informants emphasized the effect of having a relationship with a prominent industry player (either partner or customer) for attracting other stakeholders. For example, one informant concluded:

> "It is not important, you know, how many of them [customers] sign up. What's important is what is the number of customers that you can use to go out and get ten more. Right? Because what you are trying to do is to build an influence channel." (E8: 9)

Table 1.2 lists the three groups of relationships that were most consistently identified by the informants – relationships with venture capitalists, alliances and partnerships, and relationships with key customers (see also Appendix 1.B for quotes regarding each type). In total, 17 of the NVs were described as having strong relationships of one or more of these types. Two more NVs tried but were not successful in establishing the intended relationship. Relationships with partners and VCs appear to be important for high-technology NVs but not for those operating in more traditional industries. Relationships with customers were mentioned by all founders regardless of the industry or type of product their NVs offered. Below I provide some examples of founders' opinions of why these relationships are important.

Relationships with venture capitalists. Young entrepreneurial firms often have problems financing their innovation or idea. Regarding the importance of NVs' relationships with venture capital firms, Gompers and Lerner (2001: 1) point to the fact that "Innovations fail to create value when they cannot attract the resources required to develop them". In addition to financial backing, venture capitalists provide the NV with contacts, reputation, and advice. They screen entrepreneurial projects, structure financial deals, and monitor NVs' performance – activities without which many NVs would never attract the resources they need to turn their ideas into commercial success (Gompers & Lerner, 2001). Most high-technology NVs have a number of fundamental problems that make them difficult to finance – such as uncertainty about the future, information gaps, the 'soft' nature of their assets, and the market conditions (Gompers & Lerner, 2001). Therefore, building relationships with VCs, and especially with prominent VCs might provide the NV with numerous benefits in addition to access to capital, such as legitimation and endorsement by the VCs (Hsu, 2004). As one of the informants said:

> "… and the real learning was that the VC's are significantly more than just cash. They are a network of relationships that allow you to succeed in the marketplace, much more than just the money that they provide. And sure, it would have been great to have a hundred million dollars in cash in the bank from which to run the business, but the real issue was because we didn't have those relationships, we couldn't move forward." (E6: 12)

It should be noted, however, that some informants also pointed to the downside of VC relationships, especially loss of decision making power and control over the strategy of the NV. For example, one informant explained that he deliberately avoided dependence on VCs, because he did not want to share the ownership of his NVs. Another

informant pointed to the problems stemming from dilution of ownership and conflicts of interests when too many VCs invest in a NV.

Strategic alliances and partnerships. Past research has devoted significant attention to the role of alliances and partnerships for NVs and has attributed NV reputation and performance to a large degree to its alliance partners. The number of strategic alliances has been found to influence NVs' strategy and performance (Kotha et al., 2001; Stuart, 2000). Stuart (2000) further found that quality of alliance networks (or what he calls network prestige) influence NVs' performance beyond the effect of network size. He speculates that this performance is due to a reputational effect, assuming that high performance also indicates higher reputation, even though he does not measure reputation directly. As one of the entrepreneurs observed:

> "There's usually an eco system for large software companies that exists with or without their knowing. There are a large number of companies that are offshoots of Oracle or SAP, a very large technology company. Doesn't matter which one it is. So we picked Microsoft. We knew that as they came up with products, enterprise space, there was going to be a tremendous opportunity to help ride that wave. And that's what we did." (E8: 2)

Strategic alliances can serve both as a pathway to various resources and as signals that convey social status and recognition of the NV by third parties (Stuart, 2000). In the cases discussed with the informants, the signaling function appears to be the major reasons for NVs to enter various partnerships. Further, some informants mentioned that their technology-based alliance partners provided direct recommendations to customers regarding the prospects of the technology that the NVs were developing. Informants emphasized the fact that such recommendations contributed substantially to the reputation building of their NVs.

Relationships with Key Customers. For 12 NVs, informants pointed to the development of strong relationships with one or a few key customers. Informants saw these relationships as particularly helpful for developing their NVs' reputation and they deliberately spent time building such relationships:

> "My whole management team spent a lot of time networking, spent a lot of time out, going to conferences, meeting people, really developing a personal connection with different people. And that helped develop the reputation more than any branding or marketing ever did." (E5: 10)

> "The relationship with the customer is what keeps the venture going, because all the greatest ideas in the world just die on the vine if somebody didn't buy them." (E7: 14)

In most cases, these relationships were used as evidence presented to subsequent customers to convince them of the NV's reliability and credibility. Examples of key customers include Government agencies, Microsoft, and Compaq. The informants used the early relationships with a key customer to attract their second/ next customers and more generally, to build public awareness of their NVs. In two cases the NV was originally started to serve one major customer and did not search for other customers.

New Product Development. Consistent with economics view of reputation, which suggests that good reputation is built by providing high quality goods and services, informants highlighted the importance of product/technology quality for external evaluators. For example, several informants emphasized the quality requirements that stakeholders pose to a NV: "you have to have the quality" (E4: 33), "you have to have some meat" (E8: 15). Another entrepreneur, who later on had become an investor himself, said:

> "Yes, I would [look at the NV's product or technology]. Because the most powerful determiner of profitability is the product itself, and where it fits in the value chain, and how protectable its competitive advantages are and so on. It is the most important parts." (E2: 12)

Overall, for nine of the NVs their founders explicitly discussed various new product development activities, such as refining the quality of the technology under development, acquiring a technology from another NV, merger with another NV that already has developed a complementary piece of technology, and developing a second product or an upgrade to demonstrate a pipeline of products (see Appendix 1.B for examples of each type).

Observation 3: Two Types of Reputation – Direct and Generalized

Comparisons across the NVs described by informants show that not every venture finds it relevant or necessary to invest in building reputation the same way: Specifically, my analysis suggests that NVs built two types of reputations – direct and generalized. Some NVs developed reputation locally, by relying primarily on direct customer experiences with the NV's products and services and word of mouth. For example, when I asked how exactly this happens, one informant said:

> "Oh, you knock on doors and give them free stuff. Yeah, I need to explain to you that this was a small town that had no other laundry and dry cleaning business… And then, you know, word of mouth was primarily it."

Thus, direct reputation is based on the interactions between a stakeholder and the NV and the experiences that the stakeholder has with the NV.

Many NVs tried to develop a more generalized reputation at the regional or industry level. These ventures had some general idea what stakeholder groups to target but they needed to attract stakeholders and to convince them to enter the first exchange

with them. For example, one informant described his approach to achieving such general reputation as follows:

> "And so it was the promotional campaigns that had to do with 'share your knowledge with them'. I was supposed to talk about the company, talk about the field that should give them interest, and give them insight to what's going on. And every six or eight months I would develop a really significant strategic sort of speech that I would give at a major conference and that significant speech would really weigh out where the future was going and where another future in terms of networking and telecommunications and computing would be going. And I'd be interviewed 5 times a month by the trade newspapers and magazines and there would be profiles of me and there would be profiles of the company and so this is the way of building tremendous recognition and that built the business."

Later on, this general reputation with many anonymous stakeholders began to pay off by people contacting the NV and signing contracts for different projects with it, as the following quote illustrates:

> "So one day I would get a call by a vice president of a firm … It was the biggest contract we had ever done in the commercial world. They called us because we were famous."

Thus, in some cases the accumulation of generalized reputation begins before the first direct interactions with customers or other stakeholders and serves to attract them to the NV.

The observed differences in the type of reputation that the NVs aspired to and achieved appear to be systematically related to the industry and the type of products that the NVs offered. Specifically, I observed that: First, when a NV provides relatively traditional products or services for which there is a common understanding about the quality standards, the products are easy to evaluate and available immediately after founding, the NV tends to focus primarily on providing the highest quality goods and services and to rely on word of mouth for attracting more customers. Usually such

ventures had no intention to achieve industry-wide publicity, so they did not engage in symbolic activities but rather tried to build good reputations with their local community.

Second, when output quality is unobservable, the output is yet to be developed, and/or the NVs are not sure who their customers will be, they tend to focus much more on building as broad public awareness as possible by using symbolic activities and investing in building critical resources, especially HC an SC, instead of the strong emphasis on product quality that was typical for the first group of NVs. Overall, it appears that NVs that provide relatively observable and easy to evaluate products rely on direct reputation, much like established firms improve their reputations by establishing good relationships with key stakeholder audiences (Grunig, Grunig & Dozier, 2002; Yang, 2005), whereas NVs with no initial products to offer, as well as NVs offering new and/or difficult to evaluate products tend to invest in a more generalized reputation with indefinite stakeholders.

Observation 4: **Multiple Paths to Reputation Accumulation**

Related to Observation 3, I identified two distinct paths to reputation pursued by NVs, each of which involves different emphasis on investing in some activities vs. others. Table 1.3 lists NVs by type of reputation and provides detailed information regarding the type of product that the NV offered and the reputation building activities it used. First, for more traditional, observable, or otherwise relatively easy to evaluate products, entrepreneurs tend to invest in product quality and building strong relationships with customers, relying on word of mouth to develop 'good' local reputation for their NVs; no industry-wide recognition was intended or achieved. I also observed very similar

processes for moderately complex and technology-based services with well-defined performance criteria: entrepreneurs tend to focus on providing reliable service and invest in strong customer relationships (e.g., provide follow-up support, take responsibility if a problem occurs), some of them also invested in HC. As a result, they built good direct reputation with a small set of long-term customers, but no industry-wide reputation was intended or achieved. As table 1.3 shows, seven NVs fall in this category.

Second, for new technologies, unobservable, or otherwise difficult to evaluate products, entrepreneurs tend to use extensively symbolic activities, to invest in HC, and to build alliances and partnerships with established industry players, customers, and VCs. All these activities seem to produce a certain level of industry-wide visibility that materialized in a more generalized reputation with larger stakeholder audiences. These NVs are grouped in Table 1.3 above according to the degree to which they accumulated generalized reputation. I discuss these differences in greater detail in Observation 5.

Overall, observations 3 and 4 suggest that reputation building efforts such as symbolic activities and investments in resource signals have higher pay-offs for less observable products. In contrast, for NVs producing more observable products it makes more sense to focus on product quality and direct interactions with customers and other stakeholders, and would be less efficient to invest in symbolic activities. Specifically, in my study this difference appears most consistently with regard to investments in symbolic activities. Both groups of NVs invested to some degree in human capital and social capital, although these resources might have had a stronger signaling value for NVs that produce difficult to evaluate products.

Table 1.3
Product Characteristics, Investments, Types and Levels of Reputation

Reputation	NV#	Initial Conditions	Investments			
		Product Characteristics	Product Development	Human Capital	Social Capital	Symbolic Activities
Direct	E5V2	unobservable		✯	✯	✯
	E1V2	observable	✯		✯	✯
	E2V5	observable				
	E2V4	observable		✯		
	E2V2	observable	✯			
	E2V1	observable		✯		
	E7V1	unobservable			✯	
Generalized-Hi	E4V2	unobservable	✯	✯	✯	✯
	E6V3	unobservable		✯	✯	
	E6V1	unobservable		✯	✯	✯
	E3V3	unobservable		✯		
	E8V2	unobservable	✯	✯	✯	✯
	E8V1	unobservable			✯	✯
	E4V3	unobservable	✯	✯	✯	✯
Moderate	E4V1	unobservable	✯		✯	✯
	E3V2	unobservable	✯			
	E6V2	unobservable			✯	
	E9V2	unobservable			✯	
Low	E1V1	unobservable		✯	✯	✯
	E9V3	unobservable	✯			
	E3V1	unobservable		✯		
No	E5V1	observable				
	E2V3	unobservable		✯	✯	
No need	E7V2	observable	✯		✯	
	E4V4	unobservable			✯	

Notes: 1. The two dark boxes indicate that the failure to invest in the respective resources was acknowledged as a mistake that harmed the NV's reputation.

2. There is no distinction between levels of direct reputation because informants reported they had good reputation with their customers and other stakeholders, but there was no objective way to compare these beliefs.

3. Each star indicates the presence of the respective characteristic in a focal NV.

Observation 5: Relationship between NV Activities and Reputation

After identifying the relevant activities that appear to predict NV reputation, I looked for systematic evidence that these activities indeed make a difference. Following Yin's (1994) recommendations, I considered an action type related to reputation if the presence of this type of activity was associated with higher level of reputation and the absence of the same activity – with lower level of reputation. Table 1.4 summarized the levels of each type of investments and the reputation accumulated by each NV.

Table 1.4
Investments in Signaling Resources and Symbolic Activities and Reputation Levels

		Direct reputation	Generalized high reputation	Generalized medium reputation	Generalized low reputation	No evidence of reputation
Symbolic activities	Yes	★★	★★★★★	★	★	
	No	★★★★★	★★	★★★	★★	★★
Invested in HC	Yes	★★★	★★★★★★		★★	★
	No	★★★★	★	★★★★	★	★
Invested in SC	Yes	★★★	★★★★★★	★★★	★	★
	No	★★★★	★	★	★★	★
Product completed	Yes	★★	★★★	★★	★	
	No	★★★★★	★★★★	★★	★★	★★

Note: Each star corresponds to one NV falling into a given category. The two NVs that did not need to build reputation due to only one customer (as explained above) were excluded from comparisons.

Symbolic activities. Nine NVs invested in at least one type of symbolic activities, two of which accumulated direct reputation with local stakeholders, five – high levels of generalized reputation, 1 – a moderate level of generalized reputation, and 1 – a low level of generalized reputation. The relationship between reputation and symbolic activities appears to be rather strong for the NVs that accumulated generalized reputations but not for the ones that accumulated direct reputations. This observation is not surprising, given that the NVs with direct reputations also produced more observable and easy to evaluate products (see observations 3 and 4 above). For such products, it might be less relevant to spend time and efforts in using symbols because the products 'speak' for themselves through their quality, which makes symbolic activities less critical for stakeholders to understand and evaluate the quality of such NVs and their products.

Investments in human capital. As Table 1.4 shows, 12 NVs invested in increasing various aspects of their HC: they filled gaps in skills, diversified expertise, and recruited people for reputational reasons (e.g., a VP from IBM). As the tables show, three out of the seven NVs that accumulated direct reputation invested in HC. These proportions are six out of seven for NVs with high levels of generalized reputation and three out of nine for the NVs with lower levels of generalized reputation. This evidence suggests that investments in HC tend to be related to higher levels of generalized reputation. Further, investments in HC appear to be more important for NVs that build generalized reputations and less of a factor for NVs that try to build direct reputation with local customers. This conclusion is supported by the fact that all but one NV that managed to accumulate high level of generalized reputation reported deliberate

investments in HC. The only NV with high level of generalized reputation that did not invest in HC had strong relationship with Microsoft from the beginning and relied on a venture capitalist who knew the founder personally. In this case, high levels of SC might have substituted the need to invest in HC.

Relationship-building. As Table 1.4 shows, 14 NVs were able to develop at least one type of relationship. Of them, 12 NVs made investments in building strong relationships with customers, 5 NVs built relationships with investors (bankers, VCs, angels), 5 NVs established partnerships with major industry players and one more tried but failed (see Table 1.3). Further, one NV failed to establish relationship with a prestigious VC but the informant recognized this as a mistake that eventually turned out to have negative consequences for the NV's reputation and performance. The patterns of relationship between investments in SC and NV reputation look pretty similar to those for HC. Specifically, three out of the seven NVs that accumulated direct reputations invested in SC. Six out of seven NVs that accumulated high levels of generalized reputations invested in SC, whereas of the NV that accumulated lower reputation, five invested in SC and four did not. These observations suggest that investments in SC tend to be related to higher levels of generalized reputation but do not appear to make substantive difference for building direct reputation. Therefore, developing SC might be more important for NVs that aim to achieve generalized reputation but might be less important for NVs that try to build direct reputation with local customers who can interact with the NVs directly and evaluate the quality of their products.

Product development. Of all the NVs included in the analysis, only eight reported investments in new product development activities. The distribution of product development investments across NVs does not provide sufficient evidence to conclude that product development activities were critical for NVs' reputation. For all levels of reputation, the NVs that explicitly mentioned investments in new product development are fewer than the once that did not discuss such investments. One possible explanation for this weak effect of investments in product development on NV reputation might be that informants did not see this type of investment as relevant for their NVs' reputation or they assumed that this is a necessary investment that any NV would make and did not see it as distinctly contributing to the differentiation of their NV from the other NVs in the same industry.

Observation 6: Relationship between Reputation and Performance

I used qualitative statements by entrepreneurs and specific figures they reported, such as sales growth, growth in number of employees, and returns on investment, to infer the performance of each NV. I also explicitly asked each informant how each of the NVs described performed relative to their initial ambitions and expectations and what was the ultimate outcome of the NV (e.g., still active, sold at high profit, closed down, etc). For example, statements like "the business was growing like crazy", "it was very profitable" and "I sold the business for twenty times more than what I invested in it" were interpreted as indicative of high-performance NVs. Statements like "and then we found that we had no business, no money and we'd spent it all and my partner quit" were interpreted as failure. Also, there were some NVs that did not fail but were dragging for a long period

of time and the founder exited in order to pursue more profitable opportunities – such NVs were coded as underperforming. Finally, NVs that were described as performing according to expectations but not better, or doing well but not great were coded as moderately successful.

Table 1.5 below presents a summary of the number of NVs that accumulated high, moderate, low, and no reputation and their performance levels. As the table shows, high levels of generalized reputation are related to success in six out of seven ventures, whereas moderate levels of generalized reputation are related to moderate performance in one case and underperformance or failure in three cases. Consistent with this trend, low/no reputations are related to underperformance and failure in all five cases. Direct reputation is related to success in four NVs and moderate success in three NVs.

Table 1.5
Relationship between NV Reputation and Long-Term Success

	Highly successful	Successful	Moderately successful	Under-performing	Failure
Direct reputation		☆☆☆☆	☆☆☆		
High generalized reputation	☆☆☆	☆☆☆			☆
Medium generalized reputation			☆	☆☆	☆
Low generalized reputation				☆☆	☆
No reputation				☆	☆

Two points deserve special attention with regard to the relationship between reputation and performance. First, NVs with better reputations tended to perform better than those with lower reputation at least for the first few years of their lives. Also, most of them were either sold very successfully or continue to operate, which could be interpreted as favorable long-term outcomes. This observation is consistent with the empirical evidence provided by prior research in established firm contexts about the positive effect of reputation on performance (Rindova et al., 2005; Roberts & Dowling, 2002). Second, all informants distinguished between the reputation and performance or survival of their ventures. For example, one venture with very strong reputation ultimately failed because of an unexpected market crash. This observation suggests that prior studies that have assumed that NVs' reputation is directly transferable to performance and have respectively measured change in reputation by change in performance (e.g., Stuart, 2000; Stuart et al., 1999), should be interpreted with caution. While it is a common approach to assume reputation rather than measure it, it would be more informative and correct to disentangle NVs' reputation from their performance, as several studies in established firm contexts have done (see Rindova et al., 2005 for a recent example).

Observation 7: Effects of Founders' Prior Start-up Experience

Effects of founders' experience on investments in reputation-building.

Consistent with psychology theories about learning from errors, informants explicitly mentioned lessons learned from previous ventures, especially from mistakes that prevented them from building reputation. For example, one informant recognized the

benefits of association with VCs only after he and his partners experienced the negative consequences of their failure to establish such relationships. Across all informants and their founding experiences over time, I observed consistent patterns of learning to invest in building reputation for their ventures earlier and through more diverse efforts. The more experienced the founders became – as they moved to their second, third, etc. ventures, the earlier they tended to start thinking about their ventures' reputation, and the more deliberate and diverse investments in reputation building they made. In addition, comparisons among earlier and later NVs started by the same entrepreneur show patterns of increasing concern with building reputation for the NV and doing it earlier, by investing in reputation building efforts much before there was any output produced.

In terms of types of investments that founders made, I did not observe substantial relationships with experience. As Table 1.6 below shows, four out of nine first-time NVs had used some kind of symbolic activities, the same frequency as in the second-time NVs. Similarly, regardless of experience, founders tend to focus a lot on building HC and SC for their ventures, as evident from the large number of NVs that invested in these resources.

Table 1.6
Relationship between Founders' Startup Experience and Reputation Building Activities

Start-up experience	# of NVs	Product Development	Human Capital	Social Capital	Symbolic Activities	High reputation
1st NVs	8	✯	✯✯✯✯	✯✯✯ ✯✯✯	✯✯✯✯	✯✯✯✯
2nd NVs	9	✯✯✯ ✯✯✯	✯✯✯	✯✯✯✯ ✯✯✯	✯✯✯✯	✯✯✯✯✯
3rd, 4th and 5th NVs	8	✯✯	✯✯✯ ✯✯✯	✯✯✯✯	✯	✯✯✯✯✯

Finally, there is no consistent evidence whether entrepreneurs invested more or paid stronger attention to improvements in the product or technology for their subsequent NVs. This might be explained with the fact that most founders of high-tech businesses have engineering background and they tend to over-emphasize the role of technology as the single most important activity they should perform and to overlook other important factors when they start a firm for the first time. Later on, they recognize the role of other factors, such as HC and SC and refocus their attention towards those assets, the investment in which simultaneously help their ventures become more viable and serve as signals of reputation. The moderate relationships between the founders' experience and reputation building investments that I observed suggest that some other factors (such as individual differences and personality traits) may interfere with the founders' experience in determining their decisions to invest in resource signals and symbols.

Effects of founders' experience on efficiency of investments in reputation building. Although experience did not appear to increase substantively the amount of efforts that founders devote to reputation building for their NVs, it did appear to make their efforts more productive and the reputation-building investments more efficient. For example, some of my informants explicitly pointed to the fact that they managed to keep some of the people that had worked with them in their earlier ventures. One informant reported that half of his best people moved from his first venture to the second one. Apparently, the fact that some of the best employees from a founder's previous venture would join the new one makes it much easier to develop the HC for the NV.

Similarly, more experienced founders were able to use some of the contacts they had developed before for their subsequent ventures. For example, one informant pointed to the fact that when he searched for money for his second venture, he used his relationships with two of the venture capitalists he already knew from his previous NVs and could trust them. Another informant had a few key customers that he could approach and offer them the services of the NV. They readily agreed to support the NV, because they already knew and trusted the founder and his team based on the relationship they had from the previous venture. Last but not least, experience appears to increase founders' credibility and therefore, to make their symbolic activities more efficient. For example, one informant who consistently invested heavily in symbolic activities noted that his efforts (such as participations in trade shows, fairs and industry events and presentations during major technology conferences) attracted much more media attention as well as potential customers and partners during the second and third venture than during the first one. Therefore, founders' prior startup experience appears to influence positively the efficiency of all types of reputation-building investments.

Effects of founders' experience on NV reputation and performance. Following management research on the role of experience for the performance of current tasks, I expected to observe increase in the level of reputation and performance of each subsequent venture started by the same entrepreneur. However, this is the case with only two entrepreneurs (E1 and E5) both of whom have started only two ventures. In both cases, the second NV accumulated higher reputation and so far has performed better than the first one. One entrepreneur (E7) had his first venture performing better than the

second one, one had both ventures successful and with high industry-level reputation, and the majority – five entrepreneurs (E2, E3, E4, E6, and E9) – had their second or third venture as the worst performing one, and for four of them it was also with the lowest reputation. These observations do not provide evidence to support the idea that over time entrepreneurs do a better job building reputation for their ventures, but suggest at best curvilinear (U-shape) relationship.

Also, performance of each subsequent venture does not appear to be related to the success of the previous one, because successful and failed ventures, as well as low and high reputation ventures follow each other in no particular sequence. For example, successful ventures are followed by both failed and successful ones, and failed ventures are usually followed by successful ones, except for the case where the failed venture is the last one. The observation that failed NVs are followed by more successful ones but not the other way around led me to conclude that failure might be a stronger source of learning than success. This idea is consistent with recent theories of failure-driven learning in experimental psychology (Gully, Payne, Koles & Whiteman, 2002; Ohlsson, 1996; Stiso & Payne, 2004).

Observation 8: Effects of Previous Success on the Reputation of Subsequent New Ventures

I also compared each NV's reputation to the performance and long-term outcome of the previous one started by the same founder to examine if there is a spill-over effect on the NVs' reputation. For the NVs with high direct or generalized reputations, I found that eight were preceded by failed or underperforming ventures, while only four had a

successful predecessor. Further, four successful and moderately successful NVs were followed by low-reputation ones. These observations suggest that there is no simple and straightforward relationship between the NVs started by the same founder. It might be the case that founders transfer certain knowledge to their next venture but this knowledge depends on how much the founders have learned from their prior startup experiences.

Conclusions from the Key Observations

Together, the observations discussed above suggest two distinct reputation building processes that lead to two different types of reputation for NVs – direct vs. generalized. Direct reputation is built primarily by direct interactions with a limited set of stakeholders and relying on word of mouth among satisfied customers and other parties. Generalized reputation is built by using extensively symbolic activities, to invest in HC, and to build alliances and partnerships with established industry players, customers, and VCs. Further, which of these two types of reputation a NV would develop, appears to depend on the type of product that the NV offers and especially the ease of evaluation of the product quality by customers and other stakeholders. For more traditional, observable, or otherwise relatively easy to evaluate products, entrepreneurs tend to invest in product quality and building strong relationships with customers. For more difficult to evaluate products, such as new technologies or other unobservable products, entrepreneurs tend to invest in building more generalized reputation with a large set of relatively distant stakeholders.

DISCUSSION

This study offers several important insights about the critical factors in the process of reputation building by NVs. First, I found that NVs differed systematically in the type of reputation they attempted to and were able to build. Specifically, NVs offering more observable and easy to evaluate products and services, the quality of which can be judged directly by customers, tended to focus on building direct reputation with a small set of customers through direct interactions with them. In contrast, NVs offering less observable or more novel products and services tended to focus on attracting large-scale public attention to the NV and its offerings and to build a more generalized reputation with distant stakeholders. The fact that some NVs focused on building direct reputations with customers while others immediately started investing in a generalized reputation appears somewhat surprising given that recent research have found both dimensions of reputation – perceived quality and prominence – to be present in established organizations (Rindova et al., 2005). This observation is theoretically interesting and important because it suggests that there might be differences between the content of reputations of young firms and established organizations.

The observation that some NVs relied on direct customer experience while others focused primarily on more distant (signaling) efforts is somewhat consistent with the distinction that some scholars have made between primary (or experiential) reputation and secondary (or "reputational") reputation (Bromley, 1993, 2000; Grunig & Hung, 2002). According to Bromley (2000) individuals form first-order impressions with an organization through direct experiences with its product, services, premises, or personnel. Once these individual opinions begin to circulate as people interact with each other and

learn about others' experiences, more homogenous perceptions form, and they represent the secondary reputation. The first-order perceptions may be more individualized and divergent, whereas the second-order perceptions are more homogenous and uniform across stakeholders because they form at the collective level (Bromley, 2000; Grunig & Hung, 2002).

Interestingly, the NVs I studied focused primarily on influencing one of these two types of stakeholder perceptions, by either relying on direct experience of stakeholder with their products and services or on various activities that would influence broader stakeholder audiences that do not necessarily have direct access to the NV. Moreover, these important choices appear to be strongly influenced by the observability of the outputs the NV offers and the ease of evaluation of their quality. For relatively easy to evaluate outputs, NVs focused on building direct (or experiential) reputations, for more difficult to 'see and touch' outputs, especially new technologies, NVs focused on developing generalized (or "reputational") reputation. This distinction between the two types of reputational experiences early on is important because it suggests that NVs competing in different product markets tend to focus on reducing different dimension of the uncertainty they and their stakeholders face. This observation also suggests that NV's reputations follow different (potentially more sequential) dynamics than the reputations of large established corporations.

Second, the variation in output observability also appears to impact how NVs approach the issue of reputation-building, and especially how much they invest in reputation-building activities early in their lives and what types of investment they make. For observable outputs, NVs relied extensively on the direct customer experience with

the product or service and focused on providing the best quality possible. For such NVs symbolic activities and investments in HC and SC did not appear to have a strong impact on the NV's reputation. In contrast, NVs that offered less observable outputs tried to invest (more or less successfully) in at least one type of reputation-building activities – i.e., symbolic activities, HC, or SC. Moreover, the NVs that invested in all three types of reputation-building activities were able to achieve the highest level of generalized reputations. This observation is consistent with the economics view of reputation, according to which reputations are more valuable under higher uncertainty (Shapiro, 1983). My observation that for less observable products the founders engaged much more in symbolic activities and investments in HC and SC, whereas for more observable products they relied primarily on the product quality is also consistent with signaling research which suggests that signals are used to infer unobservable quality or potential. If the product quality is directly observable, resources such as HC and SC would have a weaker effect on stakeholders' perceptions, although they may still be necessary for the NV's operational efficiency. It is notable, thought, that even founders with no prior entrepreneurial experience were able to recognize the critical importance of reputation building for their NVs and to use symbolic activities very early on. Further, the differences in the effect of reputation-building activities suggest that NVs can target strategically their investments in reputation depending on the types of outputs they intend to offer and the industry in which they started.

Third, I found three types of investments to be used for reputation building purposes – using symbolic activities, investing in HC, and building SC. It appears logical that NVs used symbolic activities to influence public perceptions about themselves, but it

is interesting that they also thought of the signaling effect of recruiting key people or establishing relationships. While past research has identified these activities as critical inputs in the organizational processes of a NV, this study provides additional insights about the dual role of these resources. For example, a TMT member who has worked for Microsoft may contribute both useful skills and the prestige of affiliation to a new software development venture. Although it is possible that many NVs would invest in HC and SC as a part of their organizational strategy without considering the reputation effects of these resources, I observed that some founders invested in obtaining a resource they not only needed for operational purposes but also to increase their venture's reputation. These founders focused on the 'prestige' components of HC and SC as well as on the substantive benefits of obtaining such resources. Therefore, my findings suggest that NVs can use their limited resources most wisely by investing in a resource that can serve both substantive and signaling purposes.

Fourth, the relationships between the three types of reputation building investments appear to be complex. On one hand, symbolic activities combined with HC and SC tend to be associated with the highest levels of generalized reputation. On the other hand, some NVs managed to successfully build reputation by investing in either HC or SC in addition to symbolic activities. Therefore, it might be the case that HC and SC are substitutable at least to some degree. While it is best to have them both, resource-constrained NVs may be better off focusing on either of them while also spending efforts in symbolic activities rather than focusing on both and not using any symbolic activities. My conclusions that HC and SC may contribute to early reputation of NVs inform prior research on the role of intangible resources that has identified reputation, human capital,

and social capital as the most important resources for organizations (Hall, 1992; McMillan & Joshi, 1998). Specifically, my insights contribute to this body of research by articulating some potential interdependencies between different types of intangible resources, as well as their effect on each other. Future research should explore in greater detail these complex relationships.

Finally, my observations suggest that the success of preceding ventures does not guarantee any reputational benefits for the subsequent ones. Rather, each NV needs to develop its own reputation through investments in symbolic activities and critical resources. Although founders appear to transfer some specialized knowledge to their next venture, this knowledge may depend on how much the founders have learned from their prior experience and not on the overall success or failure of the previous start-up. However, in the context of this study I have little evidence about some potentially relevant factors that may influence how much entrepreneurs learn from each NV, such as individual learning orientation, intellectual ability, and openness to experimentation. Therefore, one recommendation for future research is to explore in greater detail what factors determine how much founders learn from a given start-up experience and to what extent this knowledge helps to increase the reputation and performance of their subsequent ventures.

ESSAY 2

RESOURCE SIGNALS, SYMBOLIC ACTIVITIES AND UNCERTAINTY REDUCTION IN THE CASE OF NEW VENTURES

ABSTRACT

This essay presents a theory of reputation building by new ventures. Drawing on signaling theory in economics and symbolic research in management, I develop a conceptual model that brings together NV resources and symbolic activities, which jointly impact its reputation. I propose that key resources, such as human capital and social capital, play the role of market signals, which indicate a NV's potential to provide high-quality outputs. Investments in such resources can increase the reputation of the NV, because reputation reflects stakeholders' perceptions of the NV's potential to provide quality or otherwise meet their needs and expectations. Further, use of symbolic activities on part of the NV can increase its reputation in two ways: (1) directly – by drawing stakeholders' attention to the NV and by providing ready-made interpretations about the NV and its activities, and (2) indirectly – by making more visible a NV's resources and by explaining their meaning and providing interpretive frameworks for stakeholders to understand their purpose as strategic investments, thus enhancing their effect on reputation. I also explain the effect of founders' prior experience on the extent of investment in key resources and symbolic activities. Finally, I explore the moderating effect of technology and market uncertainty on the patterns of investments in key resources and symbolic activities and on the effect of those investments on the NV's reputation.

INTRODUCTION

Reputations are cognitive representations (or schemas) held collectively by stakeholders and reflecting their perceptions of organizations (Fombrun, 1996). Such perceptions are important for the organization, because they drive stakeholders' expectations for future returns on investments in exchange relationships with them and encourage them to make reputation-consistent decisions regarding the organization (Rindova & Fombrun, 1999; Wartick, 1992). Management scholars have established the importance of reputation for firm performance but the mechanisms through which reputation can be accumulated are still to be explored. While some researchers have proposed that reputation can be built through continuous investments over time, there is little evidence of the nature of firm activities that might serve as strategic investments in reputation building. Moreover, prior research has focused primarily on studying reputation in large established firms that have both their prior performance, which can guide public perceptions and opinions (Fombrun & Shanley, 1990), and substantial resources to make costly investments in product quality and advertising, which serve to increase their reputation (Milgrom & Roberts, 1986; Shapiro, 1983). The tendency to study reputation among firms that already have accumulated some reputation does not allow for examining how this critical intangible asset comes into being and what factors account for the variance in the levels of reputation among young firms in an industry. This gap in the literature can be addressed by studying the process of reputation building in the context of new ventures (NVs), because such a context allows for examining the processes and different paths that may evolve from day one in the life of firms.

Under the high uncertainty surrounding the start-up process, a NV's reputation can guide stakeholders who allocate their resources by buying and selling, investment and employment decisions (Rindova & Petkova, 2005). NVs with better reputation are likely to be able to leverage higher levels of resources and support from key stakeholders. For example, favorable reputation can help stakeholders make resource allocation decisions that favor the NV, such as investing in it (Shane & Cable, 2002), or pursuing employment with it (Baron, 2004; Lievens & Highhouse, 2003; Williamson, 2000; Williamson, Cable & Aldrich, 2002). Therefore, building reputation early on can increase a NV's chances for survival and success by improving its ability to attract key stakeholders and to establish exchange relationships with them.

However, NVs cannot benefit from reputations before stakeholders develop them. Past research suggests that reputations develop as stakeholders observe and evaluate the actions and performance of firms and form summary impressions about the underlying strategic characteristics of a firm (Rindova & Fombrun, 1999; Weigelt & Camerer, 1988). Yet most NVs lack the history and performance records to guide stakeholders' evaluations and opinions about them. Often the potential stakeholders are not even aware of the existence and activities of a NV, which makes it impossible for them to form impressions or opinions. Moreover, because NVs often create value in novel ways by bringing to the market previously unavailable products or services, they face the additional challenge to prove that their activities fit with the norms and rules of the industry (Aldrich & Fiol, 1994; Rao, 1994). Overall, extant reputation research has overlooked some critical issues such as the factors that lead some NV to build reputation early in their lives and the ways to overcome resource constraints. The need to develop

reputation rapidly in the absence of specialized resources, consistent performance histories, and interaction patterns, presents a number of unique challenges not encountered by established firms in an industry (Aldrich, 2000), which makes NV reputations a special case that deserves foremost attention by both researchers and entrepreneurs.

The purpose of this essay is to develop a theoretical framework for examining the process of reputation building by NVs. I address the following research questions: What factors explain differences in reputation accumulation by NVs? and How do initial conditions shape investments in future reputation building by the NV? To answer these questions, I bring together insights from the signaling theory in economics and symbolic research in management. Signaling theory has related costly investments by a focal firm to formation of impressions about it in the market under conditions of uncertainty and information asymmetry between the firm and other market participants. Since the start-up process is inherently uncertain and stakeholders often lack sufficient information that would allow them to evaluate a NV, they are likely to rely on observable characteristics (attributes and activities) of the NV to infer unobservable characteristics such as quality and potential. Key resources, such as human capital and social capital, play the role of market signals (Rindova, Williamson, Petkova & Sever, 2005), which indicate a NV's potential to provide high-quality outputs. Investments in such resources can increase the reputation of the NV, because reputation reflects stakeholders' perceptions of the NV's potential to provide quality or otherwise meet their needs and expectations.

Symbolic research in management has highlighted the role of symbols for firms' ability to influence stakeholders' perceptions and opinions about them. Several scholars

have theorized that the use of symbolic language and behavior might be particularly beneficial for legitimating young firms and new markets (Aldrich & Fiol, 1994; Lounsbury & Glynn, 2001; Rindova, 1999; Rindova & Petkova, 2005). I extend this line of reasoning to propose that symbolic activities are a major tool for NVs to build their reputations, especially when they operate in highly uncertain or new markets. The use of symbolic activities on part of the NV can increase its reputation in two ways: (1) by increasing stakeholders' awareness of the NV and making it more visible in the organizational field, and (2) by drawing stakeholders' attention to the NV's resources, explaining their meaning and providing interpretive frameworks for stakeholders to understand their purpose as strategic investments, thus enhancing their effect on reputation.

The core contribution of this essay is that it brings the signaling and symbolic perspectives together to help better understand the process of reputation accumulation by NVs. Specifically, I propose that resource signals and symbolic activities have a complementary role in the process of reputation accumulation by NVs and that they influence both independently and jointly this critical asset. I then explain the effect of founders' prior experience on the extent of investment in key resources and symbolic activities. Finally, I explore the moderating effects of technology and market uncertainty on the patterns of investments in key resources and symbolic activities and on the effect of those investments on the NV's reputation

The essay proceeds as follows: I begin with providing a theoretical background and definitions of the key concepts. The next section explains the proposed relationships between symbolic activities, key resources, and the NV's reputation, followed by a

section on the effect of founders' experience on the resources and symbolic activities, and the role of uncertainty in the reputation building process. I conclude with discussion and implications for future research.

THEORETICAL BACKGROUND AND CONSTRUCT DEFINITIONS

Reputation

The concept of reputation has attracted considerable attention by scholars in management, economics, sociology, and marketing. Researchers from different traditions consistently use the term *reputation* to refer to perceptions of the firm by various stakeholders (Fombrun, 1996; Grunig et al., 2002; Rindova & Fombrun, 1999). For example, Fombrun and Rindova (1996) define reputation as "a collective representation of a firm's past actions and results that describes the firm's ability to deliver outcomes to multiple stakeholders. It gauges a firm's relative standing both internally with employees and externally with its stakeholders, in both its competitive and institutional environments" (Fombrun & Rindova, 1996: 10).

A more careful examination of past research shows that there are two schools of thought regarding the content of stakeholder perceptions, or what organizational reputation consists of, and how it is formed. Some scholars draw primarily on the game-theory/ economics rationale to define reputation as more specific assessments of the firm based on certain relevant attributes, while others – taking primarily a socio-institutional perspective – tend to view reputation as a more general stakeholder perception that reflects the collective knowledge and esteem accumulated about the firm in its

organizational field (Rindova et al., 2005). Appendix 2.A provides a summary of the key studies of reputation in management, economics, sociology, and marketing and their belonging to one or the other perspective.

Scholars taking a game-theory perspective define reputation as "a set of attributes ascribed to a firm inferred from the firm's past actions" (Weigelt & Camerer, 1988: 443) or "an observer's impressions of the actor's disposition to behave in a certain manner" (Clark & Montgomery, 1998: 65). These impressions are based on consistent performance over time, such as producing high-quality products (Allen, 1984; Shapiro, 1982, 1983) or following certain patterns of competitive actions (Kreps & Wilson, 1982; Milgrom & Roberts, 1982). Overall, researchers from this school of thought focus on the evaluative component of reputation and assume a tight coupling between quality and reputation.

Scholars taking more socio-cognitive and institutional perspectives view reputation as "the level of awareness that the firm has been able to develop for itself" (Shamsie, 2003: 199), "the evaluation of a firm by its stakeholders in terms of their affect, esteem, and knowledge" (Deephouse, 2000: 1093) and "publics' cumulative judgment of firms over time" (Fombrun & Shanley, 1990: 235). According to this view, the relevant publics (or stakeholders) form more general type of impressions about the firm, such as awareness, fame, and esteem, which are an outcome of social interaction processes rather than specific evaluations on given performance dimensions. The socio-institutional perspective on reputation allows for loose coupling between quality and reputation and focuses on more distant signals of quality, such as third-party affiliation and endorsement (Benjamin & Podolny, 1999; Stuart, 2000). Scholars from both

perspectives emphasize the comparative nature of reputation – reputation is an evaluation or global esteem of the firm relative to its rivals. For example, Fombrun (1996: 72) defines reputation as "a perceptual representation of a company's past actions and future prospects that describe the firm's overall appeal to all its key constituents when compared to rivals."

Recent research has integrated these two perspectives by suggesting that reputation comprises two distinct components – prominence and evaluations of quality (Rindova & Petkova, 2005; Rindova et al., 2005). "Prominence refers to the extent to which stakeholders are aware of the existence of the NV, or in cognitive terms, the degree to which a NV is available in their memory, so that they can readily recall information about it" (Rindova & Petkova, 2005: 108). Prominence is based on differences in relative ease of retrieval of knowledge about an organization. It depends on how frequently one activates the knowledge about the organization in one's memory. Frequency of activation of stored information, in turn, depends on frequency of exposure to stimuli from the domain to which the knowledge pertains (Krippendorff, 1975). Organizations about which stakeholders encounter information more frequently are likely to be more focal in attention and recognized more readily as information about them is recalled more easily. Such organizations are more likely to be considered and selected as exchange partners, and therefore benefit from stakeholders' awareness of them. Prominence is a key dimension of a NV's reputation not only because it is impossible for stakeholders to exchange resources with the NV without being aware of its existence, but also because the likelihood of them considering a NV as a potential exchange partner increases with the prominence of the NV in their minds (Rindova & Petkova, 2005).

Evaluations of quality refer to the process of impression formation through which stakeholders estimate the quality of the entrepreneurial opportunity (vision) and the potential of the NV to meet their expectations (Rindova & Petkova, 2005). Positive evaluations of an organization can emerge as the organization begins to demonstrates high performance on relevant criteria, such as product quality (Shapiro, 1983), financial results (Fombrun & Shanley, 1990), and reliability in relationships with key stakeholders (Grunig et al., 2002). The better a firm performs on these criteria, the more positive the evaluative component of its reputation is. Therefore, positive reputations of NVs are likely to be based on specific evaluations of their performance along the dimensions that stakeholders find relevant. Specifically, stakeholders are likely to evaluate the products and services of the NV relative to existing standards of performance in the industry (Rindova & Fombrun, 1999) or relative to the offerings of competing firms (Rao, 1994). Such evaluations result in judgments of the competitive standing of a NV relative to its peers and therefore contribute the unique content of reputation (Rindova & Petkova, 2005). Overall, past research supports the idea that reputation incorporates both an evaluative component, based on past quality or performance, and a more general global impression of the firm, unrelated to specific attributes (Rindova et al., 2005).[4]

The resource based view in management suggests that reputation accumulates through complex and causally ambiguous processes, which makes it a valuable intangible resource (Barney, 1991; Dierickx & Cool, 1989; Hall, 1992). Empirical studies show that reputation of large established firms is related to their past performance (Fombrun & Shanley, 1990; Roberts & Dowling, 2002), strategic choices (Hansen & Haas, 2001), and

[4] Roberts and Dowling (2002) found that this 'left-over' part, which they explain with firms' efforts to improve their reputations, accounts for 85 percent of the variance in reputations of the Fortune 1000 firms.

affiliation (Benjamin & Podolny, 1999; Rindova et al., 2005). Finally, signaling theory argues that firm reputation is influenced by the costly investments in market signals, such as pricing and advertising (Kihlstrom & Riordan, 1984; Milgrom & Roberts, 1986; Shapiro, 1982, 1983; Wolinsky, 1983) and competitive behaviors (Heil & Robertson, 1991; Milgrom & Roberts, 1982). Overall, prior studies converge on the role of signals – that is, firm characteristics and attributes that reduce the uncertainty faced by stakeholders – for reputation accumulation.

Human Capital

The concept of *human capital* was originally introduced by the economist Theodore W. Schultz (1961) to account for the investments intended to improve the quality of human effort and to enhance its productivity. He identifies five major categories of investments in human capital, including: "(1) health facilities and services, broadly conceived to include all expenditures that affect the life expectancy, strength and stamina, and the vigor and vitality of people; (2) on the job training, including old-style apprenticeship organized by firms; (3) formally organized education at the elementary, secondary, and higher level; (4) study programs for adults that are not organized by firms, including extension programs notably in agriculture; (5) migration of individuals and families to adjust to changing job opportunities" Schultz (1961: 8). More recent work in sociology provides very similar definition of human capital as "the value added to a laborer when the laborer acquires knowledge, skills, and other assets useful to the employer or firm in the production and exchange processes. … Typically, human capital is operationalized and measured by education, training, and experience" (Lin, 2001: 9).

Human capital has been a major focus of management and organizational scholars and has been consistently found to predict organizational strategy and performance outcomes (Castanias & Helfat, 1991; D'Aveni, 1990; Hambrick & Mason, 1984; Wright, Smart & McMahan, 1995). Management scholars tend to conceptualize and study human capital at the organizational rather than individual level, defining it accordingly as "the individual capabilities, knowledge, skills, and experience of the company's employees and managers" (Dess & Lumpkin, 2003: 118).[5] Scholars taking a resource-based perspective suggest that management is a key rent-generating resource of the firm (Castanias & Helfat, 1991; Penrose, 1959). Managerial background and especially industry-related experience are studied as predictors of organizational outcomes such as strategic choices and firm performance (Castanias & Helfat, 1991; Gupta & Govindarajan, 1984; Hambrick & Mason, 1984).

Researchers have further elaborated on the specific content of human capital and have found that the fit between a firm's strategy and the capabilities of its human resources increase performance (Wright et al., 1995). In addition to the amount (or level) of human capital possessed by an organization, another important dimension of human capital is its quality, usually operationalized as managerial prestige. Managerial prestige has been found to help top management teams leverage institutional support for their organizations (D'Aveni, 1990). Finally, diversity of human capital has also been found to predict organizational performance (Kilduff, Angelmar & Mehra, 2000). Based on this research, the major characteristics of human capital can be summarized along three dimensions: amount (asset mass or quantity), prestige (asset quality), and diversity.

[5] An exception of this trend are the studies of CEO or management succession, in which individual skills are the focus of analysis (see Bailey & Helfat, 2003; Harris & Helfat, 1997)

Recent research has devoted special attention to the role of human capital for small and new businesses (Rao & Drazin, 2002; Williamson, Cable & Aldrich, 2002). Researchers suggest that in order to recruit qualified personnel young and small firms have to overcome numerous challenges, stemming from the resource constraints and lack of legitimacy and awareness about them, which undermine their credibility with potential employees as compared to large and older competitors (Aldrich, 2000; Rao & Drazin, 2002; Williamson et al., 2002). The more small firms succeed in their efforts to appear legitimate, the more attractive and desirable recruiters they become and the better their chances in developing high-quality human capital (Williamson, 2000; Williamson et al, 2002). Further, resource-poor young firms can overcome resource constraints by recruiting from older and more established competitors. For example, Rao and Drazin (2002) found that young companies can increase their product innovation by recruiting highly qualified personnel form older and high-performance competitors.

Social Capital

Sociology scholars have defined social capital as "the resources embedded in social networks accessed and used by actors for actions" (Lin, 2001: 25) and more specifically "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition" (Bourdieu, 1985: 248). Management scholars provide a more specific definition of social capital as "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (Nahapiet & Ghoshal, 1998: 243).

Social capital can enhance the outcomes of purposful actions by facilitating the flow of information, exerting influence on critical actors/ decision makers, serving as social credentials, and reinforcing identity and recognition (Lin, 2001). It can provide access to economic resources, expert individuals, or affiliations with institutions that confer valued credentials (Bourdieu, 1985, Portes, 1998). Further, Dyer and Singh (1998) argue that from a relational perspective idiosyncratic interfirm linkages may be a source of relational rents and competitive advantage. They suggest that: "…the (dis)advantages of an individual firm are often linked to the (dis)advantages of the network of relationships in which the firm is embedded" (Dyer & Singh, 1998: 660). Social capital facilitates timely access to information, increases influence and power, and reduces the need for monitoring and control by fostering high level of trust (Adler & Kwon, 2002). Firms benefit from the fine-grained information sharing, joint problem solving and lower exchange costs within their social networks (Larson, 1992; Uzzi, 1996, 1997). Further, social capital facilitates the creation of new intellectual capital and thus increases innovation outputs of organizations (Nahaphiet & Ghoshal, 1998). SC is of highest value under conditions of high uncertainty and ambiguity, e.g. when there is no frame of reference and the activities of the individual or firm are of low legitimacy (Burt, 1997). In his study of benefits from bridging structural holes, Burt (1997) found that SC is especially valuable to managers with few peers, because they do not have the guiding frame of reference for behavior provided by numerous competitors, and the work they do does not have the legitimacy provided by numerous people doing the same kind of work.

Network characteristics that emerge as major dimensions of social capital are network size, prestige, and diversity. According to Burt (1999), network size is an

indicator of the volume of information benefits of social capital, while network diversity means that the quality of the information is higher. Similarly, Stuart (2000) distinguishes between the number of strategic alliance partners of a new firm (size of alliance network) and the quality (prestige) of the network, and finds effects of network quality after controlling for size. Sutton and Hargadon (1996) and Hargadon and Sutton (1997) provide an interesting illustration of the role of network diversity. The product design firm they describe, IDEO, relies extensively on the employees' relationships with clients in diverse industries. They report that during the brainstorming sessions, technological solutions from one industry were taken to solve client issues in other industries where the solutions were rare or unknown (Hargadon & Sutton, 1997). Thus, firms can generate profits by bridging a large number of actors in diverse industries, or filling the so called 'structural holes' (Burt, 1997).

Network quality (or prestige) has also been examined as one of the major predictors of performance, especially in the high-technology industry (Powell, 1996; Stuart, 2000). NVs' affiliations with prestigious actors have been consistently found to predict various outcomes, such as survival, growth, innovation and financial performance (Gulati & Higgins, 2003; Larson, 1992; Shane & Stuart, 2002). For example, IPO success has been consistently predicted by NVs' relationships with prominent actors, such as strategic alliance partners (Higgins & Gulati, 2003; Stuart, Hoang & Hybels, 1999) or venture capital firms and investment banks (Brav & Gompers, 1994; Gompers, 1996; Gulati & Higgins, 2003; Lerner, 1994). Powell (1996) found that biotechnology firms with more and higher quality partnerships receive higher market valuations from the analysts. Similarly, Podolny and Stuart (1995) found that the status of actors associated

with an innovation increases the likelihood of the innovation to be seen by others as important and thus rapidly developed, controlling for innovation quality.

Signaling Theory

Signaling theory has been introduced by the economist Mark Spence 30 years ago. According to Spence (1974: 1), "Market signals are activities or attributes of individuals in a market which, by design or accident, alter the beliefs of, or convey information to, other individuals in the market". Further, signals are observable alterable characteristics, which are costly to acquire or change (Ippolito, 1990; Spence, 1973, 1974).[6] Although originally developed in relationship to human capital, signaling theory has found broad application to various organizational contexts. Prior research has established the usefulness of market signals in various uncertainty-related contexts, including hiring and promotion decisions (Spence, 1973, 1974), faculty pay (Gomez-Mejia & Balkin, 1992), buyer-seller exchange relationships (Klein & Leffler, 1981; Milgrom & Roberts, 1986), new market entry (Milgrom & Roberts, 1982), insurance markets (Rothschild & Stiglitz, 1976), and initial public offering (Certo, Daily & Dalton, 2001).

People rely on signals as a source of information when evaluating unobservable product quality or other characteristics that cannot be judged a-priori (Nelson, 1974). Signaling is particularly effective in markets for relatively new products or services, as well as in contexts where the decision makers are relatively uninformed about the entity concerned (Kirmani & Rao, 2000; Riley, 2001). The more information asymmetry and

[6] It should be noted that the individual or entity investing in costly signals need not necessarily think of itself as signaling (Spence, 1974).

uncertainty characterize the interaction between a firm and its stakeholders, the more likely the latter to search for information (Shrum & Withnow, 1988). For example, if a firm has developed a new product or service whose quality is difficult to evaluate by potential buyers, the firm can, through costly actions such as pricing, advertising, branding, or issuing warranties, signal to buyers that it is selling a high-quality product (Riley, 2001).

Management research has been concerned with signaling in studying firm reputation with stakeholders (Fombrun & Shanley, 1990; Rindova et al., 2005) and competitors (Clark & Montgomery, 1998; Heil & Robertson, 1991; Weigelt & Camerer, 1988). In their seminal study of reputation of large established firm, Fombrun and Shanley (1990) found firms' accounting indices of performance, advertising expenditures, institutional ownership, risk, and firm size to predict their Fortune 500 rank. They reasoned that these characteristics signal to stakeholders firm strategy, performance and conformity to industry norms, thus reducing the information asymmetry and uncertainty regarding the firms. In a more recent study, Rindova et al. (2005) found that process-related signals, such as inputs and productive assets influence stakeholders' perceptions regarding output quality, whereas more general signals, such as institutional affiliation and third-part certification influence more general perceptions about the organizational standing in its filed.[7]

Overall, both signaling research in economics and its applications in management trying to explain the reputation of large established organizations suggest that signaling

[7] While some management scholars have defined signals as competitive actions and/or pre-announcements of actions (Heil & Robertson, 1991; Porter, 1980), I consider the traditional economics approach more suitable given that I am looking at a broader set of NV stakeholders not only competitors. Thus, quality related signals studied by economics research appear more appropriate and are consistent with the RBV in strategy.

might be a valuable mechanism for reputation accumulation by NVs, given that information asymmetries between NVs and their stakeholders are even more significant than those between established firms and their stakeholders.

Organizational Symbols and Symbolic Communications

Corporate communications, defined as "explicit verbal or visual statements created with the purpose to discuss, represent, and otherwise explain various aspects of a firm" (Rindova, 1999: 85), have emerged as one of the major tools used by organizations in their interactions with stakeholders and especially in their efforts to influence the process of impression formations (Brown, 1994; Jones, 1996; Pfeffer, 1981). Most management and organization scholars have related the use of symbolic activities on part of the organizations or their members to stakeholders' perceptions of organizational legitimacy (Aldrich & Fiol, 1994; Brown, 1994; Elsbach, 1994; Pfeffer, 1981).[8]

Management scholars also tend to distinguish between symbols and substance in organizational actions and communications (Westphal & Zajac, 1994, 1998; Zajac & Westphal, 1995), which is consistent with the institutional idea of decoupling (Meyer & Rowen, 1977). Consistent with this idea, impression management research has found that firms use causal attributions in their verbal accounts to manage stakeholders' impressions of the organizations (Elsbach, 1994; Salancik & Meindl, 1984). For example, Salancik and Meindl (1984: 242) observe that managers take responsibility even for bad outcomes

[8] For example, Elsbach (1994) examined how spokespersons use verbal accounts to manage perceptions of their organizations following controversial events and found that references to institutional reasons were more effective than technological arguments, especially when the audiences lacked the competence to evaluate the validity of technological explanations. Similarly, Westphal and Zajac (1998) found that symbolic communications not only explain the content of certain organizational actions but also have significant positive effect on stock-market valuations regardless of whether the firms actually implemented the announced organizational changes.

in order to induce in stakeholders illusions that they exert control over the environment: "Managements lacking real control, to remain viable, need to foster beliefs that they know what they are doing and can fulfill the organization's promises. We can expect their attributions to reflect images of control". This evidence suggests that the symbolic aspect of organizational activities plays a substantial role in shaping stakeholders' perceptions and opinions about organizations and in manipulating their understanding of complex and ambiguous organizational events (Brown, 1994).

Rindova and Fombrun (1999: 697) use the term "strategic projections" defined as "controlled images projected in social interaction through communication to secure favorable evaluations by others" to explain the role of symbols in firm interactions with stakeholders. They appear in a wide range of forms, including advertising, logo development, financial reports, and press releases (Rindova & Fombrun, 1999; Salancik & Meindl, 1984; van Riel, 1995). The goal of symbolic activities is to contribute to the formation of firm-related schemas, such as reputation (Fombrun, 1996; Grunig et al., 2002; Rindova & Fombrun, 1999). According to Rindova & Fombrun (1999: 697), "through strategic projections firms: (1) provide more information which constituents may use in making their decisions; (2) offer to constituents ready-made interpretations of their investments; and (3) impress desirable symbols in constituents' minds."

Management scholars have also theorized that symbolic activities are useful legitimation tools for new organizations, with which stakeholders are not familiar (Aldrich & Fiol, 1994; Lounsbury & Glynn, 2001; Rindova & Fombrun, 1999). For example, Aldrich and Fiol (1994) propose that a NV can develop a knowledge base via symbolic language and behaviors, and it can build trust with stakeholders by maintaining

internally consistent stories. Similarly, Lounsbury & Glynn (2000) propose that entrepreneurial stories, which reflect a NV's resource stocks and institutional capital, can shape and legitimate a NV by emphasizing its distinctiveness and unique characteristics, and by stressing its normativeness and symbolic congruence with similar organizational forms. In general, new organizations acquire standing within the organizational field by using environmentally preferred symbols and actions conforming to institutionalized rules (Rao, 1994).

Communications research provides further insights into the different types of symbolic activities that firms use to influence their reputations with various stakeholder audiences. Symbolic activities differ along three dimensions: they can be (1) symmetrical or asymmetrical, depending on the extent to which organizations rely on advocacy and collaboration with stakeholders, (2) one-way or two-way, depending on whether the communications with stakeholders take the form of broadcasting of information vs. a dialogue, and (3) mediated or direct (interpersonal), depending on the use of a communication intermediary (Grunig, 1984; Grunig & Grunig, 1992; Grunig et al., 2002). Communications scholars have advocated the use of two-way symmetrical communications as most effective for established organizations (Grunig & Grunig, 1992). Two-way interactions with stakeholders have been found to be particularly useful in highly uncertain and turbulent environments, because such environments force organizations to seek information from relevant stakeholders (Grunig, 1984; Grunig & Repper, 1992; Grunig et al., 2002). These ideas might be particularly relevant for NVs, because they often start in new industry and have to build their initial reputation with

stakeholders under conditions of high uncertainty and environmental turbulence (Aldrich, 2000).

Comparison between Symbols and Signals

Symbols are similar to signals in several ways. First, both attract stakeholders' attention to the firm in general (Nelson, 1974; Rindova & Petkova, 2005) or to specific firm characteristics and attributes (Milgrom & Roberts, 1986; Rindova et al., 2005; Shapiro, 1983). Second, both signals and symbols convey information to stakeholders and thus can affect their perceptions and opinions about the firm (Heil & Robertson, 1991). Signals may influence perceptions by design or accident, because people seek to reduce uncertainty about the NV and therefore use and interpret the available cues to infer the NV's true characteristics. Symbolic activities are explicitly intended to influence perceptions, and their information content can be controlled deliberately by the NV in order to project the desired images (Aldrich & Fiol, 1994).

However, organizational symbols differ from signals in several ways. First, signals involve costly commitments and investments that are difficult to reverse (Ippolito, 1990; Shapiro, 1983; Spence, 1974), whereas symbols do not necessarily involve costs. Second, signals are directly related to a firm's characteristics and attributes – they are by definition observable attributes that indicate unobservable qualities, whereas symbols could be loosely related to specific firm attributes (Pfeffer, 1981; Westphal & Zajac, 1994; Zajac & Westphal, 1995). Third, they use different mechanisms for influencing perceptions: signals rely on inference on part of the receivers – they convey some information but leave it to the receivers to interpret it. Thus, the experience and

background of the receivers play a certain role in the interpretations they will form based on a given signal (Heil & Robertson, 1991). Also, signaling research implicitly assumes that receivers already have developed some schemas according to which to interpret the signals.

On the other hand, symbols are intended to shape meaning – they do not rely on stakeholders' knowledge but instead provide ready-made interpretations and/or interpretive frameworks to guide formation of schemas (Rindova & Fombrun, 1999; White & Dozier, 1992). By providing interpretive frameworks, symbols reduce the information over-load and allow stakeholders to focus their attention on specific capabilities. Unlike signals, symbols do not rely on inferences but directly communicate information to stakeholders to the desired extent and in the desired form. Therefore, they give the firm the greatest flexibility in terms of content and degree of disclosure of the information they provide to stakeholders and, therefore, allow for impressing the desired images and perceptions of the organizational attributes. Consequently, regardless of the receivers' experience, symbols induce interpretations of unobservable characteristics or observable actions that might otherwise be interpreted in different ways (Lounsbury & Glynn, 2001). Finally, signaling may involve altering of observable attributes, which by design or by accident provide information about the underlying 'true' characteristics (Sanders & Boivie, 2004; Spence, 1974), while symbols frame the meaning of the observable characteristics and activities (without changing them) or provide information about unobservable characteristics, thus manipulating stakeholders' opinions (Pfeffer, 1981; Rindova & Fombrun, 1999). In sum, symbols and signals present two distinct ways to convey information through different mechanisms and with different consequences.

REPUTATION ACCUMULATION BY NEW VENTURES

How New Ventures Accumulate Reputation?

Building reputation early in a NV's life can help attract the support of various stakeholders and thus improve its chances of survival and success. At the same time, reputation building is a complex process, which requires significant resource investments over time. These conditions pose several additional challenges to NVs that are not encountered by established firms. First, it is particularly difficult for NVs to develop reputation, because at the beginning they lack the past history and consistent performance records necessary to guide stakeholders' in comparing them to rival firms and forming opinions about them. Moreover, firms develop better reputations when they allocate resources to listening to and communicating with their stakeholders (Fombrun & Rindova, 1998; Grunig, 1984; Grunig et al., 2002; Grunig & Repper, 1992). Yet NVs tend to have rather limited resources which by necessity get allocated to critical activities related to developing and producing their new products and services (Block & MacMillan, 1985). Second, NVs are expected to create value in novel ways by bringing to the market previously unavailable products and services (Aldrich, 2000; Aldrich & Fiol, 1994). However, the novelty of the products and services reduces the legitimacy of a NV and makes it difficult for potential stakeholders to see how it fits with the industry norms and beliefs (Aldrich & Fiol, 1994; Rao, 1994), which in turn reduces stakeholders' ability to compare the NV to other firms and to form positive impressions about it. Third, in order for stakeholders to form impressions of a NV, they have to be aware of its

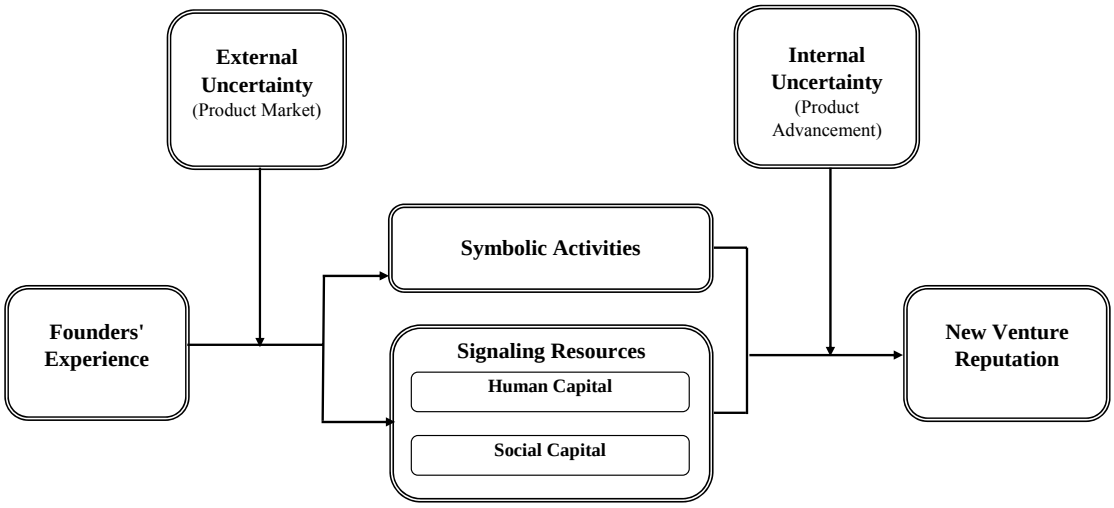
existence and activities. This is a major challenge for most NVs, given their small size and limited resources that might be prohibitive for large-scale public relations or brand-building campaigns. Further, at the beginning entrepreneurs may not even be aware of who the potential stakeholders of the NV are, which makes it even more challenging to attract their attention by selective allocation of resource investments.

Extant research suggests that firms acquire reputation through complex social interaction processes and institutionalization mechanisms, aiming to engage relevant stakeholder groups and shape their opinions and evaluations about the firm (Ager & Piskorski, 2005; Fombrun & Shanley, 1990; Grunig et al., 2002; Rindova & Fombrun, 1999). As firms and stakeholders interact, they construct interpretive frameworks and interpretations that allow for stakeholders to evaluate firms relative to industry standards and to their rivals, thus giving content to firms' reputations (Grunig & Hung, 2002; Rindova & Fombrun, 1999). Institutional theorists consider the organizational field, defined as those organizations that in the aggregate constitute a recognized area of institutional life, a major arena where an organization's interactions with key constituents unfold (DiMaggio & Powell, 1983). They also explicitly acknowledge that one of the key characteristics of an organizational field is the presence of intense interactions among various actors and institutions (DiMaggio & Powell, 1983; Rindova & Fombrun, 1999). Interpretations about an organization develop as a result of its actions in various material and symbolic domains, which attract stakeholders' attention and trigger various interpretations and impressions (Pfeffer, 1981; Rindova & Fombrun, 1999). Following this logic, it could be inferred that the process of building reputation for a NV involves ongoing social interactions that shape stakeholders' reputational cognition: entrepreneurs

take actions on part of their venture, these actions are perceived and interpreted by observers, and the observers in turn develop cognitive representations of the NV. Thus, entrepreneurs must be very proactive and start investing in the reputations of their NVs early on, because the failure to do so may delay the access to some resources that are vital for the NVs' survival and success. With the evolving activities of the NV, its reputation begins to accumulate incrementally, through the flows of strategic actions of the entrepreneurs on behalf of their ventures (Dierickx & Cool, 1989; Rindova, Petkova & Kotha, 2005).

Drawing on symbolic research in management and signaling theory in economics, I propose that two groups of factors can influence a NV's reputation: (1) symbolic activities that involve the communications and interactions of the NV with its potential stakeholders, and (2) key resources possessed by the NV, such as human capital and social capital, which signal the underlying quality of the NV's organizational and operational processes and its access to resources. Below, I explain in greater detail the theoretical rationale for each of these factors and the mechanisms through which they influence a NV's reputation. Figure 2.1 depicts the process model of reputation accumulation by NVs that I propose.

Figure 2.1 – A Conceptual Model of Reputation Accumulation by New Ventures



Symbolic Activities as Reputation Building Tools for New Ventures

Stakeholders are interested in evaluating firms as exchange partners and are concerned with their reliability, credibility and trustworthiness (Fombrun, 1996). In order to assess these qualities, stakeholders have to be knowledgeable about and to understand firm technologies, identity and unique resources (Rindova, 1999). Therefore, they need not only information about the firm's actions but also interpretive frameworks that explain the meanings of those actions (Weick, 1995; Rindova & Fombrun, 1999). As Aldrich & Fiol (1994: 651) observe, "pioneering founders cannot base initial trust-building strategies on objective external evidence. Instead, they must concentrate on framing the unknown in such a way that it becomes believable."

Symbolic activities include various communications and interactions of a firm with its current and potential stakeholders, such as use of symbolic language in naming, story-telling, advertising, promotions, and corporate social responsibility actions (Aldrich & Fiol, 1994; Lounsbury & Glynn, 2000; Rindova, 1999). Symbolic activities can both

draw stakeholders' attention to the desired information and translate for them the meaning of ambiguous resources that the NV possesses, by relating symbols from the general culture to venture-specific characteristics (e.g., artifacts, concepts and frames). "By transferring its strategy into communication themes a firm ensures that observers understand critical and defining characteristics of its activities. In selecting symbols firms seek to convey attractive and unique meanings, so that the information discussed is remembered and evaluated positively" (Rindova, 1999: 22).

Anecdotal examples and case studies also suggest that the use of symbolic activities might be among the major forces that helped some firms transfer quickly from a startup to a nationally recognized name. For example, Starbucks started extensive symbolic activities early in its life by developing communication materials that educated about coffee but also differentiated the firm and made it more memorable. As a result, Starbucks developed a national reputation within 5-6 years of founding (Rindova, 1999). Similarly, the use of symbolic activities was what differentiated Amazon.com from its nearest competitors – Barnesandnoble.com and CDNow – and helped it build a reputation for being a pioneer and the creator of the on-line book retail (Rindova, Petkova & Kotha, 2005). Based on these examples and the recently growing body of research on organizational symbolism, I propose that symbolic activities can be utilized strategically by NVs to build and increase their reputations. Below, I elaborate on the mechanisms through which the use of symbols can contribute to a NV's reputation by shaping stakeholder opinions and impressions of the NV. I draw on communications research to articulate the role of different types of symbolic activities for reputation accumulation. I use the term "symbolic activities" to denote all symbolic communications and actions

that a NV can take that are not related to substantive investments or changes in its resource base. In this sense, symbolic activities are more inclusive than pure communications.

The role of symbolic activities is to explain to stakeholders the purpose of the NV (e.g., how it can serve their needs, what products or services it is going to provide), to interpret for them the NV resources and activities, and more generally to attract stakeholders' attention to the NV and its activities. Thus, any symbolic activities on part of the NV that make stakeholders aware of its existence, demonstrate its fit with the industry norms, and induce positive evaluations of the value for stakeholders of potential relationships with the NV, can serve as investments in building the NV's reputation.

Research drawing on the institutional perspective has also focused on the use of symbols by new organizations in an effort to change existing patterns of meaning (Elsbach & Sutton, 1992; Aldrich & Fiol, 1994; Lounsbury & Glynn, 2001). New organizations acquire standing within the organizational field by using environmentally preferred symbols and actions conforming to institutionalized rules (Rao, 1994). Within the organizational field, there may exist many standards for comparison (Rindova, 1997). Stakeholders compare to their own expectations and beliefs, to other new ventures in the industry, and to the established firms (representing the industry status-quo). Therefore, the purpose of symbolic activities is to direct stakeholders' attention toward the desired comparison categories. For example, symbolic activities can be used to convey the entrepreneurial vision to the potential stakeholders and general publics (Aldrich, 2000). In his investigation of the founding of a private school, Pettigrew (1979) concludes that the use of metaphors and analogies help link the old and new terminology and, thus, to

create a new meaning. Overall, this body of research strongly supports the notion that symbolic activities are critical for NVs' interactions with their stakeholders as meaning making and impression formation stimuli.

The first step toward developing a reputation through symbolic activities is to attract their stakeholders' attention – that is, to build public awareness of the NV (Rindova & Petkova, 2005; van Leuven & Slater, 1991). Because of their limited span of attention, stakeholders are likely to notice only the most salient (or visible) firms in an industry. Visibility in turn depends on how much and how frequently stakeholders are exposed to information about a given firm. Thus, the more active a NV is in communicating with stakeholders and the more information it provides, the more likely it is to attract the stakeholders' attention. A particularly effective way of attracting the stakeholders' attention might be to focus on the media as a key info-intermediary which disseminates information about organizations to a broad range of relevant stakeholders (Grunig & Repper, 1992; van Leuven & Slater, 1991).

Symbolic activities can also contribute to the reputation of a NV by propagating new meanings, through which the actions of the NV can be understood and appreciated. Past research suggests that symbolic activities are particularly beneficial for organizations with diverse audiences as well as under conditions of high uncertainty regarding the purpose and consequences of organizational actions (Brown, 1994; Grunig & Repper, 1992; Westphal & Zajac, 1998). Specifically, prior research suggests that symbolic activities involving two-way interactions with stakeholders (as opposed to only providing information about the organization), are particularly useful in highly uncertain and turbulent environments (Grunig & Repper, 1992; Grunig et al., 2002). Therefore, NVs

may benefit from engaging in more interactive symbolic activities, such as participation in conferences, trade-shows and industry events, which allow for more immediate feedback on the new products, technologies, or other ideas that the NV seeks to develop and implement.

In addition to creating interpretive frameworks for stakeholders to understand the NV, symbolic activities can also directly induce favorable interpretations and positive evaluations of the NV's ability to create value for them. To the extent that stakeholders know about the existence of the NV and consider it legitimate, their decision to allocate and exchange resources with it will be influenced by the perceived potential of the enterprise to fulfill certain stakeholder needs and expectations (Rindova & Fombrun, 1999). Unlike established firms, for which stakeholders can rely on a proven track-record for consistent product quality or on their past financial performance (Fombrun & Shanley, 1990), NVs have nothing tangible to offer to stakeholders as evidence of their ability, because often times they start only with an idea or an entrepreneurial vision, which is still to materialize (Aldrich, 2000; Bronson, 1999). However, the idea or intention is difficult to be conveyed and even more difficult to be used as a credible signal for reliable future performance. If so, the NV can use symbolic activities to define for stakeholders its purpose and explain to them its wealth creation potential in order to induce favorable interpretations (Lounsbury & Glynn, 2001). Therefore, symbolic activities are critical in convincing stakeholders that the NV has the potential to create value for them. Based on this logic, I propose that symbolic activities are one of the most critical factors in reputation building by NVs:

Proposition 1: The higher the levels of symbolic activities on part of a NV, the greater its visibility in the organizational field and the higher its reputation.

New Venture Resources as Reputational Signals

Signaling theory posits that firm attributes convey information that reduces stakeholder uncertainty about a firm's intrinsic quality. Following this logic, reputation research in management has established that observable organizational attributes that signal an organization's potential to produce high quality shape stakeholders' perceptions about the organization (Fombrun & Shanley, 1990; Rindova et al., 2005). Because the underlying quality of NVs cannot be observed directly, stakeholders must evaluate the NV based on observable attributes that are believed to indicate the underlying unobservable quality of the NV. Faced with the high degree of uncertainty often surrounding a NV, stakeholders may rely on various signals about the NV's potential and capabilities, either in addition to or in the absence of direct communications on part of the NV.

Entrepreneurship research has devoted substantial attention to observable characteristics of NVs that can be used to predict their chances of survival and success, speculating similar uncertainty reduction mechanisms to pertain. For NVs, attributes that have been proposed to reduce uncertainty include status of alliance partners (Stuart, 2000; Stuart et al., 1999), underwriter bank prestige (Gulati & Higgins, 2003; Higgins & Gulati, 2003; Stuart et al., 1999), status of VCs investing in the NV (Lee, Lee & Pennings, 2001; Shane & Stuart, 2002), and corporate governance mechanisms (Sanders & Boivie, 2004). Although these studies have not been directly measuring NV reputation,

they have assumed that reputation drives the observed relationships and have used signaling logic to explain these relationships.

In this section, I explain how investments in critical resources on part of a NV can play the role of signals to potential stakeholders and thus contribute to the accumulation of reputation by the NV. A careful examination of the NV attributes studied by prior research shows extensive focus on two types of resources that serve as indicators of the NV's unobservable quality – human capital and social capital (Burton, Sorensen & Beckman, 2002; Davidson & Honig, 2003; Honig, 1998; Pennings, Lee & Witteloostuijn, 1998). From a stakeholders' perspective, it is not only the availability of such resources but also their quality that matters and, therefore, is likely to influence stakeholders' perceptions of the NV. For example, the quality of the NV's human capital may be evident from the size, diversity, and experience of its team; and the quality of the NV' social capital may be evident from the number and diversity of its relationships with various actors in the organizational field, as well as the status of those actors. Below, I discuss how each of these factors can play the role of a signal, and thus can impact stakeholders' perceptions of the NV.

Human capital as a signal. Entrepreneurial human capital can be broadly defined as "the set of knowledge and skills that individuals can bring to bear to create and exploit market opportunities" (Coff, 2005: 82). The human capital of a NV, and especially its most salient aspects (such as key experts), can signal to stakeholders the quality of the NV and its outputs. For example, Rindova and Kotha (2001: 1269) report that Excite attempted to signal the quality of its Web site content by introducing "personality-driven

reviews" offered by a team of journalists who were nationally renowned experts in their areas. Similarly, Audretsch and Stephan (1996) identify that a key function of top-notch scientists in biotechnology firms is to signal to stakeholders the quality of a firm's research capability. These signaling effects of human capital are particularly likely to occur in young firms, where the founders and the TMT often embody the entire human capital of the NV.

Different entrepreneurs possess different prior knowledge and experience, which could be more or less useful for the NV (Shane, 2000; Venkataraman, 1997). Entrepreneurial human capital refers to these individual variations in skills, experience, and competences, acquired through formal education, informal training, work experience, general management experience, and especially previous start-up experience (Davidsson & Honig, 2003; Gimeno, Folta, Cooper & Woo, 1997; Mosakowski, 1998). A summary of the major studies on entrepreneurial HC is provided in Appendix 2.B.

A NV's HC can influence its reputation by signaling to stakeholders that the processes utilized by the NV are of substantially high quality. Stakeholders may use different observable indicators of entrepreneurial human capital, such as size and diversity of founding teams (Eisenhardt & Schoonhoven, 1990; Porter, 2004), as well as individual founders' prestige (Shane & Cable, 2002).[9] The size of a NV's team is likely to attract more attention – other things being equal, larger teams would be more visible and thus more likely to be noticed by potential stakeholders than smaller teams or single founders. Also, a greater number of people are more likely to cope with the complex decision making tasks and the high degree of uncertainty involved in the founding

[9] According to Lin (2001: 158), "prestige has been appropriated and is understood in the literature to grade positions in the hierarchical structure (e.g., occupational prestige)."

process (Eisenhardt & Schoonhoven, 1990). Therefore, NVs started by larger teams are likely to be viewed by stakeholders as more viable and capable of producing desirable outputs. Further, team size has been found to be positively related to strategic alliance formation (Eisenhardt & Schoonhoven, 1996), which suggests that a large number of founders increases the access of the NV to key relationships and resources.

Diversity of the NV team is also a signal of higher quality of human capital, because a more diverse team is more likely to possess more of the needed expertise for the NV to perform its functions. Prior research has documented a positive effect of a NV's founding team's diversity on the NV growth and its attractiveness for various stakeholder groups (Eisenhardt & Schoonhoven, 1990; Porter, 2004). For example, Porter (2004) found that larger and more diverse founding teams make a bio-technology start-up a more attractive acquisition target.

Finally, individual team members' prestige may also serve as a signal of the quality of a NV's human capital. For example, having a degree from a prestigious university (Porter, 2004; Shane & Khurana, 2003) or having worked for a prestigious firm (Burton et al., 2002) indicates unique skills and capabilities and thus higher levels of human capital of the NV. To sum up, stakeholders are likely to use characteristics of a NV's TMT to infer the level and quality of the NV's human capital, and thus the potential of the NV to perform effectively. Therefore, other things being equal, NVs with higher levels and better quality human capital will have higher reputations than their competitors. This logic leads to the following proposition:

Proposition 2: The higher the level of human capital of a NV, as signaled by the team size, prestige, and diversity, the better the NV's reputation.

Social capital as a signal. Social capital refers to "the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit" (Nahapiet & Ghoshal, 1998: 243). According to Nahapiet and Ghoshal (1998) social capital is comprised of a relational dimension, which reflects the strength and quality of relationships, and a structural dimension, which reflects the number of relationships and the overall structure of an actor's network. It should be noted that from the actor's perspective the relational dimension might be more important, because high-quality relationships may bring more and better resources to it. However, in this section I argue that because the quality of relationships is unobservable, especially to publics not involved in a relationship with a focal NV, the relational dimension has little signaling value. At the same time, the structural dimension may have less direct benefits for a focal actor, but it is more observable and therefore, contains greater signaling value.

Management scholars have recognized the importance of high quality relationships for building organizational reputation. For example, Fombrun (1996: 57) argues that "to acquire reputation that is positive, enduring, and resilient requires managers to invest heavily in building and maintaining good relationships with their company's constituents". Communications scholars also have become increasingly concerned with the development of high-quality relationships with relevant stakeholder groups (Grunig et al., 2002; Yang, 2005). Such relationships allow organizations not only to better understand and serve their stakeholders but also to provide relevant information to stakeholders and thus to familiarize them with the organization's goals and activities. The relationships of an organization with its stakeholders increase the stakeholders'

familiarity which in turn makes them perceive the organization as more desirable and form more positive opinions about it (Fombrun & Van Reil, 2003; Grunig et al., 2002; Yang, 2005). Further, entrepreneurs tend to rely extensively on their personal networks, including family, friends, and professional contacts, for all kinds of material, financial, moral, and emotional support (Aldrich, 2000). Therefore, a NV's reputation can benefit from developing high-quality relationships with key stakeholders such as potential investors or customers.

Further, past research suggests that relationships may play a signaling role (Rindova et al., 2005), thus influencing the perceptions of stakeholders who have no direct relationships to the focal NV. A NV's social relationships can legitimate the NV and influence public impressions about it by providing information and institutional endorsement of the NV. People who know the founders personally are able to provide first-hand information and opinions regarding their personal and professional qualities and the viability of their venture. Lack of trusting relationships has been identified as one of the major reasons for the low success rates among NVs. For example, Aldrich & Fiol (1994: 664) explain that "many promising new activities never realize their potential because founders fail to develop trusting relations with stakeholders, are unable to cope with opposing industries, and never win institutional support".

The choices of third parties vis-à-vis a NV, and especially their decisions to enter an exchange relationship with it, have been identified by past research as an important signal of the NV's quality and potential, and have been found to influence NV performance and survival chances. Relationships with influential third parties serve as an endorsement or certification of the NV's quality, because such actors are believed to be

more knowledgeable and capable of evaluating the NV (Gulati & Higgins, 2003; Higgins & Gulati, 2003; Stuart, 2000; Stuart et al., 1999). Social capital can be viewed as a higher-order signal than new product development and human capital, because it comes from external validation and carries more credibility as a signal, especially if the third parties are established industry players (Podolny & Stuart, 1995; Stuart, 2000; Stuart et al., 1999). Sociology scholars have focused primarily on organizational status as a function of the relationships a NV has. Status has been conceptualized as a relative structural position in a network of exchange relationships – the more connected an organization to other well-connected actors, the higher its own status (Piskorski, 2004; Podolny, 1993; Stuart, 2000; Stuart et al., 1999). Moreover, researchers have found that social relationships play the role of organizational endorsements and certifications of quality, and thus lead to perceptions of higher organizational quality compared to less connected rivals (Benjamin & Podolny, 1999; Podolny, 1993).

From public perspective, there are three sources of information about a NV: the entrepreneurs themselves, the media, and other monitors (Fombrun & Shanley, 1990). Before entrepreneurs have proved their credibility, potential stakeholders are more likely to rely on the evaluative signals from key intermediaries such as market analysts, professional investors and reporters (Fombrun, 1997). Consequently, entrepreneurs need to be able to signal their credibility by having the right social connections to key customers, partners, and investors that shape resource formation for new firms. Therefore, they should seek to attract the attention of these experts and to convince them in the quality of the opportunity they have identified and the viability of their entrepreneurial vision (Lounsbury & Glynn, 2001). For instance, Rao (1994) found that

'certification contests' in the early years of the automobile industry played an important role in legitimating the new industry and firms within it and helped build their reputations – the winners of the contests were perceived as better and more reliable performers. Following similar logic, Podolny and Stuart (1995) found that the status of actors associated with an innovation increases the likelihood of the innovation to be seen by others as important and thus rapidly developed, controlling for innovation quality. Further, Stuart (2000) shows that the size and innovativeness of a focal firm's alliance partners predict its innovation rate and growth. This effect is stronger for new and small firms, which suggests that NVs benefit most from the signaling effect of partners on their reputation (Sanders & Boivie, 2004; Stuart, 2000; Stuart et al., 1999).

Further, outside observers can infer certain characteristics of the NV by the quality of its social ties, because people tend to associate with others who have similar values and interests (Aldrich, 2000). Aldrich (2000: 87) points to the fact that "high status people – with more social resources, power, or prestige than others – play important roles in linking nascent entrepreneurs to resources and opportunities". NVs that have relationships with high-status strategic partners are found to perform better because their social ties provide them with certification for quality when stakeholders are uncertain about their actual quality (Stuart et al., 1999). Affiliations of a NV with prestigious financial bankers, seasoned industry veterans, and large and established customers not only validate the potential of the venture signaled through its business concept and focal opportunity, but also provide legitimacy to the NV. This legitimacy is derived from the relative status of the affiliations of the NV, as high-status actors exert disproportionate amount of influence on the choices of others (Rao, Davis & Ward, 2000).

NVs' affiliations are consistently found to predict various outcomes, such as survival, growth, innovation and financial performance (Gulati & Higgins, 2003; Larson, 1992; Shane & Stuart, 2002). For example, IPO success has been consistently predicted by NVs' relationships with prominent actors, such as strategic alliance partners (Higgins & Gulati, 2003; Stuart et al., 1999) or venture capital firms and investment banks (Brav & Gompers, 1997; Gompers, 1996; Gulati & Higgins, 2003; Lerner, 1994). In an in-depth qualitative analysis of seven relationships of entrepreneurial firms Larson (1992) reports that entrepreneurial firms emphasize the importance of relationships for financial success, growth, adaptiveness, and innovation.

To sum up, prior research suggests that NVs' relationships with key stakeholders can play a dual role in building reputation for the NV, by both improving the NV's reputation based on the quality of the relationships and by signaling to more distant stakeholders the NV's worthiness, reliability and potential (Baum, Calabrese & Silverman, 2000; Stuart, 2000; Stuart et al., 1999). Therefore, social capital of a NV is likely to be attended by stakeholders as a signal of the NV's quality. Drawing on this logic, I propose that a NV's relationships can impact its reputation by signaling to potential stakeholders its performance prospects and ability to create value, thus helping them to form positive impressions of the NV.

Proposition 3: The higher the level of social capital of a NV, as signaled by the number and prestige of its relationships, the better the NV's reputation.

Symbolic Activities and the Effect of Human Capital and Social Capital on New Venture Reputation

Institutional and impression management scholars argue that symbolic activities and substantial organizational characteristics are decoupled (Meyer & Rowen, 1977; Pfeffer, 1981). Such decoupling is found to have positive effect on the performance of established corporations (Westphal & Zajac, 1994, 1998; Zajac & Westphal, 1995). However, this may not be the case with the NVs, which are much more closely watched and evaluated because of the perceived high risks related to their activities (Aldrich, 2000; Aldrich & Fiol, 1994). Instead, NVs may use symbolic activities to promote their substantive characteristics, by drawing stakeholders' attention to those characteristics and by explaining how such characteristics will help the NV produce high quality outputs or otherwise meet stakeholders' expectations (Rindova, Petkova & Kotha, 2005). In the presence of relevant resources that are likely to be seen by stakeholders as indicators of the NV's higher quality and potential, such as human capital and relationships, symbolic activities can be used to make those resources more visible to stakeholders and to focus stakeholders' attention on them. Further, symbolic activities can be used strategically to improve the quality of relationships with key stakeholders, such as customers or partners (Grunig et al., 2002). If so, symbolic activities will reinforce the positive effect of human capital, relationships with customers and partners, and product completion on a NV's reputation. Therefore, I hypothesize that:

Proposition 4: Symbolic activities will increase the positive effects of (a) human capital and (b) social capital on a NV's reputation.

Founders' Experience and New Ventures' Reputation Building

Extant research attributes a great deal of a NV's performance to its founder(s)' background characteristics. Founders' characteristics have profound effect on the way a NV is organized and the initial strategy it would pursue (Boeker, 1988; Burton, 2001; Burton, Sorensen & Stuart, 2002; Rubenson & Gupta, 1992). According to Boeker (1988: 37), "because organizations are primarily begun by individuals, these individuals (the founders) play a central role in guiding the organization's creation process". Past research has found that the functional background and past employment of a NV's founders and founding team-members predict the likelihood for the NV to pursue innovation/ first mover strategy or to deviate from dominant strategy in its industry (Boeker, 1988; Burton, 2001; Burton et al., 2002). Since founders are the major and in many cases the only decision makers for the NV, their background is likely to guide the decisions they make regarding investments in various assets and activities. Specifically, founders' experience is likely to influence their decisions and actions with regard to utilizing symbolic activities to influence stakeholders' perceptions of their NVs', building the human capital of their NVs, and developing relationships with key stakeholders or building the social capital of their NVs. More experienced founders are more likely to invest in using symbolic activities and enhancing the NV's HC and SC not only because they know from prior experience the strategic importance of these investments but also because they might be in a better position for doing such investments in comparison to novice founders.

First, experienced founders are more likely to utilize symbolic activities because they can utilize symbols better and can benefit more from them. The reason why experienced founders might be better able to utilize symbols is because their proven track

record and credibility allow them to use symbolic communications and activities more efficiently and with greater impact on stakeholder audiences (Lounsbury & Glynn, 2001). Research on IPO markets has established as a major reason for involvement of underwriters the fact that IPO firms cannot make credible commitments themselves, because they go IPO only once (Beatty & Ritter, 1986). Similar logic holds for novice founders, who do not risk anything if their statements turn out to be false. Also, the fact that an entrepreneur has already started previous NVs allows for coming up with more coherent and consistent entrepreneurial stories, by using facts and examples from previous experiences. Finally, experienced founders are more likely to realize the need for building reputation for the NV early on and to understand the critical role of symbolic activities in this process. Therefore, experienced founders are likely to have an advantage over novice ones in terms of their ability to use symbolic activities.

Second, experienced founders are likely to be more successful in building the HC for their NVs, because they can rely on the networks of contacts built during their previous ventures. It is well-established that recruitment through networks provides a "convenient and inexpensive" way of acquiring talents (Leung, 2003: 305). Experienced founders are also more likely to be able to identify and attract qualified people – either from their prior NVs or by using their credibility as seasoned founders to convince key experts to join the NV. This is particularly true early in the life of a NV when the venture is resource-poor and cannot afford other selection and recruitment channels (Leung, 2003).

Third, more experienced founders have better capabilities to invest in SC for their NVs. Entrepreneurs often rely on their personal reputation when approaching potential

stakeholders, because their ventures' reputations are not yet established (Larson, 1992). More experienced founders are more likely to have established relationships from before, or to know people who may help them develop useful relationships for their current venture. For example, founders' prior experience has been found to influence strategic alliance formation among semiconductor firms (Schoonhoven & Eisenhardt, 1996). Further, experienced founders have better chances of knowing some venture capitalists or other investors, who would be more inclined to invest in a NV if they already know its founder (Shane & Cable, 2002; Shane & Stuart, 2002). Consistent with this idea, serial entrepreneurs are found to be able to recruit funding from more sources than novice ones (Westhead & Wright, 1998). Finally, experienced founders might be able to find more prestigious venture capitalists or other investors for their NVs, because they understand the VC industry better and can direct their efforts more appropriately than novice founders (Higgins & Gulati, 2003; Wright, Smart & McMahan, 1995).

For novice entrepreneurs, external accreditation from recognized bodies, such as investment banks and venture capitalists, are much more critical than for experienced founders, because the value of external accreditation increases with the degree of evaluative uncertainty (Lounsbury & Glynn, 2001; Stuart, 2000; Stuart et al., 1999). Thus, less experienced founders may feel greater need for building SC for their NVs. Similarly, they may also need to invest more in HC in order to prove that their NV is capable of producing the envisioned outputs by utilizing appropriate and highly qualified personnel. However, building HC might be more difficult for novice founders than for their experienced peers. For example, in the face of high uncertainty and no business track record to refer to, potential employees who do not know the entrepreneurs are

unlikely to join them. Therefore, novice entrepreneurs are less likely to be successful in recruiting high-quality talent than their more experienced peers. Similarly, novice founders will have harder time convincing potential partners to join them, because they have no evidence of credibility or past success to offer. This makes them less likely to succeed in building SC for their NVs, too.

Overall, the above arguments suggest that experienced founders are more likely to invest successfully in symbolic activities, HC and SC for their NVs than their novice peers. Therefore, I propose that:

> *Proposition 5: Founders' entrepreneurial experience will increase (a) the efficiency of their investments in using symbolic activities and building human capital and social capital for the NVs; (b) the effect of symbolic activities on NV reputation.*

THE ROLE OF UNCERTAINTY IN THE PROCESS OF REPUTATION-BUILDING BY NEW VENTURES

Uncertainty and the New Venture Reputation

Uncertainty refers to the difficulty that individuals and organizations experience in predicting the future or anticipating the outcomes of certain actions (Beckman, Haunschild & Phillips, 2004; Leblebici & Salancik, 1981; Starbuck & Milliken, 1988). Past research has distinguished between two types of uncertainty – (1) internal or technical uncertainty and (2) external or market uncertainty (Beckman et al., 2004; Dixit

& Pindyck, 1994; McGrath, 1997). The various sources of uncertainty regarding NVs can be grouped similarly under two categories: (1) internal uncertainties, related to the quality of the NV organization and value creation processes, which determine its survival chances and likelihood to behave reliably in social and economic exchanges with prospective stakeholders, and (2) external uncertainties related to the target product markets for the NV's outputs and the likelihood that the NV's products will meet the quality and performance expectations of these markets. External uncertainty stems from the turbulences in the market or industry where a firm operates and is faced by all competitors, whereas internal uncertainty is firm-specific (Beckman et al., 2004). Two issues related to perceptions of uncertainty and reactions to it appear particularly relevant to the arguments developed in this essay.

First, organization scholars have acknowledged that perceptions of uncertainty differ among individuals and organizations (Daft & Weick, 1984; Meyer, 1982; Starbucks & Milleken, 1988). According to Starbucks and Milleken (1988), faced with the same external environment, different people perceive and filter out different information; and even noticing the same stimuli may lead to different interpretations, because different individuals may use different frameworks to interpret the stimuli. Further, they suggest that in complex environments, effective filtering of information requires detailed knowledge of the task environment (Starbuck & Milliken, 1988). These variations are particularly relevant for understanding NV reputation building activities, because as I will argue in this section, founders who perceive the uncertainty as higher will invest more in alleviating stakeholders' concerns and providing them with information about the NV, thus increasing the early reputation of their NVs.

Second, past research has consistently demonstrated that most people have low tolerance to uncertainty and, therefore, experience a fundamental need to reduce uncertainty (Bourgeois, 1985; Dewey, 1929; Hogg & Mullin, 1999; Hogg & Terry, 2000). Most people tend to react to uncertainty by either ignoring it or searching for information in order to reduce its magnitude (Bazerman, 2001). Dewey (1929) argues that people have a pathological need to know in situations containing uncertainty. This need to reduce uncertainty leads people to take too much credit for success and too much blame for failures (Salancik & Meindl, 1984). For example, under conditions of high uncertainty managers are found to take responsibility even for bad outcomes in order to re-assure themselves and the stakeholders of their control over the situation (Salancik & Meindl, 1984).

The need to reduce uncertainty increases the need for reputation accumulation, respectively, because reputation is a major uncertainty reduction tool in the interactions between organizations and their stakeholders (Rindova et al., 2005). In the case of NVs stakeholders may try to reduce uncertainty regarding the NVs and their quality by seeking cues that allow them to make inferences about the unobservable characteristics they like to evaluate. At the same time, NVs may also try to facilitate this process of uncertainty reduction by providing more cues to guide stakeholders' perceptions and interpretations. For example, research in finance suggests that NVs going IPO seek to reduce uncertainty by including more items in their proxy statements, thus disclosing more information about themselves (Beatty & Ritter, 1986). Therefore, the higher the level of uncertainty, the more incentives a NV has to invest in reputation building activities.

The Role of External Uncertainty on Reputation Building by New Ventures

The external or market uncertainty stems from various unknown factors, such as the customer demand for new products and services (Tushman & Anderson, 1986), the competitive actions of rival firms (Burgers, Hill & Kim, 1993), the costs of inputs coming from internal suppliers (McGrath, 1997), as well as the relative performance of new technologies, business models, or processes (Baum & Silverman, 2004; Courtney, 2001; Tushman & Rosenkopf, 1996). Market uncertainty makes the quality of the firms in the market difficult to assess by both competitors and external stakeholders (Podolny, 1994). This uncertainty gets stronger when the firms operate in emerging markets and/or the time required to evaluate the potential outcomes is extraordinary long (Courtney, 2001). Thus, market uncertainty is an ubiquitous problem faced by NVs and their stakeholders, because NVs often attempt to provide products, services or technologies that are new to the world and thus of unknown quality (Aldrich, 2000).

In this section, I propose that market uncertainty is likely to interact with founders' experience in determining the reputation-building investments made by NVs. Specifically, prior experience is likely to influence founders' perceptions of the uncertainty faced by their NVs and the need to reduce this uncertainty, thus determining the relative emphasis they would place on different activities. Different founders vary in the degree to which they are likely to (a) perceive the same need for uncertainty reduction, and (b) invest effectively in new product development, accumulate HC and SC, and use symbolic activities, depending on the perceived level of uncertainty.

Past research suggests that people avoid decision making under uncertainty to a different degree, depending on their knowledge and expertise in the realm of the decision

to be made. Experimental psychology has found that tolerance to uncertainty and confidence in decision making under a given level of uncertainty changes with experience in the focal subject area (Fox & Tversky, 1995; Heath & Tversky, 1991). For example, Heath and Tversky (1991) observed that people prefer to bet on their vague beliefs (as opposed to known probabilities) in situations where they feel particularly competent and knowledgeable, which suggests that more experienced people may perceive the same situation as less uncertain than inexperienced ones. Further, Fox and Tversky (1995) found that people perceive higher uncertainty and avoid decision making when they feel relatively incompetent about an issue – either because they compare their inferior knowledge and familiarity with the subject area to another one in which they are more competent or because they compare themselves to more knowledgeable individuals in the same subject area.

Applying similar logic to entrepreneurial experience, it is conceivable that when faced with the same external environment, experienced entrepreneurs will perceive less subjective uncertainty than their inexperienced peers. The limited empirical evidence on serial entrepreneurship suggest that while all founders perceive starting a NV as a highly uncertain attempt, experienced founders (or "serial entrepreneurs") tend to do so to a lesser extent than their novice peers (Westhead & Wright, 1998). Moreover, Kolvereid and Bullval (1993) found that experienced founders tend to get involved into more complex environments than their novice peers, which suggests that they feel more comfortable navigating under high uncertainty. These findings lead me to propose that founders' experience will influence the decisions they make under given level of

uncertainty, and more specifically the degree to which they will decide to invest in different assets and activities for their NVs.

When people compare two events about which they have different levels of knowledge, the contrast makes the more familiar event more attractive (Fox & Tversky, 1995). Since experienced entrepreneurs are likely to be more familiar with starting a new firm than, say, managing an established corporation, they would feel particularly confident in their capabilities to deal with the uncertainties of the startup situation. This confidence might be good in some ways but it may also lead to underestimation of the need to invest in certain reputation-building activities. For example, experienced founders may feel that they know quite well what expertise is needed for their ventures and invest early in recruiting the necessary personnel, thus building the HC for their NVs faster than their novice peers. Similarly, if experienced founders perceive the market as reasonably predictable, they are more likely to start investing early in developing the necessary relationships with customers, partners, venture capitalists, and other stakeholders, thus building the SC for their ventures.

On the other hand, if experienced entrepreneurs feel relatively comfortable with a given level of uncertainty, they are likely to experience lower need for uncertainty reduction than their novice peers. This in turn may lead to under-investment in symbolic activities, and especially in communications intended to provide meaning and explain to stakeholders the purpose and activities of the NV. Thus, under a very high level of uncertainty, prior entrepreneurial experience may be hubris for founder and prevent them from investing enough in symbolic activities. At the same time, novice founders who experience greater uncertainty will also feel a stronger need to explain and justify the

existence and activities of their NVs. This in turn would lead them to invest more heavily in using symbolic activities. Therefore, I propose that:

> *Proposition 6: Under conditions of high market uncertainty experienced founders will investment more in HC and SC and less in symbolic activities, as compared to novice founders.*

The Role of Internal Uncertainty on Reputation Building by New Ventures

Internal or technical uncertainty is uncertainty about the likelihood of technical success and the costs associated with success (McGrath, 1997). Technology uncertainty is firm-specific to the extent that other firms have different resources and capabilities and, therefore, different chances of success (Beckman et al., 2004). In general, there is always some uncertainty regarding a NV due to its unproven quality and future prospects (Venkataraman, 1997), manifested in the high failure rates of new firms (Romanelli, 1989). The embryonic period in the NV's life is considered particularly uncertain, because it is not clear whether the NV is going to take off and when (Gompers, 1995). "Because the quality of a new venture is always a matter of some debate, the decision of external resource holders to invest their time, capital, or other resources in a new organization is one that must be made under considerable uncertainty about the embryonic enterprise's life chances and its financial prospects" (Stuart et al., 1999: 315). Further, entrepreneurship scholars have found consistent evidence suggesting that younger and smaller NVs are perceived as more uncertain than older ones (Beatty & Ritter, 1986; Sanders & Boivie, 2004; Stuart, 2000; Stuart et al., 1999).

In a more narrow sense, the technical uncertainty regarding a NV is related to the specific activities inside the NV, such as the new product development and operation processes. For example, past research has identified accomplishments such as having a prototype or producing the first product as major milestones in the start-up process (Wasserman, 2003). Such accomplishments may signal stakeholders that the NV is "on the right track" and likely to produce the desired outputs and thus reduce the technical uncertainty about the NV. However, many NVs start with an idea rather than a finished product and it may take months or years before they deliver outputs to the market. Therefore, for products that take a long period of time to develop, such as new technologies or research-intensive products, stakeholders may use certain indicator of the NV's ability to produce an output as signals of the potential output quality.

The less advanced the product or technology the NV seeks to produce (i.e., still an idea or work in progress as opposed to a prototype or a ready output), the higher the internal uncertainty faced by the NV and respectively the more difficult for stakeholders to evaluate its quality and its chances of survival and success. As I argued above, this uncertainty regarding the quality of the NV's outputs will lead stakeholders to seek some signals of the underlying quality and potential of the NV, such as its human and social capital. The higher the technological uncertainty, the more likely stakeholders to rely on resources as signals, because they would not be able to evaluate the NV outputs directly. The less advanced the prospective output, the more important these resources signals would be as information sources. Consequently, technological uncertainty increases the usefulness of HC and SC as signals and creates incentives for stakeholders to rely on these signals when forming perceptions about the NV. Therefore, HC and SC will have

the strongest effect on a NV's reputation when the actual outputs are not yet available and a weaker effect after the NV begins to market its finished products, services, or technology.

In addition to the product advancement, the type of product is also a source of technical uncertainty about a NV, because different outputs vary widely in the quality-related uncertainty which they bring to potential evaluators. For example, 'hard' products might be easier to evaluate than new services or technologies, because they are relatively more observable and thus carry greater value as a source of information and a signal of quality. This unobservability of outputs adds even more uncertainty for the stakeholders who might be interested in exchanging resources with the NV. Further, for more innovative products the potential demand or other market reactions become difficult to predict. Therefore, the more innovative the NV's outputs, the higher the uncertainty about their quality and potential value that the stakeholders are likely to experience. For example, Sapienza and Gupta (1994) found that higher levels of innovation being pursued by the NV were related to more intense interactions between the VC and the CEO of the NV, because such ventures were perceived as more risky by the VCs. Based on these arguments, I propose that:

Proposition 7: The greater the technological uncertainty about a NV, the stronger the effects of its resources and use of symbolic activities on its reputation.

NVs can reduce technological uncertainty by using symbolic activities to provide stakeholders with ready-made interpretations (Rindova & Fombrun, 1999) or by investing in new product development activities so that they can speed up the delivery of

the first outputs to market (Schoonhoven, Eisenhardt & Lyman, 1990). Recall that symbolic activities are designed to provide stakeholders with ready-made interpretations and to induce favorable impressions of the NV. Thus, the higher the technological uncertainty regarding a NV, the more stakeholders need such interpretations (Aldrich & Fiol, 1994).

As I already discussed in the previous section, HC and SC can be used by stakeholders as signals of the underlying quality and potential of the NV, and particularly, of its ability to deliver the products it claims to be working on. Once the first products are available to market, the stakeholders have no need for relying on other signals, because the NV has already demonstrated that indeed it has the capability to produce the desired outputs. Therefore, the role of HC and SC as signals is likely to diminish as the NV matures and delivers products to the market. On the other hand, after the first product is available to the market, symbolic activities may still be needed to explain to stakeholders how the new product works and how it is going to satisfy their needs. Thus, unlike HC and SC, symbolic activities may still continue to contribute to a NV's reputation even if the technical uncertainty regarding a NV diminishes. This is particularly likely to be the case for new technologies or other products whose quality is unobservable or whose benefits are difficult to evaluate immediately. Therefore, lower internal uncertainty is more likely to diminish the effect of human capital, social capital, or other resources than the effect of symbolic activities on a NV's reputation. Therefore, I propose that:

Proposition 8: Technological uncertainty will have stronger effect on the relationship of human capital and social capital with a NV's reputation than on the relationship between symbolic activities and a NV's reputation.

DISCUSSION AND CONCLUSIONS

The theory developed in this essay is relevant for reputation accumulation in NV contexts characterized by some degree of uncertainty faced by stakeholders. Specifically, the model is most likely to hold when products are not yet available or when product quality is difficult to evaluate. In such situations, both resources are likely to matter as signals and symbolic activities – to influence stakeholders perceptions, and thus to affect a NV's reputation. The more fine-grained information about the product quality is available, the less signaling value a NV's resources would have. For example, if a NV starts producing outputs from day one and the quality of these outputs can be easily evaluated, there would be a lower need of symbolic activities or signals because the stakeholders would be able to evaluate directly the NV and its outputs. On the other hand, the model is directly relevant for NVs that produce "experience goods", the quality of which can be evaluated only after purchase and consumption (Nelson, 1974), or for NVs that develop a new technology which takes substantial time to market and thus the stakeholders have to form impressions of the NV in the absence of ready outputs to evaluate. Therefore, reputation building efforts are likely to have higher pay-offs for less observable products, whereas for more observable products it might makes more sense for NVs to focus on product quality, and would be less efficient to invest in reputation building activities.

The factors that I proposed to influence reputations of NVs are also likely to contribute to the reputations of established organizations but to a lesser degree. First, at the beginning new ventures may not know who their stakeholders are and in what role (i.e., customers, investors, or partners). Thus, it might be more feasible for NVs to try to develop a broader and more generalized reputation with all potential stakeholders by increasing their visibility in the organizational field and attracting as much attention as possible. Established firms, on the other hand, are much more likely to know who their customers, suppliers, competitors, and other relevant stakeholders are, and to target them directly. In fact, prior research suggests that established organization may even try to build audience-specific reputations – that is, to develop different reputations with different stakeholder groups (Fombrun, 1996; Grunig, 1984; Grunig et al., 2002).

Second, established organizations have stronger track record in the form of product quality, financial performance, and demonstrated reliable behavior in relationships with relevant stakeholders. Therefore, stakeholders can draw on this information to form reputational perceptions about them. The availability of information about product quality and past financial performance would make the resources that I argued to be critical for NVs' reputations less relevant as signals, although they still might matter. Third, established organizations may have a stronger focus on establishing and managing their relationships with large stakeholder audiences because such relationships are more likely to be mutually acknowledged than in the case of NVs. Further, established organizations are also likely to be more visible in their organizational field, which makes the use of symbolic activities to attract stakeholders' attention less important. Instead, such organizations may use symbolic activities for other purposes,

such as strengthening their relationships with stakeholders (Grunig et al., 2002) and explaining the meaning of novel actions or changes in their strategy (Gioia & Chittipeddi, 1991; Gioia & Thomas, 1996).

Finally, the nature and quality of relationships with key stakeholders may differ between new ventures and established firms. Whereas established firms can build relationships with large stakeholder groups as many people have experience with their products (e.g., Microsoft), new ventures may struggle to develop one or a few relationships with key stakeholders (e.g., a major customer, an established industry player, or an investor). Therefore, NVs are much more likely to rely on the indirect (or signaling) effect of relationships on their reputation, by using the few relationships they have to influence the perceptions of other more distant stakeholders. Established firms, on the other hand, may experience no need for building reputation with distant anonymous publics if large enough stakeholder groups already have direct experience with them and their products. Instead they may focus on strengthening these relationships and improving their reputations with the actual (as opposed to potential) stakeholders (Grunig et al., 2002; Yang, 2005).

Future Research Directions

In my arguments I considered the distinct effects of market uncertainty and technological uncertainty on the reputation building of NVs. However, these two types of uncertainty may also have some complex joint effects and may influence each other. Specifically, according to the 'real options' logic, high market uncertainty reduces the feasibility of heavy investments upfront in developing a new product or technology and

makes more 'rational' making smaller investments and continuously re-evaluating the feasibility of the idea (Courtney, 2001; McGrath, 1997). For example, the level of technological innovation is found to increase the time it takes young semiconductor firms to market their first product (Schoonhoven et al., 1990), which suggests that the higher market uncertainty related to developing new technologies systematically reduces the speed of new product development (Tushman & Anderson, 1986). Therefore, high market uncertainty may slow down the new product development activities of NVs and may, therefore, lead to a prolonged technological uncertainty. Future research should explore systematically how the potential relationships between market uncertainty and technological uncertainty may influence the reputation building processes.

Second, founder experience can moderate the effect of uncertainty on new product development by making it stronger for novice founder but weaker for experienced founders. More experienced and educated founders tend to be more innovative (Boeker, 1988; Burton et al., 2002) and more likely to deviate from the dominant industry strategy (Burton, 2001), which suggests that experienced founders may feel more comfortable taking the risks related to the development of a new product under high uncertainty. Further, experienced founders tend to be more active and undertake gestation activities with higher frequency than their novice counterparts (Davidson & Honig, 2003), which makes them more likely to advance the product development faster than novice founders. Finally, experienced founders are also more likely to have access to larger pools of financial resources (Kolvereid & Bullvag, 1993), which will also speed up the new product development and reduce the time to commercialize the first products (Schoonhoven et al., 1990). Overall, these arguments

suggest that founder experience may systematically influence the technological uncertainty about a NV and provides another fruitful avenue for future research.

ESSAY 3

REPUTATION BUILDING BY NEW VENTURES: AN EMPIRICAL STUDY OF THE ROLE OF SYMBOLIC ACTIVITIES AND SIGNALING RESOURCES

ABSTRACT

Reputation can help new ventures attract stakeholders and engage in interactions with them. Yet, prior research provides limited insights into the question how new ventures can build reputation early in their lives. Scholars have found that the reputation of established firms is a function of their past financial performance and costly investments in strategic signals, such as pricing and advertising. However, new ventures lack performance track records and usually possess limited resources, which makes it difficult for them to rely on the same sources of reputation as the established firms. Further, extant research suggests that because new ventures lack their own reputations, they borrow the reputation of their partners or investors. However, this research overlooks the possibility that new ventures can build their own reputation. Thus, research to date leaves open the questions: (1) how new ventures can build their own reputations, and (2) what are the consequences of building reputation for new ventures' performance.

Given the limited guidance provided by prior literature, I draw on the insights from the exploratory stage of this dissertation (described in Essay 1) to develop an empirically testable model of reputation building by new ventures. According to this model, two groups of factors can contribute to new venture reputations: (1) symbolic activities can be used to attract stakeholders' attention, communicate the unobservable

qualities of the new venture, and induce positive opinions about it, and (2) a new venture's resources, such as human capital, relationships with customers and partners, and product completion, can serve as signals of the new venture's underlying quality and potential. Further, symbolic activities can be used to make the otherwise less observable resources more visible, thus increasing their effect on the new venture's reputation. I test these ideas in a sample of 415 venture capital backed information technology new ventures founded between 1997 and 2001 in the U.S. My results support the idea that the symbolic activities used by new ventures and the key resources they possess jointly influence their early reputations, which in turn increase their performance. I also find that the initial reputation of most new ventures consists primarily of a visibility (or awareness) component, and very few ventures accumulate the evaluative component of their reputations.

INTRODUCTION

Past research consistently demonstrates that reputation is a valuable intangible resource, which contributes to a firm's competitive advantage (Barney, 1991; Dierickx & Cool, 1989; Hall, 1992). However, the mechanisms through which this critical resource emerges or can be created by the firms are much less understood. Organization and strategy scholars have focused extensively on the role of reputation for old and well-established corporations, primarily Fortune 500 firms (Fombrun, 1997; Fombrun & Shanley, 1990; Martins, 2005; Roberts & Dowling, 2002; Wartick, 2002). This approach does not allow for examining (a) how reputation comes into being and (b) what factors account for the variance in reputation among young firms in an industry.

Past research suggests that the perceptions and beliefs that constitute a firm's reputation develop as stakeholders observe and evaluate its actions and performance and form summary impressions about its underlying strategic characteristics (Fombrun & Shanley, 1990; Weigelt & Camerer, 1988). Scholars have found that the reputation of established firms is a function of their past financial performance (Fombrun & Shanley, 1990), product quality (Shapiro, 1983), and costly investments in pricing and advertising (Milgrom & Roberts, 1986). However, these predictors of reputation may have limited applicability to new ventures (NVs) for the following reasons: First, NVs lack the history and performance track records to guide stakeholders' evaluations and opinions about them. Second, many NVs start with limited resources (Aldrich, 2000), which makes it difficult for them to invest in costly advertising or other activities. Third, some NVs – especially those in technology-based industries, such as information technology or

biotechnology – take significant time to develop their first product or technology, which makes pricing and product quality inapplicable at the early years of their lives. Fourth, potential stakeholders may not even be aware of the existence and activities of a NV, which would prevent them from forming impressions or opinions about it. Last but not least, because NVs often create value in novel ways by bringing to the market previously unavailable products or services, they may face the additional challenge of stakeholders not being able to understand how such products are going to create value for them (Aldrich & Fiol, 1994; Rao, 1994; Rindova & Petkova, 2006). Therefore, the lack of sufficient resources, consistent performance histories, and interaction patterns, present a number of unique challenges that make reputation building a particularly difficult task for a NV to accomplish (Pollock, Porac & Wade, 2004; Williamson, 2000).

Given all these obstacles to reputation-building by NVs, prior research has assumed that NVs cannot build their own reputation and, therefore, borrow the reputations of other more powerful and better-established industry players by affiliating with them (Beatty & Ritter, 1986; Stuart, 2000; Stuart, Hoang & Hybels, 1999). Indeed, reputation borrowing is a viable solution for NVs that lack reputation or resources to invest in reputation building. However, there are examples of NVs that manage to develop high reputations very early in their lives, such as Amazon.com, Yahoo! and Google. These examples suggest that some NVs manage to build reputation despite the challenges faced and call for a more careful examination of the process of reputation building by NVs and the causes of variations among NVs in both reputation building efforts and the resulting levels of reputation they accumulate.

The **research questions** this essay addresses are: (1) How can a NV build reputation early in its life, and (2) What is the impact of reputation building on NV performance? Because prior research provides limited insights regarding reputation building by NVs, I followed a two-stage research design approach. First, I conducted an exploratory study (as explained in Essay 1 of this dissertation), the insights from which I used to develop a model of reputation building by NVs and to draw a set of testable hypotheses. Second, I test these hypotheses in a sample of 415 venture capital backed information technology new ventures founded between 1997 and 2001 in the U.S. My results support the idea that the symbolic activities used by new ventures and the key resources they possess jointly influence their early reputations, which in turn increase their performance. I also find that the initial reputation of most NVs consists primarily of a visibility (or awareness) component, and very few NVs accumulate the evaluative component of their reputations.

THEORY DEVELOPMENT AND HYPOTHESES

Reputation of New Ventures

Reputation reflects collective perceptions and evaluations regarding a firm's ability to create value for various stakeholders (Fombrun, 1996; Fombrun & Shanley, 1990; Roberts & Dowling, 2002). Reputation has been identified as a valuable intangible asset (Barney, 1991; Dierickx & Cool, 1989) because it can influence stakeholders' economic choices vis-à-vis a firm and their willingness to exchange resources with it (Rao, 1994; Rindova & Fombrun, 1999; Rindova, Williamson, Petkova & Sever, 2005). Reputation is particularly valuable under conditions of high uncertainty about a focal firm

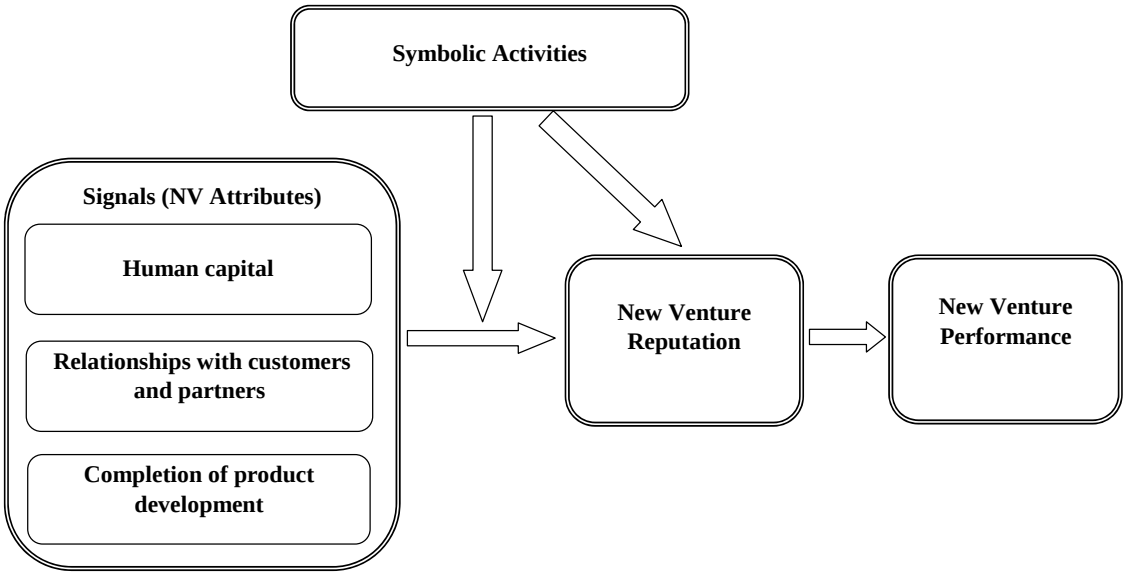
(Shapiro, 1983; Weigelt & Camerer, 1988), such as the early years of a firm's life. Favorable reputation can help stakeholders make resource allocation decisions that favor a new firm by investing in it (Shane & Cable, 2002; Stuart et al., 1999), by buying its products and recommending them to their friends, or by pursuing employment with it (Williamson, 2000; Williamson, Cable & Aldrich, 2002). NVs with higher reputations have easier access to capital, even when uncertainty about their quality is high (Stuard et al., 1999). Therefore, building reputation early on can increase a NV's chances for survival and success by improving its ability to attract key stakeholders and to establish exchange relationships with them.

Recent research on reputation has found that the construct of reputation incorporates two dimensions – an asset- mass dimension, which reflects a firm's visibility in its organizational field (or the degree of public awareness about the firm), and an evaluative dimension, which reflects how positive (or negative) a firm's reputation is (Rindova et al., 2005). Specifically, Rindova and colleagues (2005) suggest that, in the context of large established organizations, the evaluative component of reputation refers to their past quality or performance, whereas the mass dimension of reputation reflects a more general global appraisal of the firm, unrelated to specific attributes (Rindova et al., 2005). Similarly, Rindova, Petkova and Kotha (2005) found that the media reputation of new firms in an emerging market also has a mass dimension – visibility – which reflects the level of reputation, and an evaluative dimension – favorability – which reflects the positive and negative opinions about a new firm.

Below, I discuss what factors contribute to a NV's reputation and develop a model of reputation building by NVs. I bring together symbolic research in management

and organization theory and signaling research in economics to explain the mechanisms through which symbolic activities and resource signals jointly influence a NV's reputation. I use the insights gained from the exploratory study (Essay 1) to develop arguments and draw specific hypothesis regarding the resources that can serve as signals of the NV's underlying quality and potential. Figure 3.1 presents illustration of the theoretical model that I discuss below.

Figure 3.1 – A Model of Reputation Building by New Ventures



Symbolic Activities and New Venture Reputation

Stakeholders are interested in evaluating firms as exchange partners and, therefore, are concerned with their reliability, credibility and trustworthiness (Fombrun, 1996). In order to assess these qualities, stakeholders have to understand and be knowledgeable about the firm's technologies, identity and unique resources (Rindova, 1999). Therefore, they need not only information about the firm's actions but also

interpretive frameworks that explain the meanings of those actions (Weick, 1995; Rindova & Fombrun, 1999). Symbolic activities – or the communications and other non-exchange interactions of a NV with its stakeholders – can both draw stakeholders' attention to a NV and translate for them the meaning of ambiguous NV qualities, by relating symbols from the general culture to venture-specific characteristics, such as artifacts, concepts and frames (Rindova, 1999). Case studies suggest that the use of symbolic activities might be among the major factors that contributed to the quick transition of early startups like Starbucks in the specialty coffee (Rindova, 1999) and Amazon.com in the e-commerce (Rindova, Petkova & Kotha, 2005) to nationally recognized names. Therefore, using symbolic activities might be an effective mechanism to increase a NV's reputations.

Symbolic activities have emerged as one of the major tools used by organizations in their interactions with stakeholders and especially in their efforts to influence stakeholders' opinions and attitudes towards the organization (Brown, 1994; Grunig & Repper, 1992; Grunig et al., 2002; Pfeffer, 1981; Rindova, 1999). Past research suggests that symbolic activities are particularly beneficial for organizations with diverse audiences as well as under conditions of high uncertainty regarding the purpose and consequences of the organizational actions (Brown, 1994; Grunig, 1984; Westphal & Zajac, 1998). For example, Grunig (1984) suggests that higher environmental uncertainty increases an organization's propensity to use two-way communications in order to receive immediate feedback from relevant stakeholders, whereas under lower uncertainty organizations tend to use primarily one-way communications.

Symbolic activities appear in a wide range of forms, including advertising, logo development, financial reports, and press releases (Rindova & Fombrun, 1999; Salancik & Meindl, 1984; van Riel, 1995). The goal of symbolic activities is to contribute to the formation of firm-related schemas, such as reputation (Fombrun, 1996; Grunig et al., 2002; Rindova & Fombrun, 1999). According to Rindova & Fombrun (1999: 697), through symbolic activities firms: "(1) provide more information which constituents may use in making their decisions; (2) offer to constituents ready-made interpretations of their investments; and (3) impress desirable symbols in constituents' minds." Consistent with these ideas, Westphal and Zajac (1998) found that symbolic communications serve to explain the content of certain organizational actions to stakeholders and lead to positive stock-market reactions. Research drawing on the institutional perspective has also focused on the use of symbols by new organizations in efforts to change existing patterns of meaning (Elsbach & Sutton, 1992; Aldrich & Fiol, 1994; Lounsbury & Glynn, 2001). Overall, new organizations can acquire higher standing within their organizational field by using symbolic actions to help stakeholders understand their activities and to induce desirable impressions about themselves (Rindova, Petkova & Kotha, 2005).

My interviews with experienced entrepreneurs suggest that symbolic activities influence a NV's reputation in at least three ways: First, symbolic activities can be used to attract attention and increase public awareness of the NV by active and continuous interactions with potential stakeholders. As one entrepreneur said, "you've got to create a buzz around what you do." Some informants explained that they deliberately targeted major industry events, such as trade shows, conventions, and conferences, to build awareness of their venture and the product or technology it was going to offer. Further,

they considered these activities a top priority and invested a lot of time in them, as the following quote illustrates:

> "I went and I gave speeches at every major meeting … I would give twenty, thirty, forty speeches a year and I may be talking to 25 people or 125 people or 500 people and they were all these major conventions of major meetings, you know, major business meetings, major communications networks, symposiums and so in the audience you would see literally hundreds of people, internationals as well as domestic, who were interested in building these networks. So, within a period of 2 or 3 years, we were known world wide to the point where people would call us."

Second, symbolic activities can contribute to the reputation of a NV by propagating new meanings, through which the actions of the NV can be understood and appreciated (Rindova, Petkova & Kotha, 2005). Helping stakeholders understand what the NV can offer and how its products can meet their needs is particularly important when the potential products are not available yet, it would take time to develop them, or even after they are finished it would be difficult for stakeholders to evaluate them, as is usually the case with new technologies (Rindova & Petkova, 2005). For example, one informant believed that the educational lectures he gave out were what built the initial reputation of his business in the 1970s, when networking and communications technologies were still new terms:

> "And so it was the promotional campaigns that had to do with sharing your knowledge with them … I was the keynoter of the major conferences and that significant speech would really weigh out where the future was going and where another future in terms of networking and telecommunications and computing would be going and I'd be interviewed by the trade newspapers and magazines and there would be profiles of me and there would be profiles of the company and so this is the way of building tremendous recognition and that built the business."

Another informant explained that "educating" potential stakeholders was a way for building the initial reputation of his venture:

> "Well, it's a very successful strategy because what happens is that what you have to be able to do is impart knowledge and wisdom about whatever it is that you're doing and in the imparting of that knowledge and wisdom you build a reputation. You know, if you just say, 'here's the products that we offer. Buy our products' you lose credibility. You talk about the actual field itself with how products are used and then how services are used and then you show what the available services are and you build credibility. … You sell education and by giving away good insights for free, because that's what you are doing, they come back and they figure there must be more there, alright, and so they end up hanging for the rest of it."

Third, in addition to creating interpretive frameworks for stakeholders to understand the NV, symbolic activities can also directly induce favorable interpretations and positive evaluations of the NV's ability to create value for them. Unlike established firms, for which stakeholders can rely on proven track-record for product quality or past financial performance (Fombrun & Shanley, 1990), NVs have nothing tangible to offer to stakeholders as evidence of their ability, because often times they start only with an idea or an entrepreneurial vision, which is still to materialize (Bronson, 1999). However, an idea or intention is difficult to convey and even more difficult to use as a credible signal for reliable future performance. Instead, a NV can use symbolic activities to define for stakeholders its purpose and to explain for them its value creation potential in order to induce favorable interpretations (Lounsbury & Glynn, 2001). For example, the entrepreneurs I interviewed emphasized the importance of conveying a clear vision about the direction of the NV or explaining what is unique about their business as ways to induce positive opinions about their NVs in the absence of ready outputs to demonstrate, as the following quotes illustrate:

> "You need to set a vision of where you're going to be and that vision just can't be painted in words by the senior executive. It has to be embodied in sort of like the literature of and the images of the place and the vision itself of where you're going to be helps people get there. This is as important for the internal people as for external people."

> "Let's see if we can do something new and unique. And so what was unique for them was that they got to influence the design, because they would come to customer meetings, and we'd do joint application developments, JAD sessions together."

According to communications research symbolic activities differ along three dimensions: they can be (1) symmetrical or asymmetrical, depending on the extent to which organizations rely on advocacy or collaboration with stakeholders, (2) one-way or two-way, depending on whether the communications with stakeholders take the form of broadcasting of information vs. a dialogue, and (3) mediated or direct, depending on whether they are conducted through a communication intermediary (Grunig, 1984; Grunig & Grunig, 1992: Grunig et al., 2002). Communications scholars have advocated the use of two-way symmetrical communications as most effective for established organizations (Grunig & Grunig, 1992).[10] Two-way interactions with stakeholders have been found to be particularly useful in highly uncertain and turbulent environments, because such environments force organizations to seek information from relevant stakeholders (Grunig, 1984; Grunig & Repper, 1992; Grunig et al., 2002). These ideas might be particularly relevant for NVs, because they often start in a new industry and have to build their initial reputation with stakeholders under conditions of high uncertainty and environmental turbulence (Aldrich, 2000).

Another useful distinction to make is whether symbolic activities are targeted at influencing stakeholders by reaching out and informing them about important events regarding the NV or they are used mostly for identity defining purposes. For example, a

[10] It should be noted that the above typology has been developed by communications scholars based on studies of large established organizations with significant amount of power over their stakeholder audiences. Given that NVs have very limited power and are highly dependent on their actual or potential stakeholders, the power/influence symmetry of communications might be a non-issue and thus less relevant than the other two dimensions.

NV's web site with its logo, motto, statement of mission and other information represents the 'face' that a NV puts for its publics. This face, or external identity (Rindova & Schultz, 1998), is what stakeholders encounter when they visit the NV's web site. Thus, identity-building symbolic activities are aimed at presenting the 'self' of a NV to stakeholders. On the other hand, externally-oriented activities might be focused on specific audiences. For example, press releases are explicitly focued at reaching the general media, whereas more interactive activities such as participation at conferences and industry events are focused more on reaching other relevant stakeholder groups, such as potential customers, partners, investors, or the industry press. Thus, I draw on the communications research to distinguish between two types of externally-oriented symbolic activities – one-way (broadcasting of information) and two-way (interactions with stakeholders).

My exploratory study suggested that using a variety of symbolic activities might be a more effective reputation-building strategy than focusing on only one or a few types of symbolic activities. Informants provided two major rationales in favor of diverse symbolic activities: First, because of the high uncertainty about the market and the NV's potential stakeholders, some entrepreneurs were not sure which symbols would work, so they tried to use a variety of symbolic activities in the hope that some of them would lead to the desired effects. Second, informants believed that different stakeholder groups attend different symbols, so by using diverse symbolic activities they wanted to "cover all bases", by targeting each stakeholder group separately.

Using diverse symbolic activities can contribute to a NV's reputation in two ways: First, by allowing the NV to reach more stakeholders from different stakeholder

audiences, because different stakeholders may attend different sources of information (Grunig et al., 2002; Rindova & Fombrun, 1999). Second, different types of symbolic activities are likely to provide information on different aspects of the NV, its resources, and its activities. By receiving more diverse information, stakeholders can become more familiar with and develop a more complex image of a focal organization (Yang, 2005). Such familiarity in turn is likely to increase the positive evaluations of NVs by stakeholders, because people tend to evaluate more positively familiar objects and actors (Fiske & Taylor, 1991). Therefore, diversity of symbolic activities can increase both the awareness and the evaluative dimensions of a NV's reputation.

To sum up, symbolic activities appear to be critical in convincing stakeholders that the NV has the potential to create value for them and to otherwise meet their expectations. Specifically, symbolic activities influence a NV's reputation (1) by building awareness of the NV, (2) by providing potential stakeholders with interpretive frameworks so that they can better understand the NV and its products, and (3) by inducing positive evaluations and opinions about the NV. Therefore, I hypothesize that:

Hypothesis 1: The number and diversity of symbolic activities on part of a NV will have a positive effect on the NV's reputation.

New Ventures' Resources as Signals

Market signals are activities or attributes of actors in a market, which are costly to acquire or change and which, by design or accident, alter the beliefs of, or convey information to, other actors in the market (Ippolito, 1990; Spence, 1973, 1974). Although originally developed in relationship to human capital, signaling theory has found broad

applications to various organizational contexts characterized by some degree of uncertainty (see Riley, 2001 for a review). Reputation research, in particular, has been concerned with the effect of market signals on firm reputation with stakeholders (Fombrun & Shanley, 1990; Rindova et al., 2005) and competitors (Clark & Montgomery, 1998; Weigelt & Camerer, 1988). For example, Fombrun and Shanley (1990) found firms' accounting indices of performance, advertising expenditures, institutional ownership, risk, and firm size to predict their Fortune 500 rank. They reasoned that these characteristics signal to stakeholders firm strategy, performance, and conformity to industry norms, thus reducing the information asymmetry and uncertainty regarding the firms. In a more recent study, Rindova et al. (2005) found that inputs and productive assets influence stakeholders' perceptions regarding output quality, whereas more general signals, such as institutional affiliation and third-party certifications influence the more general perceptions about the organization's standing in its field. Overall, past research suggests that signaling theory might be useful for understanding the mechanisms through which NVs can build reputation, because potential customers, investors and other stakeholders who possess limited or no information about the NVs are usually concerned with their unobservable quality and potential.

NVs rarely have substantial tangible assets that the potential investors and other stakeholders can assess (Gompers & Lerner, 1999; Sahlman, Stevenson, Roberts & Bhide, 1999). The resource constraints also prevent NVs from investing in traditional branding and advertising campaigns as established firms do. The entrepreneurs I interviewed consistently pointed to the limited resources and small size of their firms as a major obstacle for launching an advertising campaign and a reason for relying on

alternative sources of reputation for their NVs. As one informant explained: "It's a small company, no way a company like that can actually really purchase enough promotion and advertising to become famous."

Because NVs lack enough resources to invest in costly reputation signals, stakeholders may attend other NV attributes, such as some initially accumulated resources, which can serve as signals of a NV's potential to provide value for them. My inductive study suggested that the most important signaling resource of a NV are (1) its human capital, embodied in its founder(s) and top management team members, (2) its relationships with key customers and partners, and (3) its progress toward completion of the first product(s) or technology.[11] These ideas are consistent with past research, which has found that human capital and social capital are the major predictors of a NV's performance and survival (Eisenhardt & Schoonhoven, 1990; Gimeno, Folta, Cooper & Woo, 1997; Pennings, Lee & Witteloostuijn, 1998; Schoonhoven Eisenhardt & Lyman, 1990).

Human capital as a signal. A NV's human capital can influence its reputation by signaling to stakeholders that the processes utilized by the NV are of substantially high quality. For example, Rindova and Kotha (2001: 1269) report that Excite attempted to signal the quality of its Web site content by introducing "personality-driven reviews" offered by a team of journalists, who were nationally renowned experts in their areas. Similarly, Audretsch and Stephan (1996) identify that a key function of top-notch scientists in biotechnology firms is to signal to stakeholders the quality of a firm's

[11] It should be noted that a NV's resources can serve as signals regardless of whether they were intended as such (Spence, 1973).

research capability. These signaling effects of human capital are particularly likely to occur in NVs, where the founders and the management team often embody their entire human capital. As one entrepreneur explained,

> "When those management teams are assembled early, it alleviates a lot of pressure from the founders and allows them to do what the founders should be doing, which is looking to the future, being out as an advocate of their technology, their product to the marketplace. Not trying to deal with lots of other issues."

Stakeholders may use different observable indicators of a NV's human capital, such as the education, diversity, and experience of its team (Eisenhardt & Schoonhoven, 1990; Porter, 2004; Shane & Cable, 2002).

The top management team members' education and relevant experience may serve as signals of the quality of a NV's human capital. For example, having an advanced degree or a degree from a prestigious university (Porter, 2004; Shane & Khurana, 2003), as well as having worked for a major firm in the industry (Burton, Sorensen & Beckman, 2002), indicate that a NV's team members may posses some unique skills and capabilities and thus signal the overall better quality of the NV's human capital. For example, one informant explicitly mentioned experience in a major firm as a reason for hiring two of his team members:

> "I felt confident in my own consulting abilities, but I didn't have a blue chip management consulting resume. You know, having worked for Diamond Technology Partners, or Cambridge … So the two places I hired in, it wasn't so much I felt weak in the consulting, as I knew how I needed the right reputation."

Another informant emphasized the credibility that past employment with a well-known industry player gives to the NV team:

> "And so he was able to reach out to people at Dell and Paychecks, and so forth, and say hey we've got this new product coming. Don't you remember me from

> Microsoft? We'd like to pitch the product to you. And they would take those phone calls."

Diversity of the NV's team can also indicate higher quality of its human capital, because a more diverse team is more likely to possess more of the needed expertise for the NV to perform its functions. One third-time founder acknowledged his own lack of knowledge in certain areas as a motivation to recruit team members with complementary skills:

> "… the management team becomes so important, because even if I could do ten start-ups in a row, I'm not going to learn everything about running a start-up"

Another informant argued against the 'all-engineers' teams, which are clueless about dealing with marketing or management issues:

> "Good engineers, you know, bright ideas, but no clue whatsoever when it's coming to what do you need to do, to take a new product and market it successfully, and fund successfully, the creation of an operation line, and all that kind of stuff which was needed."

Consistent with the above ideas, prior research has documented positive relationships between founding team size and diversity and the attractiveness of a NV for certain stakeholder groups, such as investors or potential partners (Eisenhardt & Schoonhoven, 1990; Porter, 2004). Therefore, the diversity of a NV's team is likely to signal higher quality human capital and greater potential to create value for stakeholders, thus increasing a NV's reputation.

To sum up, stakeholders are likely to use characteristics of a NV's top management team to infer the level and quality of its human capital, and its potential to perform effectively. Thus, I hypothesize that the observable characteristics of a NV's team, such as education, diversity, and experience, will influence the NV's reputation:

Hypothesis 2: The quality of a NV's human capital, as indicated by the team members' education, diversity, and experience, will have a positive effect on the NV's reputation.

The role of founders for public evaluations of a NV is much more pronounced than in established firms, because of the general belief that founders have disproportionately strong effect on organizational characteristics and performance (Boeker, 1989; Dobrev & Barnett, 2005). The recognized ability of the NV founders provides important clues about the NV's future prospects, because publics tend to believe strongly in the importance of leadership for the success or failure of any organization (Meindl, Ehrlich & Dukerich, 1985; Meindl & Ehrlich, 1987). Founders' prior start-up experience can reduce the uncertainty related to their expertise and abilities and thus alleviate concerns regarding the NV's potential for successful performance (Sapienza & Gupta, 1994). Specifically, prior research has found that founders' prior start-up experience reduces VCs' uncertainty regarding the NV and the need for interaction between the NV's CEO and the VCs (Sapienza & Gupta, 1994). Thus, more experienced founders might be perceived as more reliable, which in turn will lead to more favorable evaluations of their ventures' future prospects. Further, founders with prior start-up experience are more likely to be perceived as suitable for carrying out the complex tasks at founding and the early life of a NV, because the fit between the CEO's managerial experience and the firm's strategy is found to have a positive effect on performance (Gupta & Govindarajan, 1984). Specifically, prior entrepreneurial experience provides evidence to stakeholders that the founders have already done this at least once, which is

likely to alleviate their concerns regarding the prospects of the NV. In other words, startup experience can serve as a source of validation of the founders' entrepreneurial ability, not possessed by novice entrepreneurs (Aldrich, 2000). Therefore, I propose that founders' experience accumulated prior to starting a focal NV is likely to have positive effect on the NV's reputation:

> *Hypothesis 3: Founders' prior entrepreneurial experience will have a positive effect on the NV's reputation.*

Relationships with customers and partners as signals. Past research suggests that a NV's relationships also can play a signaling role, thus influencing the perceptions of more distant stakeholders who have no direct relationships to the NV. The choices of third parties vis-à-vis a NV, and especially their decisions to enter an exchange relationship with it, have been identified by past research as an important signal of the NV's quality and potential, and have been found to influence a NV's performance and survival chances. Past research has found that relationships with other actors in the industry play the role of organizational endorsements and certifications of quality, and thus lead to perceptions of higher organizational quality compared to less connected rivals (Benjamin & Podolny, 1999; Podolny, 1993). Relationships with influential third parties serve as an endorsement or certification of the NV's quality, because such actors are believed to be more knowledgeable and capable of evaluating the NV (Gulati & Higgins, 2003; Higgins & Gulati, 2003; Stuart, 2000; Stuart et al., 1999). Following similar logic, Podolny and Stuart (1995) found that the status of actors associated with an innovation increases the likelihood of the innovation to be seen by others as important

and thus rapidly developed, regardless of the innovation's quality. Further, Stuart (2000) shows that the size and innovativeness of a focal firm's alliance partners predict its innovation rate and growth. This effect is stronger for new and small firms, which suggests that NVs benefit most from the signaling effect of partners on their reputation (Sanders & Boivie, 2004; Stuart, 2000; Stuart et al., 1999).

My exploratory study suggested two types of relationships to be particularly valuable for a NV's reputation – those with customers and with partners. First, informants consistently mentioned the importance of building strong relationships with one or more customers very early in the life of the NV. For example, one founder of a software development company said:

> "This business is all about relationships. It's beyond the price, beyond everything. You know, because next time someone will come and try to bid, and if their bid is going to be close to us, the only reason the customer will stay with us is the relationship."

Specifically, some informants believed that it was important to develop strong relationships with multiple customers early on. For example, one founder strategically sought to develop relationships with key customers and invested substantive efforts in contacting people who potentially may become long-term customers of his NV.

> "My whole management team spent a lot of time networking, spent a lot of time out, going to conferences, meeting people, really developing a personal connection to different people. And that helped develop the reputation more than any branding or marketing ever did."

Another informant concluded:

> "The relationship with the customer is what keeps the venture going, because all the greatest ideas in the world just die on the vine if somebody didn't buy them."

In addition to their direct effect on a NV's reputation with these particular stakeholders (Grunig et al., 2002), such relationships can serve as a signal of the NV's

worthiness as a producer. Thus, the fact that somebody (supposedly knowledgeable) values the NV's offerings may signal to more distant stakeholders that the NV provides high quality outputs and may have positive effect on its reputation. Therefore, the majority of stakeholders who have no direct experience with the NV but may potentially consider some type of relationship with it are likely to use the fact that some customers have already signed for the NV's products as an indicator of the NV's high quality and potential. Specifically, securing an early influential customer may help a NV build reputation with other potential customers and stakeholder groups, by using the first customer as a signal of the NV's quality. The entrepreneurs I interviewed emphasized the role of the industry-wide prestige of their first customers, as the following quote illustrates:

> "So you leverage your wins to say … We would let the prospective customers know about the first thing that we did with Compaq, because we knew that the first time they went to Merrill Lynch, Merrill Lynch would ask Microsoft, and Compaq would typically be on the customer call with us, or we would hook them up there on. … So what we did was, we basically used that as a teaser."

The importance of securing an early influential customer for NVs' reputations is also consistent with research findings that high-status actors exert disproportionate amount of influence on the choices of others (Rao, Davis & Ward, 2000). Therefore, I expect that NVs that are able to build relationships with customers early on, and especially with prestigious customers, would accumulate higher levels of reputation than other NVs.

Hypothesis 4: The number and prestige of customers with which a NV has relationships will have a positive effect on the NV's reputation.

Second, the choices of third parties vis-à-vis a NV, and especially their decisions to enter a partnership with it, have been identified by past research as important indicators of the NV's quality and potential, and have been found to influence a NV's performance and survival chances. Relationships with influential third parties serve as an endorsement or certification of the NV's quality, because such actors are believed to be more knowledgeable and capable of evaluating the NV (Gulati & Higgins, 2003; Higgins & Gulati, 2003; Stuart, 2000; Stuart et al., 1999). Outside observers can infer certain characteristics of the NV by the quality of its partners, because people tend to associate with others who have similar values and interests (Aldrich, 2000). Aldrich (2000: 87) points to the fact that "high status people – with more social resources, power, or prestige than others – play important roles in linking nascent entrepreneurs to resources and opportunities".

Several informants believed that an early relationship with an influential industry player was what gave boost to their NVs' initial reputation. For example, one informant explained how the early partnership with Microsoft helped his business take off:

> "The notion was that because Microsoft was entering the high-end enterprise networking market that they were going to go after the Novell and the Banyan customers. Because that was, that was the hunting ground for them. And Microsoft was going to be the driver of our business. … And there's usually an eco system for large software companies that exists with or without their knowing. There is a large number of companies that are offshoots of Oracle or SAP, a very large technology company. Doesn't matter which one it is. So we picked Microsoft. We knew that as they come up with products, enterprise space, there was going to be a tremendous opportunity to help ride that wave, you know. And that's what we did."

This is consistent with prior research on the role of alliances and partnership in NV contexts. NVs that have relationships with high-status strategic partners are found to perform better because such ties provide them with certification for quality when

stakeholders are uncertain about their actual quality (Stuart et al, 1999). In an in-depth qualitative analysis of seven relationships of entrepreneurial firms, Larson (1992) reports that entrepreneurial firms emphasized the importance of relationships for financial success, growth, adaptiveness, and innovation. Overall, my informants, as well as prior research consistently support the notion that a NV's affiliates reduce public uncertainty regarding the NV's prospects and reliability (Baum, Calabrese & Silverman, 2000; Stuart, 2000; Stuart et al., 1999). Therefore, I hypothesize that:

Hypothesis 5: The number and prestige of partners with which a NV has relationships will have a positive effect on the NV's reputation.

Completion of New Product Development as a Signal

Output quality is the best-established predictor of reputation in economic theory: firms develop 'good' reputation by providing consistently high quality outputs over time (Shapiro, 1983; Weigelt & Camerer, 1988). However, product quality is often difficult to evaluate a-priori, which creates evaluative uncertainty for customers and other stakeholders. As Shapiro (1982: 20) explains, "uncertainty about quality is a wide-spread and important feature of markets for most firms' goods and services". Such evaluative uncertainty might be even greater in the context of NVs, because many NVs start with an idea rather than a finished product and it may take months or years before they deliver outputs to the market. Therefore, stakeholders may use certain indicator of the NV ability to produce an output as signals of the potential output quality. For example, for products that take a long period of time to develop, such as new technologies or research-intensive products, the stage of product development, or how advanced and how close to

completion the output is, can signal to stakeholders that the NV has the potential of producing valuable outputs.

Past research has identified accomplishments such as having a prototype or producing the first product as major milestones in the start-up process (Wasserman, 2003). Such accomplishments may signal to stakeholders that the NV is "on the right track" and likely to produce the desired outputs. On the other hand, if in a few years a NV still has nothing but a promising idea to offer, stakeholders may begin to question the feasibility and quality of the idea. In other words, progressing too slowly towards completing the first output may send negative signals to stakeholders and harm a NV's reputation. Therefore, I hypothesize that NVs that manage to reach some level of completion of their first product or technology faster will have higher reputation than their peers:

Hypothesis 6: Faster completion of new product development will have positive effect on a NV's reputation.

Interactions between Symbolic Activities and Signaling Resources

Institutional and impression management scholars argue that symbolic activities and substantial organizational characteristics are decoupled (Meyer & Rowen, 1977; Pfeffer, 1981). Such decoupling is found to have positive effect on the performance of established corporations (Westphal & Zajac, 1994, 1998; Zajac & Westphal, 1995). However, this may not be the case with the NVs, which are much more closely watched and evaluated because of the high perceived risks related to their activities (Aldrich, 2000; Aldrich & Fiol, 1994). Instead, NVs may use symbolic activities to promote their

substantive characteristics, by drawing stakeholders' attention to those characteristics and by explaining how such characteristics will help the NV produce high quality outputs or otherwise meet stakeholders' expectations (Rindova, Petkova & Kotha, 2005). As one informant observed, "You have to be very active in this, you know … if you're great and nobody knows that, you're not great" Another informant explained how he and his team used symbolic activities to broadcast their knowledge and capabilities (i.e. the human capital) of their NV:

> "What we did was, for example, we built what we called 'a capabilities brochure' and we took the resumes of all of the individuals who were associated with us and we were academics ok, so we had written many, many papers and some of those papers had very interesting titles and so we built a brochure that was by subject matter, Design and Computer Communications Network, for example, and we took the papers and we wrote down the names of the papers that we'd written on that, so we built this brochure out of capabilities including us as individuals, our resumes, a description of the business, challenges, up front big world of networking, then the backward applications."

As the above example illustrates, in the presence of relevant resources that are likely to be seen by stakeholders as indicators of the NV's higher quality and potential, such as human capital and relationships, symbolic activities can be used to make those resources more visible to stakeholders and to focus stakeholders' attention on them. If so, symbolic activities will reinforce the positive effect of human capital, relationships with customers and partners, and product completion on a NV's reputation. Therefore, I hypothesize that:

> *Hypothesis 7: Symbolic activities will increase the positive effects of (a) human capital, (b) relationships with customers and partners, and (c) product completion on a NV's reputation.*

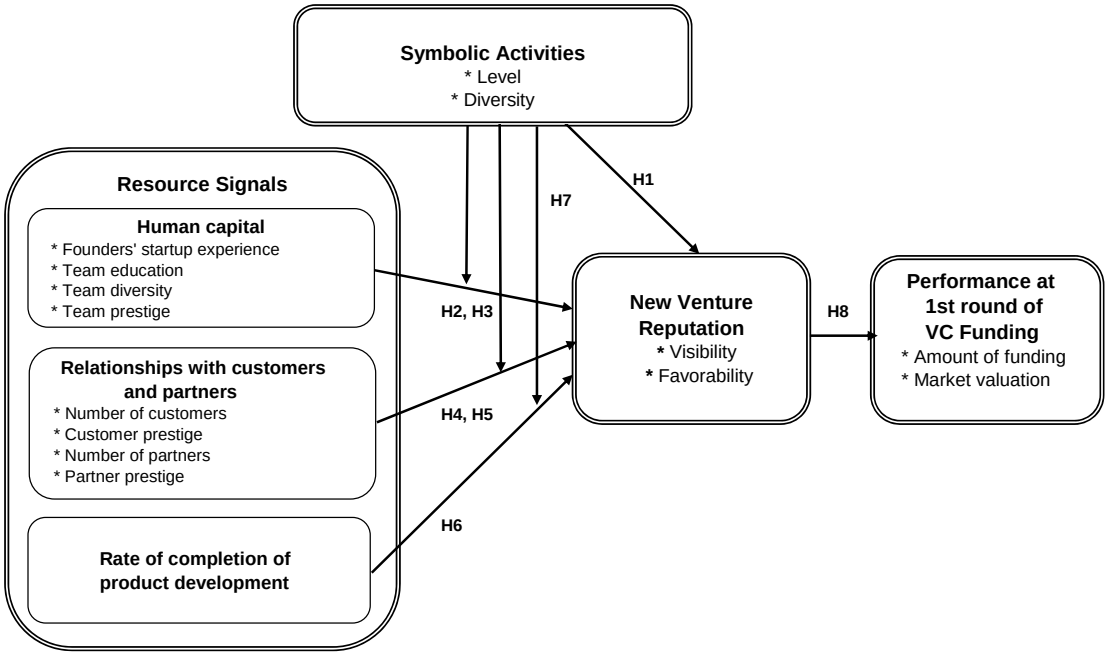
New Venture Reputation and Performance

Stakeholders rely on an organization's reputation to reduce uncertainty about the value of future exchanges with it. As a result, favorable reputations induce stakeholders to establish exchange relationships with the organization. For example, buyers are willing to pay premium prices for the products of an organization with high reputation because it increases their confidence in the value of the organization's outputs (Klein & Leffler, 1981; Shapiro, 1983) or because acquiring products from such an organization can enhance their own image (Podolny, 1994). Numerous studies have documented the positive effect of reputation on a firm's financial performance (Roberts & Dowling, 2002; Wartick, 2002). If reputation matters for NVs as well, we would expect to find similar effect of NVs' reputation on their early performance. Indeed, research on the human capital of young firms has found that qualified employees are more likely to pursue employment relationship with high reputation NVs (Williamson, 2000, Williamson et al., 2002), which in turn may increase those ventures' overall performance. Similarly, Shane and Cable (2002) found that VCs are more likely to invest in NVs that they perceive as having better reputation. More generally, reputation has been argued to be a major driver of NVs' early performance (Stuart et al., 1999). Therefore, I expect that a NV's reputation will be positively related to its performance.

Hypothesis 8: The greater and the more positive a NV's reputation is, the better its early performance.

Figure 3.2 presents a detailed model of the hypothesized relationships. According to this model, symbolic activities and signaling resources jointly influence a NV's reputation, which in turn increases its early performance.

Figure 3.2 – A Detailed Model and Hypotheses



METHOD

The sample for this study consists of 415 information technology NVs founded in 1997, 1999 and 2001 in the U.S. that received at least one stage of venture capital (VC) funding. The purpose of selecting NVs started in three different years was to account for potential systematic differences in terms of public and investor interests and expectations regarding the IT sector before, during, and after the so called 'Internet bubble'. Following prior research (Hsu, 2004, 2005), I confine the sample within the pool of VC-backed

NVs, to be able to compare their performance and to control for some unobservable differences that may depend on the source of funding.

The NVs were randomly selected from the pool of companies listed on the VentureXpert database, which has been used extensively by prior research as a reliable source of data on venture capital (VC) firms and VC-backed NVs (Baum & Silverman, 2004; Gompers & Lerner, 1999; Gulati & Higgins, 2003; Higgins & Gulati, 2003; Shane & Stuart, 2001). The observation period for each NV starts from its founding date and ends at the time the NV received its first round of VC funding. I collected data about each venture from multiple sources, including the NV's archival websites (extracted from the Internet archive www.archive.org), VentureXpert database, Lexis-Nexis Academic database, and ABI/Inform.

Table 3.1 – Summary of Variables, Measures, and Data Sources

VARIABLE	DESCRIPTION	DATA SOURCE
Reputation Measures		
Media visibility (total)	Total number of articles that mention the NV's name	Lexis-Nexis database
Positive reputation	The number of positive media articles that mention the NV's name	Lexis-Nexis database
Media tenor	The proportions of 'positive' to 'negative' media articles relative to the media total	Lexis-Nexis database
Performance Measures		
Amount of money raised at 1st round	Total amount (in mil $) of investment at first round by VCs and other investors, divided by the total number of VC investments in the IT industry that year	VentureXpert database
Market valuation at 1st round	Amount (in mil $) of the NV market valuation at first round, divided by the NASDAQ composite index for the date of each NV's first round of VC funding	VentureXpert database
Symbolic Activities Measures		
Level of symbolic activity	Total number of all symbolic activities used by the NV	Venture archival web-sites, PR Newswire in Lexis-Nexis
Identity-building symbolic activities	Number of activities of the following types: web-site updates, logo, motto, mission statement, and number of links/ topics on the NV's web-site prior to 1st round	Venture archival web-sites, www.archive.org

One-way externally oriented symbolic activities	Number of activities of the following types: press releases, speeches, interviews on the radio/TV, books and white papers published by team members	Venture archival web-sites, Lexis-Nexis, ABI/Inform
Two-ways externally oriented symbolic activities	Number of activities of the following types: conferences, fairs, trade shows, and other special events initiated and/or attended by the NV	Venture archival web-sites, Lexis-Nexis, ABI/Inform
Diversity of symbolic activities	Blau (1977) diversity index among the three types of symbolic activities	Venture archival web-sites
Human Capital Measures		
Average team education	Average of highest degree for each member	Venture archival web-sites
Relevant experience on the team	Number of team members who worked for at least one of the major firms in the industry (e.g., Microsoft, IBM, Cisco, Apple), divided by team size	Venture archival web-sites
Diversity of the top management team	Blau (1977) diversity index for team members' backgrounds	Venture archival web-sites
Founders' prior start-up experience	Average number of prior start-ups by the NV founder(s)	Venture archival web-sites
Relationships Measures		
Customer relationships	Total number of customers	Venture archival web-sites, PR Newswire in Lexis-Nexis
Prestigious customer relationships	Number of customers who are *Fortune 500* firms or the Government, divided by total number of customers	Venture archival web-sites, PR Newswire in Lexis-Nexis
Partnerships	Total number of partners	Venture archival web-sites, PR Newswire in Lexis-Nexis
Prestigious partnerships	Number of partners who are *Fortune 500* firms or the Government, divided by total number of partners	Venture archival web-sites, PR Newswire in Lexis-Nexis
Controls		
NV age	Days from founding to 1st round	VentureXpert database
Year of founding	Year dummies for 1997, 1999, 2001	VenureXpert database
Industry sector	Dummies for each of the six IT sectors	VenureXpert database
Seed investment	Amount of seed investment in million USD	VenureXpert database
Number of VC investors	Number of VC investors at 1st round	VenureXpert database
VC financial prestige	Size (in million $) of the largest VC investor	VenureXpert database
VC evaluative prestige	Number of IPOs led by the largest VC in the year preceding 1st round	VenureXpert database

Table 3.1 summarizes the variables and measures used in this study, and the sources of data for each variable. All qualitative data, such as press releases, media articles, and texts from the NVs' archival web-sites were content analyzed and coded by trained coders. The intercoder reliability for the tone of media articles was .93 for a

subsample of 50 articles, which suggested sufficiently high agreement to split the rest of the media coding among single coders.

Dependent Variables

New venture reputation. Most prior studies of firm reputation have used *Fortune* 500 rankings as a measure of reputation, an approach driven by convenience rather than a strong theoretical or empirical rationale (see Wartick, 2002 for a recent review and critique). However, this approach does not allow for making any conclusions about the emergence of reputation and is practically inapplicable to start-up firms, none of which appears in the *Fortune* rankings. An alternative approach particularly suited for studying the reputation of NVs focuses on capturing reputation in the media coverage of firms (Deephouse, 2000; Pollock & Rindova, 2003; Rindova, Petkova & Kotha, 2005). Prior research has emphasized the role of the media in making large number of stakeholders aware of a focal organization (Hunt & Grunig, 1994; Van Leuven & Slater, 1991) and sharing the same perceptions about it (Bromley, 1993).

My interviews with people involved in different capacity with the IT industry also suggested that media coverage of IT NVs is an appropriate measure of their initial reputations. An expert who has been following the development of the high technology start-ups in the Silicon Valley for the last 10 years explained the role of the media as a major uncertainty reduction agency in the following way:

> "… about any given startup, initially there is what I would call a *generalized uncertainty*, meaning uncertainty in multiple domains like technology, demand, management, investments. And there is an interdependence of opinions among multiple stakeholders: customers would like to buy a technology from a firm that is going to be around, but the firm is not going to be around unless it gets some venture capital; however, the venture capitalists would like to give money to the ventures that will succeed, and so on. So, each of the stakeholders is looking at

> the others, but because all of them are uncertain, ultimately all of them need to rely on what is in the mass-media."

Because of the endemic, multifaceted nature of uncertainty regarding high technology NVs, perceptions of each stakeholder group are driven and depend on those of the other stakeholders, and all of them need a "broker" to inform these perceptions. The media can play the role of such a broker, as suggested by prior research in various contexts and settings (Pollock & Rindova, 2003; Rindova & Fombrun, 1999; Rindova et al., 2005). These ideas are also consistent with Zuckerman's (1999) mediated market model, according to which in markets characterized with high uncertainty, actors look for authoritative opinions from information intermediaries, such as industry analysts or the media. Media can play an important intermediary role in building a NV's reputation, because it can attract public attention to those issues that are covered and away from those that are not covered (Hoffman & Ocasio, 2001; Pollock & Rindova, 2003). By increasing the exposure of a NV to public interpretations, media can render it more comprehensible and familiar (Pollock & Rindova, 2003). Also, positive media coverage increases the perceptions of a NV's value by framing public opinions regarding the NV (Pollock & Rindova, 2003; Rindova, Petkova & Kotha, 2005). Therefore, the representations of NVs in the media can serve as a reasonable proxy for their reputation, which allows for comparison among NVs. This measure improves over past research, which has used NVs' performance as an indicator of their reputations (Stuart, 2000), lumping together the reputation as an asset with its performance consequences.

Media reputation can be operationally defined as "the aggregated news reports relating to a specific company within a prescribed period" (Wartick, 1992: 34). I measured NVs' media reputations for the period between each NV's founding and first

round of VC funding.[12] Following past research on media reputation (Deephouse, 2000; Pollock & Rindova, 2003; Rindova, Petkova & Kotha, 2005; Wartick, 1992), I operationalize NV media reputation in terms of visibility and favorability. *Visibility* (or volume of media coverage) is measured by the total number of media articles mentioning each NV, as listed in "Industry News", "Business and Finance", "Magazines and Journals" and "Major newspapers" sections of the Lexis-Nexis Academic database and/or in ABI/Inform database. This approach produced a total of 1318 articles, of which 694 were published in specialized industry outlets and 624 in general press (the vast majority of which local newspapers and magazines). The fact that the NVs I studied received coverage primarily by specialized outlets – either by industry sector or geography – is consistent with the findings of prior research that media seeks to write about events of local relevance or provide information that contains some local angle and is, therefore, more relevant for their readers (Aronoff, 1978; Hunt & Grunig, 1994; Sallot & Johnson, 2006). Readers, in turn, tend to pay attention to information that is most relevant for them (Grunig, 1980b; Hunt & Grunig, 1994). Arguably, an information technology NV is most likely to find potential customers or partners among people interested in information technology. In addition, the most relevant investors and prospective employees are those located closer to the NV. Therefore, the types of media publications I identified are indeed likely to reach the most relevant stakeholder groups and influence their perceptions of a given NV.

[12] Although the data on both substantive and symbolic activities and media coverage was collected during the same time period for each NV, I have strong reasons to believe that media coverage follows (as opposed to preceding) any given action. Specifically, I have matched the dates on 200 substantive and symbolic actions and their media coverage and found that the first media coverage of an action always appeared after the action was taken, within a time period ranging from one day to two years after a given action (on average, two and a half months).

To measure *media favorability*, each article was coded as positive, negative, or neutral by trained coders, producing 172 (13%) positive, 9 (1%) negative, and 1137 (86%) neutral articles. The intercoder reliability for the tone of media articles was .93 based on a subsample of 50 articles, which suggested sufficiently high agreement to split the rest of the media coding among single coders. The high proportion of neutral articles is not surprising, given that journalists usually strive to provide unbiased reports of the reality, and only occasionally express evaluative opinions (Hunt & Grunig, 1994). Moreover, the high uncertainty surrounding a NV makes any evaluative statements even more risky for journalist. My observations are also consistent with recent research on IPO firms, which similarly finds that the majority of media coverage of an IPO is neutral (Pollock & Rindova, 2003).

I operationalize favorability in two ways. First, I used the number of positive articles as an indicator of *positive reputation*. Second, I calculated for each NV an overall *tenor* score using Janis-Fader coefficient of imbalance (Janis & Fader, 1965), which has been adopted by past organization research (Deephouse, 2000; Pollock & Rindova, 2003). The formula for calculating this measure is:

$$\text{Tenor} = (P^2 - PN)/V^2 \text{ IF } P>N;\ 0 \text{ IF } P = N, \text{ AND } (PN - N^2)/V^2 \text{ IF } N > P,$$

Where P is the number of positive articles about a NV, N is the number of negative articles about it, and V is the total number of articles about it, including articles that are neutral in tenor. The range of this variable is from -1 to 1, where -1 denotes all negative coverage and 1 denotes all positive coverage.

New venture performance. NV performance was measured at the time of the first round of venture capital investment ("Series A" funding). Early stage VC funding plays the role of interim valuation of the NV that predicts later profitability, because VCs do market valuation based on expected profitability of the NV. The most important characteristics of this valuation are (1) the amount of money the NV is able to gather from VCs; and (2) the market valuation of the NV at the time of first VC funding. *Amount of funding* was measured as the total investment by all VCs participating in the first round of funding for each NV, as reported on VentureXpert database. To account for the fact that the amounts of investment vary due to the supply of VC money, which is not related to a particular NV's quality or reputation, I adjusted this variable by dividing the amount of first-round investment for each NV by the total VC investments in the IT industry in the respective year, as reported by Price Waterhouse-Cooper Money Tree. *Market valuation* was measured as the actual market valuation of the NV on the date of the first round of VC funding, as reported on VentureXpert database. To account for stock market variations unrelated to the focal NVs' quality and reputation, I adjusted this variable by dividing each NV's valuation by the NASDAQ composite index for the date of the NV's first round of VC funding. Only 229 NVs had disclosed their market valuation, thus the analyses including market valuation were performed with this sub-sample.

Independent Variables

Symbolic activities. Symbolic activities have been rarely studied empirically in the context of NVs, which makes the use of established measures difficult. Therefore, I

started by developing an exhaustive list of all symbolic activities described by the 11 entrepreneurs I interviewed. Next, I categorized the diverse symbolic activities that NVs can use in three groups – identity-building, one-way externally oriented, and two-way externally oriented symbolic activities. Table 3.1 lists the activities that fall in each category. It should be noted that the vast majority of one-way externally oriented symbolic activities in my sample (92%) are press releases posted on public wire servers such as *PR Newswire* and *Business Wire*. The correlation between the number of press releases only and the number of all one-way externally oriented symbolic activities is .984, suggesting that the effects for this type of symbolic activities is driven primarily by the press releases. However, the other one-way externally oriented symbolic activities add value to the overall diversity of symbolic activities, so I decided to keep them in this category for the analysis.

Symbolic activities can be operationalized along two dimensions – intensity (or level) and diversity. *Intensity* of symbolic activity was measured by the total number of all symbolic activities, as well as by the number of activities of each of the three types (identity-building, reaching out one-way, and reaching out two-ways). *Diversity* of symbolic activity was measured using Blau (1977) heterogeneity index, which captures the relative proportion of each type of symbolic activities in the total.

Diversity of symbolic activities = $1 - \Sigma p_i^2$,

where p_i equals the percentage of symbolic activities that fall in the *i*th category out of three possible categories – identity-building, one-way externally oriented, and two-way externally oriented symbolic activities. The measure varies from 0 (no diversity) to 1

(high diversity). A NV gets a zero score for diversity if it has no symbolic activities or if all of its symbolic activities fall into one category (e.g., only press-releases).

Human capital. In order to construct the human capital measures, I collected biographical data on a total of 2239 individuals, of which 705 founders and 1534 team members. All the data were collected from the NVs' archival web-sites for the period between founding and first round of VC funding, including the last web-site updated before the date of the first round of VC funding. Therefore, each NV's team includes both people who were there from the startup and those who joined the top management team between founding and first round of VC funding. For each team member I collected and coded data on their highest degree, past entrepreneurial experience and employment.

Top management team quality. I hypothesized that the quality of a VN's top management team is signaled through the team's diversity, education and relevant experience. First, for each team member, I coded their highest degree as 0=high school, 1=college, 2=Bachelor, 3=Master, 4=PhD. I then averaged the scores across all team members to come up with an average degree score for each NV.[13] Second, I measured relevant experience (or prestige of prior experience) as the proportion of team members who have worked for at least one of the major firms in the industry (e.g., Microsoft, IBM, Cisco, and Apple). To identify these firms I used *Fortune* 500 list of largest corporations and selected those from the IT industry. Third, I used the heterogeneity index proposed by Blau (1977) and used by organizational research as an appropriate measure of team

[13] I also calculated alternative measures of education, such as number of team members with a Ph.D., number of team members with a Master's degree, and the highest degree on the team. None of these alternative alternative variables changed the results substantively.

diversity (Bunderson & Sutcliffe, 2002). The Blau index was calculated for each NV using the following formula:

$$\text{Team diversity} = 1 - \Sigma p_i^2,$$

where p_i equals the percentage of team members who have background in the ith area (out of nine possible background areas – engineering, computers/information technology, physics, general management, marketing/sales, finance/accounting, operations, law, and others). The measure varies from 0 (low diversity) to 1 (high diversity). A NV gets a zero score for diversity if all team members come from the same background (e.g., all engineers or all IT specialists).

Founders' entrepreneurial experience. Following prior research, I measure founders' entrepreneurial experience as the number of prior start-ups by the founder(s), divided by the number of founders for NVs with more than one founder (Sapienza & Gupta, 1994; Schoonhoven, Eisenhardt & Lyman, 1990). For robustness tests I also developed a scale-based measure of prior start-up experience where 0 = no entrepreneurial experience, 1 = worked for a NV in non-founder and non-TMT member capacity, 2 = worked for a NV as TMT/CEO/ other capacity involving decision making, 3 = been a founder or co-founder of a NV before in an unrelated industry, 4 = been a founder or co-founder of a NV in the same or a related industry, 5 = started more than 1 NV regardless of the industry. The alternative measure did not change the results substantively.

Relationships with customers and partners. Relationships with customers and partners were operationalized using information about the customers and partners of a NV that (1) was listed on the NV's most recent web-site before the date of its first round of VC funding, and/or (2) announced in press-releases during the time period between founding and the first round of VC funding. Using the information from these sources I counted the total number of customers a NV listed or announced. To calculate the customer prestige measure, I checked for each customer whether its name appears in the *Fortune 500* list of largest corporations. I also considered the Government as a prestigious customer. I than calculated the proportion of prestigious customers out of the total number of customers and used this measure in my analysis. Similarly, I also counted the number of relationships with partners for each NV. Partners' prestige was operationalized as the proportion of *Fortune 500* partners (the number of *Fortune 500* partners, divided by the total number of partners).

Completion of product development. In order to measure how fast NVs completed their first outputs, I first coded the degree of completion as the stage at which the NV product was at the time of the first VC funding (Higgins & Gulati, 2003).[14] I used the following scale which was developed after consulting two IT experts and asking them to differentiate between degrees of completion of the products for a sub-sample of 50 NVs (based on the product descriptions on the NVs' archival web-sites): 1 = idea stage (product description is provided but no evidence of ready output), 2 = a demo or test-runs available, 3 = ready for sale output available (can click and buy or contact somebody to

[14] Higgins & Gulati (2003) categorize the stage of product development in their study of biotechnology industry firms as preclinical, clinical, or postclinical.

order installation), 4 = second generation or an upgrade of the first product/ technology is available, 5 = second type of product/ technology is available, 6 = more than two different outputs are available. The degree of completion of each NV's product was measured at the last point in time before the first round of VC funding when product description was available.

As a second step, I calculated the rate of product completion for each NV, assuming that (1) at the time of founding, all NVs started from the idea stage, and (2) the advancement of the new product development between founding and first round of VC funding of each NV followed an exponential function. I use the following formula to calculate the rate of advancement for each NV:

Rate of new product completion = $A^{1/n} - 1$,

where *A* is the level of completion at the last time point before the first round of VC funding, *n* is the number of days from founding to the first round of VC funding.[15] This measure is independent of time and allows for comparison across NVs in the relative speed with which they got to the level of completion observed at the time of the first VC funding.

Control Variables

Controls for predicting reputation. In predicting NV reputation, I control for the year of founding, industry sector, and NV age. Dummies for *founding year* were included as controls, because prior research suggests that high technology ventures started during

[15] I started by reasoning that if each NV starts its product development from level of $A_0=1$ (idea), and the product advancement by the end of the observation period depends on the time that elapsed from founding to first round and on the NV-specific rate of advancement, the product advancement at the end of the observation period can be expressed as $A_n = (A_0 + r)^n$. By solving this equation for r, I derived that $r = A^{1/n} - 1$.

the Internet bubble period (1999-2000) received disproportionate amount of media attention (Prats, 2004). I also control for *industry sector* by including a dummy variable for each industry sector in my sample – communications, computer hardware, computer software, internet specific, computer others, and semiconductor/electronics. Finally, I control for the *NV age* (the time that elapsed between the founding of a NV and the time of first VC funding), because I reasoned that the more time a NV had, the more likely to obtain media coverage regardless of other factors. I measure the NV age in days from startup to the date of the first venture capital investment in the NV.

Controls for predicting performance. I control for several factors suggested by prior research as contributing to the amount of money and the market valuation of a NV. These variables include seed investments at founding, year of founding, industry sector, NV age at the time to the first round of VC finding, number of VC investors, and prestige of VC investors. The *founding year* was included as a control to account for potential cohort effects on the NV performance. I use the same *industry sector* controls as in predicting reputation, to account for variations in funding among the IT industry sectors. *NV age* (in days from the startup date to the date of the first venture capital investment in the NV) was included, because older NVs are likely to present lower uncertainty for VCs, and might be able to attract more money and/or to receive a higher market valuation. The fact that a NV has already received a *seed investment* may help it attract more VC money on the first round. Therefore, I also control for the amount of seed investment received by NVs. Past research suggests that being evaluated by VCs, and especially by prestigious VCs, can influence a NV's early performance relative to other NVs in the same industry (Gulati & Higgins, 2003; Higgins & Gulati, 2003; Hsu, 2004; 2005a). To

account for these effects, I collected data on the characteristics of the VC investors that participated at the time of the first round of VC funding (a total of 583 firms). I constructed two variables to control for both VC financial prestige and VC evaluative prestige. First, following the methodology used by prior research (Gulati & Higgins, 2003; Hsu, 2004, 2005a), I measured *VC financial prestige* using the total funds under control of the largest VC investor, adjusted for the total VC investments in the year of funding. Second, as suggested by past research (Hsu, 2004, 2005a), to measure *VC evaluative prestige*, I used the number of IPOs led by the largest VC in the year preceding the first round of VC investment in a focal NV, adjusted for the total number of IPOs in that year.[16] Finally, I control for the *number of VCs*, because more VCs are likely to provide more money to a NV, regardless of its reputation. The data for all control variables was collected from the VentureXpert database.

ANALYSIS AND RESULTS

I performed two sets of analyses – two-stage least square (2SLS) regressions and measured variable path analysis – in order to better assess the empirical evidence in support of my hypotheses and the overall fit of the hypothesized model to the data. In this section I explain each of these analyses and the results from them.

Regression Analysis and Results

In the first set of analyses, I use two-stage least square (2SLS) regressions to test the hypothesized model. 2SLS is an instrumental variable analysis particularly

[16] I also repeated the analysis using the number of IPOs in the last 3 years preceding the year of the first round VC funding but all the results remained essentially the same.

appropriate for models that contain mediating variables, because it accounts for the correlation between error terms across equations and produces coefficients that are consistent and unbiased (Kennedy, 2001; Shaver, 2005). In order to identify the system of equations, I first had to identify the explanatory variables that predict only reputation and those that predict only performance (Greene, 2003).

According to my theory, stakeholder perceptions which comprise a NV's reputation are influenced by symbolic activities and substantial resources that serve as signals to stakeholders (see Figure 3.2). Because stakeholders have to notice the NV and form impressions about it before making investment decisions (Fiske & Taylor, 1991), I reasoned that a NV's symbolic activities and substantial resources can influence directly its reputation but not its financial performance. On the other hand, venture capitalist characteristics such as prestige and number of VCs, may impact the financial performance but are unlikely to influence a NV's reputation, because in the context of my study they follow in time the media coverage of the NV. Therefore, on the first stage of the 2SLS I estimated the direct and interaction effects of symbolic activities, human capital, relationships with customers and partners, and product completion on NV reputation. To reduce nonessential collinearity, I centered the variables prior to creating the product terms for the interactions following the centering procedures suggested by Aiken and West (1991) and Cohen, Cohen, West and Aiken (2003). At the second stage, I estimated NV financial performance as a function of its reputation, including VC characteristics as control variables to account for alternative explanations of performance.

Correlations and descriptive statistics. Table 3.2 shows the descriptive statistics for, and the correlations among, the study variables. The correlation between the total media coverage and the positive coverage is high (0.790), which is not surprising given that the positive coverage is a sub-sample of the total coverage. Similarly, the correlation between the amount of investment and the market valuation at the 1st round of VC funding is high (0.731), which suggests that both measures of a NV's early financial performance capture the same construct. There are also very high correlations between the total number of symbolic activities and the number of identity-building symbolic activities (b=.891), as well as between the total number of symbolic activities and the number of one-way externally oriented symbolic activities (b=.903). These high correlations suggest that the total number of symbolic activities should not be included together with the three types of symbolic activities in the same analysis, in order to avoid multi-collinearity problems.

It also should be noted that the three measures of team quality (team members' industry experience, team diversity, and team average degree) are relatively weakly correlated (bivariate correlations range between .319 and .458), which suggests that they may capture different dimensions of the overall quality of the NV teams. Finally, the correlations between the number of customers and the proportion of Fortune 500 customers and between the number of partners and the proportion of Fortune 500 partners are also relatively low (bivariate correlations of .126 and .220, respectively), suggesting that the prestige of customers and partners is largely independent of the size of a NV's customer and partner networks.

Table 3.2 – Correlations and Descriptive Statistics

		Min	Max	Median	Mean	SD	1	2	3	4	5	6	7
1.	Total media coverage	.000	86.000	.000	3.176	9.337							
2.	Positive media coverage	.000	10.000	.000	.414	1.392	.790						
3.	Media tenor	-.250	1.000	.000	.022	.111	.048	.268					
4.	Amount of 1st round	.000	.042	.001	.002	.003	.149	.161	.075				
5.	Market valuation	.000	1.758	.038	.138	.229	.158	.172	.065	.731			
6.	Rate of product development	.000	.045	.000	.001	.004	.073	.070	.009	-.030	.039		
7.	Team members industry experience	.000	2.000	.290	.340	.308	.037	.120	.003	.042	-.037	-.002	
8.	Team diversity	.000	.840	.571	.480	.264	.079	.100	.081	.046	.009	-.023	.319
9.	Team average degree	.000	4.000	2.000	1.729	1.192	-.094	-.013	.120	-.015	-.026	-.010	.377
10.	Founders' prior startup experience	.000	3.000	.000	.367	.623	.131	.091	.023	-.044	-.001	-.084	-.007
11.	Number of customers	.000	58.000	.000	.627	4.036	.104	.107	.004	.018	.108	.111	.066
12.	Proportion of Fortune 500 customers	.000	1.000	.000	.013	.094	.177	.220	.031	.101	.078	.003	.026
13.	Number of partners	.000	40.000	.000	1.357	4.247	.314	.331	.053	.079	.131	.145	-.073
14.	Proportion of Fortune 500 partners	.000	1.000	.000	.013	.074	.079	.088	.064	.049	.123	-.006	-.037
15.	Identity-building symbolic activities	.000	67.000	1.000	5.605	7.981	.451	.383	.064	.073	.083	.226	-.014
16.	Two-way externally oriented symbolic activities	.000	29.000	.000	.390	1.977	.339	.266	-.014	.023	.004	.053	-.027
17.	One-way externally oriented symbolic activities	.000	79.000	.000	3.617	8.578	.556	.501	.048	.116	.334	.059	-.006
18.	Total number of symbolic activities	.000	118.000	2.000	9.600	15.800	.572	.499	.057	.103	.213	.152	-.014
19.	Diversity of symbolic activities	.000	.652	.000	.151	.212	.459	.408	.084	.105	.125	.215	-.010
20.	Age at 1st round	7.000	2396.000	425.000	513.573	418.583	.227	.203	.069	.043	.031	-.138	-.136
21.	Seed investment	.000	21.600	.000	.584	2.407	.189	.121	.053	.053	.278	.059	-.012
22.	Number of VCs	.000	17.000	2.000	2.383	1.874	.072	.074	.068	.366	.275	.003	.049
23.	VC financial prestige (biggest VC size)	.000	.124	.005	.008	.011	-.055	-.022	.044	.225	.096	-.002	.065
24.	VC evaluative prestige (biggest VC IPOs)	.000	12.700	.350	1.392	2.206	-.073	-.077	-.010	.132	.108	-.006	.088
25.	Founded in 1997	.000	1.000	.000	.352		-.036	-.038	-.010	-.067	.035	-.127	-.136
26.	Founded in 1999	.000	1.000	.000	.366		-.058	-.007	.012	-.086	.000	-.004	-.006
27.	Founded in 2001	.000	1.000	.000	.282		.100	.048	-.002	.162	.163	.139	.151
28.	Industry - communications	.000	1.000	.000	.219		.019	.043	-.017	.063	.051	-.001	.069
29.	Industry - computer hardware	.000	1.000	.000	.031		.083	.096	.003	.056	.084	.120	-.009
30.	Industry - computer software	.000	1.000	.000	.436		-.019	.007	.033	-.078	-.099	-.024	.054
31.	Industry - internet specific	.000	1.000	.000	.193		.020	-.071	-.103	-.041	.045	.032	-.114
32.	Industry - computer others	.000	1.000	.000	.012		.012	.046	-.002	-.035	-.046	-.024	.014
33.	Industry - semiconductor/electronics	.000	1.000	.000	.108		-.071	-.048	.099	.073	-.057	-.060	-.033

		8	9	10	11	12	13	14	15	16	17	18	19	20
1.	Total media coverage													
2.	Positive media coverage													
3.	Media tenor													
4.	Amount of 1st round													
5.	Market valuation													
6.	Rate of product development													
7.	Team members industry experience													
8.	Team diversity													
9.	Team average degree	.458												
10.	Founders' prior startup experience	.193	.169											
11.	Number of customers	.075	.025	-.009										
12.	Proportion of Fortune 500 customers	.104	.014	.089	.126									
13.	Number of partners	.086	-.065	.011	.306	.213								
14.	Proportion of Fortune 500 partners	.017	-.064	-.066	.005	.045	.220							
15.	Identity-building symbolic activities	.113	-.027	-.003	.261	.198	.437	.219						
16.	Two-way externally oriented symbolic activities	.045	-.116	.009	.109	.037	.243	.095	.339					
17.	One-way externally oriented symbolic activities	.086	-.061	.005	.429	.223	.450	.105	.633	.321				
18.	Total number of symbolic activities	.109	-.062	.000	.378	.226	.496	.180	.891	.471	.903			
19.	Diversity of symbolic activities	.047	-.117	-.083	.218	.147	.387	.198	.619	.383	.557	.663		
20.	Age at 1st round	.012	-.087	-.044	.118	.173	.229	.237	.535	.196	.431	.529	.429	
21.	Seed investment	.001	-.099	.006	.092	.055	.253	.040	.061	.064	.107	.097	.115	-.023
22.	Number of VCs	.032	.028	.068	-.024	-.053	.026	-.042	-.001	.012	.004	.004	-.007	-.029
23.	VC financial prestige (biggest VC size)	.020	.044	-.034	.025	.123	-.040	-.019	-.025	-.041	-.040	-.039	-.029	-.038
24.	VC evaluative prestige (biggest VC IPOs)	-.019	.083	-.029	-.019	-.045	-.053	.035	-.100	-.048	-.061	-.089	-.111	-.102
25.	Founded in 1997	-.062	-.133	-.126	-.048	.005	-.092	.009	-.096	-.095	.011	-.054	-.055	.286
26.	Founded in 1999	-.053	.047	.055	-.024	-.011	.025	-.043	-.019	.022	-.024	-.019	-.009	-.141
27.	Founded in 2001	.122	.091	.075	.077	.007	.071	.037	.122	.077	.014	.078	.068	-.153
28.	Industry - communications	.033	.042	.042	-.064	.052	-.072	-.091	-.127	-.043	-.078	-.112	-.061	-.166
29.	Industry - computer hardware	-.027	-.043	-.025	-.014	-.025	.079	.335	.110	.020	.107	.116	.092	.139
30.	Industry - computer software	.175	.059	-.019	.109	-.017	.143	.045	.146	.104	.085	.132	.078	.197
31.	Industry - internet specific	-.156	-.184	-.029	-.023	-.002	-.048	-.056	-.042	-.050	.002	-.026	-.008	-.091
32.	Industry - computer others	.070	.022	.024	-.001	.064	-.035	-.019	-.008	-.022	-.029	-.022	-.007	.028
33.	Industry - semiconductor/electronics	-.136	.101	.017	-.052	-.048	-.102	-.060	-.068	-.049	-.084	-.086	-.081	-.065

		21	22	23	24	25	26	27	28	29	30	31	32
1.	Total media coverage												
2.	Positive media coverage												
3.	Media tenor												
4.	Amount of 1st round												
5.	Market valuation												
6.	Rate of product development												
7.	Team members industry experience												
8.	Team diversity												
9.	Team average degree												
10.	Founders' prior startup experience												
11.	Number of customers												
12.	Proportion of Fortune 500 customers												
13.	Number of partners												
14.	Proportion of Fortune 500 partners												
15.	Identity-building symbolic activities												
16.	Two-way externally oriented symbolic activities												
17.	One-way externally oriented symbolic activities												
18.	Total number of symbolic activities												
19.	Diversity of symbolic activities												
20.	Age at 1st round												
21.	Seed investment												
22.	Number of VCs	.135											
23.	VC financial prestige (biggest VC size)	.080	.332										
24.	VC evaluative prestige (biggest VC IPOs)	.110	.348	.423									
25.	Founded in 1997	.012	-.048	.028	.048								
26.	Founded in 1999	-.084	.007	.006	.092	-.560							
27.	Founded in 2001	.077	.043	-.037	-.150	-.462	-.476						
28.	Industry - communications	.036	.112	.138	.056	-.049	.093	-.047					
29.	Industry - computer hardware	-.001	.008	.009	.020	.070	-.137	.072	-.095				
30.	Industry - computer software	.030	-.154	-.096	-.105	.003	-.063	.064	-.466	-.158			
31.	Industry - internet specific	-.050	-.009	-.040	-.036	.113	.072	-.198	-.259	-.088	-.430		
32.	Industry - computer others	-.027	-.023	-.040	-.030	.057	.008	-.069	-.059	-.020	-.097	-.054	
33.	Industry - semiconductor/electronics	-.023	.111	.030	.139	-.143	-.040	.195	-.185	-.063	-.307	-.170	-.039

Note: N=415, correlation coefficients higher than .100 and lower than -.100 are significant at p<.05

Regression results for media visibility. Table 3.3 shows the regression results for predicting the media visibility of NVs and the effect of media visibility on the amount and market valuation at the 1st round VC funding. At the first stage of the 2SLS regressions I estimated the direct and interaction effects of symbolic activities, human capital, relationships with customers and partners, and product completion on media visibility. Model 1 is a baseline model consisting of control variables. Consistent with my expectations, older NVs received significantly more media coverage (b=.282). Also, being started in 1997 and 1999 has a negative effect (b=-.223 and b=-.154, respectively) on media visibility (started in 2001 is the omitted category). Finally, the communications and internet industry sectors have positive effect on media visibility (b=.161 and b=.168, respectively).

Model 2 adds the direct effects of symbolic activities, human capital, relationships with customers and partners, and product completion on media visibility. As predicted by

hypothesis 1, both level and diversity of symbolic activity have strong positive effects on NVs' media visibility (b=.566 and b=.169, respectively). The practical effect of symbolic activities is also pretty sizable – other things being equal, three additional symbolic activities on part of a NV increase its media coverage with one article. Of the team quality variables, only team members industry experience has a marginally significant ($p<.10$) positive effect on media visibility (b=.074). Looking at the nonstandardized beta coefficient for team members' industry experience suggests that one unit increase in average experience on the team contributes two additional articles in media visibility. The effect of team average degree is marginally significant ($p<.10$) but negative (b=-.091), and team diversity has no statistically significant effect on media visibility. Overall, these results provide limited support to hypothesis 2. Consistent with hypothesis 3, founders' prior entrepreneurial experience has a positive and significant effect on media visibility (b=.145). In more practical terms, for every additional startup per founder a NV's media coverage increases with two articles. Contrary to hypothesis 4, the number of customers has negative and significant effect on media visibility (b=-.142) and customer prestige has no statistically significant effect. Coefficients for both number of partners and proportion of Fortune 500 partners are non-significant, thus hypothesis 5 is not supported. Finally, hypothesis 6 also fails to receive statistical support, because the coefficient for rate of product development is non-significant.

The overall magnitude of the effects of symbolic activities and NV resources on media visibility is also indicated by the R-square statistics reported in table 3.3. According to these statistics, the main predictors in my model account for a total of

52.5% of the variance in media visibility (direct and interaction effects), which suggests that my model captures effectively the major predictors of media reputation.

Table 3.3 – Two-Stage Least Square Coefficients for Media Visibility, Amount of First Round VC Funding, and Market Valuation at First Round of VC Funding

Variables	Stage 1 (DV *Media visibility*)			Stage 2 *(DV Amount of 1st round)*		Stage 2 *(DV Valuation 1st round)*	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**
Controls							
Age at 1st round	.282***	-.137**	-.078	.090^	.090^	.139^	.015
Founded in 1997	-.223***	.002	.021	-.180**	-.180**	-.157^	-.036
Founded in 1999	-.154**	-.079	-.051	-.178**	-.178**	.106	.183*
Industry - communications	.161*	.065	.027	.018	.017	.226*	.157^
Industry - computer hardware	.082	.030	.085*	.024	.023	.138^	.076
Industry - computer software	.081	-.019	-.019	-.036	-.037	.062	.020
Industry - internet specific	.168*	.038	.003	-.002	-.002	.106	.006
Industry - computer others	.046	.030	.014	-.016	-.016	-.016	-.030
Seed investment				-.010	-.014	.073	-.019
Number of VCs				.314***	.310***	.285***	.265***
VC financial prestige (biggest VC size)				.125*	.132**	.112	.077
VC evaluative prestige (biggest VC IPOs)				.000	-.003	-.058	-.013
Predictors							
Total number of symbolic activities		.566***	.512***				
Diversity of symbolic activities		.169**	.109*				
Team members industry experience		.074^	.128***				
Team diversity		.004	-.013				
Team average degree		-.091^	-.073^				
Founders' prior startup experience		.145***	.186***				
Number of customers		-.142***	-.053				
Proportion of Fortune 500 customers		.036	.043				
Number of partners		.059	-.005				
Proportion of Fortune 500 partners		-.036	-.032				
Rate of product development		-.054	-.094*				
Symbolic activities * Team members experience			.370***				
Symbolic activities * Team diversity			-.014				
Symbolic activities * Team average degree			-.160***				
Symbolic activities * Founders' prior startup experience			.439***				
Symbolic activities * Number of customers			-.198**				
Symbolic activities * Fortune 500 customers			-.162**				
Symbolic activities * Number of partners			.134***				
Symbolic activities * Fortune 500 partners			.025				
Symbolic activities * Rate of product development			.162***				
Media visibility					.103*		.370**
R-square	.093	.414	.618	.180	.190	.206	.311
Adjusted R-square	.075	.385	.590	.155	.164	.157	.265
R-square change	.093***	.320***	.205***	.180***	.011*	.206***	.105***

Note: The standardized beta coefficients are reported. *p<.05, **p<.01, ***p<.001, ^p<.10. N=415 for models 1 to 5, N=217 for models 6 and 7.

Model 3 adds the interaction effects of the resource signals with the number of symbolic activities. Consistent with hypothesis 7, symbolic activities have positive significant interactions with team members industry experience (b=.370), founders prior entrepreneurial experience (b=.439), number of partners (b=.134) and rate of product completion (b=.162). In addition, symbolic activities have negative significant

interactions with team average degree (b=-.160), number of customers (b=-.198) and customer prestige (b=-.162). Appendix 3.A shows the plots of all the significant interactions of symbolic activities with resource signals. As the first plot shows, increase in TMT industry experience has a positive effect on media visibility for high levels of symbolic activities but slightly negative effect for low levels of symbolic activities. Second, higher TMT degree has a strong negative effect on media visibility for high levels of symbolic activities but positive effect for low levels of symbolic activities. Third, increase in founders' prior startup experience has a positive effect on media visibility for high levels of symbolic activities but slightly negative effect for low levels of symbolic activities, similar to the pattern observed in TMT experience.

Fourth, a greater number of customers has a strong negative effect on media visibility for high levels of symbolic activities but positive effect for low levels of symbolic activities. Customer prestige does not appear to make any difference beyond the effects due to symbolic activities – for high levels of symbolic activities media visibility is high and for low levels of symbolic activities media visibility is low, regardless of the level of customer prestige. Fifth, an increase in number of partners has a strong positive effect on media visibility for high levels of symbolic activities but slightly negative effect for low levels of symbolic activities. These negative interactions of symbolic activities with relationships with customers and partners might be indicators of substitutive effects between the information value of symbolic communications and affiliation.

To explore this possibility further I also plotted the effect of symbolic activities on media visibility under high vs. low number of customers and partners. These plots are presented in Appendix 3.B. As the plots show, symbolic activities are fully redundant

with the number of partners – for low number of partners symbolic activities have strong positive relationship with media visibility but for high number of partners, symbolic activities have no effect on media visibility. However, they have a positive effect for a high number of customers and a negative effect for a low number of customers, which suggests different patterns of interaction with customers vs. partners. Finally, the rate of product advancement does not appear to make a difference beyond the effects due to symbolic activities – for high levels of symbolic activities media visibility is high and for low levels of symbolic activities media visibility is low, regardless of the rate of product advancement.

At the second stage, I estimated the effect of media visibility on the amount of the 1st round VC funding (Models 4 and 5) and the market valuation (Models 6 and 7). Model 4 presents the effect of control variables on the amount of the 1st round VC funding. NV age is significantly positively predictive of the amount of the 1st round VC funding (b=.105). Being started in 1997 and 1999 has a negative effect (b=-.177 and b=-.171, respectively) on the amount of 1st round VC funding (started in 2001 was the omitted category). There are no significant industry sector effects. From the VC characteristics, the number of VCs and the VC financial prestige (biggest VC size) have positive significant effects on the amount of the 1st round VC funding (b=.342 and b=.136, respectively). Model 5 adds the media visibility, which has a positive significant effect on the amount of the 1st round VC funding (b=.128), consistent with hypothesis 8.

Model 6 presents the effect of control variables on the market valuation at the time of the 1st round VC funding. NV age is positively predictive of the amount of the 1st round VC funding (b=.139). Being started in 1997 has a negative effect (b=-.157). Of the

industry sectors, communications and computer hardware have positive significant effect on market valuation (b=.226 and b=.138, respectively). From the VC characteristics, the number of VCs has a positive significant effect on market valuation (b=.285). Model 7 adds the effect of media visibility, which is positive and significant (b=.370). Overall, the positive and significant effects of media visibility on both the amount and the market valuation of the 1st round VC funding provide strong support to hypothesis 8.

The effects of media visibility on the amount of the VC funding and the market valuation at the 1st round are small to medium (R-square change of 4.9% and 10.5%, respectively). However, my results have practical significance, because they suggest that each additional media article about a NV increases the amount of money it receives from VCs with 128,000 USD and its market valuation with 370,000 USD. My results are also important from a theoretical perspective, because venture capitalists represent the most conservative and well-informed stakeholder group, which is least likely to rely on media reputation when evaluating NVs. The fact that the decisions of this supposedly "rational" stakeholder group are influenced by the media visibility of NVs suggests that these effects might be even stronger with other more distant stakeholder.

Regression results for positive media coverage. Table 3.4 shows the regression results for predicting the positive media coverage of NVs and the effect of positive media coverage on the amount of the 1st round VC funding (all other variables remain the same as in the previous analysis). At the first stage of the 2SLS regressions I estimated the direct and interaction effects of symbolic activities, human capital, relationships with customers and partners, and product completion on positive media coverage. Model 1

shows the baseline models with the control variables. As this model shows, older NVs and those started in the communications sector received significantly higher positive media coverage (b=236 and b=129, respectively). The NVs founded in 1997 received significantly less positive coverage. All other controls are non-significant.

Model 2 adds the effects of symbolic activities, human capital, relationships with customers and partners, and product completion on positive media coverage. Consistent with hypothesis 1, both level and diversity of symbolic activity have a strong positive effect on NVs' positive media coverage (b=.445 and b=.156, respectively). In more practical terms, for each additional symbolic activity, the positive articles about a NV increase with .04, going form no diversity to maximum diversity of symbolic activities increases the number of positive articles about a NV with one.

As predicted by hypothesis 2, team members' industry experience has a significant positive effect on positive media coverage (b=.146). Looking at the nonstandardized beta coefficients suggests that having team members who have worked for a major IT firm increases the positive media coverage of a NV with .7 articles. The effects of team diversity and average degree are not statistically significant. Consistent with hypothesis 3, founders' prior entrepreneurial experience has a positive and significant effect on positive media coverage (b=.096). in practical terms, one additional startup per founder increases a NV's positive media coverage with .22 of an article. Consistent with hypothesis 4, customer prestige has a positive and significant effect on positive media coverage (b=.094). Having only prestigious customers increases positive media coverage with more than one article. However, the number of customers has a negative and significant effect (b=-.124), contrary to my predictions.

Table 3.4 – Two-Stage Least Square Coefficients for Positive Media Coverage, Amount of First Round VC Funding, and Market Valuation at First Round of VC Funding

Variables	Stage 1 (*DV Positive coverage*)			Stage 2 *(DV Amount of 1st round)*		Stage 2 *(DV Valuation 1st round)*	
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 5**	**Model 6**	**Model 7**
Controls							
Age at 1st round	.236***	-.125*	-.071	.090^	.091^	.139^	.033
Founded in 1997	-.144*	.073	.082	-.180**	-.181**	-.157^	-.071
Founded in 1999	-.054	.021	.054	-.178**	-.179**	.106	.118
Industry - communications	.129^	.030	-.003	.018	.018	.226*	.1714^
Industry - computer hardware	.091	.040	.082^	.024	.023	.138^	.057
Industry - computer software	.055	-.049	-.051	-.036	-.036	.062	.027
Industry - internet specific	.039	-.073	-.083	-.002	-.001	.106	.085
Industry - computer others	.065	.045	.031	-.016	-.016	-.016	-.033
Seed investment				-.010	-.009	.073	-.004
Number of VCs				.314***	.311***	.285***	.244***
VC financial prestige (biggest VC size)				.125*	.127*	.112	.068
VC evaluative prestige (biggest VC IPOs)				.000	.002	-.058	.000
Predictors							
Total number of symbolic activities		.445***	.442***				
Diversity of symbolic activities		.156**	.109*				
Team members industry experience		.146**	.186***				
Team diversity		-.015	-.015				
Team average degree		-.037	.003				
Founders' prior startup experience		.096*	.138***				
Number of customers		-.124**	-.029				
Proportion of Fortune 500 customers		.094*	.077				
Number of partners		.127*	-.075				
Proportion of Fortune 500 partners		-.026	.043				
Rate of product development		-.039	-.067				
Symbolic activities * Team members experience			.482***				
Symbolic activities * Team diversity			-.048				
Symbolic activities * Team average degree			-.042				
Symbolic activities * Founders' prior startup experience			.230***				
Symbolic activities * Number of customers			-.467***				
Symbolic activities * Fortune 500 customers			-.111^				
Symbolic activities * Number of partners			.448***				
Symbolic activities * Fortune 500 partners			-.051				
Symbolic activities * Rate of product development			.140***				
Positive media coverage					.098*		.365***
R-square	.069	.339	.532	.180	.189	.206	.311
Adjusted R-square	.050	.307	.497	.155	.163	.157	.265
R-square change	.069***	.271***	.193***	.180***	.010***	.206***	.105***

Note: The standardized beta coefficients are reported. *p<.05, **p<.01, ***p<.001, ^p<.10. N=415 for models 1 to 5, N=217 for models 6 and 7.

Consistent with hypothesis 5, the number of partners has a positive and significant effect on positive media coverage (b=.127). More practically, for each additional partner a NV receives about .04 of a positive media article. The proportion of *Fortune* 500 partners has no significant effect. Hypothesis 6 fails to receive statistical support. The overall magnitude of the effects of symbolic activities and NV resources on positive media coverage is also indicated by the R-square statistics reported in table 3.4. According to these statistics, the main predictors in my model account for a total of

46.3% of the variance in positive media coverage (direct and interaction effects), which suggests that my model captures effectively the major predictors of positive media coverage.

Model 3 adds the interaction effects of the main predictors with the number of symbolic activities. Consistent with hypothesis 7, symbolic activities have positive significant interactions with team members industry experience (b=.482), founders prior entrepreneurial experience (b=.230), number of partners (b=.448) and rate of product completion (b=.140). In addition, symbolic activities have negative significant interactions effect with number of customers (b=-.467) and marginally significant interactions effect with customer prestige (b=-.111). Overall, it appears that symbolic activities increase the effects of the resource signals in a direction consistent with their main effects, except for prestigious customers.

At the second stage, I estimated the effect of media visibility on the amount of 1st round VC funding (Models 4 and 5) and the market valuation (Models 6 and 7). Model 4 presents the effect of control variables on the amount of the 1st round VC funding, which are identical to those estimated in the previous regression and their effects are the same (see above). Model 5 adds the effect of positive media coverage on the amount of 1st round VC funding, which is positive and statistically significant (b=.134), consistent with hypothesis 8. Model 6 presents the effect of control variables on the market valuation at the time of the 1st round VC funding, which are identical to those estimated in the previous regression and their effects are the same (see above). Model 7 adds the effect of media visibility on market valuation, which is positive and significant (b=.365). Overall, these results provide strong support to hypothesis 8.

The effects of positive media coverage on the amount of VC funding and the market valuation at the 1st round are small to medium (R-square change of 5.1% and 10.5%, respectively). However, they suggest that each additional positive media article about a NV increases the amount of money it receives from VCs with 134,000 USD and its market valuation with 365,000 USD.

Table 3.5 – Two-Stage Least Square Coefficients for Media Tenor, Amount of First Round VC Funding, and Market Valuation at First Round of VC Funding

Variables	Stage 1 (*DV Media Tenor*)			Stage 2 *(DV Amount of 1st round)*		Stage 2 *(DV Valuation 1st round)*	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Controls							
Age at 1st round	.066	.021	.013	.090^	.091^	.139^	.053
Founded in 1997	.017	.056	.071	-.180**	-.181**	-.157^	-.188
Founded in 1999	.042	.053	.070	-.178**	-.179**	.106	.038
Industry - communications	-.135	-.147	-.148	.018	.018	.226*	.401***
Industry - computer hardware	-.055	-.075	-.069	.024	.024	.138^	.200**
Industry - computer software	-.140	-.158	-.154	-.036	-.036	.062	.230*
Industry - internet specific	-.204**	-.200**	-.207**	-.002	-.001	.106	.388***
Industry - computer others	-.039	-.046	-.050	-.016	-.016	-.016	.024
Seed investment				-.010	-.012	.073	.061
Number of VCs				.314***	.312***	.285***	.261***
VC financial prestige (biggest VC size)				.125*	.124*	.112	.085
VC evaluative prestige (biggest VC IPOs)				.000	.002	-.058	-.050
Predictors							
Total number of symbolic activities		-.022	.170				
Diversity of symbolic activities		.092	.057				
Team members industry experience		-.041	-.029				
Team diversity		.046	.039				
Team average degree		.111	.115				
Founders' prior startup experience		.008	.030				
Number of customers		-.018	-.009				
Proportion of Fortune 500 customers		.014	.033				
Number of partners		.023	-.069				
Proportion of Fortune 500 partners		.053	.071				
Rate of product development		.015	-.012				
Symbolic activities * Team members experience			.112				
Symbolic activities * Team diversity			-.048				
Symbolic activities * Team average degree			.024				
Symbolic activities * Founders' prior startup experience			.045				
Symbolic activities * Number of customers			-.128				
Symbolic activities * Fortune 500 customers			-.060				
Symbolic activities * Number of partners			.195				
Symbolic activities * Fortune 500 partners			-.010				
Symbolic activities * Rate of product development			.041				
Media tenor					.034		.336***
R-square	.023	.048	.063	.180	.181	.206	.271
Adjusted R-square	.004	.002	-.007	.155	.154	.157	.222
R-square change		.024	.016	.180***	.001	.206***	.065***

Note: The standardized beta coefficients are reported. *p<.05, **p<.01, ***p<.001, ^p<.10. N=415 for models 1 to 5, N=217 for models 6 and 7.

Regression results for media tenor. I also replicated the latter analysis using media tenor as a measure of the favorability of NVs' reputations, because this measure

has been used extensively by past research. However, as models 1, 2 and 3 in Table 3.5 show, none of the coefficients for the controls, main effects, and interactions, is statistically significant, except for the internet sector control (b=-.204). Moreover, media tenor has no significant effect on the amount of the 1st round VC funding (see Model 5 in Table 3. 5). Interestingly, it does have a positive significant effect on market valuation (b=.336), which provides some support to hypothesis 8. Overall, these results suggest that media tenor may be less appropriate for capturing the favorability component of reputations for really young firms than it has been proven to be the case in the context of older firms.

Exploring the effects of symbolic activities by type. Because symbolic activities (a) consistently came out as the most significant predictor of both the visibility and favorability dimensions of NVs' reputations, and (b) have received less attention by prior research as compared to the resource signals included in my model, I conducted additional analyses to explore in greater detail the effect of each type of symbolic activities on NVs' reputations. For this purpose, I replicated only the first stages of the previous analyses but replaced the total number of symbolic activities with three separate variables – identity-building, one-way externally oriented, and two-way externally oriented symbolic activities.

Table 3.6 shows the results of the OLS regressions estimating the effects of each type of symbolic activities, human capital, relationships with customers and partners, and product completion on media visibility. Model 1 is identical to the baseline model presented in Table 3.3 and discussed above. Model 2 tests the effects of the predictors on media visibility. As the model shows, identity-building symbolic activities have a

marginally significant effect on media visibility (b=.104), two-way externally oriented symbolic activities and one-way externally oriented symbolic activities have positive and highly significant effects on media visibility (b=.122 and b=.437, respectively). All other effects are similar to those presented in Table 3.3 above.

Table 3.6 – OLS Regression Coefficients for the Effects of each Type of Symbolic Activities on Media Visibility

Variables	*DV Media Visibility*	
	Model 1	**Model 2**
Controls		
Age at 1st round	.282***	-.090
Founded in 1997	-.223***	-.029
Founded in 1999	-.154**	-.092^
Industry - communications	.161*	.062
Industry - computer hardware	.082	.020
Industry - computer software	.081	-.018
Industry - internet specific	.168*	.042
Industry - computer others	.046	.034
Predictors		
Identity-building symbolic activities		.104^
Two-way externally oriented symbolic activities		.122***
One-way externally oriented symbolic activities		.437***
Diversity of symbolic activities		.165***
Team members industry experience		.073^
Team diversity		.007
Team average degree		-.081^
Founders' prior startup experience		.142***
Number of customers		-.167***
Proportion of Fortune 500 customers		.036
Number of partners		.055
Proportion of Fortune 500 partners		-.020
Rate of product development		-.016
R-square	.093	.430
Adjusted R-square	.075	.400
R-square change	.093***	.337***

Note: The standardized beta coefficients are reported. N=415, *p<.05, **p<.01, ***p<.001, ^p<.10

Table 3.7 – OLS Regression Coefficients for the Effects of each Type of Symbolic Activities on Positive Media Coverage

Variables	*V Positive Media Covera*	
	Model 1	**Model 2**
Controls		
Age at 1st round	.236***	-.077
Founded in 1997	-.144*	.037
Founded in 1999	-.054	.006
Industry - communications	.129^	.027
Industry - computer hardware	.091	.028
Industry - computer software	.055	-.046
Industry - internet specific	.039	-.071
Industry - computer others	.065	.050
Predictors		
Identity-building symbolic activities		.031
Two-way externally oriented symbolic activities		.073^
One-way externally oriented symbolic activities		.399***
Diversity of symbolic activities		.157**
Team members industry experience		.145***
Team diversity		-.011
Team average degree		-.030
Founders' prior startup experience		.095*
Number of customers		-.155***
Proportion of Fortune 500 customers		.091*
Number of partners		.124**
Proportion of Fortune 500 partners		-.008
Rate of product development		.002
R-square	.069	.358
Adjusted R-square	.050	.323
R-square change	.069***	.289***

Note: The standardized beta coefficients are reported. N=415, *p<.05, **p<.01, ***p<.001, ^p<.10

Table 3.7 shows the results of the OLS regressions estimating the effects of each type of symbolic activities, human capital, relationships with customers and partners, and product completion on positive media coverage. Model 1 is identical to the baseline model presented in Table 3.4 and discussed above. Model 2 tests the effects of the

predictors on positive media coverage. As the model shows, identity-building symbolic activities have no significant effect on positive media coverage, two-way externally oriented symbolic activities have a marginally significant effect (b=0.73) and one-way externally oriented symbolic activities have positive and highly significant effects (b=.399) on positive media coverage. All other effects are similar to those presented in Table 3.4 above.

Table 3.8 – OLS Regression Coefficients for the Effects of each Type of Symbolic Activities on Media Tenor

Variables	*DV Media Tenor*	
	Model 1	**Model 2**
Controls		
Age at 1st round	.066	.019
Founded in 1997	.017	.051
Founded in 1999	.042	.052
Industry - communications	-.135^	-.147^
Industry - computer hardware	-.055	-.078
Industry - computer software	-.140^	-.156^
Industry - internet specific	-.204**	-.201**
Industry - computer others	-.039	-.046
Predictors		
Identity-building symbolic activities		-.012
Two-way externally oriented symbolic activities		-.052
One-way externally oriented symbolic activities		.013
Diversity of symbolic activities		.099
Team members industry experience		-.042
Team diversity		.048
Team average degree		.106^
Founders' prior startup experience		.009
Number of customers		-.025
Proportion of Fortune 500 customers		.010
Number of partners		.023
Proportion of Fortune 500 partners		.055
Rate of product development		.015
R-square	.023	.050
Adjusted R-square	.004	.001
R-square change	.023	.027

Note: The standardized beta coefficients are reported. N=415, *p<.05, **p<.01, ***p<.001, ^p<.10

Table 3.8 shows the results of the OLS regressions estimating the effects of each type of symbolic activities (one-way direct, two-way direct, and one-way mediated), human capital, relationships with customers and partners, and product completion on media tenor. Model 1 is identical to the baseline model presented in Table 5 and discussed above. Model 2 tests the effects of the predictors on media tenor. As the model shows, none of the predictors has a statistically significant effect on media tenor.

Post-hoc Analysis for Differences Among Industry Sectors

Although all NVs in my sample are in the IT industry, the 2SLS results reported above show that some industry sectors have significant effect on NV reputation. Specifically, as Table 3.3 above shows, communications and Internet sectors have positive and significant effect of media visibility (b=161 and b=168, respectively). To explore these inter-industry sector differences further, I split the sample in two – communications and internet specific vs. the other four IT sectors and repeated the analysis for their effect of symbolic activities and resource signals on media visibility. The results from these analyses are presented in Table 3.9 below.

The analyses show that the number of symbolic activities in the communications and Internet sectors is lower than the number of symbolic activities in the other four IT sectors (means of 7.43 vs. 11.12, respectively)**.** The effects of all three types of symbolic activities on media visibility are stronger for the communications and Internet sectors than for the other IT sectors. Specifically, identity-building symbolic activities have a positive and significant effect on media visibility in the communications and internet sectors (b=.276) but no significant effect in the other IT sectors. Two-way externally

oriented symbolic activities have significant effect in both subsamples but their effect in the communications and internet sectors is stronger than in the other IT sectors (b=.373 vs. b=119).The difference is smaller for one-way externally oriented symbolic activities (b=.436 in the communications and internet sectors vs. b=374 in the other IT sectors). The diversity of symbolic activities and the number of partners have significant positive effects on media visibility in the other IT sectors' subsample but no significant effect in the communications and internet sectors. Finally, symbolic activities and signaling resources explain 56.8% of the variance in media visibility for the communications and internet sectors and substantially less (33.1%) of the variance in the other IT sectors.

Table 3.9 – OLS Regression Coefficients - Comparison of the Predictors of Media Visibility for Communications and Internet Specific vs. the Other IT Sectors

Variables	*Communications & Internet Specific*		*The othe Four IT Sectors*	
	Model 1	**Model 2**	**Model 1**	**Model 2**
Controls				
Age at 1st round	.206**	-.126*	.345***	-.019
Founded in 1997	-.390***	-.110	-.099	.067
Founded in 1999	-.301**	-.160*	-.074	-.024
Predictors				
Identity-building symbolic activities		.276***		.058
Two-way externally oriented symbolic activities		.373***		.119*
One-way externally oriented symbolic activities		.436***		.374***
Diversity of symbolic activities		-.007		.156*
Team members industry experience		-.025		.093
Team diversity		-.008		.003
Team average degree		-.080		-.028
Founders' prior startup experience		.129**		.094^
Number of customers		-.138**		-.172**
Proportion of Fortune 500 customers		.029		.093
Number of partners		-.056		.179**
Proportion of Fortune 500 partners		-.012		-.004
Rate of product development		-.128*		-.004
R-square	.105	.673	.108	.439
Adjusted R-square	.089	.639	.097	.399
R-square change	.105***	.568***	.108***	.331***

Note: The standardized beta coefficients are reported . *p<.05, **p<.01, ***p<.001, ^p<.10. N=171 for communications & internet specific, N=244 for the other IT sectors. The average number of symbolic activities in the communications & internet specific sectors is 7.43, the average number of symbolic activities for the other sectors is 11.12.

LISREL Analysis and Results

To test simultaneously the proposed relationships in the hypothesized model I estimated a series of path models, using Measured Variable Path Analysis in LISREL 8.53 (Jöreskog & Sörboom, 2001). The Measured Variable Path Analysis allows researchers to simultaneously examine a series of dependence relationships, while simultaneously analyzing multiple dependent variables (Shook, Ketchen, Hult & Kacmar, 2004), such as the relationships hypothesized in my model. By estimating the maximum-likelihood solutions of a system of equations, LISREL provides both an overall assessment of the fit of a hypothesized path model to the data, and tests of individual hypotheses.

The hypothesized model depicted in Figure 3.3 consisted of 17 exogenous variables and 2 endogenous variables.[17] Each variable was modeled as a single indicator and assumed to contain no measurement error. Further, I allowed the main predictor variables to co-vary, because as I inferred from the exploratory stage of this research (Essay 1), all resource investments and commitment to using symbolic activities may be driven to some degree by the founders' vision, capabilities, or other underlying common factor, which makes these variables likely to be correlated. I estimated separate models for media visibility, positive media coverage, and media tenor as measures of NVs' reputations.

Below I report the results for each of these models by starting with the overall model fit to the data. I assessed the overall fit of each model to the data using the chi-square statistic, the goodness-of-fit index (GFI), the normed fit index (NFI), the

[17] I included only team members' industry experience as a measure of the NVs' team quality, because the other two measures did not appear to significantly improve the model and the purpose of LISREL is to find the most parsimonious (not all-inclusive) model that fits the data.

comparative fit index (CFI), and the incremental fit index (IFI). The chi-square statistic is well-known to be oversensitive to sample size and be significant (suggesting that a model does not adequately fit the data) even when the differences between observed and model-implied co-variances are slight (Kline, 1998). To reduce the sensitivity of the chi-square statistic to sample size researchers recommend using the rule "χ^2 /df lower than 3" to decide the acceptability of the chi-square value (Kline, 1998). GFI, NFI, CFI, and IFI scores at or above .90 indicate an acceptable fit (Medsker, Williams & Holahan, 1994). After evaluating the fit of each model to the data, I also present the maximum-likelihood parameter estimates for the main predictors, significance levels, and R-squares for the hypothesized model.

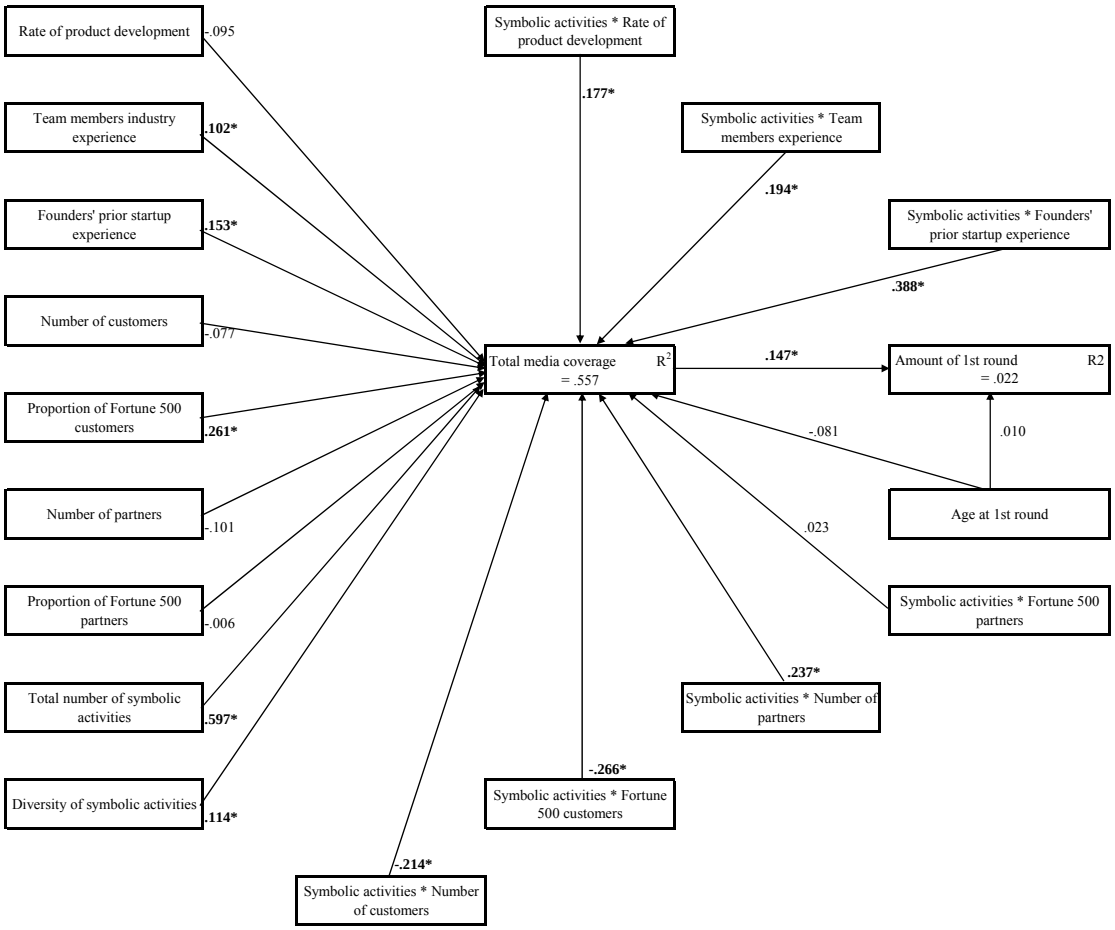
To test the interactions between symbolic activities and signaling resources, I used the total number of symbolic activities. I calculated a product term for each interaction following Ping's (1995, 1996) procedure, also recommended by Cortina, Chen & Dunlap (2001). To avoid non-essential collinearity, I centered each variable prior to calculating the interaction terms following the centering procedures recommended by Aiken and West (1991). I tested separate models with media visibility, positive media coverage, and media tenor as measures of reputation.

Media visibility as a measure of reputation. The chi-square for the hypothesized model with media visibility as a measure of reputation was χ^2 (16, N = 415) = 12.088, p > .05. Chi-square divided by the degrees of freedom was .756 suggesting an adequate fit of the model to the data. The GFI for this model was .997, the NFI was .997, the CFI was 1.000, and the IFI was 1.000, supporting the conclusion that the hypothesized model

adequately fits the data. Figure 3.3 contains the maximum-likelihood parameter estimates for the main and interaction predictors, significance levels, and R-squares for the hypothesized model. As predicted by hypothesis 1, the number of symbolic activities is positively and significantly related to media visibility ($\gamma = .597$). Diversity of symbolic activities is also positively and significantly related to media visibility ($\gamma = .114$). Thus, hypothesis 1 is supported. The team members' industry experience is positively and significantly related to media visibility ($\gamma = .102$). Thus hypothesis 2 is also supported. Consistent with hypothesis 3, the founders' prior entrepreneurial experience has a positive significant relationship with media visibility ($\gamma = .153$). The number of customers has no significant relationship to media visibility and customer prestige has a positive and significant effect on media visibility ($\gamma = .261$). Thus, hypothesis 4 is partially supported. None of the partner variables has a significant relationship with media visibility. Thus, hypothesis 5 is not supported. The rate of product completion is not significantly related to media visibility, thus failing to support hypothesis 6. Consistent with hypothesis 7, symbolic activities have positive significant interactions with rate of product completion ($\gamma = .177$), the team members' industry experience ($\gamma = .194$), the founders' prior startup experience ($\gamma = .388$), and the number of partners ($\gamma = .237$). However, contrary to my predictions, the interactions of symbolic activities with the number of customers and customer prestige are negative and significant ($\gamma = -.214$ and $\gamma = -.266$, respectively). It appears that symbolic activities increase the positive effects of internal to the NV resources but not of the relationships with customers and partners. Overall, these results provide mixed support to hypothesis 7. Finally, consistent with hypothesis 8, media visibility is positively and significantly related to the amount of

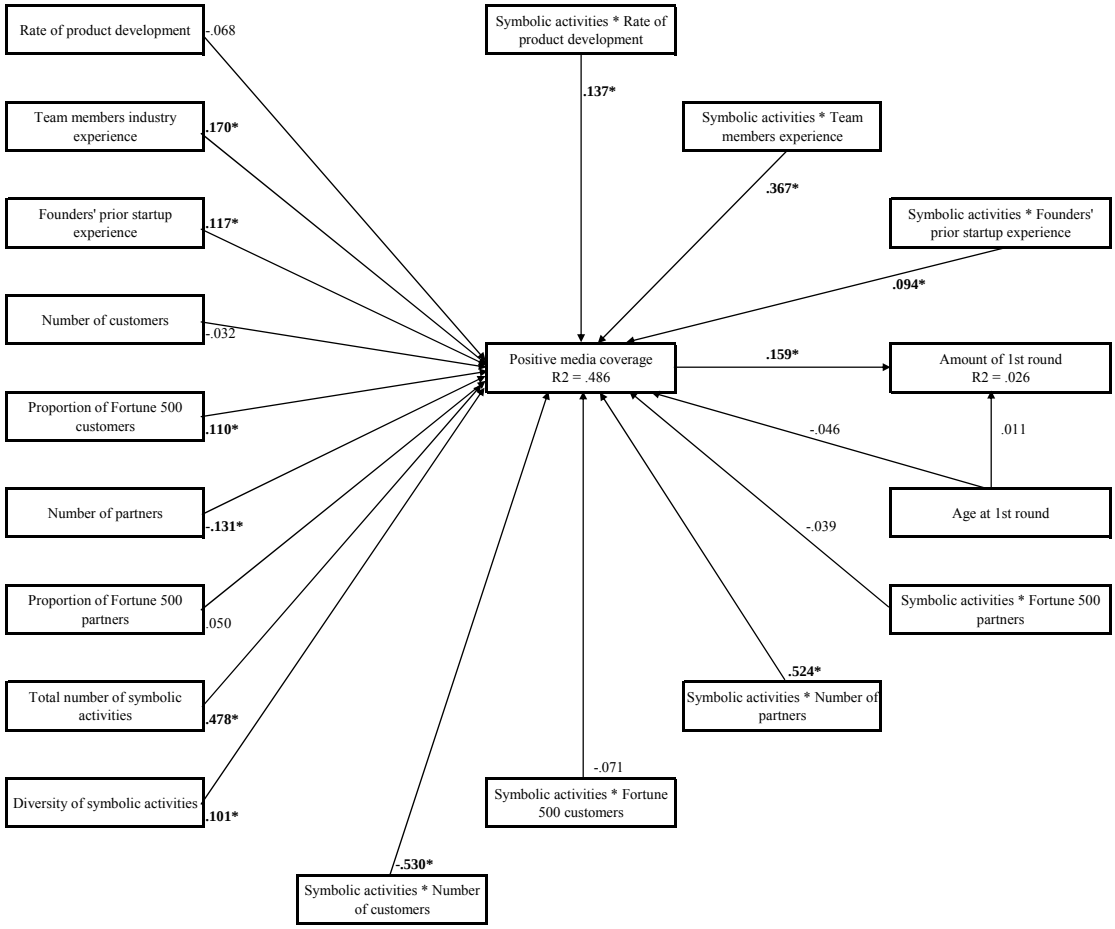
the 1st round VC funding (β = .147). As evident from the R-squares statistics, the exogenous variables together explain 55.7% of the variance in media visibility, which in turn explains 2.2% of the variance in the amount of the 1st round VC funding. Further, the following exogenous variables have significant indirect effects on the amount of the 1st round VC funding: the number of symbolic activities (.088), the team members' industry experience (.015), the founders' prior experience (.022), and the proportion of Fortune 500 customers (.038). The other predictors have no significant indirect effects.

Figure 3.3 – Path Coefficients for the Direct and Interaction Effects with Media Visibility as a Measure of Reputation



Positive media coverage as a measure of reputation. The chi-square for the hypothesized model with positive media coverage as a measure of reputation was χ^2 (16, N = 415) = 10.384, p > .05. Chi-square divided by the degrees of freedom was .649 suggesting an adequate fit of the model to the data. The GFI for this model was .997, the NFI was .997, the CFI was 1.000, and the IFI was 1.000, supporting the conclusion that the hypothesized model adequately fits the data. Figure 3.4 contains the maximum-likelihood parameter estimates for the main and interaction predictors, significance levels, and R-squares for the hypothesized model.

Figure 3.4 – Path Coefficients for the Direct and Interaction Effects with Positive Media Coverage as a Measure of Reputation

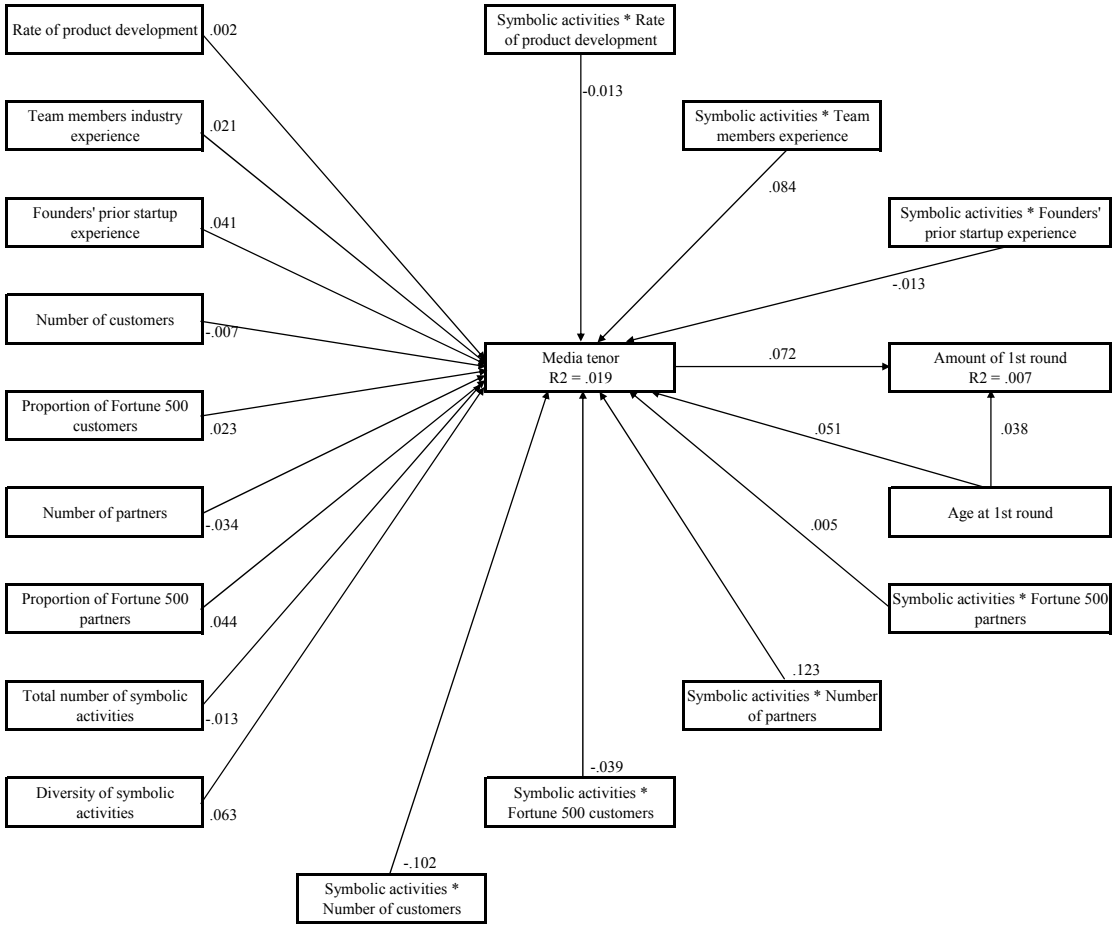


As predicted by hypothesis 1, both the number and diversity of symbolic activities have positive and significant effect on positive media coverage (γ = .478 and γ = .101, respectively). Consistent with hypothesis 2, the team members' industry experience is positively and significantly related to positive media coverage (γ = .170). The founders' prior entrepreneurial experience also has a positive significant relationship with positive media coverage (γ = .117), thus supporting hypothesis 3. Consistent with my predictions, customer prestige has a positive and significant effect on positive media coverage (γ =.110). However, the number of customers has no significant relationship to positive media coverage. Thus, hypothesis 4 is partially supported. The number of partners and partner prestige have no significant relationship with positive media coverage. Thus, hypothesis 5 is not supported. The rate of product completion is not significantly related to positive media coverage, failing to support hypothesis 6.

Consistent with hypothesis 7, symbolic activities have positive significant interactions with rate of product completion (γ = .137), the team members' industry experience (γ = .367), the founders' prior startup experience (γ = .094), and the number of partners (γ = .524). However, contrary to my predictions, the interactions of symbolic activities with the number of customers is negative and significant (γ = -.530). The interactions with customer prestige and partner prestige are not significant. Overall, these results provide mixed support to hypothesis 7. Finally, consistent with hypothesis 8, positive media coverage is positively and significantly related to the amount of 1st round VC funding (β = .159). As evident from the R-squares statistics, the predictor variables together explain 48.6% of the variance in media visibility and media visibility in turn explains 2.6% of the variance in the amount of the 1st round VC funding. Further, the

following exogenous variables have significant indirect effects of the on the amount of the 1st round VC funding (which in this model are the same as the total effects): the number of symbolic activities (.076), the team members' industry experience (.027), and the founders' prior experience (.019). The other predictors have no significant indirect effects.

Figure 3.5 – Path Coefficients for the Direct and interaction Effects with Media Tenor as a Measure of Reputation



Media tenor as a measure of reputation. The chi-square for the hypothesized model was χ^2 (16, N = 415) = 16.092, p > .05. Chi-square divided by the degrees of freedom was 1.006 suggesting adequate fit of the model to the data. The GFI for this

model was .996, the NFI was .995, the CFI was 1.000, and the IFI was 1.000, supporting the conclusion that the hypothesized model adequately fits the data. Figure 3.5 contains the maximum-likelihood parameter estimates for the main predictors, significance levels, and R-squares for the hypothesized model with media visibility as a measure of reputation. As the figure shows, none of the path coefficients is statistically significant, suggesting that the predictor variables are not related to media tenor and media tenor in turn is not related to the amount of the 1st round VC funding.

Tests of separate effects of symbolic activities by type. As a next step, I tested the direct relationships in the hypothesized model including each type of symbolic activities as a separate variable in the models to estimate the different contributions to media reputation of different symbolic activities. I estimated only two models – those with media visibility and positive media coverage as measures of reputation, because media tenor is not related to any variables in the hypothesized model.

I first tested these effects using media visibility as a measure of reputation. The chi-square for the hypothesized model was χ^2 (11, N = 415) = 8.329, p > .05. Chi-square divided by the degrees of freedom was .757 suggesting an adequate fit of the model to the data. The GFI for this model was .997, the NFI was .996, the CFI was 1.000, and the IFI was 1.000, supporting the conclusion that the hypothesized model adequately fits the data. Figure 3.6 contains the maximum-likelihood parameter estimates for the main predictors, significance levels, and R-squares for the hypothesized model with media visibility as a measure of reputation. Of the three types of symbolic activities, identity-building direct activities have no significant relationship to media visibility. The other two types – two-way externally oriented and one-way externally oriented symbolic

activities – are positively and significantly related to media visibility (γ = .124 and γ = .446, respectively). Diversity of symbolic activities is also positively and significantly related to media visibility (γ = .178). Further, both one-way and two-way externally oriented symbolic activities have significant indirect (or total) effects on the amount of the 1st round VC funding (.018 and .066, respectively).

Figure 3.6 – Path Coefficients for Each Type of Symbolic Activities with Media Visibility as a Measure of Reputation

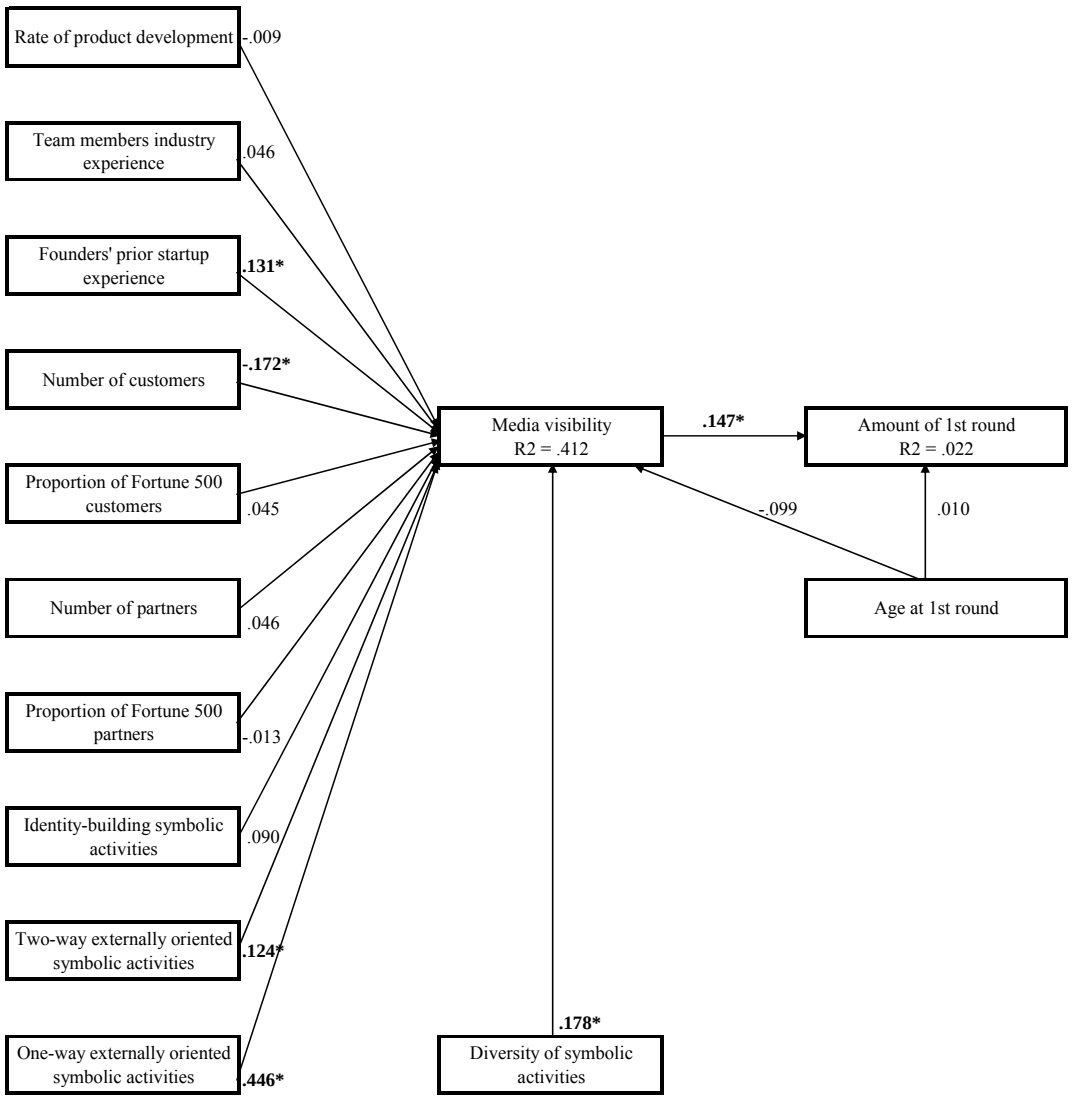
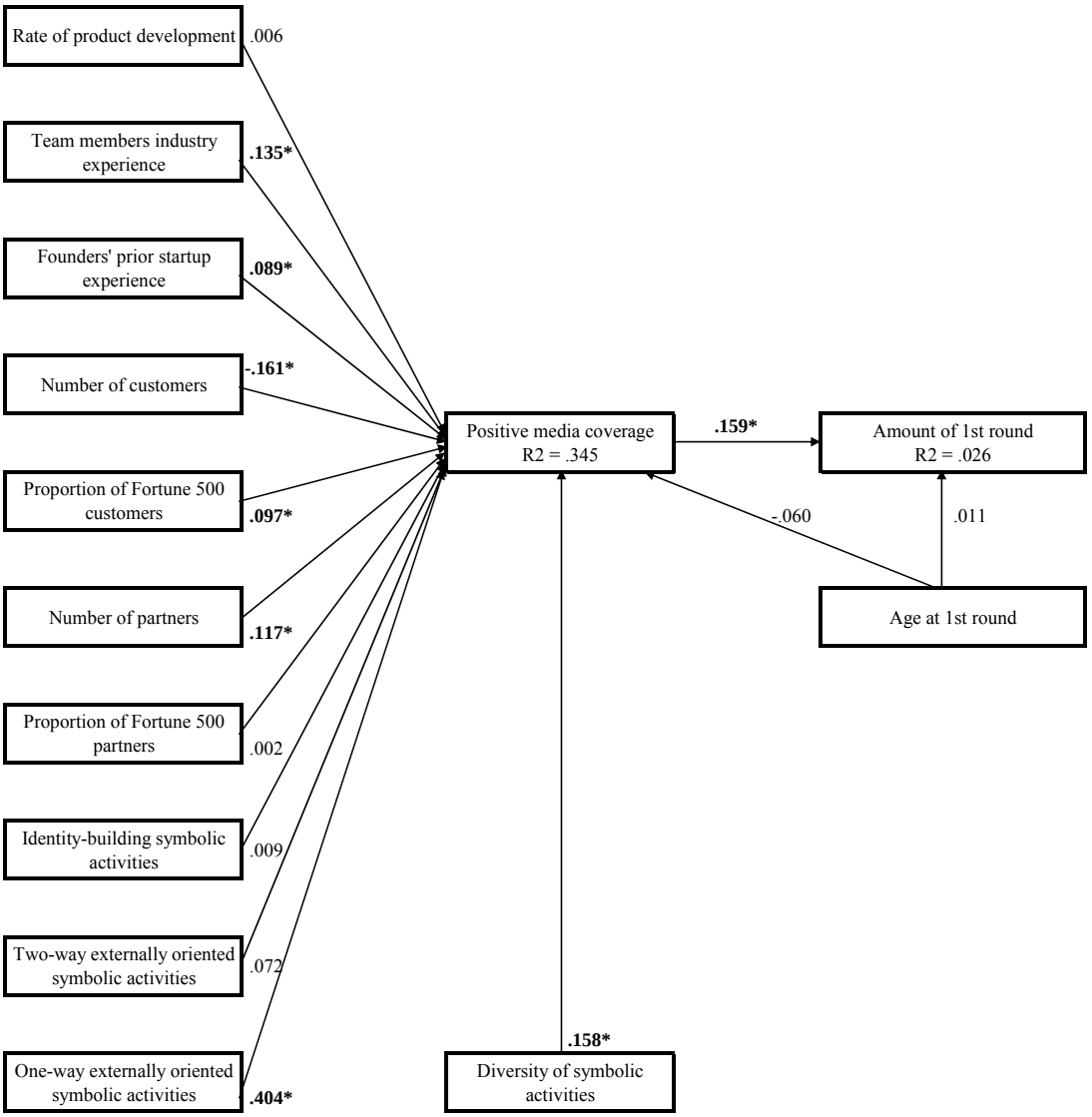


Figure 3.7 – Path Coefficients for Each Type of Symbolic Activities with Positive Media Coverage as a Measure of Reputation



Second, I tested the same model using positive media coverage as a measure of reputation. The chi-square for the hypothesized model was χ^2 (11, N = 415) = 7.107, p > .05. Chi-square divided by the degrees of freedom was .646 suggesting adequate fit of the model to the data. The GFI for this model was .998, the NFI was .996, the CFI was 1.000,

and the IFI was 1.000, supporting the conclusion that the hypothesized model adequately fits the data. Figure 3.7 above contains the maximum-likelihood parameter estimates for the main predictors, significance levels, and R-squares for the hypothesized model with positive media coverage as a measure of reputation. Of the three types of symbolic activities, only one-way externally oriented symbolic activities are positively and significantly related to positive media coverage (γ = .404). The other two types – identity-building and two-way externally oriented symbolic activities – have no significant relationship to positive media coverage. Diversity of symbolic activities is positively and significantly related to positive media coverage (γ = .158). Together these results suggest that although identity-building and two-way externally oriented symbolic activities by themselves may not contribute substantively to the favorable evaluations of a NV, they increase the diversity of symbolic activities, which in turn has a positive effect on the level of positive media coverage. Further, one-way externally oriented symbolic activities have significant indirect effects on the amount of the 1st round VC funding (.064).

Alternative Models Estimation

The measured variables path analysis is a statistical technique that allows researchers to compare the hypothesized model to other plausible models by comparing the fit of the alternative models to that of the hypothesized model. Both Medsker et al. (1994) and Hayduk (1987) recommend such comparisons of the hypothesized model to plausible alternative models. Two alternative models appear to present logical alternatives to the hypothesized system of relationships and should be tested.

Alternative model 1 – partial mediation. My theory suggests that reputation fully mediates the relationship between the NV resources and the amount of the 1st round VC funding. However, it is possible that this mediation is only partial and the resources also have direct effect on the early financial performance of NVs. I tested for this alternative by adding paths from team members' industry experience, founders' prior start-up experience, number of customers, proportion of Fortune 500 customers, number of partners, proportion of Fortune 500 partners, and rate of product completion to the amount of 1st round VC funding. All other paths remained unchanged. I used the criteria suggested by James, Mulaik and Brett (1982) to compare nested alternative models to the hypothesized model. Following this procedure, a significant reduction in chi-square suggests an improvement in the fit of the model to the data. For the model with media visibility as a measure of reputation, chi-square difference tests revealed that the decrease in chi-square from the hypothesized model to alternative model 1 was not significant ($\Delta\chi^2$ (6) = 6.218, $p > .05$). For the model with positive media coverage as a measure of reputation, chi-square difference tests revealed that the decrease in chi-square from the hypothesized model to alternative model 1 was not significant either ($\Delta\chi^2$ (6) = 5.181, $p > .05$). Thus, the alternative model 1 is less parsimonious because it adds more parameters to be estimated and does not fit the data significantly better.

Alternative model 2 – no mediation. Prior research has assumed that the NV resources – especially its human capital and relationships – influence directly venture capitalists' funding. I tested for this alternative by adding paths from team members' industry experience, founders' prior startup experience, number of customers, proportion

of Fortune 500 customers, number of partners, proportion of Fortune 500 partners, and rate of product completion to the amount of 1st round VC funding and removing the paths from these variables to reputation. All other paths remained unchanged. Because this alternative model both adds new paths and removes paths that existed in the hypothesized model, it is not nested in the hypothesized model. Thus, consistent with the recommendations of Kline (1998), to determine whether these alternative models fit the data better than the hypothesized model I compared the Akaike Information Criterion (AIC) scores of each alternative model to the AIC score of the hypothesized model. Kline (1998) suggests that given two non-nested models, the one with the lowest AIC score represents the best fitting model. For media visibility as a measure of reputation, the AIC score for the alternative model (402.211) was higher than the AIC of the hypothesized model (359.913). For positive media coverage as a measure of reputation, the AIC score for the alternative model (372.770) was also higher than the AIC of the hypothesized model (358.255).

Alternative model 3 – founders' experience as an antecedent of symbolic activities and signaling resources. Another plausible model to estimate is the one in which the founders' prior startup experience determines the levels of a NV's symbolic activities and signaling resources. This is possible because founders are usually the major decision makers of a NV and their experience largely determines their efficiency in recruiting resources, such as HC and SC, as well as for using symbolic activities. I tested for this alternative model by adding additional paths from founders' prior startup experience to each of the other predictors of media visibility and positive media

coverage. Although theoretically plausible, this alternative model did not fit adequately the data – all fit statistics were lower than .70, which suggests unacceptable fit (the recommended levels of fit are above .90). Also, its AIC scores were much higher than those for the hypothesized model. For media visibility as a measure of reputation, the AIC score for the alternative model was 1676.511 vs. 196.246 for the hypothesized model. For positive media coverage as a measure of reputation, the AIC score for the alternative model was 1675.29 vs. 195.046 for the hypothesized model. Based on these findings, I concluded that the hypothesized model was superior to the plausible alternative models I examined.

Tests of differences by founding year. Given the significant effects of founding years on media coverage and amount of the 1st round VC funding, I decided to explore whether there are some differences in the predictors of reputation by year. For this purpose, I split the sample in three sub-samples – 146 NVs started in 1997 (pre-bubble), 152 NVs started in 1999 (bubble), and 117 NVs started in 2001 (post-bubble) – and I tested a reduced form of the hypothesized model in each of these subsamples.[18] These tests showed the following differences by year: First, for NVs started in 1997 and 2001 the founders' entrepreneurial experience was the only significant predictor of NV reputation ($\gamma = .115$ and $\gamma = .169$, respectively), whereas for NVs started in 1999 it was not significant ($\gamma = .083$). Second, customer prestige was a significant predictor of NV reputation for NVs started in 1999 ($\gamma = .309$) but not for those started in 1997 and 2001. Third, the total number of symbolic activities had positive effect on NV reputation for

[18] The reason for testing a reduced form is that splitting the sample in three led to loss of statistical power and including all the predictors would not allow for reliable estimation of the model fit to the data.

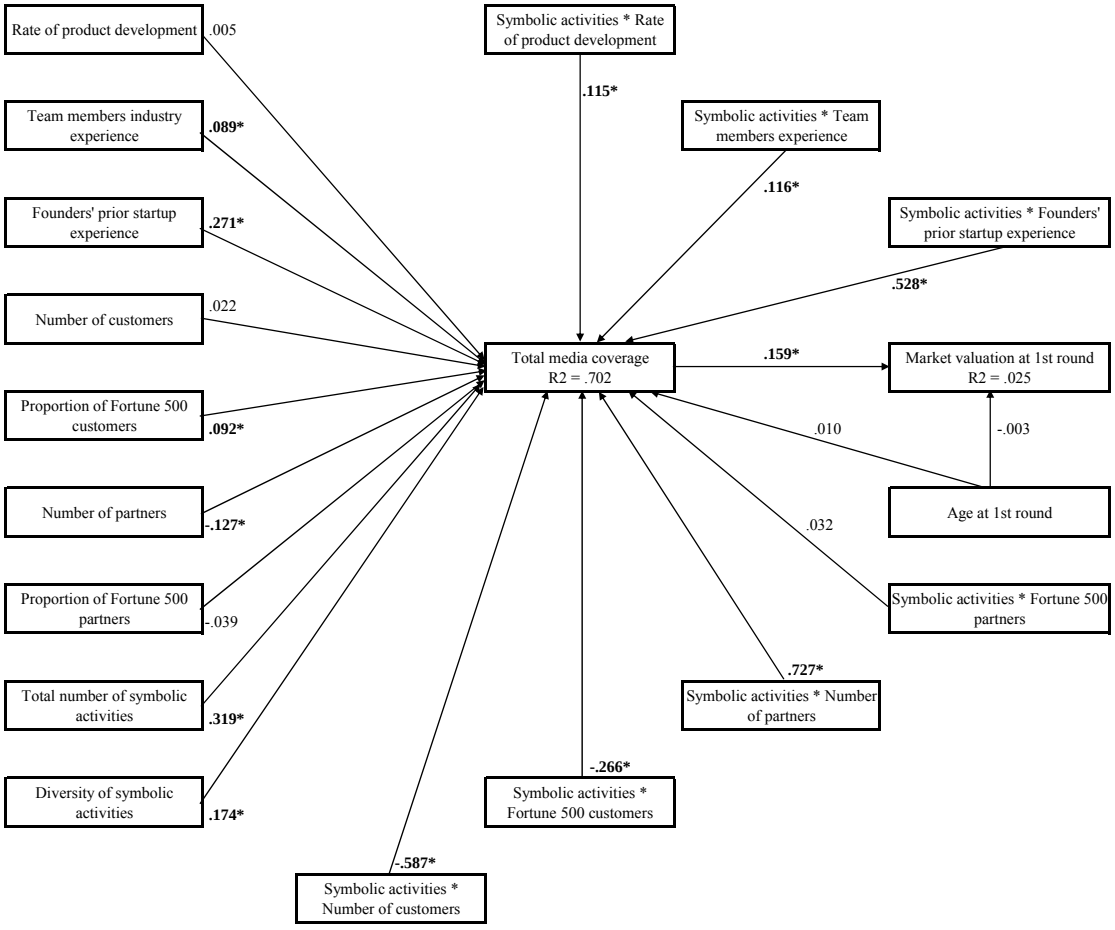
NVs started in 1997 and 2001 (γ = .548 and γ = .493, respectively) but no significant effect for those started in 1999. The diversity of symbolic activities is the only predictor that was significant in each of the three yearly analyses (γ = .218, γ = .294, and γ = .237, respectively). Finally, media visibility predicted significantly amount of 1st round VC funding for NVs started in 1999 and 2001 (γ = .136 and γ = .178, respectively) but not in 1997. Although some of the non-significant results may be due to the lower statistical power, these comparisons suggest that the predictors of a NV's reputation change with major shifts in market conditions. Also, it appears that the effect of a NV's reputation on its early financial performance became more important after the Internet bubble.

LISREL Analysis and Results for the Sub-sample with Disclosed Market Valuation

In order to evaluate the overall fit of my model for predicting NVs' market valuation, I repeated the analysis described above using the sub-sample of 217 NVs that disclosed their market valuations. Following the same logic, I re-ran the analysis using media visibility, positive media coverage, and media tenor as measures of reputation. I also compared the hypothesized model to plausible alternative models. It should be noted that the results from this analysis may not generalize to the entire population of NVs, because the NVs that did not disclose their market valuations are systematically different from those that did in terms of their performance. Specifically, t-tests suggest that the NVs that did not disclose their market valuations took longer to get to the 1st round of VC funding, received less money on the 1st round of VC funding, and had lower media visibility.

Media visibility as a measure of reputation. The chi-square for the hypothesized model with media visibility as a measure of reputation was χ^2 (16, N = 217) = 33.266, p < .05. Chi-square divided by the degrees of freedom was 2.079 suggesting an adequate fit of the model to the data. The GFI for this model was .992, the NFI was .992, the CFI was .996, and the IFI was .996, supporting the conclusion that the hypothesized model adequately fits the data. Figure 3.8 contains the maximum-likelihood parameter estimates for the main and interaction predictors, significance levels, and R-squares for the hypothesized model. As predicted by hypothesis 1, the number of symbolic activities is positively and significantly related to media visibility (γ = .319). The diversity of symbolic activities is also positively and significantly related to media visibility (γ = .174). Thus, hypothesis 1 is supported. The team members' industry experience is positively and significantly related to media visibility (γ = .089). Thus hypothesis 2 is also supported. Consistent with hypothesis 3, the founders' prior entrepreneurial experience has a positive significant relationship with media visibility (γ = .271). The number of customers has no significant relationship to media visibility and customer prestige has a positive and significant effect on media visibility (γ = .092). Thus, hypothesis 4 is partially supported. The number of partners has negative significant effect on media visibility (γ = -.127), contrary to my predictions, and partner prestige has no significant relationship with media visibility. Thus, hypothesis 5 is not supported. The rate of product completion is not significantly related to media visibility, thus failing to support hypothesis 6.

Figure 3.8 – Path Coefficients for the Direct and Interaction Effects with Media Visibility as a Measure of Reputation



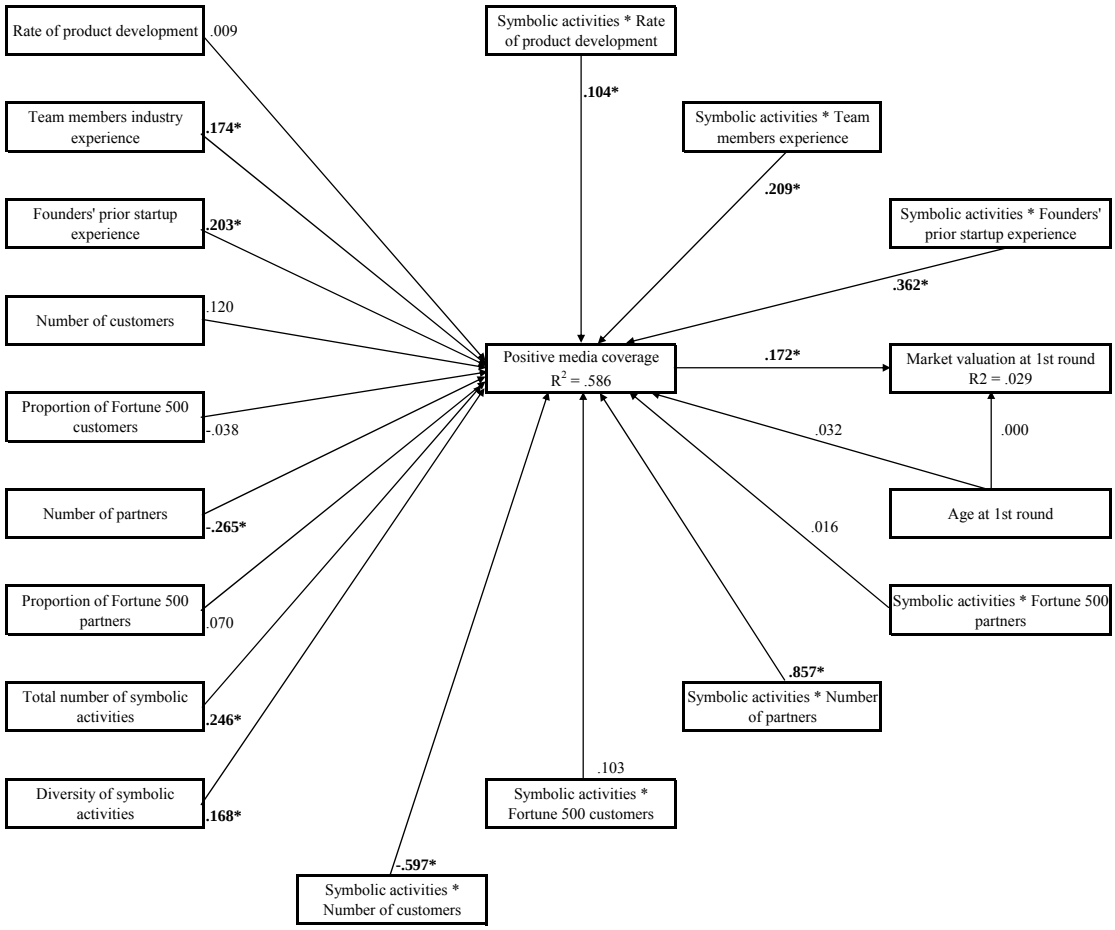
Consistent with hypothesis 7, symbolic activities have positive significant interactions with the rate of product completion ($\gamma = .115$), the team members' industry experience ($\gamma = .116$), the founders' prior start-up experience ($\gamma = .528$), and the number of partners ($\gamma = .727$). However, contrary to my predictions, the interactions of symbolic activities with the number of customers and customer prestige are negative and significant ($\gamma = -.587$ and $\gamma = -.266$, respectively). It appears that symbolic activities increase the positive effect of internal to the NV resources only. Overall, these results

provide mixed support to hypothesis 7. Finally, consistent with hypothesis 8, media visibility is positively and significantly related to the market valuation of NVs at the 1st round of VC funding ($\beta = .159$).

As evident from the R-squares statistics, the predictor variables together explain 70.2% of the variance in media visibility and media visibility in turn explains 2.5% of the variance in the amount of the 1st round VC funding. Further, the following exogenous variables have significant indirect effects on the amount of the 1st round VC funding (which in this model are the same as the total effects): the number of symbolic activities (.051), the diversity of symbolic activities (.028), the team members' industry experience (.014), the founders' prior experience (.043), and the proportion of Fortune 500 customers (.015). The other predictors have no significant indirect effects.

Positive media coverage as a measure of reputation. The chi-square for the hypothesized model with positive media coverage as a measure of reputation was χ^2 (16, N = 217) = 32.512, $p < .05$. Chi-square divided by the degrees of freedom was 2.032 suggesting adequate fit of the model to the data. The GFI for this model was .992, the NFI was .992, the CFI was .996, and the IFI was .996, supporting the conclusion that the hypothesized model adequately fits the data. Figure 3.9 contains the maximum-likelihood parameter estimates for the main and interaction predictors, significance levels, and R-squares for the hypothesized model.

Figure 3.9 – Path Coefficients for the Direct and interaction Effects with Positive Media Coverage as a Measure of Reputation



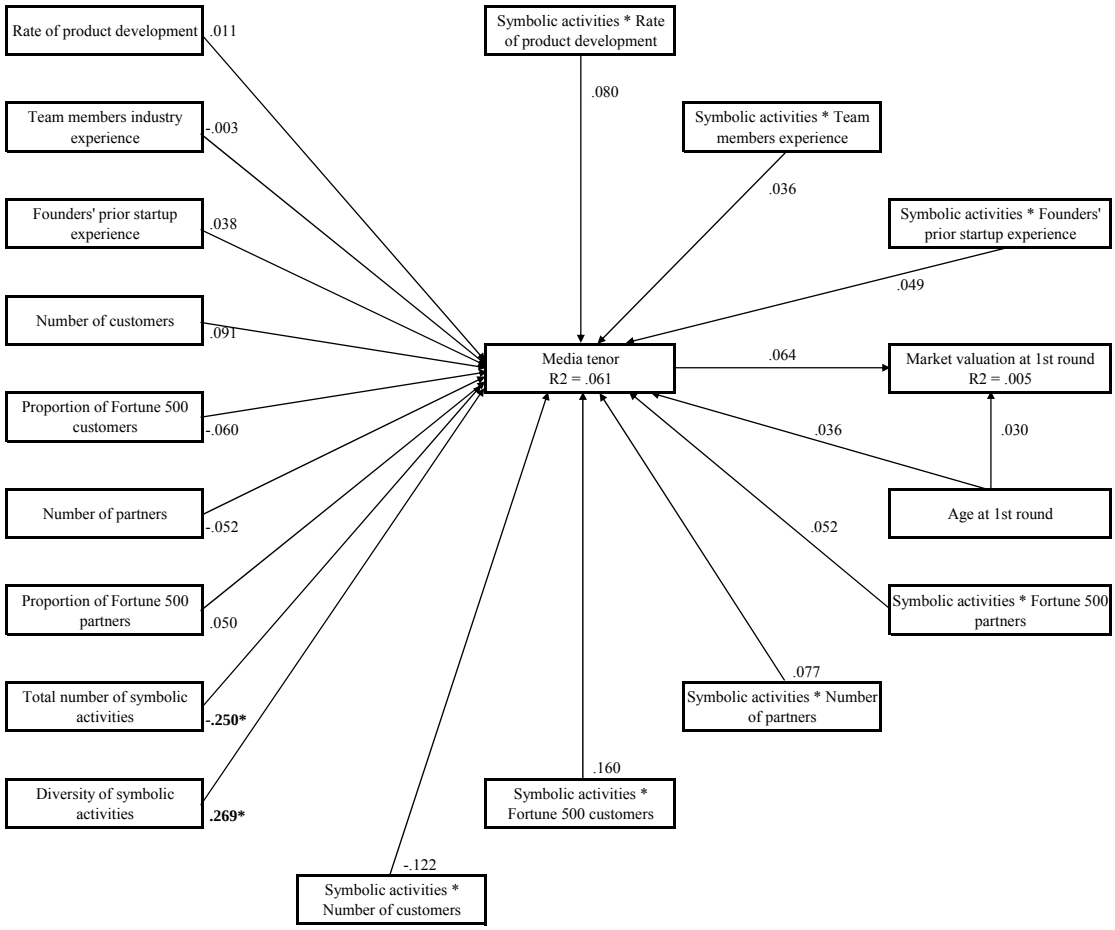
As predicted by hypothesis 1, both the number and diversity of symbolic activities have positive and significant effect on positive media coverage (γ = .246 and γ = .168, respectively). Consistent with hypothesis 2, the team members' industry experience is positively and significantly related to positive media coverage (γ = .174). The founders' prior entrepreneurial experience also has a positive significant relationship with positive media coverage (γ = .203), thus supporting hypothesis 3. Neither the number of customers nor customer prestige has a significant effect on positive media coverage.

Thus, hypothesis 4 is not supported. Contrary to my prediction, the number of partners has negative and significant effect on positive media coverage and partner prestige has no significant relationship with positive media coverage. Thus, hypothesis 5 is not supported. The rate of product completion is not significantly related to positive media coverage, failing to support hypothesis 6.

Consistent with hypothesis 7, symbolic activities have positive significant interactions with the rate of product completion ($\gamma = .104$), the team members' industry experience ($\gamma = .209$), the founders' prior startup experience ($\gamma = .362$), and the number of partners ($\gamma = .857$). However, contrary to my predictions, the interactions of symbolic activities with the number of customers is negative and significant ($\gamma = -.597$). The interactions with customer prestige and partner prestige are not significant. Overall, these results provide mixed support to hypothesis 7. Finally, consistent with hypothesis 8, positive media coverage is positively and significantly related to the market valuation of NVs at the 1st round of VC funding ($\beta = .172$).

As evident from the R-squares statistics, the predictor variables together explain 58.6% of the variance in media visibility and media visibility in turn explains 2.9% of the variance in the amount of the 1st round VC funding. Further, the following exogenous variables have significant indirect effects on the amount of the 1st round VC funding (which in this model are the same as the total effects): the number of symbolic activities (.042), the diversity of symbolic activities (.029), the team members' industry experience (.030), and the founders' prior experience (.035). The other predictors have no significant indirect effects.

Figure 3.10 – Path Coefficients for the Direct and interaction Effects with Media Tenor as a Measure of Reputation



Media tenor as a measure of reputation. The chi-square for the hypothesized model was χ^2 (16, N = 217) = 42.664, p < .05. Chi-square divided by the degrees of freedom was 2.667 suggesting an acceptable fit of the model to the data. The GFI for this model was .990, the NFI was .988, the CFI was .992, and the IFI was .992, supporting the conclusion that the hypothesized model adequately fits the data. Figure 3.10 contains the maximum-likelihood parameter estimates for the main predictors, significance levels, and R-squares for the hypothesized model with media visibility as a measure of reputation. As the figure shows, the number of symbolic activities has negative significant

relationship with media tenor (γ = -.250) and the diversity of symbolic activities has a positive and significant relationship with media tenor (γ = .269). None of the other path coefficients is statistically significant, suggesting that the predictor variables are not related to media tenor and media tenor in turn is not related to the market valuation of NVs at the 1st round of VC funding.

Tests of separate effects of symbolic activities by type. As a next step, I tested the direct relationships in the hypothesized model including each type of symbolic activities as a separate variable in the models to estimate the different contributions to media reputation of different symbolic activities. I estimated only two models – those with media visibility and positive media coverage as measures of reputation, because media tenor is not related to any variables in the hypothesized model.

I first tested these effects using media visibility as a measure of reputation. The chi-square for the hypothesized model was χ^2 (11, N = 217) = 62.374, $p < .05$. Chi-square divided by the degrees of freedom was 5.670 suggesting that the model did not adequately fit the data. However, the GFI for this model was .980, the NFI was .973, the CFI was .977, and the IFI was .977, suggesting that the hypothesized model adequately fits the data. Figure 3.11 contains the maximum-likelihood parameter estimates for the main predictors, significance levels, and R-squares for the hypothesized model with media visibility as a measure of reputation. Of the three types of symbolic activities, identity-building and one-way externally oriented symbolic activities are positively and significantly related to media visibility (γ = .217 and γ = .551, respectively). Two-way externally oriented symbolic activities have no significant relationship to media visibility

in this sub-sample. Diversity of symbolic activities is also positively and significantly related to media visibility (γ = .095). Further, identity-building and one-way externally oriented symbolic activities have significant indirect (or total) effects on market valuation at the 1st round of VC funding (.034 and .087, respectively).

Figure 3.11 – Path Coefficients for Each Type of Symbolic Activities with Media Visibility as a Measure of Reputation

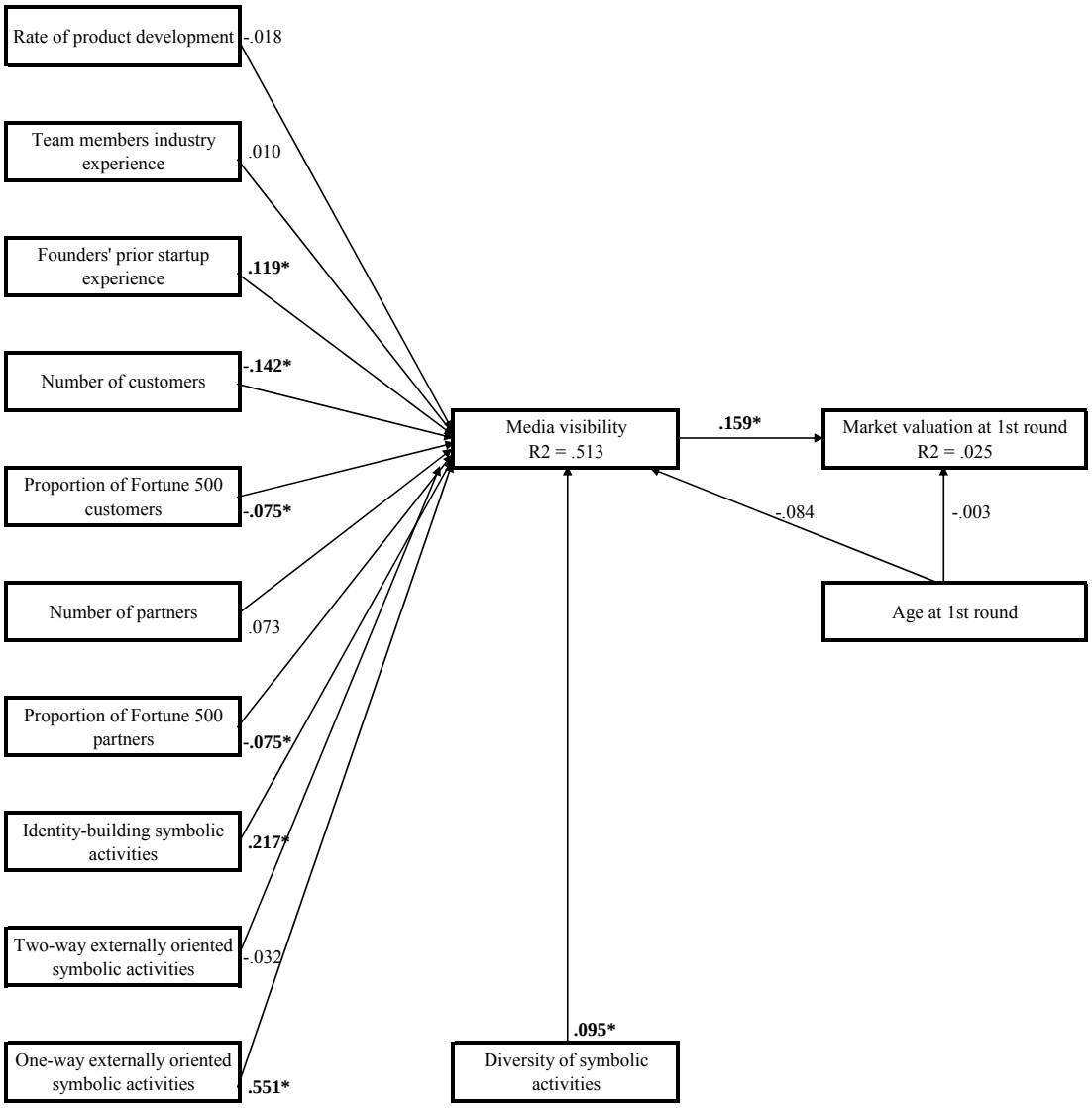
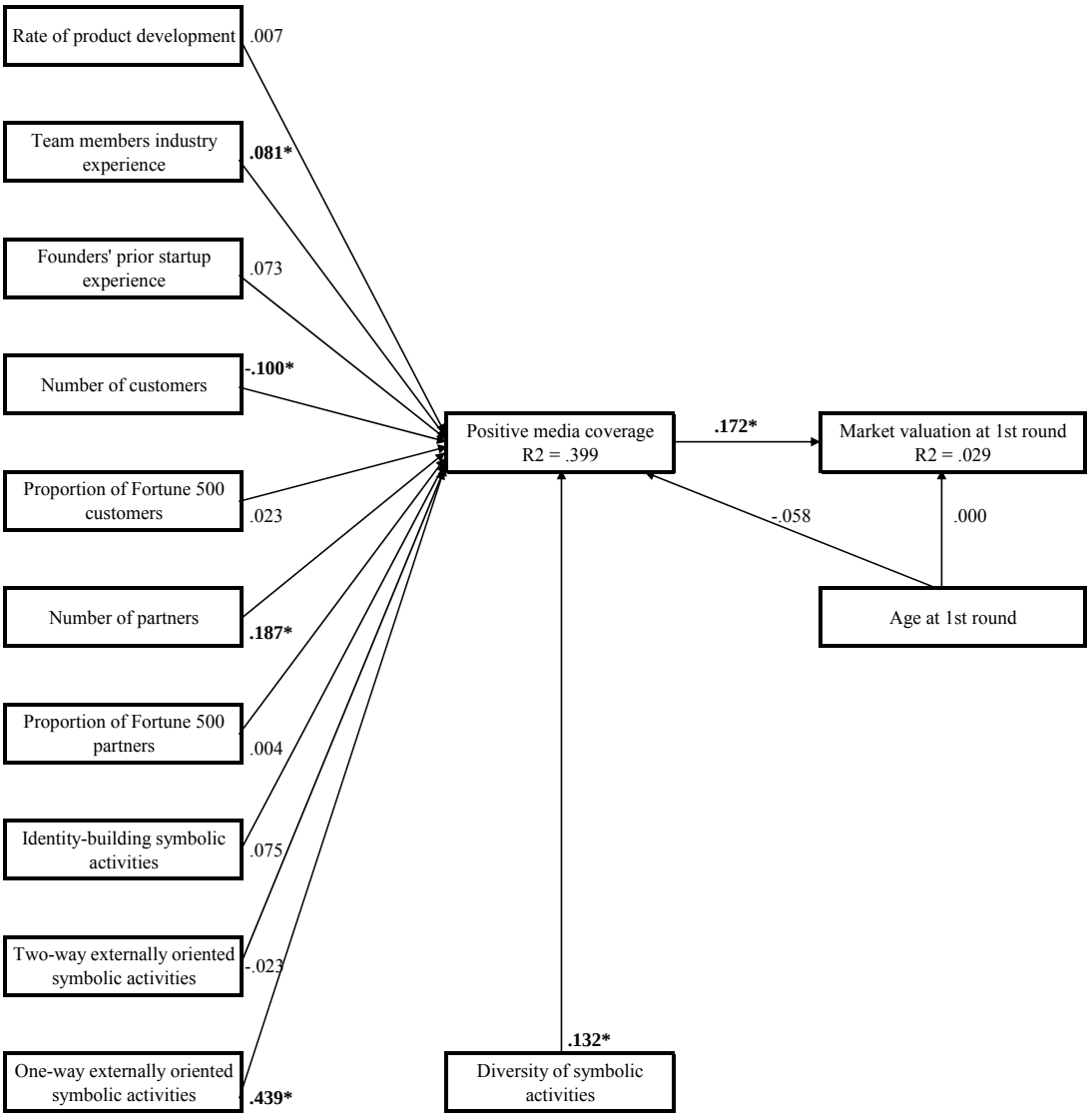


Figure 3.12 – Path Coefficients for Each Type of Symbolic Activities with Positive Media Coverage as a Measure of Reputation



Second, I tested the same model using positive media coverage as a measure of reputation. The chi-square for the hypothesized model was χ^2 (11, N = 217) = 59.527, p < .05. Chi-square divided by the degrees of freedom was 5.412 suggesting that the model does not adequately fit the data. The GFI for this model was .981, the NFI was .973, the CFI was .977, and the IFI was .978, supporting the conclusion that the hypothesized

model adequately fits the data. Figure 3.12 contains the maximum-likelihood parameter estimates for the main predictors, significance levels, and R-squares for the hypothesized model with positive media coverage as a measure of reputation. Of the three types of symbolic activities, only one-way externally oriented symbolic activities are positively and significantly related to positive media coverage ($\gamma = .439$). The other two types – identity-building and two-way externally oriented symbolic activities – have no significant relationship to positive media coverage. Diversity of symbolic activities is positively and significantly related to positive media coverage ($\gamma = .132$). These results suggest that although identity-building and two-way externally oriented symbolic activities by themselves may not contribute substantively to the favorable evaluations of a NV, they contribute to the diversity of symbolic activities, which in turn has a positive effect on the level of positive media coverage that a NV receives. Further, one-way externally oriented symbolic activities have significant indirect (or total) effects on market valuation at the 1st round of VC funding (.075).

Alternative Models Estimation

The measured variables path analysis is a statistical technique that allows researchers to compare the hypothesized model to other plausible models by comparing the fit of the alternative models to that of the hypothesized model. Both Medsker et al. (1994) and Hayduk (1987) recommend such comparisons of the hypothesized model to plausible alternative models. In the present study, two alternative models appear to present logical alternatives to the hypothesized system of relationships and should be tested.

Alternative model 1 – partial mediation. My theory suggests that reputation fully mediates the relationship between NVs' resources and the market valuation of NVs at the 1st round of VC funding. However, it is possible that this mediation is only partial and the resources also have direct effect on the early financial performance of NVs. I tested for this alternative by adding paths from team members' industry experience, founders' prior startup experience, number of customers, proportion of Fortune 500 customers, number of partners, proportion of Fortune 500 partners, and rate of product completion to the amount of 1st round VC funding. All other paths remained unchanged. I used the criteria suggested by James et al. (1982) to compare nested alternative models to the hypothesized model. Following this procedure, a significant reduction in chi-square suggests an improvement in the fit to the data. For the model with media visibility as a measure of reputation, chi-square difference tests revealed that the decrease in chi-square from the hypothesized model to alternative model 1 was significant ($\Delta\chi^2$ (9) = 19.894, p < .05). For the model with positive media coverage as a measure of reputation, chi-square difference tests revealed that the decrease in chi-square from the hypothesized model to alternative model 1 was not significant ($\Delta\chi^2$ (9) = 18.890, p > .05). Thus, the alternative model 1 is less parsimonious because it adds more parameters to be estimated and does not fit the data significantly better.

Alternative model 2 – no mediation. Prior research has assumed that the NV resources – especially its human capital and relationships – directly influence venture capitalists' funding. I tested for this alternative by adding paths from team members'

industry experience, founders' prior startup experience, number of customers, proportion of Fortune 500 customers, number of partners, proportion of Fortune 500 partners, and rate of product completion to the market valuation at 1st round of VC funding and removing the paths from these variables to reputation. All other paths remained unchanged. Because this alternative model both adds new paths and removes paths that existed in the hypothesized model, it is not nested in our hypothesized model. Thus, consistent with the recommendations of Kline (1998), to determine whether these alternative models fit the data better than the hypothesized model we compared the Akaike Information Criterion (AIC) scores of each alternative model to the AIC score of the hypothesized model. Kline (1998) suggests that given two non-nested models, the one with the lowest AIC score represents the best fitting model. For media visibility as a measure of reputation, the AIC score for the alternative model (451.446) was higher than the AIC of the hypothesized model (379.965). For positive media coverage as a measure of reputation, the AIC score for the alternative model (434.838) was higher than the AIC of the hypothesized model (379.268). Based on these findings I concluded that the hypothesized model was superior to the alternative models I examined.

Summary of Results

Effects of symbolic activities on NV reputation. Both the number and diversity of symbolic activities consistently emerged as the strongest predictors of media reputation (both in terms of visibility and favorability). Thus, hypothesis 1 is strongly supported. Further, one-way and two-way externally oriented symbolic activities have direct positive

effect on NV reputations, whereas identity-building symbolic activities appear to contribute only through their input into the overall diversity of symbolic activities.

Effects of human capital on NV reputation. Of the three indicators of team quality, only prior industry experience contributed to media reputation, as I predicted in hypothesis 2. The founders' prior entrepreneurial experience also consistently predicted the NVs' media reputation. Together, these two results suggest that experience is particularly relevant as a signal of the quality of a NV's human capital, whereas education and diversity appear to be less relevant.

Effects of relationships with customers and partners on NV reputation. My hypotheses about the effect of relationships with customers and partners on a NV's reputation received less than sufficient support. Only the hypothesized positive effect of customer prestige on NVs' reputation received consistent support. The number of customers appears to have non-significant and even negative (according to some of the regressions) effect on reputation, contrary to hypothesis 4. Therefore, hypothesis 4 was only partially supported. The number of partners and partner prestige have no significant effect on NV reputation, thus failing to support hypothesis 5.

Effects of product completion on NV reputation. The hypothesized positive effect of product completion on NVs' reputation was not supported in my analysis. However, consistent with my predictions product completion had positive and significant interaction effects with symbolic activities in all of the analyses that I performed. This

suggests that product completion might be an important but less observable signal, and, therefore, may influence NVs' reputations only when it is made more visible to stakeholders by using symbolic activities.

Interaction between symbolic activities and resource signals. Consistent with my predictions, symbolic activities increased the positive effect of human capital (both team quality and founders' experience) and product completion. However, symbolic activities also appear to increase the negative effect of the number of customers and make the effects of customer prestige and the number of partners negative. Thus, hypothesis 6 is only partially supported.

Effects of NV reputation on financial performance. The hypothesized positive effect of NVs' reputation on early financial performance received consistent support for both the visibility and positive media coverage as measures of reputation, as well as for both the amount of the 1st round VC funding and the market valuation at the 1st round VC funding as a measure of performance. Overall, these results provide strong support to hypothesis 8.

The different types of analysis that I presented above provide general support for the hypothesized model of reputation building by NVs that I developed in this essay. In the next section I discuss in greater detail the implications of these results and the possible explanations for the lack of support in my sample for some of the hypothesized relationships.

DISCUSSION

In this essay I tested a set of hypotheses proposing that a NV's reputation is the joint result of its symbolic activities and signaling assets. Specifically, I hypothesize that the human capital, relationships with customers and partners, and product completion, together with the symbolic activities of a NV, predict its initial reputation, which in turn increases its early performance. The empirical analyses of a sample of 415 information technology NVs provide general support to the hypothesized model. Consistent with my theory, symbolic activities have the strongest direct effect on a NV's reputation, and tend to increase the effects of the key resources possessed by NVs. Also, the NVs' human capital, indicated by their founders' entrepreneurial experience and team members' industry experience, has a positive effect on NVs' reputation. Reputation, in turn, is positively related to NVs' early financial performance. The effects on NVs' reputations of their relationships with customers and partners, however, appear to be less straightforward, and therefore deserve further attention.

The non-significant and even negative effect of the number of customers could be explained with the lack of consistency among NVs in terms of the customers they claim to have and the more general lack of any evidence if a customer has indeed signed to use or support a given IT output. Specifically, when exploring the data more qualitatively, I found wide variations in what kinds of firms NVs list as their customers: for example, one NV had only one big customer – the state of North Carolina, the contract with which was announced in press-releases from both parties to the contract, posted on the NV's web-site, and subsequently covered by the media; another NV had listed on its web-site

the names of more than 40 customers, most of which I was unable to find on the Internet (probably very small firms that have no web-site or individuals). These variations suggest that the number of customers a NV claims to have cannot serve as a reliable indicator that the NV indeed has strong (or even any) relationships with those customers. On the other hand, having a prominent firm, such as IBM or Microsoft, as a customer may serve as a more reliable signal, because such firms are unlikely to allow every NV to post their logo on its web-site. Thus, the NVs that have highest proportions of Fortune 500 customers are those that have few strong relationships with prominent industry players, which explains why the prestige and not the size of customer networks had a significant effect on NVs' reputation.

The lack of significant effects of a NV's partnerships on its reputation appears to somehow contradict prior studies, which have established that partners have a positive effect on NVs' performance and have attributed these effects to the reputational mechanisms through which affiliation influences stakeholders' perceptions of a focal NV (Stuart, 2000; Stuart et al., 1999). However, these studies assumed rather than tested for the effects of relationships on reputation, which makes it difficult to compare the results. One possible explanation for the lack of a strong signaling effect on the part of partnerships is that in the IT industry partnerships are so ubiquitous (Kotha, Rindova & Rothaermel, 2001; Rindova, Wiltbank & Kotha, 2001; Stuart, 2000; Stuart et al., 1999) that they may appear to be the norm rather than a distinctive signal of the quality of a NV.

An alternative explanation for the weak effect of relationships with customers and partners is that there might be a substitutive effect between symbolic activities and the

signaling role of third parties. In fact, all prior studies that found the positive effect of affiliation did not take into account symbolic activities. Therefore, it is possible that once symbolic activities are used to draw stakeholders' attention to the NV's human capital and product development activities, the third party affiliations do not add that much value. Indeed, if I exclude symbolic activities from the analysis the coefficients for the number of partners become positive and significant. Therefore, future research should account for the role of symbolic activities when studying reputational effects of affiliations with third parties on NVs' performance.

I found that the founders' past entrepreneurial experience appears to increase a NV's reputation. These results suggest that related experience matters by itself, regardless of past performance (i.e., whether prior start-ups were successful or not or whether the team members were doing a good job in their prior positions). This strong effect of founders on a NV's reputation is consistent with past research on the role of founders for the formation and performance of new organizations (Boeker, 1989; Dobrev & Barnett, 2005). However, there might be variations in how much founders learn from successful versus failed experiences. Thus, one productive line for future research could be to explore the differential effects of founders' prior successful, failed, and mixed experiences on the reputation and performance of their subsequent ventures.

Further, the team members' industry experience had both direct and interaction effects on a NV's reputation. However, the other two indicator of the quality of a NV's human capital suggested by prior research – education and team diversity – did not appear to be significant predictors of the NVs' reputation.[19] It should be noted, however,

[19] In fact, education appears to have even a slightly negative effect on reputation, which could be explained with the fact that the "all Ph.D. in engineering" teams tend to believe that the product will speak for itself

that prior studies were conducted in relatively older high technology firms than the ones in my sample (Honig, 1998; Schoonhoven & Eisenhardt, 1996; Schoonhoven, Eisenhardt & Lyman, 1990). One explanation for the relatively weak signaling value of team diversity may be that finance, accounting, marketing and other types of expertise that adds to a team's diversity, may appear less relevant so early in the NV's life. Whereas such experience would be valuable once the NV takes off, at the very early days of its life it may have unclear relevance in the eyes of the stakeholders, because this is the time when the NVs are still struggling to produce a first prototype or to develop a new technology that will not be ready to market in the next few years. Therefore, it is plausible that very early in a NV's life stakeholders look for indications that the NV is in good hands and likely to take off and survive, whereas later they may become more concerned with the availability of complementary expertise (i.e., team diversity) or highly specialized technical competences (e.g., a Ph.D. in computer engineering). Future research should explore the potential variation in the effect of human capital characteristics as a NV progresses from the start-up stage to later stages in its life.

The rate of product advancement had no direct effects on NVs' reputation but had significant interaction effects with symbolic activities. These findings suggest that such internal activities might be relatively weaker as signals but become more visible to publics when they are promoted or emphasized by using symbolic activities. For example, if a NV is committed to new product development and makes fast progress but nobody knows about this, it is unlikely that the high rate of product advancement will contribute to its reputation. Therefore, one practical conclusion that can be derived from

---

and to invest only in new product development activities, ignoring completely the need to build reputation for the NV.

these observations is that NVs should use symbolic activities as much as possible, especially if they have something substantive to show, because symbolic activities magnify the effect of otherwise unobservable new product development activities and make them important reputation signals.

The strongest predictor of reputation in my study is the number of symbolic activities, which appears somewhat surprising given all the reputation research that has focused on product quality and past financial performance (Fombrun & Shanley, 1990; Milgrom & Roberts, 1986; Roberts & Dowling, 2002; Shapiro, 1983). The strong effects of symbolic activities could be explained with the fact that at the beginning NVs have very few substantive resources and relationships with stakeholders, because building substantive relationships with large stakeholder audiences requires long-term consistent behaviors and performance on part of the organization (Grunig, 1993; Milgrom & Roberts, 1982, 1986; Shapiro, 1983). Thus, early in a NV's life when these relationships are not developed yet, stakeholders need to rely more extensively on the communications that come from the NV than they would later on.

Two-way communications have been advocated as the most effective PR practices, especially when firms operate under high environmental uncertainty (Grunig, 1984; Grunig et al., 2002). My results suggest that indeed two-way communications contribute significantly to a NV's reputation, both independently and by adding more diversity to the repertoire of symbolic activities that the NV uses. Further, one-way externally oriented symbolic activities (e.g., press releases) had the strongest independent effect, consistent with observations in media research that journalists tend to be quite passive when searching for new events to cover. Specifically, prior research has found

that most media stories come form press releases and other passive information gathering, rather than from active search of new events on part of the journalists (Hunt & Grunig, 1994). This might be even more so in the case of NVs, for which journalists may not have any information unless they encounter announcements of what NVs are doing or learn about their products during a specialized industry event.

It is somewhat surprising that the identity-building symbolic activities, such as web-site upgrades, logo, motto, and mission statements, did not appear to have significant effect as a standalone type of symbolic communications in most analyses. They appear to add value only by contributing to the overall diversity of symbolic activities. It is possible that because such symbolic activities do not target specific stakeholder groups, they receive accordingly less attention from the more general and distant stakeholders, represented by the media. Overall, my results suggest that using a large number and diverse types of symbolic activities is the best strategy to build an early reputation for a NV. However, these activities have to be backed up by some substantive resources or advancement toward completion of the product that the NV is going to offer.

Whereas my model holds for media visibility and positive media coverage, both in terms of factors that predict a NV's reputation and the effects of reputation on a NV's performance, the overall media tenor had no significant relationships with other variables in my model. This observation can be explained with the fact that early in their lives NVs receive primarily neutral media coverage (86.3% of my sample) and relatively few NVs (13.1% of the sample) received positive evaluations, which makes the tenor scores very low. This observation is not surprising, though, because prior research suggests that even for established firms, reputation may not always include an evaluative component

(Grunig & Hung, 2002). For example, Grunig and Hung (2002) found that the lack of familiarity leads to neutral description by stakeholders of the products of world-wide known firms such as Microsoft.

Further, it might be the case that a NV first has to accumulate a certain threshold level of visibility before it can start developing the evaluative dimension of its reputation. The more coverage a NV receives, the more familiar it becomes and the more likely the journalists to feel comfortable making evaluative statements about it. This idea is consistent with the fact that in order for people to form evaluative opinions of an issue, they first have to devote their attention to that issue (Fiske & Taylor, 1991). Similarly, for stakeholders to begin to form evaluative opinions about a NV, it might be necessary for the NV to become sufficiently salient in its organizational field, and to gain a minimum amount of attention. Therefore, at the beginning of a NV's life visibility might be a more meaningful measure of its reputation than the formation of favorable interpretations. Given the relatively short period of observation of my study (average of one and a half year per NV) and the small number of NVs that received positive coverage, it is difficult to make specific conclusions along those lines. Future research should explore more systematically the potential threshold effect of media visibility – e.g., at what point in time NVs begin to accumulate positive evaluations in addition to visibility. Also, future research can explore how the patterns of accumulation of visibility and favorability evolve over time, as the NVs progress through subsequent stages of their lives.

It is also important to note that the visibility (or awareness) component of reputation accrues at the level of the NV and is more general (i.e., the stakeholders' focus of attention is shifted towards the focal NV), whereas evaluations for quality are at the

product level and are based on more detailed assessment of product quality (Rindova et al., 2005). Given that most NV in my sample had no available outputs, it is not surprising that only a few of them accumulated positive reputations. This finding is important from a theoretical point of view, because it suggests that the reputational perceptions begin to accumulate from more general awareness and progress toward more specific evaluations of the output quality. Therefore, this dissertation extends prior research, which has focused extensively on quality and past performance as the main drivers of reputation, by drawing attention to the initial factors that trigger the reputation-building process – namely, to the activities that attract stakeholders' attention to a NV. My study also extends the sociological view of reputation as a position in a network of relationships by pointing to the fact that before relevant stakeholders begin to form relationships with a NV they need to notice it and form some initial reputational perceptions about it. Finally, my study also alerts entrepreneurs, who often believe that the product will "speak for itself", that this is not necessarily the case. In fact, my results suggest that there might be some threshold level of attention that needs to focus on the NV before stakeholders even begin to evaluate the NV or its products.

Research Contributions

This study makes several important contributions to management and organization theory and practice. First, the paper contributes to reputation research by uncovering the process of reputation building from its very beginning. It addresses an important gap in current research on organizational reputations, which has focused primarily on established firms (Fombrun & Shanley, 1990; Fombrun, 1996; Wartick,

2002) and has overlooked the uniqueness of the process of reputation building by NVs. As my results suggest, certain venture-specific assets, such as the founders' entrepreneurial experience and the relationships with prominent customers, serve as reputation building investments by NVs, although they have not been considered relevant variables by reputation research to date.

Further, I show that symbolic activities play a much more critical role for building the initial reputation of NVs than for established firms. Past reputation research suggests that investing heavily in one particular type of symbolic activities – advertising – can help an established industry player improve its reputation (Milgrom & Roberts, 1986). However, none of the firms in my study engaged in advertising in the early period of its life. My results show that using a large number of discrete and relatively inexpensive symbolic activities, as well as using a wide variety of symbolic activities can help NVs build their initial reputations. These findings are important because they draw researchers' attention to the fact that the process of developing initial reputation might be quite different from the process of sustaining or increasing an already existing reputation.

Second, I refine the scholarly understanding of reputation as a valuable intangible asset by examining the processes through which this asset can be developed and by demonstrating that early in a firm's life, its accumulation is much less ambiguous than the resource-based view of the firm suggests (Barney, 1991; Dierickx & Cool, 1989). Specifically, my analyses suggest that the resource signals I identify (i.e., human capital, social capital and new product development) together with symbolic activities explain a sizable portion of the variance in NV reputation. According to the results of the 2SLS regressions the NVs' symbolic activities and signaling resources explain 52.5% of the

variance in the visibility component of a NV's reputation (R-square change is .320 for direct effects and .205 for interaction effects) and 46.4% of the variance in the evaluative (positive) component of a NV's reputation (R-square change is .271 for direct effects and .193 for interaction effects). Similarly, the results of the LISREL suggest that the predictions of my model explain 55.7% of the variance in the visibility component of a NV's reputation and 48.6% of the variance in the evaluative (positive) component of a NV's reputation. Therefore, it might be useful to investigate more carefully when and how reputation and other critical intangible resources emerge, and what factors contribute to their initial accumulation.

Third, with this study I extend the current understanding of firm resources by offering useful insights about the interrelationships among critical intangible assets, such as reputation, social capital and human capital. Past research has found that once reputation is accumulated, it can help young and small firms attract better employees, thus increasing their human capital (Williamson, 2000; Williamson, Cable & Aldrich, 2002). Also, reputation has been found to help NVs attract more venture capital (Shane & Cable, 2002; Stuart et al., 1999) – a finding confirmed by my analysis – which capital in turn allows for the acquisition of various resources. Therefore, by explaining how NVs can build their initial reputations, I provide more detailed understanding of the early asset acquisition processes by new firms, especially with regard to the interactions between symbolic activities and substantive NV attributes. My model suggests that the initial human capital (especially the founders' experience) and the first relationships with customers and partners can contribute to the accumulation of early reputation by NVs. Thus, it appears that some resources might be a prerequisite for other resources to be

developed. Specifically, reputation is a resource whose accumulation might be largely dependent on the existence or early acquisition of other, more internal to the firm resources. These initial observations suggest that future research should explore the co-development of multiple intangible assets instead of focusing on one asset at a time.

Fourth, this dissertation extends prior research on NVs, which has assumed that NVs do not have their own reputations and therefore borrow the reputations of their partners or investors (Beatty & Ritter, 1986; Hsu, 2004; Stuart et al., 1999). Specifically, recent studies have demonstrated that NVs pay for their affiliation with prestigious venture capitalists by agreeing on a lower market valuation than they would get otherwise (Hsu, 2004). My results suggest that in fact these assumptions of past research are only partially true – indeed, NVs that have no reputation may seek affiliation with prestigious VCs. However, there are also NVs that are pretty alert and manage to build reputation very early in their lives. Those NVs do not necessarily strive to attract the most prestigious VCs but still manage to receive more money and higher market valuations. I split the sample in two – NVs with no reputation (no articles) and some reputation (at least one article) – and found that on average the VCs that invested in the 'no-reputation' group of NVs were 33% bigger and had 52% more IPOs in the preceding year than those that invested in the 'reputation' group. These differences suggest that the NVs with no reputation are the ones that tend to affiliate with more prestigious VCs, but they also receive less money and lower market valuations than the ventures that build their own reputation and can afford to raise VC money regardless of the VCs prestige. Therefore, my study points to the different consequences for NVs between developing their own reputations versus borrowing the reputations of others.

Last but not least, my study speaks directly to entrepreneurship research and practice by providing specific suggestions how new ventures can build reputation early in their lives. As I already discussed above, building reputation early in a NV's life is critically important for the NV's ability to attract stakeholders and to engage in exchange relationships with them. Thus, building reputation early on can improve NVs' chances for survival and success. Moreover, most of the activities necessary to accumulate resources that serve as reputation signals are a natural part of the development of a new firm. Therefore, building these resources strategically and with an eye towards their potential reputation effects would help NVs grow faster and overcome the initial hurdles at start-up. Also, using symbolic activities to promote the substantive resources possessed by a NV is something overlooked by both researchers and entrepreneurs. However, symbolic activities can be used not only to attract stakeholders' attention to a NV, but also to increase stakeholders' knowledge of the positive aspects of the NV, which may convince them to invest in it, attempt employment with it, or otherwise support its development. All these benefits, added to the fact that most of the symbolic activities I identified are relatively easy to initiate and do not require substantive resources, make them both attractive and affordable for NVs.

Limitations and Future Research Directions

As every study, this dissertation is not without limitations. Several points deserve particular attention and further exploration in future research. First, I examined the factors that influence NV reputation in a sample of venture capital backed NVs. Arguably, these NVs may differ from the population of NVs that never receive VC

finding. For example, it is possible that NVs interested in VC finding focus more on early reputation building activities than those that have enough start-up capital from non-VC sources. Alternatively, it is likely that the majority of the NVs that never receive VC funding have lower potential or otherwise perform worse than those that receive VC funding. Also, it is possible that reputation influences which ventures will receive finding from VCs. If so, there might be systematic differences between VC-backed and non-VC backed NVs in terms of their reputation building activities and outcomes. Given that the majority of high technology NVs never receive VC funding (Goldfarb, Kirsch & Pfarrer, 2006), it is important for future research to explore the reputation building processes in non-VC backed NVs and to compare with those identified in this dissertation research.

Second, this study explores how NVs can build reputations with large and distant stakeholder audiences through media coverage. However, some NVs may also invest in building direct reputation with a small set of stakeholders by relying on developing high quality relationships with these stakeholders through direct interactions with them (Grunig et al., 2002). Arguably, these two distinct strategies in approaching the reputation-building process – reputation building with a small set of stakeholders that have direct experience with NVs versus a large number of distant stakeholders – require different resources and may have different consequences for NVs' early and long-term performance. Future research should explore the pros and cons of each strategy and the role of some contingent factors, such as industry and product type (e.g., hard products, services, or new technologies) on the effectiveness of each strategy. It is also likely that media visibility can create interest in various publics towards the focal NV and thus can contribute to converting such relatively distant (and thus less involved) stakeholders into

more proximate ones, who are more directly involved with the NV. This is an important issue for future research to explore, because according to some scholars, only the stakeholders that are actively involved with a given firm deserve investments in sustaining and improving the firm's relationships with them (Grunig et al., 2002). Although conventionally direct relationships with stakeholders have been seen as more important than reputation building with larger publics, in the context of my study media appears to be a pretty important factor, too. This observation is likely to generalize to other high-technology context, where the uncertainty about the quality of NVs is substantial. Therefore, a more fruitful direction for future research might be to look for relationships between the more direct and more distant types of reputation and to explore them together as opposed to mutually exclusive alternatives.

Third, in this study I use media coverage to measure NVs' reputation with large and diverse stakeholder groups. Arguably, my measures capture only part of the reputation of NVs – the most broadly shared one. Ideally, one would collect data on each stakeholder's opinion about a focal NV to draw more correct conclusions. Also, the reputation of any given NV with the few stakeholders with which it has direct relationships may differ qualitatively from its reputation with distant anonymous stakeholders. Although it has been notoriously difficult to measure stakeholders' opinions about a NV (primarily due to the difficulty to find relevant stakehdoelrs who have any opinion about a given NV), it might be useful to explore even small samples of stakeholders in greater detail in order to see whether their opinions differ from the representation in the media. Such comparison would be particularly useful given that contrary to the common belief that media follows it own agenda, some scholars have

argued that in fact media correctly represents publicly shared views about organizations (Deephouse, 2000). More generally, future research should strive to come up with new and improved measures of NV reputation, which may reflect more completely whether stakeholders are aware of and what they think about a given NV.

Fourth, I focused on identifying the predictors of early NV reputation – symbolic activities and signaling resources – and on establishing that they matter both independently and jointly. My results suggest that different activities have different effects and that symbolic activities in particular are critical for increasing the effects of some resource signals, such as product advancement and human capital. However, my study does not address the issue of what determines the variation among NVs in their use of symbolic activities and investment in signaling resources, because these predictors are exogenous to my model. Therefore, one productive avenue for future research might be to further investigate what factors determine whether and how much a NV would use symbolic activities and to what extent it would invest in different resources. Some potential predictors to explore could be founders' prior startup and industry experience, market or industry differences, and other factors from the external environment.

Fifth, my findings suggest that other things being equal a NV's reputation increases its early performance, as measured by the amount of money that VCs invest in it. One plausible alternative explanation of these findings might be that sunk cost investments (such as new product development, as well as building human capital and social relationships for the NV) are higher in industry sectors with increasing returns (Sutton, 1991). If VCs are most likely to invest in these same sectors, the relationship between reputation and VC finding might reflect simply the coocurrence of resource

signals, more media attention, and higher VC investments in the fastest growing industry sectors. In my models I did my best in accounting for these factors by including industry sector controls. Also, in additional analyses not reported in the main body of this dissertation I added controls for the type of product that the NV is going to offer – hard product, software, hardware, or new technology, to account for potential differences in the sunk cost investments required for each type of product. However, these controls are only proxies for the actual differences in the sunk cost investments and the increase in returns in each industry sector. Therefore, one recommendation for future research is to try to come up with better ways to account more directly for these potential differences.

My study focuses on if and how NVs manage to build their own reputations very early in their lives. However, prior research has demonstrated that many NVs do not build their own reputation but instead borrow the reputations of their affiliates. Indeed, in the discussion above I pointed to the different financial consequences of developing own reputations versus borrowing the reputations of venture capitalists. Further, it is plausible that each of these two options has both pros and cons, or different pay-offs from a short-term versus a long-term perspective. Future research should explore what factors determine whether a given NV would choose to build or to borrow reputation early in its life and what the consequences of building its own reputation versus borrowing the reputation of affiliates for the NV's long-term performance are. It might be the case that building its own reputation initially brings more money to the NV but later on having prestigious VC affiliations becomes more important. Also, there might be some trade-offs between investing in reputation-building earlier versus later for the long-term survival and success of NVs. All these possibilities provide fertile grounds for future research.

In order to understand the first attempts at reputation-building that NVs make, I focused on the very early stage in the life of NVs – from founding to the first round of VC funding – a period during which NVs have no prior financial performance to guide stakeholders' perceptions and opinion formation. Based on the consistent evidence from prior research on the reputation of established organizations that financial performance is the strongest predictor of reputation (Fombrun & Shanley, 1990; Roberts & Dowling, 2002), one could expect that the first round of VC funding would influence the subsequent reputation of NVs, because it serves as the first formal and comparable across NVs evaluation of their financial performance. Moreover, the NV's performance at this important milestone event in their lives may influence how much they will be able to invest in various resources later and how efficient their investments will be, which will influence further their subsequent reputations. Therefore, it is important for future research to explore the reputation-building dynamics after the first round of VC funding and to compare them with the dynamics identified in this study.

Further, my study suggests that the accumulation of reputation as a resource is largely dependent on the existence or early acquisition of other, more internal to the firm resources, such as human capital and product advancement. However, it is also possible that there is a feedback effect and the initial reputation influences the subsequent accumulation of human capital and other resources by NVs. For example, prior studies have documented that young and small firms with better reputation are more capable of attracting highly qualified personnel (Williamson, 2000; Williamson, Cable & Aldrich, 2002). It is also very likely that NVs with better initial reputation would become more successful in attracting customers, partners and VCs. Therefore, the interdependencies

between reputation, human capital, and social capital might be quite complex and intertwined. Given that these are the most important intangible resources for the firm (Hall, 1992; McMillan & Joshi, 1998), it is important to understand their co-evolution and co-development both in young and more mature firms. Overall, these ideas suggest that future research should explore the co-development of multiple intangible assets instead of focusing on one asset at a time and should try to understand how these critical assets influence each other and jointly contribute to a firm's performance.

APPENDICES

APPENDIX 1.A

Interview Questions for Entrepreneurs

Preliminary Information

- Name
- Age now
- Highest education at start-up (degree and major – tech/business)
- Where received degree (university/college name)
- Work experience before 1st venture – type and highest position held
- Business or entrepreneurship courses taken before 1st NV – how many & what level (UG/MBA)
- Been a non-founding member of a NV – successful/unsuccessful
- Membership in associations, clubs, professional organizations

1st NV

- Exact name
- Year started
- How old were then
- Alone or with partners
- Partners' names, age, education, majors, university names, firms they last worked for

Knowledge & experience

- Similarity of the NV to prior work or start-ups
- Areas of activities you felt confident/knew well
- What you found you didn't know when started
- What did you do about that (ex, hiring TMT/other, consult experts, acquisitions, alliances)

Social relationships

- How did you find customers for your products/services
- Did you rely on some third-party referrals or other relations with people you new well

Reputation

- Did you do anything special to make others notice your business
- Have you hired a "star" person (ex, s.b. from IBM or Microsoft)
- Any public recognition – press releases, media article

Recapitulation

- For how long run the NV – years
- What happened – sold, IPO, still active, closed down

- What plans or expectations had when started
- How was relative to these expectations in 6 ms, 1 yr, 2 yrs
- Growth rate (# of people at founding, 3 mths, 6 mths, 1 year, 2 year)
- Revenue/sales – when 1st sale and how much
- Did they get any VC/angel funding
- Time to external funding
- Did they go public
- Time to IPO
- Market valuation

Evaluation

- How useful was your background for this NV
- What did you learn from the NV experience
- If you are to start over, what would you do differently
- Special role of mistakes during the NV or from previous work and old NVs

Expert opinion

- What determines the potential of a NV to create valuable products/services
- If you are to judge a NV, how would you decide if it is promising or not

Archival materials – brochures, media articles, advertisements

Appendix 1.B

Variables Extracted from the Interviews with Experienced Entrepreneurs

Variable	Indicators suggested by the informants	Examples of Why the Informants Consider It Important
Symbolic actions aimed at increasing public awareness of the NV	Make people notice the NV by high level of activity	"You have to be very active, you know … if you're great and nobody knows that, you're not great" (E4: 27) "So you've got to create a buzz around what you do." (E8: 15)
	Attending trade-shows, conventions, etc.	"See we go to very targeted shows. You know, we generally have a booth, a demonstration booth. So we do some creative things there, so people come to our booth, and we share some information." (E8: 15) "I also spent a lot of my time going to trade shows. So I was at almost every major event that was in the business, I would go to that all the time. And essentially, most of my job was public facing. ... And the company as a whole generally transformed itself from being in stealth mode to really being outward facing. And that was critical." (E6: 6)
	Presented/ gave speeches at professional conferences	"I went and I gave speeches at every major meeting but the speeches were always about the networks of the future, how to build them and how to plan for them and network strategy and I would give twenty, thirty, forty speeches a year and I may be talking to maybe 25 people or 125 people or 500 people and they were all these major conventions of major meetings, you know, major business meetings, major communications networks, symposiums and so in the audience you would see literally hundreds of people internationals as well as domestic, who were interested in building these networks representing companies so within a period of 2 or 3 years of doing this and I continuously did it, we were known world wide to the point where people would call us." (E4: 7)
	Hired VP of public relations	"We hired a head of public relations. Her idea was we're going to build this large company and get promotions, so there would be articles in magazines, again from same context as that pile there ... so again the company became very well known very quickly because of the high visibility." (E4: 17)
	Published tech papers, books, industry newsletters	"It's small company, no way a company like that can actually really purchase enough promotion and advertising to become famous. We did a different strategy which is we published articles all over the place" (E4: 7)
Symbolic actions to legitimate the NV	Act as a "real" company: • hired a professional PR-agency • hired a	"We use an internal [to the industry] PR firm. It's a very technology focused PR firm. They are some really smart people. So they call down industry analysts, press people, Washington Post, Washington Business Journal, a whole bunch of people. So we have a PR firm that's actively looking out for us, and really helping build momentum for the company." (E8: 15) "You build credibility in every possible way that you can. We built these capability brochures, we built very, very nice brochures that talk about the skills and capabilities of the company that we work, so see now we're all of a

	professional Ad-agency	sudden in the big time. We're hiring professional advertising agencies to help develop these brochures whereas before that, I was designing the brochures." (E4: 7)
	Efforts to educate customers about the new tech – express authoritative opinions, provide explanations about the new technology	"And so it was the promotional campaigns that had to do with share your knowledge with them. I was supposed to talk about the field that should give them interest, and give them insight to what's going on and every sort of six or eight months I would develop what I would call a really significant strategic sort of speech that I would give at a major conference and by that time I was the keynoter of the major conferences and that significant speech would really weigh out where the future was going and where another future in terms of networking and telecommunications and computing would be going and I'd be interviewed as I said 5 times a month, 6 times, 7 times by the trade newspapers and magazines and there would be profiles of me and there would be profiles of the company and so this is the way of building tremendous recognition and that built the business." (E4: 8) "Well, it's a very successful strategy because what happens is that what you have to be able to do is impart knowledge and wisdom about whatever it is that you're doing and in the imparting of that knowledge and wisdom you build a reputation. You know, if you just say, 'here's the products that we offer. Buy our products' you lose credibility. You talk about the actual field itself with how products are used and then how services are used and then you show what the available services are and you build credibility. … You sell education and by giving away good insights for free, cause that's what you are doing, they come back and they figure there must be more there, alright, and so they end up hanging for the rest of it." (E4: 9)
Symbolic actions to induce positive evaluations of the NV and its activities	Communicating clear vision to external parties – how the NV creates unique value for customers	"I think it's important for a business owner to be able to articulate why it's better to use their products or services over the competition's … and then also to be able to back that up with support for the customer, and answering questions, and just being there." (E7: 8) "You need to set a vision of where you're going to be and that vision just can't be painted in words by the senior executive. It has to be embodied in sort of like the literature of and the images of the place and the vision itself of where you're going to be helps people get there. This is as important for the internal people as for external people." (E4: 27) "Let's see if we can do something new and unique. And so what was unique for them was that they got to influence the design, because they would come to customer meetings, and we'd do joint application developments, JAD sessions together." (E6: 5)
	Brochures and handouts that illustrate the NV team's skills and capabilities	"What we did was, for example, we built what we called 'a capabilities brochure' and we took the resumes of all of the individuals who were associated with us and we were academics ok, so we had written many, many papers and some of those papers had very interesting titles and so we built a brochure that was by subject matter, Design and Computer Communications Network, for example, and we took the papers and we wrote down the names of the papers that we'd written on that, so we built this brochure out of capabilities including us as individuals, our resumes, a description of the business, challenges, up front big world of networking, then the backword applications." (E4: 4)
Investments in HC as a path to Reputation	Building a TMT early in the life of a NV (HC quantity)	"So when those management teams are assembled early, it alleviates a lot of pressure from the CEO to do what the founders should be doing, which is looking to the future, being out as an advocate of their technology, their product to the marketplace. Not trying to deal with lots of other issues." (E5: 15)

	Recruit a TMT member or other experts from a prominent organizations (HC quality)	"I felt confident in my own consulting abilities, but I didn't have a blue chip management consulting resume. You know, having worked for Diamond Technology Partners, or Cambridge … So the two places I hired in, it wasn't so much I felt weak in the consulting, as I knew how I needed the right reputation." (E5: 7-8) "I think it gave some credibility, but the reality was what was valuable was that in his role at Microsoft, he had established a bunch of industry contacts in the retail and supply chain industry, which was where this product was tending to focus in small business. And so he was able to reach out to people at Dell and Paychecks, and so forth, and say hey we've got this new product coming. Don't you remember me from Microsoft? We'd like to pitch the product to you. And they would take those phone calls." (E6: 9) "From a learning standpoint, Microsoft is a great place, you know, when you get out of school to go into learn what it takes to go create a new software product company. It's a great place to go learn. So all of our development processes, all of our product methodology, product marketing, methodology, how we collect market needs, and definition. How we organize ourselves, titles, levels, everything is Microsoftish, Microsoft like. Everything is adapted, you know, anywhere from HR review forms to how we build a desk code, it's all, it's all very Microsoft like." (E8: 11)
	Recruit an expert with degree from a top university (HC quality)	"our chief marketing officer has got a Harvard MBA" (E8: 13)
	Recruit a TMT member or other expert with proven track record (HC quality)	"You know that A+ players always hire A+ players, right, or usually even better than them. So if you look at my management team, my VP of products has been a product manager guy for twenty-two years, our chief marketing officer has been a CEO for about fifteen years. He moved from Silicon Valley here. … He shut down a company. He spun off a company. He's done multiple things. Same thing with the VP of sales. You know, each one of the key management team members have tasted success. And if you haven't tasted success, you don't know what it is. Then you don't know what it takes to get there." (E8: 13) "I would generally argue that the quality of the people and the management team is almost more important than the product. Because I'm convinced that you can hire a management team to deliver any kind of product. The product idea flow is relatively easy and systematized system, or process. And the management capability is really what brings these things home." (E6: 10)
	Recruit a TMT member with prior start-up experience (HC quality)	"I think a lot of what one learns in the field running a company is very difficult to teach ... I think that internships and apprenticeships are very good models for this type of experience simply because the number of variables are so great and the number of different situations that evolve over time so unpredictable that it's very difficult to lay it down as if it were a set of principles." (E9: 8)
	Recruiting TMT to fill-in missing skills (HC diversity)	"… the management team becomes so important, because even if I could do ten start-ups in a row, I'm not going to learn everything about running a start-up" (E5: 17) "Good engineers, you know, bright ideas, but no clue whatsoever when it's coming to what do you need to do, to take a new product and market it successfully, and fund successfully, the creation of an operation line, and all that kind of stuff which was needed." (E1: 2)

Building relationships with critical stakeholders (SC) as a path to Reputation	Investment in building SC as a substitute for investment in traditional branding & advertising	"… we were so far behind in terms of branding, that it was useless to try to brand in this region. So instead we went on the path of having a better network." (E5: 10) "It's small company, no way a company like that can actually really purchase enough promotion and advertising to become famous." (E4: 7) "It's all about brand, and it's all about a compelling network of both connections, and in the absence of connections, a powerful branding. So in the case of [a NV], for example, the brand is non-existent, but the connections we developed are very, very strong." (E6: 10) "All the advertisements and things like that, they are only good for brand building for Microsoft and IBM. It doesn't work for companies like us, small companies, because it's meaningless. So we have a very shotgun, rifle approach where we figure how we do market segmentation, you know, to figure out exactly which company, you know, where, what level, and target those companies. And we'll talk to them, you know, by cold calling them, or sending them email. Find out who knows them, personal relationships, that social capital. You figure how to use your social network to go out and capture your first three customers." (E8: 14) "That's a big distinction—relationships in large companies are important, but there are often redundancies. Start-ups don't have a lot of redundancies. So if you blow a relationship, you've blown it for your firm, right. If you go into a situation, and you just totally mishandle it, you don't have back up to go in through another door and sort of smooth things over and fix the problem. Where larger firms in many cases have that sort of slack or that buffer to do that." (E5: 17)
	Building a customer network	"My whole management team spent a lot of time networking, spent a lot of time out, going to conferences, meeting people, really developing a personal connection to different people. And that helped develop the reputation more than any branding or marketing ever did." (E5: 10) "The relationship with the customer is what keeps the venture going, because all the greatest ideas in the world just die on the vine if somebody didn't buy them." (E7: 14) "You don't need to have the fancy new gadget in order to start a business. You can sell the same widget everybody else is selling, but just do a better job interacting with the customer to get them to buy it from you." (E7: 14) "This business is all about relationships. It's beyond the price, beyond everything. You know, because next time someone will come and try to bid, and if their bid is going to be close to us, the only reason the customer will stay with us is the relationship." (E1: 7) "When we started focusing more on printing, we still got referrals from existing clients who had started with design." (E1: 6)
	Secure a few prominent customers and use them for credential purposes	"We wrote a business plan that talked about the future of networking and we had this project that we did in the government that showed that we were able to work with a great deal of money and we convinced them that we could make a big company out it." (E4: 3) "It is not important, you know, how many of them [customers] sign up. What's important is what is the number of customers that you can use to go out and get ten more. Right? Because what you are trying to do is to build an influence channel." (E8: 9) "So you leverage your wins to say … We would let the prospective customers know about the first thing that we did

		with Compaq, because we knew that the first time they went to Merrill Lynch, Merrill Lynch would ask Microsoft, and Compaq would typically be on the customer call with us, or we would hook them up there on. … So what we did was, we basically used that as a teaser." (E8: 7)
	Building strategic alliances/ partnerships	"Relationship is really what matters, because you know that a partner is going to help create a business. So you got to make commitment to them first to make them successful. So once they're convinced that for every dollar that you make, they can make twelve dollars and you show to them how they can make twelve dollars, they will help you go get the customers. They will help you go out, get more revenue." (E8: 19)
	SA/ partnerships with prominent industry players (e.g., Microsoft, IBM, SAP)	"the notion was that because Microsoft was entering the high-end enterprise networking market that they were going to go after the Novell and the Banyan customers. Because that was, that was the hunting ground for them. And the Microsoft was going to be the driver of our business. … And there's usually an eco system for large software companies that exist with or without their knowing. They're large number of companies that are offshoots of Oracle or SAP, a very large technology company. Doesn't matter which one it is. So we picked Microsoft. We knew that as they come up with products, enterprise space, there was going to be a tremendous opportunity to help ride that wave, you know. And that's what we did." (E8: 2)
	Relationships with VCs	"And the real learning was that the VC's are significantly more than just cash. They are a network of relationships that allow you to succeed in the marketplace, much more than just the money that they provide. And sure, it would have been great to have a hundred million dollars in cash in the bank from which to run the business, but the real issue was because we didn't have those relationships, we couldn't move forward." (E6: 12) "I think I had become a lot more business savvy, because now I had venture capitalists on the board advising me, I had had a guy who had been on Commodore's board that had come from the Yankee group to Commodore and then he ultimately left Commodore but stayed on our board who was really a terrific asset on the strategic advice side" (E3: 12)
	Relationships with prominent VCs	"I think you can't underestimate the power of the VC relationship in making these deals work. I would say greater than 50% of the success of a small entrepreneurial company is the quality of the people that are doing the work, and <u>the quality of their network of potential investors and influencers</u>. … It's one of these things, the more VC's you know, and the more <u>high quality VC's</u> you know, the better ability it is for you to navigate the business." (E6: 9) "So it's key to me that the board be high quality brand. It's got to be brand- name VC." (E6: 13) "I think having [prominent VC1]'s input on the business and his sort of cache' would have helped us back when we were trying to forge those strategic relationships in the PC industry. … So if I look at it and say would I have agreed to whatever the little mingling terms were that the lawyer and [VC1] had pissed me off, today I would probably have said you know this isn't right but in the long run I'm going to get more strategic value out of having [VC2] and [VC1] be on my board as opposed to [VC2] and the guy I had on the board from Bay Partners, who wasn't a bad guy but he just didn't have the marquee name." (E3: 14-15)
	NO evidence that the more VCs the better	"I realized that while I had raised this significant amount of money to start the companies, I had the wrong financial structure. I had nine venture capital companies that could never agree on anything." (E4: 18)
Technology	Quality of the NV's	"But they [PR agents] can only be effective if you give them real bullets to shoot with. You know? So you can't

Development	potential products/ services/ technology	give them blank bullets. You have to have some meat. You have to have some real contacts. So you have to go to them with specific customer stories." (E8: 15) "The thing is, public relations is good to get a quick start. It's essential to deliver an impression of what you have but it can't requite. The best quality of public relations with a lousy quality product is like the advertising that goes on for a movie before the movie comes out. But when the movie comes out, all of a sudden people know if it's any good or not. You can get people into the movie the first weekend based on public relations but you can't get them to come back and you can't get the next weekend so you have to have the quality. If you don't have the quality, then the public relations is sort of a sham and people figure it out. People aren't dumb." (E4: 33) "So when investors do decisions of putting money into companies, because you don't have products, they talk to customers and really, and they're pretty good at it. They dig down to what is the value proposition that [the NV] brings to the table that if technology were used to solve the problem, how much time it would save, how much money it would save, how much effort it would save. They put hard quantifying." (E8: 17)
	Have a pipeline (2nd product/ upgrade of technology)	"The question is, can you actually have a second product to follow along with the first even before you do the first because if you don't have a second product, you are not going to stay. Most one product businesses don't become very interesting." (E4: 13)
	Mergers with existing firms	"… we had technical expertise by putting together the two kinds of companies that we did, we created a set of expertise that was very different and very special. That was the whole strategy behind our building the companies that we created a set of expertise that it was difficult for even the very large multi-division companies to compete with and we able to do it on technical proficiency and we were actually able to deliver." (E4: 7) "There was very little overlap between the six companies. … I mean really, it's a merger. In a way, it was a merger of equals. And for the purposes of for a market, you know, to satisfy market need." (E7: 10)
	Acquisition of technology	"So I got the idea, why don't we assemble the pieces of a much bigger company by buying little pieces and putting them together and create a whole new capability that way and that was the beginning of the idea. Ultimately in an 18-month period I bought 6 companies." (E4: 15)
Reputation	• Media coverage in the general business press • Media coverage in specialized industry journals and magazines • Covered in TV news or other reports	"We got write-ups and a lot of business press, and train rides, and things like that." (E8: 10) "the company became very well known very quickly because of the high media visibility" (E4: 17)
	• Industry/ market awards for innovation,	"So we and Oracle actually shared a marketing award for creating a brand new category called Enterprise Directory Management Category." (E8: 10)

	pioneering, etc.	
Performance Criteria	• Successfully sold the NV to a big firm • Market valuation when sold the NV • Number of employees	"We almost doubled again. So we went up to about 430 odd people. A pretty explosive growth." (E6: 6) "The total investment in [the NV] was about 4 Million dollars, both angel and institutional and the price of the company when it was sold was about 22 Million and that acquisition took place in less than a year following the funding so the return on the investment, the IRR was very, very high." (E9: 7)

Appendix 2.A
Definitions of Reputation in Management, Economics, Sociology, and Marketing

Discipline	Definitions of Reputation	Type of Perceptions	Example Studies
Management	**Economics/ Game-theory perspective**		
	An attribute or a set of attributes ascribed to a firm, inferred from the firm's past actions	Assessments of a relevant attribute(s)	Weigelt & Camerer (1988); Hayward & Boeker (1998); Stuart (2000)
	An observer's impression of the actor's disposition to behave in a certain manner	Assessments of a relevant attribute(s)	Clark & Montgomery (1998)
	Sociological/ Institutional perspective		
	Publics' cumulative judgments of firms over time; global perception	Accumulation of knowledge and esteem in the collective, a global perception	Fombrun & Shanley (1990); Roberts & Dowling (2002)
	Stakeholders' knowledge and emotional reactions – affect, esteem – towards the firm	Accumulation of knowledge and esteem in the collective, a global perception	Hall (1992); Fombrun (1996); Deephouse (2000)
	Marketing perspective		
	The level of awareness that the firm has been able to develop for itself and for its brands; fame	Accumulation of knowledge and esteem in the collective, a global perception	Hall (1992); Shamsie (2003)
Economics	Consumers' expectations and beliefs about a firm's products quality	Assessments of a relevant attribute(s)	Shapiro (1982, 1983); Allen (1984)
	A rival's perceptions about the likelihood of an incumbent to behave in certain way	Assessments of a relevant attribute(s)	Kreps & Wilson (1982); Milgrom & Roberts (1982)
Sociology	A prevailing collective agreement about an actors' attributes or achievement based on what the relevant public "knows" about the actor.	Accumulation of knowledge and esteem in the collective, a global perception	Lang & Lang (1988); Camic (1992)
	A characteristic or an attribute ascribed to an actor, based on his past actions	Assessments of a relevant attribute(s)	Raub & Weesie (1990); Kollock (1994)
Marketing	The estimation of the consistency over time of an attribute of an entity	Assessments of a relevant attribute(s)	Herbig & Milewicz (1995);
	Perceptions and beliefs about the firm based on previous interactions	Assessments of a relevant attribute(s)	Campbell (1999); Prabhu & Stewart (2001)
	Consumers' impression of the company that is producing and selling a given product or brand	Accumulation of knowledge and esteem in the collective, a global perception	Goldberg & Hartwick (1990)
	Public esteem or high regard judged by others	Accumulation of knowledge and esteem in the collective, a global perception	Weiss et al. (1999)

Note: This table was adapted from Rindova, Williamson, Petkova and Sever (2005).

Appendix 2.B
Major Studies on the Role of Human Capital for New Ventures

Paper	Theory	Method and measures	Findings
Amit, Glosten & Muller (1990 – MS)	RQ: investigate analytically what factors determine the decision of Es to develop their NV independently or w/ VCs *Principal-agent framework of the relationship b/n Es and VCs: E's ability as predictor of involving VC-cap **E's ability* = talent, skills, experience, ingenuity, leadership, etc. to combine tangible and intangible assets in new ways and to deploy them to meet customer needs in manner that could not be easily imitated	Formal econometric modeling to solve for maximum conditions	*If Es skill levels are common Kn, all will choose to involve VCs for risk-sharing purposes; *Less able Es choose > VCs than more able ones; *Some Es invest in costly signals to convey ability (not necessarily the most able ones)
Bates (1995 – JBV)	RQ: the role of education and work experience in identifying self-employment entry *Role of education and work experience differs across industries (skill-intensive, construction or large-scale)	*NV creation (0/1) *Education – dummies for high-school, etc. *Experience – # of years of work experience	*Higher education → (+) skilled-service NVs, but (-) construction *Experience → (+) skilled-service NVs, but N.S. for construction
Bird (1993 – book chapter)	RQ: What factors predict propensity to start a NV? *Summary of prior work on the role of entrepreneurial background and behaviors *demographic approaches – life experience channels and shapes behavior: hard to change char-s (motivation and personality) and changeable qualities (abilities, competences, relationships) together influence entr-l behavioral potential to start, persist and succeed *education and work experience (industrial, managerial, entrepreneurial) are the major experience var-s studied	*Entrepreneurial experience = direct (founders) or vicarious (employees or in other way observed/ involved in the start-up process) *also people have looked at effects of age, gender, race, ethnicity, and religious background	*across various studies and countries, 27-40% of Ers have previous start-up experience (having started once → increases potential for new start-up) *in certain industries having tech degree (engineering, medicine, science) is important
Boeker (1988 – book)	RQ: The role of founder Er's experience and environmental conditions at time of founding on initial NV strategy "Because organizations are primarily begun by individuals, these individuals (the founders) play a central role in guiding the organization's creation process." (p. 37) *expect that founder's characteristics and incubator firm worked for will shape NV strategy (close to familiar organizational strategy) *environmental effects also will impact likelihood of initial	Semiconductor industry – 62 firms, responses by Mngrs DV: NV strategy = 1st mover, 2nd mover, low-cost, niche IVs: Es' functional background = R&D, manufacturing, mktg/sales; Er's incubator firm; formal education, age; environmental characteristics by time periods – military market, symbolic	*Es' functional background → (+) NV strategy (R&D→1st mover, manuf→ low-cost, mktg/sales → niche) *Small effect of incubator-firm strategy on the NV strategy *Highest education → 1st mover *Es' age → (-) 1st mover *environment → predictive of 1st

	strategy	competition, expansion of the consumer market, advent of the consumer market	mover, low-cost & niche *No predictors of follower found significant
Boeker (1989 – AMJ)	RQ: the extent to which org strategies exhibit patterns of stability or change – what specific conditions influence change in strategy *Brings together a strategic choice and inertia perspectives *characteristics of organization's founding imprint its initial strategy by contributing to a consensus around a given strategic approach *conditions subsequent to founding influence the degree to which initial strategy is preserved *younger firms are more likely to have retained their initial strategy and thus to exhibit less change in organizational strategy than older organizations which have had more time to deviate from original strategy	Semiconductor industry, 51 firms in 1984 Interviews, market research firms in the Silicon Valley, articles in the electronic and business press DV: change in strategy IVs: Conditions at founding: dominant initial strategy, distribution of influence, management ownership at founding; Conditions subsequent to founding: org performance, environmental variation and org age, Er's tenure with the firm	*Org age → (+) change *Dominant founding strategy → (-) change *no effect of functional background on strategy change *poor performance → (+/No) change
Burton (2001 – book chapter)	RQ: Why are new firms founded under different conceptual models? What are the factors that lead a founding team to espouse a particular employment model? *differences in founders' educational and employment experiences produce diversity in their understanding of what the normative employment models are *five major employment models (star, engineering, commitment, bureaucracy, autocracy) emerged based on three recruiting dimensions (nature of the employees' attachment to the firm, basis for selecting new employees, & mode of coordination) *strategies – tech-driven (innovator or enhancer) and org-development (marketer or low-cost producer)	*173 Silicon high-tech firms (SPEC project) *open-ended interview and secondary sources DV: likelihood of the NV to deviate from the dominant industry model IVs: prior founding experience and/or senior mngt experience = # of founders holding a title of VP or higher prior to founding the focal firm; nontechnical background = # of founders w/ sales, mktg, finance, or administration experience; team size = # of founders	*senior mngt experience → (+) deviation from dominant ind. Model *nontechnical experience → (+) deviation from dominant ind. Model *team size → (-) deviation from dominant ind. Model *found dominant model in each industry
Burton, Sorensen & Beckman (2002)	RQ: where do innovative NVs come from? **Entr. Prominence* – visibility of established firms in the entr. community * Information advantages allow individuals from entrepreneurially prominent firms to identify new opportunities * Reputational benefits accrue to employees of prominent firms: Entr. prominence reduces perceived uncertainty of the	*A stratified random sample of Silicon Valley NVs <10 years and w/ >10 employees *Pursue innovation strategy – semi-structured interviews to see how founders describe core competence of the firm at founding (dummy-coded as 0/1) *Financing at time of founding – any	*Entr. Prominence → (+) innovation strategy and likelihood of external financing at start-up *Graduate degree → (+)innovation strategy *Experience in sales or finance → (-) innovation strategy *Senior mngt experience→ (+)

	NV * Entr-s' work history (being employed at entr-prominent firm) is a social capital that carry to the NV and helps Er attract more resources and increase their innovativeness * "There are three ways in which a brand NV can have higher perceived quality: (1) its founders have high level of human capital; (2) it has a product which can be independently evaluated; and (3) it has ties to prominent firms that serve as endorsements" [p. 239]	money from any third party (incl. VC, angel, family, banks, corp. investments, government) *Founders' careers – for each team member # of prior jobs and employer name; # of founders w/ prior entr experience; # of founders w/ prior senior mngt experience *Prominence of past employment – the extent to which a firm has been a source of NVs (how many founders in the sample come from the same firm) – see p. 245 list	probability of external financing at start-up *N.S. effect of prior entrepr. Experience on innovation strategy and likelihood of financing at start-up
Chandler (1996 – ETP)	RQ: focus on the degree of similarity b/n pre-ownership experience and the work requirements of the present NV as a moderator of the relationship b/n pre-ownership experience of founders and the NV performance *Two dimensions of business similarity – task environment (similarity in customers, suppliers, and competitors) and skill/ability (specific managerial and technical skills) *Managerial experience – competence in organizing, planning, coordinating, and motivating people *Technical competence – R&D, production *Conclusions [based on results contrary to prediction] it may not be necessary to have experience in a highly similar business to gain familiarity with the task environment	*Performance – self-reported business growth (market share and sales growth) and volume (earnings and sales) [p. 58] *Task environment similarity – 5-point scale to what extent previous job is similar to NV in customers, suppliers, competitors, product/service, and technology *Skill/ability similarity – 5-point scale on task performed, skill/abilities used, managerial duties, technical/functional duties *Past experience – # of years spent as general manager, managing their own business, in technical/specialist positions: breadth= how many of this, depth=years in each	*Similarity b/n task environment of the NV and task envir. Faced in previous job → (+) NV growth, N.S. effect on volume *Skill/ability similarity → (-) on volume [contrary to prediction], N.S. effect on growth *N.S. interaction b/n task envir similarity and experience * Skill/ability similarity → (-) moderation of experience on all perf. [contrary to prediction]
Chandler & Hanks (1994 – ETP)	RQ: present a parsimonious model of NV performance that incorporates individual founder, firm, and environmental characteristics *Individual founder, firm, and environmental characteristics jointly influence NV performance *Er plays a very central role in the NV's goal, strategy, vision, and culture	*Self-reported data on everything, scales for each variable [p. 81-84] *Perf measured both in growth and volume [same as Chandler, 1996]	*Entr competence – moderates quality of opportunity → NV perf *Mngrl competence – moderates resources and capabilities → perf *Entr comp and Mngrl comp – no direct effect on perf.

	*Two roles of Er: (1) entrepreneurial role – scan the envir for opportunities; (2) managerial role – interact w/ the envir to acquire & utilize resources		
Chandler & Jansen (1992 – JBV)	RQ: the relationship b/n founder characteristics and NV performance *Three role of Es: entrepreneurial, managerial, and technical-functional. Entr. role – the ability to take advantage of an opportunity; Mngrl role – competence to coordinate all org activities, human competence to motivate people, political competence to build power, establish the right connections, enhance own position; Tech role – ability to use tools, techniques and procedures of a specialized field	*prior business similarity to NV – customers, suppliers, competitors, products, technology *task similarity – knowledge, skills, abilities, managerial duties, tech-functional duties, task *21 items for competencies *performance = profitability (sales, earnings) and growth	*# prior start-up and years as owner mngr – NS related to performance *High on all roles → best perform *years of education – NS but type of education (buss & mngt) → perf
Cooper et al. (1994 – JBV)	RQ: seek to predict NV performance based on factors that can be observed at the time of start-up (HC & FC) *Three possible outcomes – failure, marginal survival, growth *initial HC (general HC, mngrl know-how and industry-specific KH) and financial capital → outcome *NV involves extensive experimentation and learning	*longitudinal, 1053 NVs general HC = education, gender, race mngrl KH = parents owned buss, non-profit org, level of mngrl experience, use of professional advisor, partners *Ind KH = business similarity	*Industry-specific know-how → (+) survival and growth *general HC (education) → (+) survival and growth *mngrl know-how – NS effect *financial capital → (+) sur&growth
Davidson & Honig (2003 – JBV)	RQ: Do individuals who attempt to start busineses begin w/ different levels of HC & SC? Do these endowments affect their rate of success? **HC* – not defined but ~ previously accumulated Kn and experience **SC* – defined as social exchange of resources or information *Both formal and informal HC-activities lead to Kn promotion: Formal HC = education; informal HC= labor market experience, mngt experience, and previous tart-up experience	*start a NV (0/1) *exploitation – frequency of gestation activities *success – succeed w/ a first sale, profitability *Bonding social capital (=strong ties) – parents or friends who own a business *Bridging SC (=weak ties) – being a member of association or organization	*Formal education and previous start-up experience → (+) likelihood to start NV *Formal education → N.S. effect on NV success and exploitation *Start-up experience → (+) exploitation but N.S. on success *STs → (+) likelihood to start NV *WT → (+) exploitation and success
Eisenhardt & Schoonhoven (1990 – ASQ)	RQ: How does NV growth relate to founding conditions – TMT, tech strategy, competitive environment? *Examine direct and interaction effects of founding conditions on organizational growth	*interviews w/ TMTs, secondary data *98 semiconductor firms founded 1978-1985 – annually through death/ 1988 DV: firm growth (sales) IVs: founding team – size, prior joint exper, heterogeneity of industry exper; tech innovation; founding environment –	*TMT size, joint exper, heterogeneity of industry exper → (+) growth *tech innov → N.S. effect on growth *no relationship b/n TMT characteristics and founding environment

		market stage (new, growth, mature), competitive concentration (4-firm ratio)	*effects of environment and TMT grew over time
Gimeno et al. (1997 – ASQ)	RQ: what are the determinants of NV performance and survival? Why some underperforming firms persist? *"HC theory (Becker, 1975) uses econ logic to study individual decisions dealing w/ investments in productivity-enhancing skills and Kn (schooling, training, firm-specific Kn investments), career choices (decision to work, switching employment, labor mobility), and other work characteristics (wages, reservation wages, hours of work)" [p. 754] **General HC* leads to skills useful across a wide range of occupational alternatives **Specific HC* results from education, training, and experience w/ a limited scope of applicability; related to degree of similarity b/n NV and prior work [p. 757] *Similarity b/n NV and prior experience also allow Ers to rely on previously established relationships *NV survival is not strictly a function of econ perf. But depends on a firm's own threshold of perf. *Threshold of a NV differs across Ers – it depends on EHC characteristics: alternative employment opportunities, psychic income from entr-ship, and cost of switching to other occupation	*Survey mailed to 13,000 NFIB members in business for less than 18 mths; 3 waves *General HC – formal education (% of people in the sample with lower level of education), achievement level (supervised managers – 0/1, supervised others – 0/1, managed own business – 0/1, all vs. supervised no one) and prior work experience (# of prior jobs) *Specific HC – knowledge of customers, suppliers, products, an services w/in the context of the NV (5-point Likert scale) *Parents owned a business – 0/1 dummy *Intrinsic motivation – goal in starting NV: 1=avoid working for other, -1=make more money than otherwise, 0=other reasons *Status of NV in 2nd and 3rd year – surviving, sold, discontinued: 0/1 exit dummy Performance – money taken out	*Education, mngt experience, and supervisory experience → (+) econ perf of the NV *Only mngt exper → (+) threshold *Education and supervisory exper → (-) exit *Similar business → (+) econ perfor, (-) exit *Entr experience – marginally sig. on econ perf, N.S. on exit, (+) threshold of NV perf
Honig (1998 – JBV)	RQ: study the influence of HC, SC, and FC of the owners on their business profitability *SC – individual affiliation within the community *SC moderates the return to HC *SC provides access to financial capital	*HC = education (five dummies for primary, secondary, high school, vocational, and post-secondary education); years of experience in the business – separate from HC (???) *SC = frequent church attendance, marital status of the owner	*HC (vocational training, mother's high occupational status, experience) → (+) econ. Performance *Business loan – N.S. effect on technological tier NVs *SC → (+) performance
Honig (2001 – ETP)	RQ: differences in learning strategies b/n entrepreneurs and intrapreneurs *HC refers to wage and compensation in return to individual variation in skills, training, and expertise (Schultz, 1959; Becker, 1964; Mincer, 1974) *Social networks provided by extended family, community-	HC=years education, years of full-time paid work experience, ever taken business class (0/1), and ever started a NV before (0/1) SC=contact w/ agency	*HC (years education, years work experience, ever took business class, and previous start-up) – N.S. on likelihood of being Er (vs. Intrapr.) *SC → (+) probability of being Er

	based, or organizational relationships enhance the effect of education, experience, and financial capital		
Jones-Evans (1996 – NTWE)	RQ: the effect of previous experience on the management of a NV *Occupational background of technological Ers affect the skills they bring to the NV *Technological background of Ers is more important for technology-based NVs *Four types of technical Ers: (1) *research* TEs – academic Kn-oriented background; (2) *producer* TEs – IO background, involved w/ production & development of technology; (3) *user* TEs – OI background, peripheral tech experience in tech sales or support, or user of tech; (4) *opportunist* TEs – no IO background	*Exploratory case-study – interviewed 38 TEs *Structured interviews, coding and text-reduction techniques *Grouped in the four types and compared in terms of technological and managerial experience	*Most of the TEs – high to moderate tech experience, many w/ managerial experience in R&D but few in functional areas (finance, marketing, manufacturing, sales) *Ers from academic research settings have very strong technical skills but low level of managerial competence *Producer TEs – high tech skill and high managerial competences *User TEs – relevant mngt skills but predominantly user-level tech skills *opportunist TEs – strong prevalence of any skills, random examples of high on tech or mngt skills
McGee et al. (1995 – SMJ)	RQ: should inexperienced managers cooperate simply to gain new knowledge and experience, or should they not cooperate unless they are experienced enough to know what they don't know? *Examine the relationship b/n the experience of a NV's TMT, its choice of competitive strategy, and its use of cooperative arrangements *Experienced TMTs can benefit more from cooperative arrangements, especially when their areas of expertise overlap w/ competitive strategy of the NV: mktg different – mktg exper, tech differ – R&D exper, low-cost – manuf exper.	*IPO statements of high-tech NVs *Perf = average sales growth over 3 years *functional experience of TMT members in mktg, R&D, and manuf = adjusted sum of years of experience in each area *average experience = divided the adjusted mean to the # of TMT members *cooperative arrangements – all SAs & JVs *comp strategy – coded from SEC statement	*coop mktg → (+) perf *coop mktg * mktg exper → (+) perf *coop R&D → (-) perf *coop R&D * R&D exper → (+) per *coop manuf → (+) perf *coop manuf * manuf exper → (+) perf
Mosakowski (1998 – OS)	RQ: which entrepreneurial resources might generate novel competitive outcomes? **Entr resources* – the propensity of an individual to behave creatively, act with foresight, use intuition, and be alert to new opportunities: (1) *creativity* – an individual's propensity to engage in generating novel variations on existing themes; (2) *foresight* – tendency to spend significant amount of time engaged in thought or care for the future; (3) *intuition* –	Propositions – focus on ER. And entr. outcomes (nothing specific or testable)	

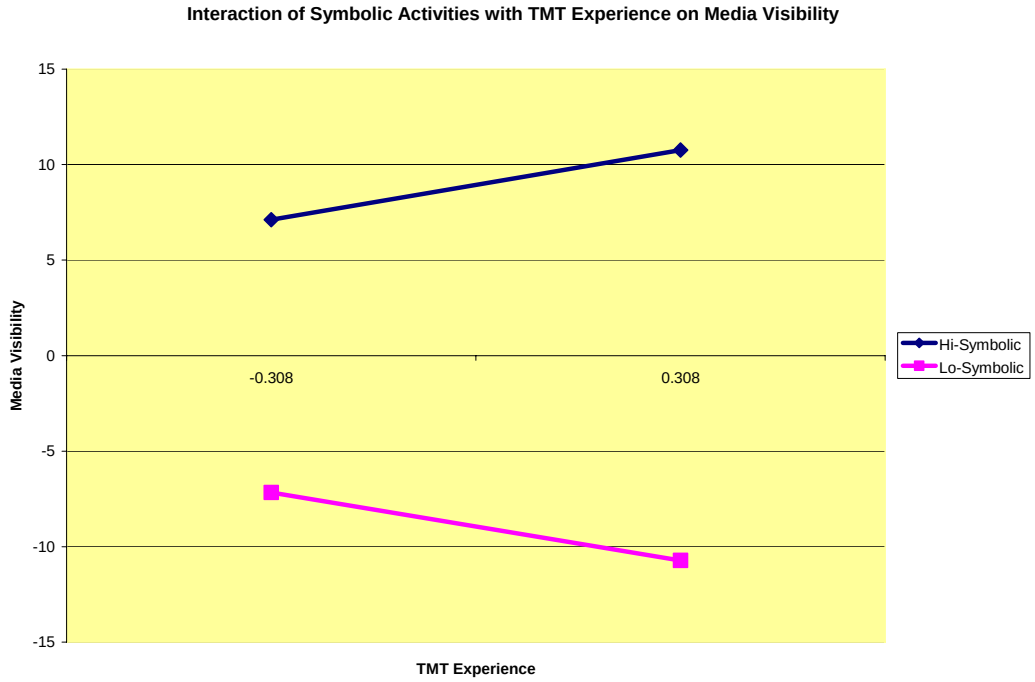
	tendency to solve problems without explicit reasoning or analysis; (4) *alertness* – tendency to spend significant amount of time engaging the environment with a search for profitable opportunities *ER are based on past perf & determine future perf *Entr. res-s can be held by one individual or distributed across a team of Ers		
Pennings et al. (1998 – AMJ)	RQ: effect of human capital and social capital on firm dissolution "HC of a firm is defined as the knowledge and skills of its professionals that can be used to produce professional services" (p. 426) SC is "the aggregate of firm members' connectedness with potential clients" (p. 427) "SC plays a more important role in economic transaction when information with respect to qualities of professionals is imperfect, as is the case in professional service industries (Burt, 1992; Pennings & Lee, 1998)" (p. 427)	All Dutch accounting firms, 1880-1990; DV – firm dissolution; HC: firm-specific HC =firm tenure; industry-specific HC=professional degree (Masters, Ph.D.) & industry experience in Ln(years) [assume diminishing effect of time] SC=previously employed in client firm, departed to work for client firm – see p. 430-431 for calculation of heterogeneity variables	*Professional education → (-) dissolute *Ind. Exper & Firm exper → U-shape relationship to dissolution *SC → (-) dissolution *Firm-specific HC & SC > effect than industry-specific HC *Partners (owners') HC & SC > effect than associates (employees)
Porter (2004 dissertation)	RQ: transfer of individual level characteristics to the firm level; the power of 1st impressions; the role of regional culture in shaping the growth of an industry at the level of who becomes involved *considers the interaction b/n three main facets of founders' background: HC, SC, and status *argues that one characteristic is valued most (in the case of biotech – status) and if the NV is high on it, it doesn't matter whether it has other desirable char-s; *for middle status NVs the presence of other char-s matters most (middle-level conformity theory) *Founders' individual status transfers to the NV	*125 biotech firms in SanFrancisco & Boston areas – from Bioscan database *founders' career histories from company web-sites, SEC filings, & press-releases DVs: 1st investment (0/1 received; age at time of inv, value of initial inv, value of inv for 2 years after founding), IPO (0/1; age at time of IPO, size of IPO), and exit (0/1; age at time of exit, acquisition/Bankruptcy) IVs: *status* – three categories based on founders research affiliation and degree; *desirable team char-s* (0-6) – larger than median founding team, multiple functional backgrounds, two or more members have worked together, at least one member w/ prior founding, industry, mngt experience; SC = diversity of prior affiliation (Blau index)	*founding team status → (+) value of 1st inv, IPO, (-) exit founding team demographics - middle status → (+) IPO *status → (-) dependence on past relationships for obtaining resources (earlier and larger 1st investment) *status & founding team demographics → (+) acquisition (contrary to predictions) [expl: others have to be aware of the firm to acquire it – low status firms are not a desirable acquisition target]

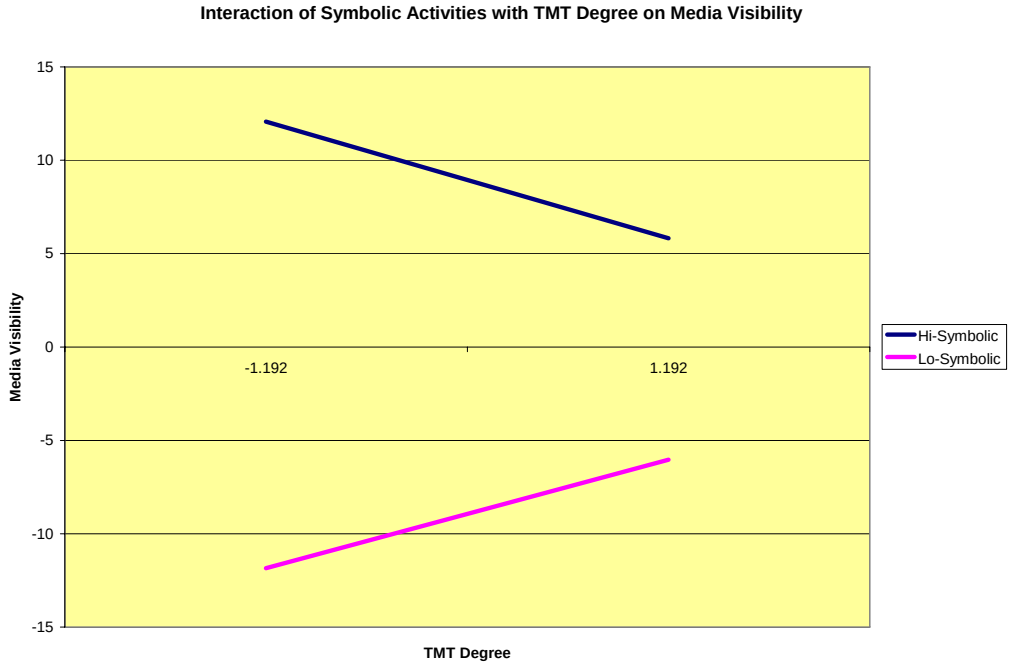
Sapienza & Gupta (1994 – AMJ)	RQ: the impact of agency risk and task uncertainty on VC-CEO interactions *the major argument is that VCs interact more with the NV CEO when the uncertainty regarding the NV is greater and look at CEO experience, degree of tech. Innovation, NV stage of development, and goal congruence as uncertainty-reduction factors.	51 VC-CEO dyads (contacted 32 VCs) DV: VC-CEO interaction – 1-7 scale IVs: mngt ownership = sum of % owned by all mngrs; goal congruence = instrument asking CEOs and VCs about their objectives; CEO's NV experience = no, worked at a NV, founded a NV; financing stage of the NV = seed, start-up, first-stage, restart-up, expansion, bridge-acquisition (from Pratt's Guide to Venture Capital Sources)	*CEO NV experience → (-) VC-CEO interaction *NV's stage of development → (-) VC-CEO interaction *Degree of innovation → (+) VC-CEO interaction *VC-CEO goal congruence → (-)VC-CEO interaction
Schoonhoven & Eisenhardt (1996 – book chapter)	RQ: What determines the formation rate of SAs in new firms? How do environmental, organizational, and institutional conditions play a role?	*Interviews w/ TMTs of 98 semiconductor firms founded 1978-85 DV: formation of SA-manufacturing IVs: TMT-char-s – founders' networks, # of past industry employers, previous highest position; envir – competition, market stage, envir variability; tech innovation; org attrib-s	*tech innov → (+) SA formation *prior industry exper → (+) SA formation
Schoonhoven Eisenhardt & Lyman (1990 – ASQ)	RQ: What factors influence the time to shipping 1st product by a NV? *time to market the 1st product is important to gain early cash-flow, external visibility and legitimacy, early market share, and increase likelihood of survival *greater experience in parent industry (esp. research intensive) provide founders w/ tacit Kn of the innovation process *prior start-up exper – provides skills in balancing multiple functions (funding, hiring, tech equipment) *joint work experience improves and speeds up the decision making in the NV team	*Interviews w/ TMTs of 98 semiconductor firms founded 1978-85 DV: time to market the 1st product = months IVs: entrepren. exper – % founders w/ start-up exper, % founders w/ joint work exper, mean years industry exper, tech innovation (Kn created and synthesized), % VC owned, outside investors on founding board, # competitors; org structure – marketing and manuf positions	*Entrepreneurial exper → NS speed *tech innov → (+) time to market *manuf & marketing position → (-) time to market *competition → (-) time to market *fin resources → (-) time to market * Silicon Valley → (-) time to mrkt
Shane & Khurana (2003 – ICC)	RQ: what is the effect of inventor teams' prior experience on the probability that an innovation will be commercialized through founding of NV? *Prior experience influences individuals' expectations about the liability of newness their NV would face and the external expectations of the capability of the NV to overcome this	*1387 MIT inventions (patents) 1980-1996 DV: firm founding (0/1) for each patent IVs: **firm founding experience* = aver # of prior MIT inventions that led to founding	*founding exper → (+) NV founding *financing exper → (+) founding *social status → (+) founding

	liability, and thus impact the likelihood of founding a NV, given opportunity of certain quality *financial experience → access to resources *founding experience → familiarity w/ entrepreneurial roles and skills *status → legitimacy	of NV across all the inventors of the patent, **financing exper*. = aver # of prior inventions that led to external financing of NVs across all the inventors of the patent, **social status* = max university rank across the set of inventors who filed the patent Controls: radicalness, prior patents, tech field, # of firms in the industry, year dummies, entrepreneurial type	

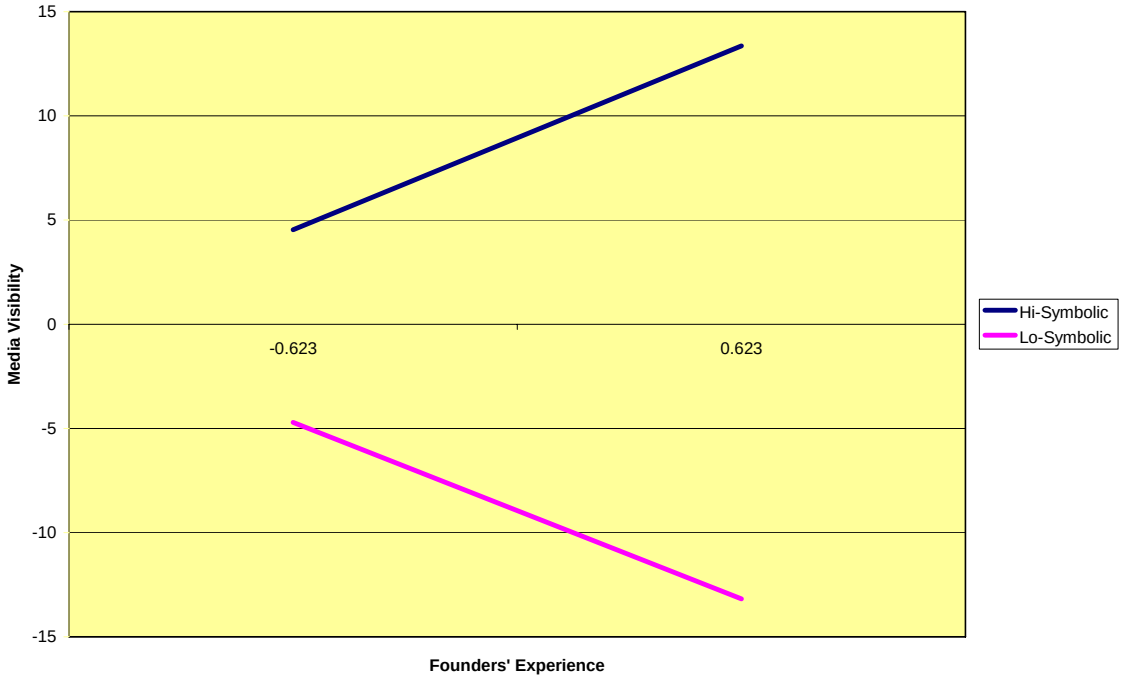
APPENDIX 3.A

Plots of the Significant Interaction Effects of Symbolic Activities and Resource Signals on Media Visibility

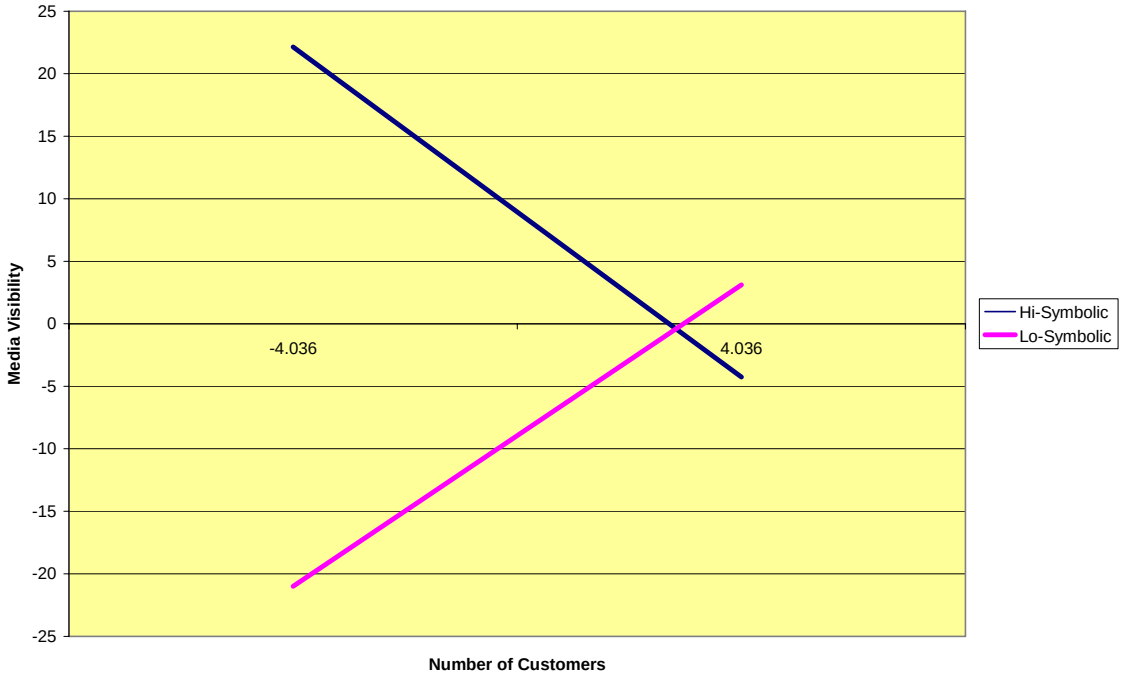


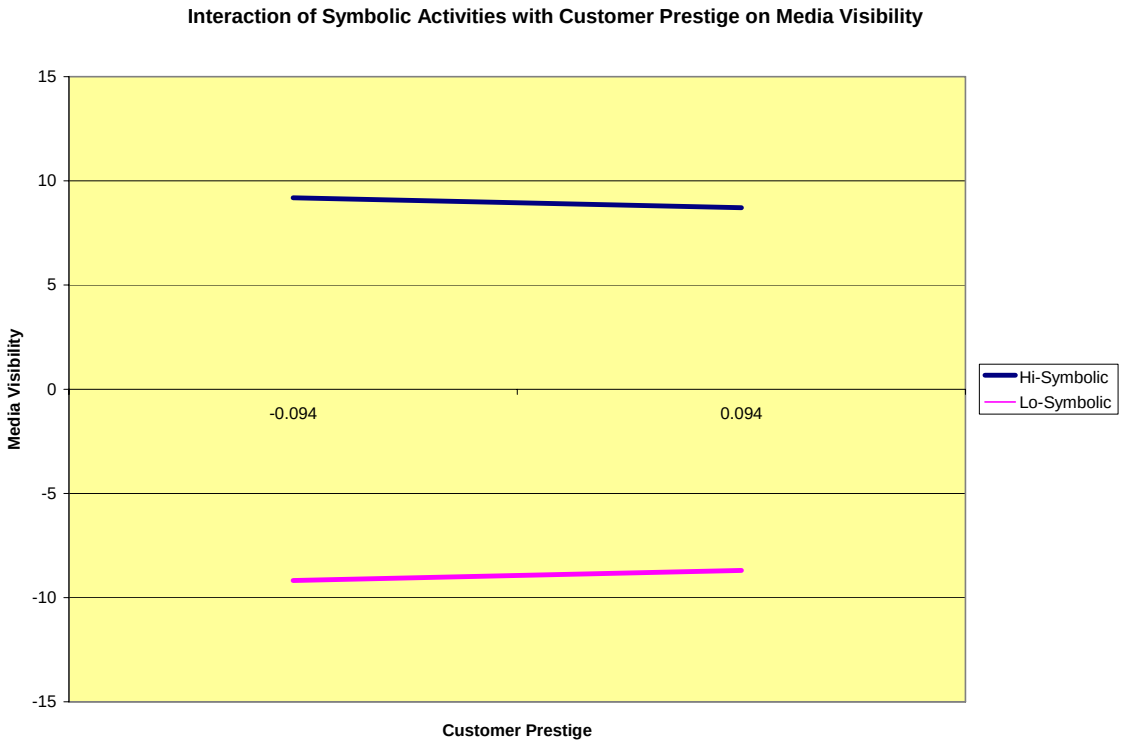


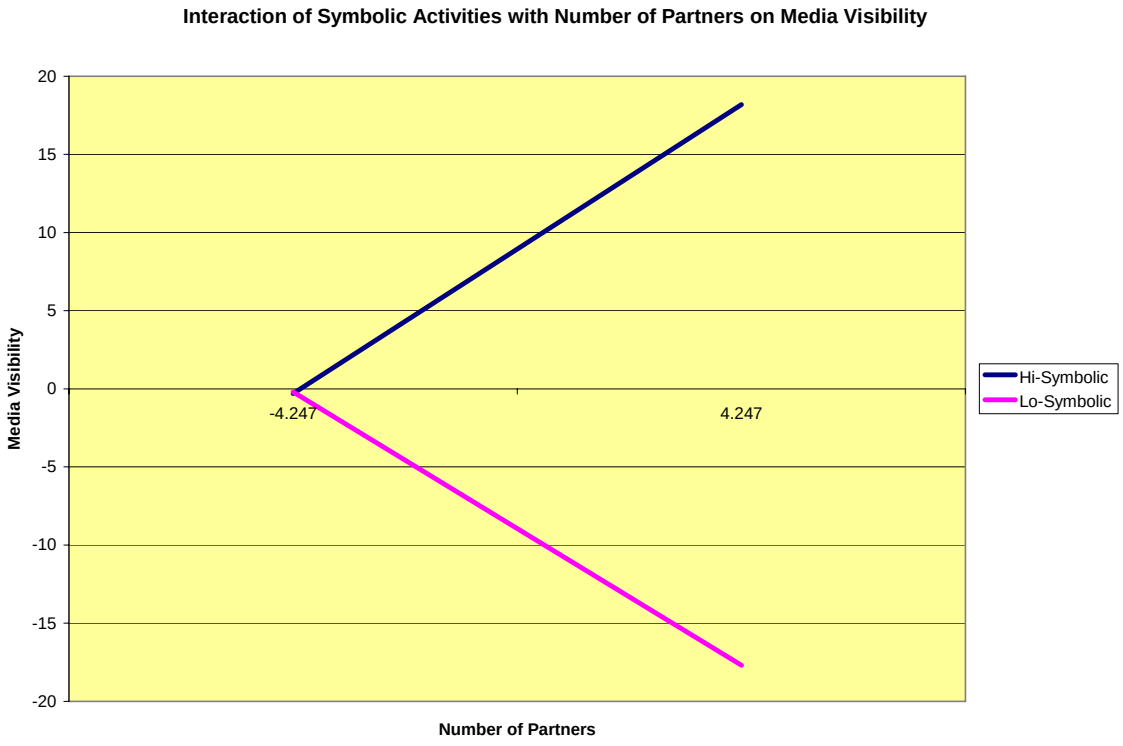
Interaction of Symbolic Activities with Founders' Experience on Media Visibility

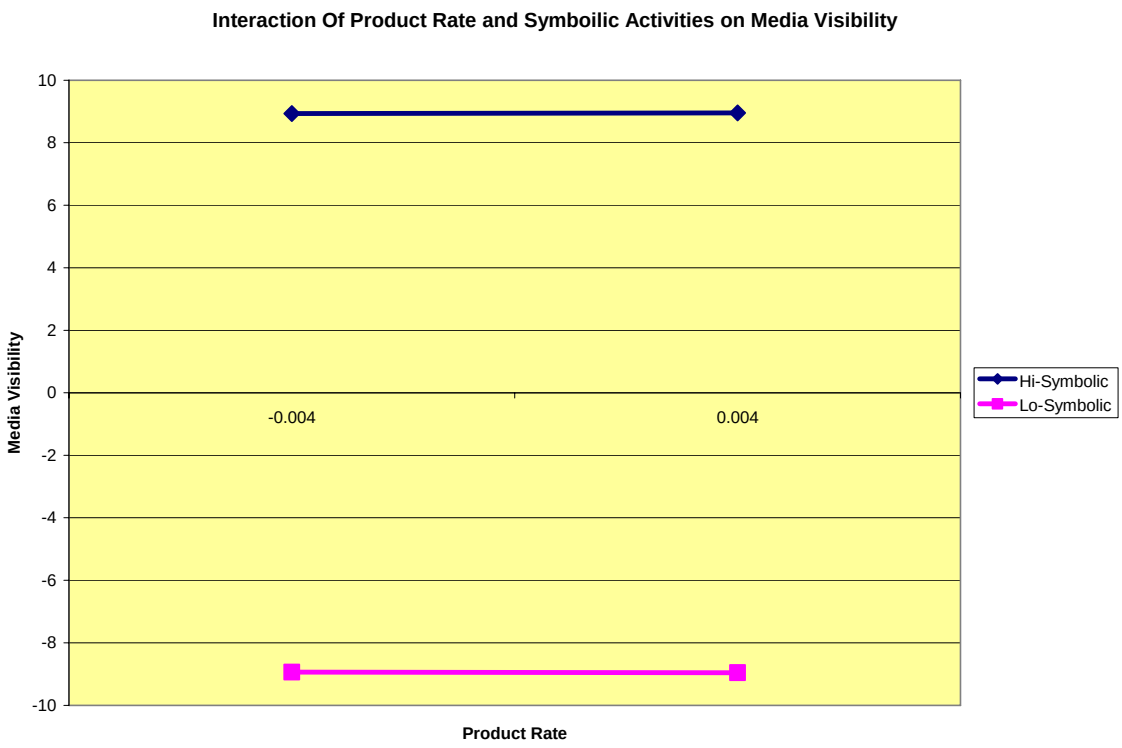


Interaction of Symbolic Activities with Number of Customers on Media Visibility



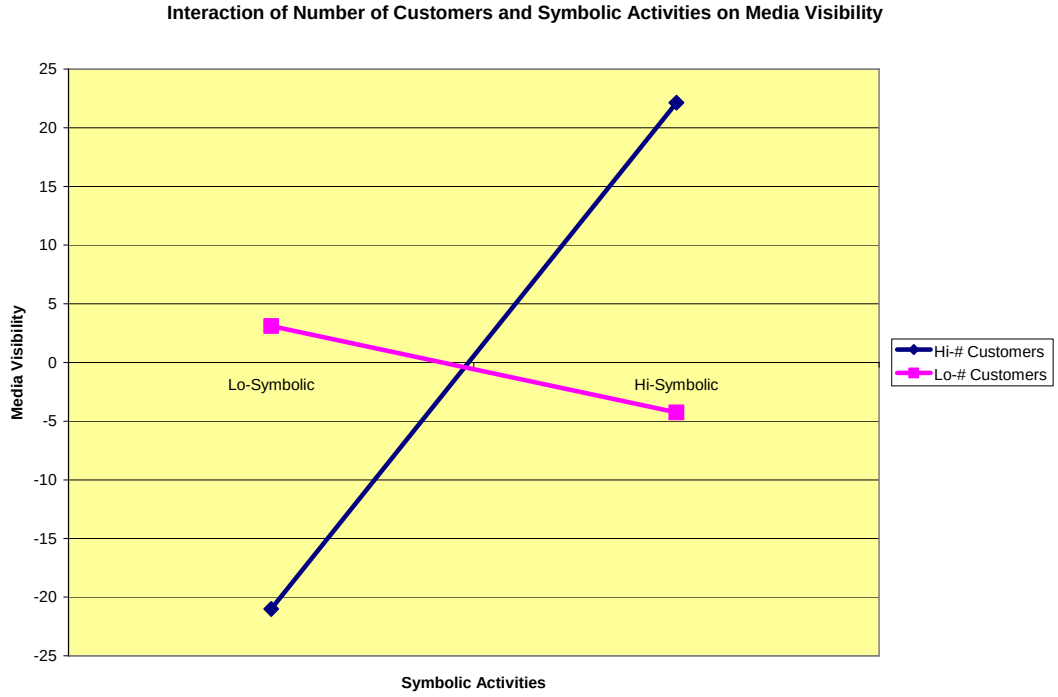

Interaction of Symbolic Activities with Customer Prestige on Media Visibility
15
10
5
0
-5
-10
-15
Media Visibility
-0.094
0.094
Customer Prestige
Hi-Symbolic
Lo-Symbolic

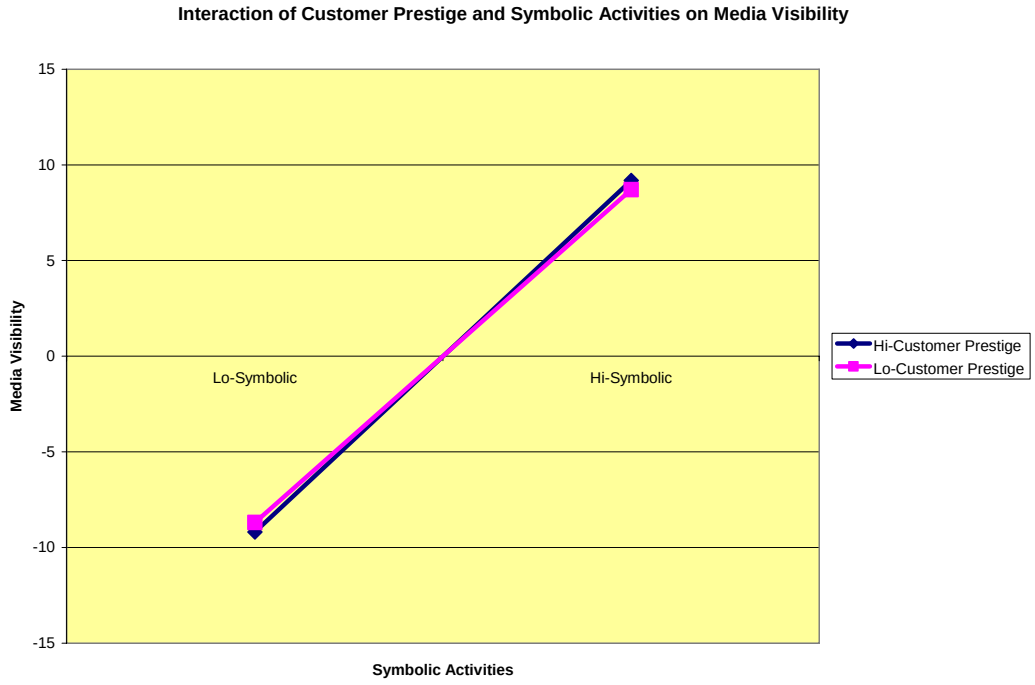

Interaction of Symbolic Activities with Number of Partners on Media Visibility
20
15
10
5
0
-5
-10
-15
-20
Media Visibility
-4.247
4.247
Number of Partners
Hi-Symbolic
Lo-Symbolic

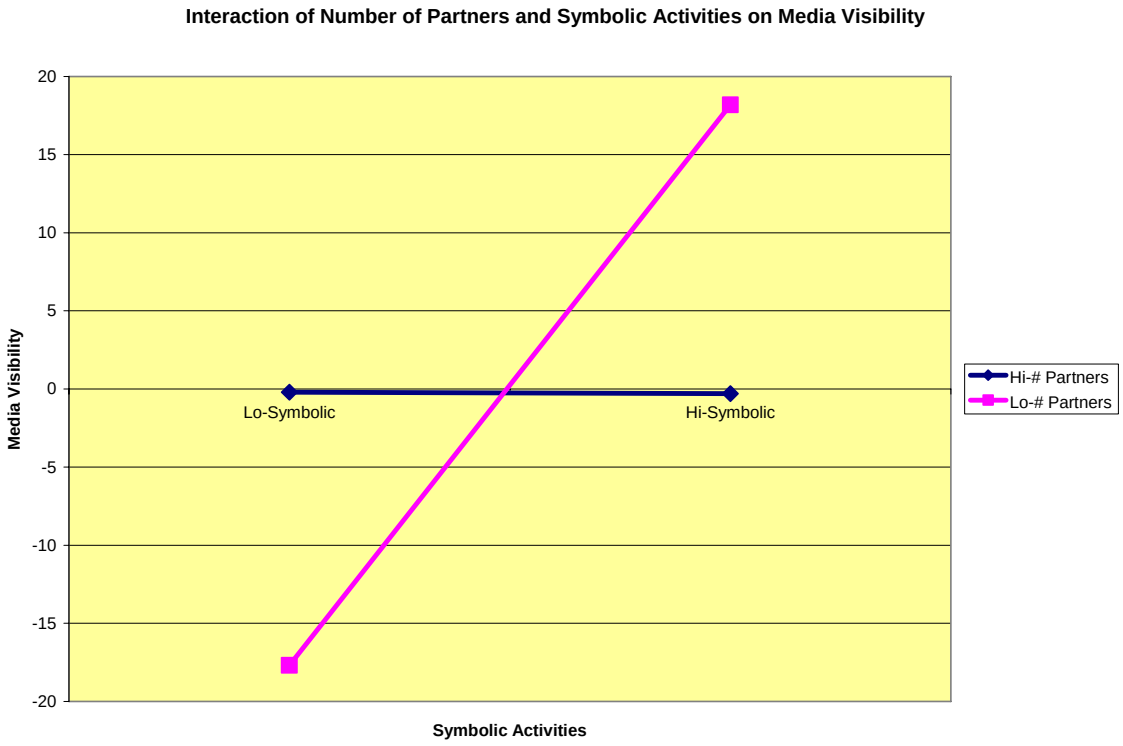

Interaction Of Product Rate and Symboilic Activities on Media Visibility
10
8
6
4
2
0
-2
-4
-6
-8
-10
Media Visibility
-0.004
0.004
Product Rate
Hi-Symbolic
Lo-Symbolic

APPENDIX 3.B

Plots of the Reverced Interaction Effects of Symbolic Activities and Relationships with Customers and Partners on Media Visibility






Interaction of Number of Partners and Symbolic Activities on Media Visibility
20
15
10
5
0
-5
-10
-15
-20
Media Visibility
Lo-Symbolic
Hi-Symbolic
Symbolic Activities
Hi-# Partners
Lo-# Partners

REFERENCES

Adler, P., & Kwon, S. 2002. Social capital: Prospects of a new concept. *Academy of Management Review,* 27: 17-40.

Ager, D. L., & Piskorski, M. J. 2004. Age, audiences and autonomy in the dynamics of organizational prestige. Harvard Business School, Working paper.

Aiken, L., & West, S. 1991. *Multiple regressions: Testing and interpreting interactions.* Newbury Park, CA: Sage.

Aldrich, H. 2000. *Organizations evolving.* London: Sage.

Aldrich, H. & Fiol, M. 1994. Fools rush in? The institutional context of industry creation. *Academy of Management Review,* 19: 645-670.

Allen, F. 1984. Reputation and product quality. *Rand Journal of Economics,* 15: 311-327.

Almeida, P., Dokko, G., & Rosenkopf, L. 2003. Startup size and the mechanisms of external learning: Increasing opportunity and decreasing ability? *Research Policy,* 32: 301-315.

Alvesson, M. 1990. Organization: From substance to image? *Organization Studies,* 11: 373-394.

Alvesson, M. 1991. Organizational symbolism and ideology. *Journal of Management Studies,* 28: 207-225.

Alvesson, M. 1994. Talking in organizations: Managing identity and impressions in an advertising agency. *Organization Studies,* 15: 535-563.

Amit, R., Glosten, L., & Mueler, E. 1990. Entrepreneurial ability, venture investments, and risk sharing. Management Science, 36: 1232-1245.

Aronoff, C. E. 1978. Predictors of success in placing releases in newspapers. *Public Relations Review,* 2 (Winter 1978): 43-57.

Audretsch, D. B., & Stephan, P. E. 1996. Company-scientist locational links: The case of biotechnology. *American Economic Review,* 86: 641-652.

Bailey, E. E., & Helfat, C. E. 2003. External management succession, human capital, and firm performance: An integrative analysis. *Managerial and Decision Economics,* 24: 347-370.

Ball-Rokeach, S. J. 1973. From pervasive ambiguity to a definition of the situation. *Sociometry,* 36: 378-389.

Baker, T., Aldrich, H., Langton, A., & Cliff, J. E. 1997. Tempered by the flame: What do entrepreneurs learn from failure? Paper presented at the annual meeting of the Academy of management, Vancouver, British Columbia.

Barney, J. B. 1991. Firm resources and sustained competitive advantage. *Journal of Management,* 17: 99-120.

Baron, J. N. 2004. Employing identities in organizational ecology. *Industrial and Corporate Change,* 13 (1): 3-32.

Bates, T. 1995. Self-employment entry across industry groups. *Journal of Business Venturing,* 10: 143-156.

Baum, J. A. C., Calabrese, T., & Silverman, B. S. 2000. Don't do it alone: Alliance network composition and startups' performance in Canadian biotechnology. *Strategic Management Journal,* 21: 267-294.

Baum, J. A. C., & Silverman, B. S. 2004. Picking winners or building them? Alliance, intellectual, and human capital as selection criteria in venture financing and performance of biotechnology startups. *Journal of Business Venturing,* 19: 411-436.

Bazerman, M. H. 2001. *Judgment in managerial decision making.* New York: John Wiley & Sons.

Beatty, R. P., & Ritter, J. R. 1986. Investment banking, reputation, and the underpricing of initial public offerings. *Journal of Financial Economics,* 15: 213-232.

Beckman, C. M., Haunschild, P. R., & Phillips, D. J. 2004. Friends or strangers? Firm-specific uncertainty, market uncertainty, and network partner selection. *Organization Science,* 15: 259-275.

Benjamin, B. A., & Podolny, J. M. 1999. Status, quality, and social order in the California wine industry. *Administrative Science Quarterly,* 44: 563-589.

Bird, B. J. 1993. Demographic approaches to entrepreneurship: The role of experience and background. In J. A. Katz and R. H. Brockhaus (Eds.), *Advance in entrepreneurship, firm emergence and growth,* vol. 1: 11-48. Greenwich, CT: JAI Press.

Blau, P. M. 1977. *Inequality and heterogeneity: A primitive theory of social structure.* New York: Free Press.

Block, Z., & MacMillan, I. C. 1985. Milestones for successful venture planning. *Harvard Business Review,* September-October: 2-7.

Boeker, W. P. 1988. Organziational origins: Entrepreneurial and environmental imprinting at the time of founding. In G. R. Carroll (Ed.), *Ecological models of organizations:* 33-51.Cambridge, MA: Ballinger Publishing.

Boeker, W. P. 1989. Strategic change: The effects of founding and history. *Academy of Management Journal,* 32: 489-515.

Bourdieu, P. 1985. The forms of capital. In J. G. Richardson (Ed.), *Handbook of theory and research for the sociology of education:* 241-258. New York: Greenwood.

Bourgeois III, L. J. 1985. Strategic goals, perceived uncertainty, and economic performance in volatile environments. *Academy of Management Journal,* 28: 548-573.

Bourgeois III, L. J., & Eisenhardt, K. M. 1988. Strategic decision processes in high-velocity environments: Four cases in the microcomputer industry. *Management Science,* 34: 816-835.

Brav, A.., & Gompers, P. 1997. Myth or reality? The long run underperformance of initial public offerings: Evidence from venture and nonventure capital-backed companies. *Journal of Finance,* 52: 1791–1821.

Bromley, D. B. 1993. *Reputation, image, and impression management.* Chichester, UK: John Wiley & Sons.

Bromley, D. B. 2000. Psychological aspects of corporate identity, image, and reputation. *Corporate Reputation Review,* 3: 240-252.

Bronson, P. 1999. *The nudist on the late shift and other true tales of Silicon Valley.* New York: Random House.

Brown, A. D. 1994. Politics, symbolic action and myth making in pursuit of legitimacy. *Organization Studies,* 15: 861-878.

Burgers, W. P., Hill, C. W. L., & Kim, W. C. 1993. A theory of global strategic alliances: The case of the global auto industry. *Strategic Management Journal,* 14: 419-432.

Burt, R. S. 1997. The contingent value of social capital. *Administrative Science Quarterly,* 42: 339-365.

Burt, R. S. 1999. Entrepreneurs, distrust, and third parties. In L. Thompson, J. Levine, and D. Messick (eds.), *Shared cognition in organizations: The management of knowledge.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Burton, M. D. 2001. The company they keep: Founders' models for organizing new firms. In C. B. Schoonhoven and E. Romanelli (Eds.), *The entrepreneurship dynamic:* 13-39. Stanford, CA: Stanford University Press.

Burton, M. D., Sorensen, J. B., & Beckman, C. M. 2002. Coming form good stock: Career histories and new venture formation. *Social Structure and Organizations Revisited,* 19: 229-262.

Camic, C. 1992. Reputation and predecessor selection: Parsons and the Institutionalists. *American Sociological Review,* 57: 421-445.

Campbell, M. C. 1999. Perceptions of price unfairness: Antecedents and consequences. *Journal of Marketing Research,* 36: 187-199.

Casson, M. 1982. *The entrepreneur.* Totowa, NJ: Barnes and Noble Books.

Castanias, R. P., & Helfat, C. E. 1991. Managerial resources and rents. *Journal of Management,* 17: 155-171.

Certo, S. T., Daily, C. M., & Dalton, D. R. 2001. Signaling firm value through board structure: An investigation of initial public offerings. *Entrepreneurship Theory and Practice,* 26: 33-50.

Chandler, G. N. 1996. Business similarity as a moderator of the relationship between pre-ownership experience and venture performance. *Entrepreneurship Theory and Practice,* 20: 51-65.

Chandler, G. N., & Hanks, S. N. 1994. Founder competence, the environment, and venture performance. *Entrepreneurship Theory and Practice,* 18: 77-89.

Chandler, G. N., & Jansen, E. J. 1992. Founders self-assessed competence and venture performance. *Journal of Business Venturing,* 7: 223-236.

Clapp, D. 1992. *The Macintosh reader.* New York: Random House

Clark, B. H., & Montgomery, D. B. 1998. Deterrence, reputations, and competitive cognition. *Management Science,* 44: 62-82.

Coff, R. 2005. Entrepreneurial human capital. In M. A. Hitt and R. D. Ireland (Eds.), *The Blackwell Encyclopedia of management* (2nd edition), Volume III: Entrepreneurship: 82-84. Malden, MA: Blackwell Publishing.

Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. 2003. *Applied multiple regression/correlation analysis for the behavioral sciences* (3rd ed.). Mahwah, NJ: Erlbaum.

Cooper, A. C., Gimeno, G. F. J., & Woo, C. Y. 1994. Initial human and financial capital as predictors of new venture performance. *Journal of Business Venturing,* 9: 371-396.

Cortina, J. M., Chen, G., & Dunlap, W. P. 2001. Testing interaction effects in LISREL: Examination and illustration of available procedures. *Organizational Research Methods,* 4: 324-360.

Courtney, H. 2001. *20/20 foresight: Crafting strategy in an uncertain world.* Boston, MA: Harvard Business School Press.

D'Aveni, R. A. 1990. Top managerial prestige and organizational bankruptcy. *Organization Science,* 1: 121-142.

Daft, R. L., & Weick, K. E. 1984. Toward a model of organizations as interpretation systems. *Academy of Management Review,* 9: 284-295.

Davidson, P., & Honig, B. 2003. The role of social capital and human capital among nascent entrepreneurs. *Journal of Business Venturing,* 18: 301-331.

Deephouse, D. 2000. Media reputation as a strategic resource: An integration of mass communication and resource-based theories. *Journal of Management,* 26: 1091-1112.

Dess, G. G., & Lumpkin, G. T. 2003. *Strategic management: Creating competitive advantages.* Boston: McGraw-Hill Irwin.

Dewey, J. 1929. *The quest for certainty.* Balch, NY: Minton.

Dierickx, I. & Cool, K. 1989. Asset stock accumulation and sustainability of competitive advantage, *Management Science,* 35: 1504-1511.

DiMaggio, P., & Powell, W. 1983. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review,* 48: 147-160.

Dixit, A., & Pindyck, R. 1994. *Investment under uncertainty.* Princeton, NJ: Princeton University Press.

Dobrev, S. D., & Barnett, W. P. 2005. Organizational roles and transition to entrepreneurship. *Academy of Management Journal*, 48: 433-449.

Dodge, H. R., Fullerton, S., & Robbins, J. E. 1994. Stages of the organizational life cycle and competition as mediators of problem perception for small businesses. *Strategic Management Journal,* 15: 121-134.

Dollinger, M. J., Golden, P. A., & Saxton, T. 1997. The effect of reputation on the decision to joint venture. *Strategic Management Journal,* 18: 127-140.

Dyer, J. H., & Singh, H. 1998. The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *Academy of Management Review,* 23: 660-679.

Eisenhardt, K. M. 1989. Building theories from case study research. *Academy of Management Review,* 14: 532-550.

Eisenhardt, K. M. 1989. Making fast strategic decisions in high-velocity environments. *Academy of Management Journal,* 32: 543-576.

Eisenhardt, K. M., & Bourgeois, L. J. III. 1988. Politics of strategic decision making in high-velocity environments: Toward a midrange theory. *Academy of Management Journal,* 31: 737-770.

Eisenhardt, K. M., & Schoonhoven, C. B. 1990. Organizational growth: Linking founding teams, strategy, environment, and growth among U.S. semiconductor ventures, 1978-1988. *Administrative Science Quarterly,* 35: 504-529.

Eisenhardt, K. M., & Schoonhoven, C. B. 1996. Resource-based view of strategic alliance formation: Strategic and social effects in entrepreneurial firms. *Organization Science,* 7: 136-150.

Elsbach, K. 1994.Managing organizational legitimacy in the California cattle industry: The construction and effectiveness of verbal accounts. *Administrative Science Quarterly,* 39: 57-88.

Elsbach, K. D., & Kramer, R. M. 1996. Members' responses to organizational identity threats: Encountering and countering the Business Week rankings. *Administrative Science Quarterly,* 41: 442-476.

Elsbach, K.D. & Sutton, R.I. 1992. Acquiring organizational legitimacy through illegitimate actions: A marriage of institutional and impression management theories. *Academy of Management Journal,* 35: 699-738.

Fiske, S. T., & Taylor, S. E. 1991. *Social Cognition.* New York: McGraw-Hill.

Fombrun, C. J. 1996. *Reputation: Realizing value from the corporate image.* Boston: Harvard Business School Press.

Fombrun, C. J. 1997. *The reputational landscape.* Corporate Reputation Review, 1: 5-13.

Fombrun, C. J., & Rindova, V. P. 1996. Who's tops and who decides? The social construction of corporate reputations. Working Paper, New York university.

Fombrun, C. J. & Rindova, V. P. 1998. Reputation management in global 1000 firms: A benchmarking study. *Corporate Reputation Review,* 1(3): 205-215.

Fombrun, C. J., & Shanley, M. 1990. What's in a name? Reputation-building and corporate strategy. *Academy of Management Journal,* 33: 233-258.

Fombrun, C. J., & van Reil, C. B. M. 2003. *Fame & fortune: How successful companies build winning reputations.* Upper Saddle River, NJ: Prentice Hall.

Fox, C. R., & Tversky, A. 1995. Ambiguity aversion and comparative ignorance. *Quarterly Journal of Economics,* 110: 585-603.

Gimeno, J., Folta, T. B., Cooper, A. C., & Woo, C. Y. 1997. Survival of the fittest? Entrepreneurial human capital and the persistence of underperforming firms. *Administrative Science Quarterly,* 42: 750-783.

Gioia, D. A., & Chittipeddi, K. 1991. Sensemaking and sensegiving in strategic change initiation. *Strategic Management Journal,* 12: 433-448.

Gioia, D. A., & Thomas, J. B. 1996. Institutional identity, image and issue interpretation: Sensemaking during strategic change in academia. *Administrative Science Quarterly,* 41: 370-403.

Glaser, B. G., & Strauss, A. L. 1994. *The discovery of grounded theory: Strategies for qualitative research.* New York: Aldine de Gruyter.

Goldberg, M. E., & Hartwick, J. 1990. The effects of advertiser reputation and extremity of advertising claim on advertising effectiveness. *Journal of Consumer Research,* 17: 172-179.

Goldfarb, B. D., Kirsch, D. A., & Pfarrer, M. 2006. Searching for ghosts: Business survival, unmeasured entrepreneurial activity and private equity investment in the Dot-com era. University of Maryland, College Park: Working Paper.

Gomez-Mejia, L. R., & Balkin, D. B. 1992. Determinants of faculty pay: An agency theory perspective. *Academy of Management Journal,* 35: 921-955.

Gompers, P. A. 1995. Optimal investment, monitoring, and the staging of venture capital. *Journal of Finance,* 50: 1461-1489.

Gompers, P. A. 1996. Grandstanding in the venture capital industry. *Journal of Financial Economics,* 42: 133–156.

Gompers, P. A., & Lerner, J. 1999. *The venture capital cycle.* Cambridge, MA: MIT Press.

Gompers, P. A., & Lerner, J. 2001. *The money of invention: How venture capital creates wealth.* Boston, MA: Harvard Business School Press.

Greene, W. H. 2003. *Econometric analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Grunig, J. E. 1980a. Theory and practice of interactive media relations. *Public Relations Quarterly,* Fall 1980: 18-23.

Grunig, J. E. 1980b. Communication of scientific information to nonscientists. In B. Dervin and M. J. Voigt (Eds.), *Progress in communication sciences* (Vol. 2): 167-214. Norwood, N. J.: Ablex.

Grunig, J. E. 1984. Organizations, environments, and models of public relations. *Public Relations Research and education,* 1 (1): 6-29.

Grunig, J. E. 1993. Image and substance: From symbolic to behavioral relationships. *Public relations Review,* 91: 121-139.

Grunig, J. A., & Grunig, L. A. 1992. Models of public relations and communications. In J. E. Grunig (Ed.), *Excellence in public relations and communication management:* 285-325. Hillsdale, N.J.: Lawrence Erlbaum Associates.

Grunig, L. A., Grunig, J. A., & Dozier, D. M. 2002. *Excellent public relations and effective organizations: a study of communication management in three countries.* Mahwah, N.J.: Lawrence Erlbaum Associates.

Grunig, J. E., & Hung, T. 2002. The effect of relationships on reputation and reputation on relationships: A cognitive, behavioral study. Paper presented at the PRSA Educator's Academy 5th Annual International, Interdisciplinary Public Relations Research Conference, Miami, Florida, March 8-10, 2002.

Grunig, J. A., & Repper, F. C. 1992. Strategic management, publics, and issues. In J. E. Grunig (Ed.), *Excellence in public relations and communication management:* 117-157. Hillsdale, N.J.: Lawrence Erlbaum Associates.

Gully, S. M., Payne, S. C., Koles, K. L. K., & Whiteman, J.-A. K. 2002. The impact of error training and individual differences on training outcomes: An attribute-treatment interaction perspective. *Journal of Applied Psychology,* 87: 143-155.

Gulati R. 1995. Social structure and alliance formation patterns: A longitudinal analysis. *Administrative Science Quarterly,* 40: 619-652.

Gulati, R., & Higgins, M. C. 2003. Which ties matter when? The contingent effects of interorganziational partnerships on IPO success. *Strategic Management Journal,* 24: 127-144.

Gupta, A. K., & Govindarajan, V. 1984. Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation. *Academy of Management Journal,* 27: 25-41.

Hall, R. 1992. The strategic analysis of intangible resources. *Strategic Management Journal,* 13: 153-144.

Hall, R. 1993. A framework linking intangible resources and capabilities to sustainable competitive advantage. *Strategic Management Journal,* 14: 607-618.

Hambrick, D. C., & Mason, P. A. 1984. Upper echelons: the organization as a reflection of its top managers. *Academy of Management Review,* 9: 193-206.

Hansen, M.T. & Haas, M.R. 2001. Competing for attention in knowledge markets: Electronic document dissemination in a management consulting company. *Administrative Science Quarterly,* 46: 1-28.

Hargadon, A. B. & Sutton, R. I. 1997. Technology brokering and innovation in a project development firm. *Administrative Science Quarterly,* 42: 716-749.

Harris, D., & Helfat, C. 1997. Specificity of CEO human capital and compensation. *Strategic Management Journal,* 18: 895-920.

Hayduk, L. A. 1987. *Structural equation modeling with LISREL: Essentials and advances.* Baltimore, MD: Johns Hopkins.

Hayward, M., & Boeker, W. 1998. Power and conflicts of interest in professional firms: Evidence from investment banking. *Administrative Science Quarterly,* 43: 1-22.

Heath, C., & Tversky, A. 1991. Preference and belief: Ambiguity and competence in choice under uncertainty. *Journal of Risk and Uncertainty,* 4: 5-28.

Heil, O., & Robertson, T. S. 1991. Toward a theory of competitive market signaling: A research agenda. *Strategic Management Journal,* 12: 403-418.

Hellmann, T., & Puri, M. 2000. The interaction between product market and financial strategy: The role of venture capital. *Review of Financial Studies,* 13: 959-984.

Herbig, P., & Milewicz, J. 1995. The relationship of reputation and credibility to brand success. *Journal of Consumer Marketing,* 12 (4): 5-10.

Higgins, M. C., & Gulati, R. 2003. Getting off to a good start: The effects of upper echelon affiliations on underwriter prestige. *Organization Science,* 14: 244-263.

Hoffman, A. J. & Ocasio, W. 2001. Not all events are attended equally: Toward a middle-range theory of industry attention of external events. *Organization Science,* 12: 414-434.

Hogg, M. A., & Mullin, B. A. 1999. Joining groups to reduce uncertainty: Subjective uncertainty reduction and group identification. In D. Abrams and M. A. Hogg (Eds.), *Social identity and social contagion:* 249-279. Malden, MA: Blackwell.

Hogg, M. A., & Terry, D. J. 2000. Social identity and self-categorization processes in organizational contexts. *Academy of Management Journal,* 25: 121-141.

Honig, B. 1998. What determines success? Examining the human, financial, and social capital of Jamaican microentrepreneurs. *Journal of Business Venturing,* 13: 371-394.

Honig, B. 2001. Learning strategies and resources for entrepreneurs and intrapreneurs. *Entrepreneurship Theory and Practice,* 25: 21-35.

Howell, J. M., & Higgins, C. A. Champions of Change: Identifying, Understanding, and Supporting Champions of Technological Innovations. *Organizational Dynamics*, 19: 40-55.

Hsu, D. 2004. What Do Entrepreneurs Pay for Venture Capital Affiliation? *Journal of Finance,* 59: 1805-1844.

Hsu, D. 2005a. Experienced Entrepreneurial Founders and Venture Capital Funding. Wharton School of Business, Management Department Working Paper.

Hsu, D. 2005b. Venture Capitalists and Cooperative Start-up Commercialization Strategy. Wharton School of Business, Management Department Working Paper.

Hunt, T., & Grunig, J. E. 1994. *Public relations techniques* (Ch. 3). Fort Worth, TX: Harcourt Brace.

Ippolito, P. M. 1990. Bonding and nonbonding signals of product quality. *Journal of Business,* 63 (1): 41-60.

James, L. R., Mulaik, S. A., & Brett, J. M. 1982. *Causal analysis: Assumptions, models, and data.* Beverly Hills, CA: Sage.

Janis, I. L., & Fader, R. 1965. The coefficient of imbalance. In H. Lasswell, N. Leites, & Associates (Eds.), *Language of politics:* 153-169. Cambridge, MA: MIT Press.

Jones, M. O. 1996. *Studying organizational symbolism: What, how, why? Qualitative Research Methods Series,* 39. Thousand Oaks, CA: Sage Publications.

Jones-Evans, D. 1996. Experience and entrepreneurship: Technology-based owner-managers in the U.K. *New Technology, Work and Employment,* 11: 39-54.

Jöreskog, K.G., & Sörboom, D. 2001. *LISREL 8 user's reference guide.* Chicago: Scientific Software.

Kahn, B. E., & Sarin, R. K. 1988. Modeling ambiguity in decisions under uncertainty. *Journal of Consumer Research,* 15: 265-272.

Kazanjian, R. K. 1988. Relation of dominant problems to stage of growth in technology-based new ventures. *Academy of Management Journal,* 31: 257-279.

Kazanjian, R. K., & Drazin, R. 1989. An empirical test of a state of growth progression model. *Management Science,* 35: 1489-1503.

Kennedy, P. 2001. *A guide to econometrics* (4th ed.). Cambridge, MA: MIT Press.

Kihlstrom, R. E., & Riordan, M. H. 1984. Advertising as a signal. *Journal of Political Economy,* 92: 427-450.

Kilduff, M., Angelmar, R., & Mehra, A. 2000. Top management-team diversity and firm performance: Examining the role of cognitions. *Organization Science,* 11: 21-34.

Kirmani, A., & Rao, A. R. 2000. No pain, no gain: A critical review of the literature on signaling unobservable product quality. *Journal of Marketing,* 64 (2): 66-79.

Klein, B., & Leffler, K. B. 1981. The role of market forces in assuring contractual performance. *Journal of Political Economy,* 89: 615-641.

Kline, P. B. 1998. *Principles and practices of structural equation modeling.* New York: Guilford.

Kollock, P. 1994. The emergence of exchange structure: An experimental study of uncertainty, commitment, and trust. *American Journal of Sociology,* 100: 313-345.

Kolvereid, L., & Bullvag, E. 1993. Novices versus experienced business founders: An exploratory investigation. In S. Birley and I. C. MacMillan (Eds.), *Entrepreneurship research: Global perspectives:* 275-285. Proceedings of the Second Annual Global Conference on Entrepreneurship Research, London, UK, 9-11 March 1992.

Kotha, S., Rindova, V. P., & Rothaermel, F. T. 2001. Assets and actions: Firm-specific factors in the internationalization of U.S. internet firms. *Journal of International Business Studies,* 32: 769-791.

Kreps, D., & Wilson, R. 1982. Reputation and imperfect information. *Journal of Economic Theory,* 27: 253-279.

Krippendorff, K. 1975. Some principles of information storage and retrieval in society. *General Systems,* 20: 15-35.

Krippendorff, K. 2004. *Content analysis: An introduction to its methodology.* Thousand Oaks, CA: Sage Publications.

Landon, S., & Smith, C. E. 1997. The use of quality and reputation indicators by consumers: The case of Bordeaux wine. *Journal of Consumer Policy,* 20: 289-323.

Lane, M. S., & Klenke, K. 2004. The ambiguity tolerance interface: A modified social cognitive model for leading under uncertainty. *Journal of Leadership and Organizational Studies,* 10 (3): 69-81.

Lang, G. E., & Lang, K. 1988. Recognition and Renown: The Survival of Artistic Reputation. *American Journal of Sociology,* 94: 79-109.

Larson, A. 1992. Network dyads in entrepreneurial settings: A study of the governance of exchange relationships. *Administrative Science Quarterly,* 37: 76-104.

Leblebici, H., & Salancik, G. R. 1981. Effects of environmental uncertainty on information and decision processes in banks. *Administrative Science Quarterly,* 26: 578-596.

Lee, C., Lee, K., & Pennings, J. M. 2001. Internal capabilities, external networks, and performance: A study on technology-based ventures. *Strategic Management Journal,* 22: 615-640.

Lee, T. W. 1999. *Using qualitative methods in organizational research.* Thousand Oaks, CA: Sage.

Lerner, J. 1994. Venture capitalists and the decision to go public. *Journal of Financial Economics,* 35: 293–316.

Leung, A. 2003. Different ties for different needs: Recruitment practices of entrepreneurial firms at different developmental phases. *Human Resource Management,* 42: 303-320.

Li, H., & Atuahene-Gima, K. 2001. Product innovation strategy and the performance of new technology ventures in China. *Academy of Management Journal,* 44: 1123-1134.

Lievens, F., & Highhouse, S. 2003. The relation of instrumental and symbolic attributes to a company's attractiveness as an employer. *Personnel Psychology,* 56: 75-102.

Lin, N. 2001. *Social capital: A theory of social structure and action.* Cambridge: Cambridge University Press.

Lounsbury, M. & Glynn, M. A. 2001. Cultural entrepreneurship: Stories, legitimacy, and the acquisition of resources, *Strategic Management Journal,* 22: 545-564.

Martins, L. 1998. The very visible hand of reputational rankings in US business schools. *Corporate Reputation Review,* 1 (1-2): 293-298.

Martins, L. L. 2005. A model of the effects of reputational ranking on organizational culture. *Organization Science,* 16: 701-720.

McGee, J. E., Dowling, M. J., & Megginson, W. L. 1995. Cooperative strategy and new venture performance: The role of business strategy and management experience. *Strategic Management Journal,* 16: 565-580.

McGrath, R. G. 1997. A real options logic for initiating technology positioning investments. *Academy of Management Review,* 22: 974-996.

McGuire, J., Schneeweis, T., & Branch, B. 1990. Perceptions of firm quality: A cause or result of firm performance. *Journal of Management,* 16: 167-180.

McMillan, G. S., & Joshi, M. P. 1998. Sustainable competitive advantage and firm performance: The role of intangible resources. *Corporate Reputation Review,* 1 (1-2): 81-85.

Medsker, G.J., Williams, L.J., & Holahan, P.J. 1994. A review of current practices for evaluating causal models in organizational behavior and human resource management research. *Journal of Management,* 20: 439-464.

Meindl, J. R., & Ehrlich, S. B. 1987. The romance of leadership and the evaluation of organizational performance. *Academy of Management Journal,* 30: 91-109.

Meindl, J. R., Ehrlich, S. B., & Dukerich, J. M. 1985. The romance of leadership. *Administrative Science Quarterly,* 30: 78-102.

Meyer, A. D. 1982. Adapting to environmental jolts. *Administrative Science Quarterly,* 27: 515-537.

Meyer, J. W. & Rowen, B. 1977. Institutionalized organizations: Formal structure as myth creation. *American Journal of Sociology,* 83: 340-363.

Milgrom, P., & Roberts, J. 1982. Predation, reputation, and entry deterrence. *Journal of Economic Theory,* 27: 280-312.

Milgrom, P., & Roberts, J. 1986. Price and advertising signals of product quality. *Journal of Political Economy,* 94: 796-821.

Miller, K. D., & Reuer, J. J. 1996. Measuring organizational downside risk. *Strategic Management Journal,* 17: 671-692.

Mosakowski, E. 1998. Entrepreneurial resources, organizational choices, and competitive outcomes. *Organization Science,* 9: 625-643.

Nahapiet, J. & Ghoshal, S. 1998. Social capital, intellectual capital, and the organizational advantage, *Academy of Management Review,* 23: 242-266.

Nelson, P. 1974. Advertising as information. *Journal of Political Economy,* 82: 729-754.

Ohlsson, S. 1996. Learning from performance errors. *Psychological Review,* 103: 241-262.

Pennings, J. M., Lee, K., & Witteloostuijn, A. 1998. Human capital, social capital, and firm dissolution. *Academy of Management Journal,* 41: 425-440.

Penrose, E. T. 1959. *The theory of the growth of the firm.* New York: John Wiley & Sons.

Pettigrew, A. 1979. On studying organizational culture. *Administrative Science Quarterly,* 24: 570-581.

Pfeffer, J. 1981. Management as symbolic action: The creation and maintenance of organizational paradigm. In L. L. Cummings and B. M. Staw (Eds.), *Research in Organizational Behavior:* 1-52. Greenwich, CT: JAI Press.

Ping, R. A., Jr. 1995. A parsimonious estimating technique for interactions and quadratic latent variables. *Journal of Marketing Research,* 32: 336-347.

Ping, R. A., Jr. 1996. Estimating latent variable interactions and quadratics: The state of this art. *Journal of Management,* 22: 163-183.

Piskorski, M. 2004. The network structure of power and status: Reciprocity in venture capital syndicates. Working paper, Stanford university.

Podolny, J. M. 1993. A status-based model of market competition. *American Journal of Sociology,* 98: 829-872.

Podolny, J. M. 1994. Market uncertainty and the social character of economic exchange. *Administrative Science Quarterly,* 39: 458-483.

Podolny, J. M., & Stuart, T. E. 1995. A role-based ecology of technological change. *American Journal of Sociology,* 100: 1224-1260.

Pollock, T. G., Porac, J., & Wade, J. 2004. Constructing deal networks: Brokers as network "architects" in the U.S. IPO market and other examples. *Academy of Management Review,* 29: 50-72.

Pollock, T. & Rindova, V. 2003. Media legitimation effects in the market for initial public offerings. *Academy of Management Journal,* 46: 631-642.

Porter, M. 1980. *Competitive Strategy.* NY: MacMillan.

Porter, K. A. 2004. You can't leave your past behind: The influence of founders' career histories on their firms. Ph.D. dissertation. Stanford University, AAT 3128458.

Portes, A. 1998. Social capital: Its origins and applications in modern sociology. *Annual Review of Sociology,* 24: 1-24.

Powell, W. W. 1996. Inter-organizational collaboration in the biotechnology industry. *Journal of Institutional and Theoretical Economics,* 152: 197-225.

Prabhu, J., & Stewart, D. W. 2001. Signaling strategies in competitive interaction: Building reputations and hiding the truth. *Journal of Marketing Research,* 38: 62-72.

Rao, H. 1994. The social construction of reputation: Certification contests, legitimation, and the survival of organizations in the American automobile industry: 1895-1912. *Strategic Management Journal,* 15: 29-44.

Rao, H., Davis, G. F., & Ward, A. 2000. Embeddedness, social identity and mobility: Why firms leave the NASDAQ and join the New York Stock Exchange. *Administrative Science Quarterly,* 45: 268-292.

Rao, H, & Drazin, R. 2002. Overcoming resource constraints on product innovation by recruiting talent from rivals: A study of the mutual fund industry, 1986-94. *Academy of Management Journal,* 45: 491-507.

Raub, W., & Weesie, J. 1990. Reputation and efficiency in social interactions: An example of network effects. *American Journal of Sociology,* 96: 626-654.

Reynolds, P. D., & White, S. B. 1997. *The entrepreneurial process: Economic growth, men, women, and minorities.* Westport, CT: Quorum Books.

Riley, J. G. 2001. Silver signals: Twenty-five years of screening and signaling. *Journal of Economic Literature,* 39: 432-478.

Rindova, V. 1997. The image cascade and the formation of corporate reputations. *Corporate Reputation Review,* 1: 188-194.

Rindova, V. P. 1999. *Competing for the mind: Corporate communications and observers' interpretations of specialty coffee chains.* New York University: Doctoral Dissertation.

Rindova, V., & Fombrun, C. 1999. Constructing competitive advantage: The Role of firm-constituent interactions. *Strategic Management Journal,* 20: 691-710.

Rindova, V. P., & Kotha, S. 2001. Continuous "morphing": Competing through dynamic capabilities, form, and function. *Academy of Management Journal,* 44: 1263-1280.

Rindova, V. P., & Petkova, A. P. 2005. Entrepreneurial reputation. In M. A. Hitt and R. D. Ireland (Eds.), *The Blackwell Encyclopedia of management* (2nd edition), Volume III: Entrepreneurship: 107-111. Malden, MA: Blackwell Publishing.

Rindova, V. P., & Petkova, A. P. 2006. When is a new thing a good thing? Technological change, product form design and perceptions of value for product innovations. Working Paper, University of Maryland.

Rindova, V. P., Petkova, A. P., & Kotha, S. 2005. Standing Out: Reputation Accumulation by New Firms in New Markets. First Annual Smith Entrepreneurship Research Conference in College Park, Maryland, April 2005.

Rindova, V. P., Williamson, I. O., Petkova, A. P., & Sever, J. M. 2005. Being good or being known: An empirical examination of the dimensions, antecedents, and consequences of organizational reputation. *Academy of Management Journal,* 48: 1033-1049.

Rindova, V., Wiltbank, R., and Kotha, S. 2001. Action and value: An investigation of the strategies of new ventures on the Internet. In J. Butler (Ed.), *E-commerce and entrepreneurship.* Greenwich, CT: Information Age Publishing.

Roberts, P. W., & Dowling, G. R. 2002. Corporate reputation and sustained superior financial performance. *Strategic Management Journal,* 23: 1077-1093.

Romanelli, E. 1989. Environments and strategies of organization start-up: Effects on early survival. *Administrative Science Quarterly,* 34: 369-387.

Ronstadt, R. 1988. The corridor principle. *Journal of Business Venturing,* 3: 31-40.

Rothschild, M., & Stiglitz, J. E. 1976. Equilibrium in competitive insurance markets: An essay on the economics of imperfect information. *Quarterly Journal of Economics,* 80: 629-649.

Rubenson, G. C., & Gupta, A. K. 1992. Replacing the founder: Exploding the myth of the entrepreneur's disease. *Business Horizons,* 35 (6): 53-57.

Sahlman, W. A., Stevenson, H. H., Roberts, M. J., & Bhide, A. 1999. *The entrepreneurial venture.* Boston, MA: Harvard Business School Press.

Salancik, G. R., & Meindl, J. R. 1984. Corporate attributions as strategic illusions of management control. *Administrative Science Quarterly,* 29: 238-254.

Sallot, L. M., & Johnson, E. A. 2006. To contact … or not? Investigating journalists' assessments of public relations subsidies and contact preferences. *Public Relations Review,* 32: 83-86.

Sanders, WM. G., & Boivie, S. 2004. Sorting things out: Valuation of new firms in uncertain markets. *Strategic Management Journal,* 25: 167-186.

Sapienza, H. J., & Gupta, A. K. 1994. Impact of agency risk and task uncertainty on venture capitalist-CEO interaction. *Academy of Management Journal,* 37: 1618-1632.

Schoonhoven, C. B., Eisenhardt, K. M., & Lyman, K. 1990. Speeding products to market: Waiting time to first product introduction in new firms. *Administrative Science Quarterly,* 35: 177-207.

Schultz, T. W. 1961. Investment in human capital. *American Economic Review,* 51: 1-17.

Shamsie, J. 2003. The context of dominance: An industry-driven framework for exploiting reputation. *Strategic Management Journal,* 24: 199-215.

Shane, S. 2000. Pror knowledge and the discovery of entrepreneurial opportunities. *Organization Science,* 11: 448-469.

Shane, S., & Cable, D. 2002. Netwrok ties, reputation, and the financing of new ventures. *Management Science,* 48: 364-381.

Shane, S., & Khurana, R. 2003. Bringing individuals back in: The effects of career experience on new firm founding. *Industrial and Corporate Change,* 12: 519-543.

Shane, S., & Stuart, T. 2002. Organizational endowments and the performance of university start-ups. *Management Science,* 48: 154-170.

Shapiro, C. 1982. Consumer information, product quality and seller reputation. *Bell Journal of Economics*, 13: 20-35.

Shapiro, C. 1983. Premiums for high quality products as returns to reputations. *Quarterly Journal of Economics,* 98: 659-680.

Shaver, J. M. 2005. Testing for mediating variables in management research: Concerns, implications, and alternative strategies. *Journal of Management,* 31: 330-353.

Shrum, W., & Withnow, R. 1988. Reputational status of organizations in technical systems. *American Journal of Sociology,* 93: 882-912.

Shook, C. L., Ketchen Jr., D. J., Hult, G. T. M., & Kacmar, K. M. 2004. An assessment of the use of structural equation modeling in strategic management research. *Strategic Management Journal,* 25: 397-404.

Sine, W. D., Shane, S., & DiGregorio, D. 2003. The Halo effect and technology licensing: The influence of institutional prestige on the licensing of university inventions. *Management Science,* 49: 478-496.

Spence, A. M. 1973. Job Market Signaling. *Quarterly Journal of Economics,* 87: 355-374.

Spence, A. M. 1974. *Market signaling: Informational transfer in hiring and related screening processes.* Cambridge, MA: Harvard University Press.

Spence, A. M. 1977. Entry, capacity, investment and oligopolistic pricing. *Bell Journal of Economics,* 8: 534-544.

Starbuck, W. H., & Milliken, F. J. 1988. Executives' perceptual filters: What they notice and how they make sense. In D. C. Hambrick (Ed.), *The executive effects: Concepts and methods for studying top managers:* 35-65. Greenwich, CT: JAI Press.

Stiso, M. E., & Payne, S. C. 2004. The influence of incentives and timing on the effectiveness of eror training. Working paper, Texas A&M University.

Stuart, T. 2000. Interorganizational alliances and the performance of firms: A study of growth and innovation rates in a high-technology industry. *Strategic Management Journal,* 21: 791-811.

Stuart, T. E., Hoang, H., & Hybels, R. C. 1999. Interorganizational endorsements and the performance of entrepreneurial ventures. *Administrative Science Quarterly,* 44: 315-349.

Sutton, J. 1991. *Sunk costs and market structure.* Cambridge, MA: MIT Press.

Sutton, R. I, & Hargadon, A. 1996. Brainstorming groups in context: Effectiveness in a product design firm. *Administrative Science Quarterly*, 41: 685-718.

Thompson, J. D. 1967. *Organizations in action.* New York: McGraw-Hill.

Tushman, M. L., & Anderson, P. 1986. Technological discontinuities and organizational environment. *Administrative Science Quarterly,* 31: 439-465.

Tushman, M. L., & Rosenkopf, L. 1996. Executive succession, strategic reorientation and performance growth: A longitudinal study in the U.S. cement industry. *Management Science*, 42: 939-953.

Uzzi, B. 1996. The sources and consequences of embeddedness for the economic performance of organizations: The network effect. *American Sociological Review,* 61: 674-698.

Uzzi, B. 1997. Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Science Quarterly,* 42: 35-67.

Vaaler, P. M., & McNamara, G. 2004. Are technology-intensive industries more dynamically competitive? No and yes. Working paper, Tufts University.

Van Leuven, J. K., & Slater, M. D. How publics, public relations, and the media shape the public opinion process. In L. A. Grunig and J. E. Grunig (Eds.), *Public relations research annual,* vol. 3: 165-178. Hillsdale, NJ: Lawrence Erlbaum.

Van Riel, C. B. M. 1995. *Principles of corporate communication.* London: Prentice Hall.

Venkataraman, S. 1997. The distinctive domain of entrepreneurship research. In J. Katz and R. Brockhaus (Eds.), *Advances in Entrepreneurship, firm emergence, and growth:* 119-138. Greenwich: JAI Press.

Wartick, S. L. 1992. The relationship between intense media exposure and change in corporate reputation. *Business and Society,* 31 (1): 33-49.

Wartick, S. L. 2002. Measuring corporate reputation: Definition and Data. *Business and Society,* 41: 371-392.

Wasserman, N. 2003. Founder-CEO succession and the paradox of entrepreneurial success. *Organization Science,* 14: 149-172.

Weick, K. 1995. *Sensemaking in Organizations.* Thousand Oaks, CA: Sage Publications.

Weigelt, K. & Camerer, C. 1988. Reputation and corporate strategy: A review of recent theory and applications. *Strategic Management Journal,* 9: 443-454.

Weiss, A. M., Anderson, E., & MacInnis, D. J. 1999. Reputation management as a motivation for sales structure decisions. *Journal of Marketing,* 63 (4): 74-89.

Westhead, P., & Wright, M. 1998. Novice, portfolio, and serial founders: Are they different? *Journal of Business Venturing,* 13: 173-204.

Westphal, J. D., & Zajac, E. J. 1994. Substance and symbolism in CEO's long-term incentive plans. *Administrative Science Quarterly,* 39: 367-390.

Westphal, J. D., & Zajac, E. J. 1998. The symbolic management of stockholders: Corporate governance reforms and shareholder reactions. *Administrative Science Quarterly,* 43: 127-153.

White, J., & Dozier, D. M. 1992. Public relations and management decision making. In J. E. Grunig (Ed.), *Excellence in public relations and communication management:* 91-108. Hillsdale, N.J.: Lawrence Erlbaum Associates.

Williamson, I.O. 2000. Employer legitimacy and recruitment success in small business. *Entrepreneurship: Theory & Practice,* 25: 27-42.

Williamson, I.O., Cable, D.M., & Aldrich, H. (2002). Smaller but not necessarily weaker: How small businesses can overcome barriers to recruitment. In J. Katz & T. Welbourne (Eds.), *Advances in Entrepreneurship, Firm Emergence, and Firm Growth,* vol. 5, pp. 83-106. Greenwich, CT: JAI Press.

Williamson, O. E. 1981. The economics of organization: The transaction cost approach. *American Journal of Sociology,* 87: 548-577.

Wolinsky, A. 1983. Prices as signals of product quality. *Review of Economic Studies,* 50: 647-658.

Wright, P. M., Smart, D. L., & McMahan, G. C. 1995. Matches between human resources and strategy among NCAA basketball teams. *Academy of Management Journal,* 38: 1052-1074.

Yang, S. 2005. *The effects of organization-public relationships on organizational reputation from the perspective of publics.* University of Maryland: Doctoral Dissertation.

Yin, R. K. 1994. *Case study research: Design and methods* (2nd ed.). Thousand Oaks, CA: Sage.

Zajac, E. J., & Westphal, J. D. 1995. Accounting for the explanations of CEO compensation: Substance and symbolism. *Administrative Science Quarterly,* 40: 283-308.

Zuckerman, E. W. 1999. The categorical imperative: Security analysts and the illegitimacy discount. *American Journal of Sociology,* 104: 1398-1438.