



The evolution of interorganizational relationships in emerging ventures: An ethnographic study within the new product development process



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ABSTRACT

Emerging ventures rarely have the resources they need, which often force them to reach beyond their boundaries to access these resources. While the field has acknowledged how critical external relationships are in the emergence process, we lack an understanding of how these relationships evolve. Drawing on fourteen longitudinal case studies, this article begins to fill that gap by examining how emerging ventures use interorganizational relationships to discover, develop, and commercialize new products. We found that emerging ventures tended to establish outsourcing relationships early and that many outsourcing relationships progressed into alliances. This suggests that these early relationships are dynamic, evolve through the emergence process, and may be critical to the successful emergence of a venture. We also discovered that many entrepreneurs developed strong socioemotional bonds with their alliance partners. Unexpectedly, our study revealed that in many cases these socioemotional bonds clouded the entrepreneur's judgment of the partner's abilities and led to problems that threatened the venture's survival.

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“Trust but verify.”

[President Ronald Reagan]

1. Executive summary

A central concern for the field of entrepreneurship is the process of organizational emergence. Organizations come to exist when they demonstrate intention, establish boundaries, acquire resources, and engage in exchanges (Katz and Gartner, 1988). Reynolds and Miller (1992) defined venture emergence as the process through which a series of actions are undertaken by an entrepreneur to create a viable organization. The creation and ultimate emergence of entrepreneurial ventures is often an iterative process between entrepreneurs and the resources that surround them (Alvarez and Barney, 2007; Alvarez et al., 2013; Sarasvathy, 2001). However,

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emerging ventures rarely have the resources they need to complete the tasks required to take an idea to commercialization, which forces them to reach beyond their boundaries to access required resources to perform tasks such as design, engineering, and manufacturing (Aldrich and Martinez, 2001; Steier and Greenwood, 2000).

These outside resources may be transactional or take the form of an alliance. These two literatures for the most part have been developed individually. Outsourcing research tends to focus on cost benefits, and views the purpose of interorganizational relationships as *minimizing* the resources and capabilities required by an entrepreneur. Conversely, the alliance research tends to focus on the mutual benefits each partner gains from the relationship, and views the purpose as the development or acquisition of new resources and capabilities. In combining the two literatures, we can see that the form of the relationship changes by whether or not the entrepreneur is attempting to minimize costs or gain skills. Our study seeks to answer calls in the literature for detailed, historical data on how new ventures evolve during the development of new products (Kapoor and Adner, 2012) and to consider interorganizational relationships as dynamic and mutable over time (Ariño et al., 2008; Gulati and Sytch, 2008; Pels et al., 2000). We provide insights into the pathways and patterns through which interorganizational relationships in emerging ventures are initiated and evolve, and how that evolution impacts emerging ventures' attempts to launch new products.

Our research is centered on the application of a multi-case ethnographic, qualitative methodology to investigate how entrepreneurs utilize and develop interorganizational relationships during the emergence of their new venture. Using grounded theory, we initiated a ten-year, longitudinal qualitative study of fourteen emerging ventures. The prolonged engagement allowed the study of multiple ventures during the new product development process, from idea through commercialization.

Our study makes several contributions to the entrepreneurship literature. First, we highlight how interorganizational relationships evolve during the new product development (NPD) process. Second, we discovered that frequently, as many of the relationships evolved, governance shifted from explicit contracts to implicit, subjective agreements (i.e., psychological contracts). Finally, we found that interorganizational relationships that came to rely heavily on psychological contracts often encountered problems whereby socioemotional bonds superseded business obligations. A relationship tipping point was found to emerge whereby the alliance became enmeshed. These relationships proceeded down a path of escalated commitment and psychological dependency, which ultimately had dire consequences for both parties. We found that these toxic, enmeshed relationships tended to occur during periods of the most tension, strain, and conflict. In this research, these periods of stress tended to be during the final preparation for commercialization. Ultimately, those emerging ventures that were unable to revise the relationship eventually failed to successfully commercialize. Therefore, while our study shows the benefits of interorganizational relationships to new venture emergence, it also identifies how such relationships, when they are based more on socioemotional bonds than on business obligations, can impede the venture's emergence.

2. Introduction

A central concern for the field of entrepreneurship is the process of organizational emergence. Organizations come to exist when they demonstrate intention, establish boundaries, acquire resources, and engage in exchanges (Katz and Gartner, 1988). Prior to these achievements, organizations are in the process of emergence from which only a few will actually launch. Reynolds and Miller (1992) defined venture emergence as the process through which a series of actions are undertaken by an entrepreneur to create a viable organization. The creation and ultimate emergence of entrepreneurial ventures is often an iterative process between entrepreneurs and the resources that surround them (Alvarez and Barney, 2007; Alvarez et al., 2013; Sarasvathy, 2001). However, emerging ventures rarely have the resources they need to complete the tasks required to take an idea to commercialization, which forces them to reach beyond their boundaries to access required resources (Aldrich and Martinez, 2001; Steier and Greenwood, 2000). This study contributes to our understanding of entrepreneurial creation and emergence by applying a multi-case ethnographic methodology to investigate how entrepreneurs utilize and develop interorganizational relationships during the emergence of their new venture.

Building on Ring and Van de Ven's theory of interorganizational relationships and psychological contract theory (Rousseau, 1995), our study concentrates on the role of the entrepreneur in developing and utilizing partnerships since "these relationships only emerge, evolve, grow, and dissolve over time as a consequence of individual activities" (Ring and Van de Ven, 1994: 95). Interorganizational relationships can range from simple contractual outsourcing to strategic alliances in which boundaries of the firms become co-mingled. During the opportunity creation and venture emergence process a dynamic interaction is at play between the entrepreneurs and their partners and the actions taken by either party can influence both the relationships and the emergence of the venture (Alvarez and Barney, 2007; Sarasvathy, 2001).

Our study seeks to answer calls in the literature for detailed, historical data on how new ventures evolve during the development of new products (Kapoor and Adner, 2012) and to consider interorganizational relationships as dynamic and mutable over time (Ariño et al., 2008; Gulati and Sytch, 2008; Pels et al., 2000). We aim to provide insights into the pathways and patterns through which interorganizational relationships in emerging ventures are initiated and evolve, and how that evolution impacts emerging ventures' attempts to launch new products. Specifically, we seek to explore how interorganizational relationships evolve as ventures emerge and how this evolution affects the ventures' emergence.

Our study makes several contributions to the entrepreneurship literature. First, we highlight how interorganizational relationships evolve during the new product development (NPD) process. Second, we discovered that frequently, as many of the relationships evolved, governance shifted from explicit contracts to implicit, subjective agreements (i.e., psychological contracts). Finally, we found that interorganizational relationships that came to rely heavily on psychological contracts often encountered problems whereby socioemotional bonds superseded business obligations. Those emerging ventures that were unable to revise the relationship

eventually failed to successfully commercialize. Therefore, while our study shows the benefits of interorganizational relationships to new venture emergence, it also identifies how such relationships, when they are based more on socioemotional bonds than on business obligations, can impede the venture's emergence.

Below, we briefly review the outsourcing and alliance literatures. This is followed by the presentation of our research methodology and results. We conclude with a discussion of our findings and avenues for future research.

3. Literature review

The outsourcing and alliance literatures highlight the value of cooperative contracts between firms (Artz, 1999; Mudambi and Tallman, 2010). Often drawing from transaction cost economics (TCE) and the resource-based view (RBV) of the firm, research on outsourcing stresses how the contracting of peripheral activities to other firms allows a business to focus on its core capabilities (Quinn, 1999) and to minimize expenses (Pitelis and Pseiridis, 1999). While research on alliances also draws from TCE and RBV (Artz, 1999; Deeds and Hill, 1998; Rothaermel and Deeds, 2006), this research tends to place greater emphasis on the importance of organizational learning and combining complementary assets (Doz, 1996; Fichman and Levinthal, 1991; Gulati, 1998; Ireland et al., 2002; Lavie, 2006). For example, studies suggest that research and development projects require firms to enter into alliances to achieve a greater level of integration and cooperation than that provided by a simple outsourcing relationship (Narula and Hagedoorn, 1999). Thus, the outsourcing research tends to focus on cost benefits, and views the purpose of interorganizational relationships as *minimizing* the resources and capabilities required by an entrepreneur. Conversely, the alliance research tends to focus on the mutual benefits that each partner gains from the relationship, and views the purpose as the development or acquisition of new resources and capabilities.

In combining the two literatures, we can see that the form of the relationship changes by whether or not the entrepreneur is attempting to minimize costs or gain skills. The simplest form of outsourcing is purely transactional – it may be cheaper to buy rather than to make something in-house because providers can have economies of scale (Venkatesan, 1992). But outsourcing has also been recommended for firms to increase their knowledge base (Quinn, 1999), transform their business (Linder, 2004), and adjust the boundaries of the firm in response to externalities (Bustinza et al., 2010). Interorganizational relationships that evolve beyond a transactional exchange into ones that require high integration and interdependence between partners and persist for a lengthy period of time develop into alliances (Grover et al., 1996). The evolution from a transactional relationship to an alliance has been posited to be difficult (Fink et al., 2006; Roses, 2013) and this process is poorly understood. The literature is currently missing insight into how interorganizational relationships may evolve along a continuum from outsourcing to alliances, and how that evolution impacts the emergence of new ventures navigating the new product development process. Our study seeks to address these gaps in the literature.

4. Research methodology

4.1. Longitudinal, embedded participant observation

This research project began in 2001 and ran for ten years. The research started with a pilot study of several ventures from 2001 to 2004 ($n = 4$). Multiple ventures were chosen for the pilot study to increase robustness of the cases, following Yin's (1994) recommendations. During this pilot, the lead author (and principal investigator (PI)) was an embedded, participant observer in each of the startup projects. By nature, an embedded participant observer over a prolonged engagement period is an ethnographic researcher. Ethnography involves extended, experiential participation by a researcher in a specific context. Long-term immersion and engagement in the context increases the likelihood of spontaneously encountering important moments in the ordinary events of subjects' daily lives and experiencing revelatory incidents (Fernandez, 1986). Ethnographic research is used to explain the meanings that insiders ascribe to their experiences in a real-world setting (Geertz, 1973). These meanings are interpreted by identifying themes in the data and comparing information from different sources (Ware et al., 1999). Ethnography is a family of methods involving direct and sustained social contact with agents, and the generation of a rich depiction of the encounter to represent the human experience (Willis and Trondman, 2002). According to Given (2008, p. 691), "the use of prolonged engagement allows the research study to go further in the investigation of certain phenomena that cannot be adequately explored with short-term study designs."

The multi-venture pilot phase ended in 2004. In the pilot study, the mean engagement period was twelve months (engagement ranged from nine to forty-two months). Multiple data sources were used to reduce the risk of potential bias and interpretive problems. These included structured and non-structured interviews, review of archival data (emails, access to files and documents), inclusion in meetings, and the observation of team interactions during the product development effort. We followed the multi-case methodology recommendations of Yin (1994) to further diminish sources of bias. These techniques included: sampling methods that randomize the selection of times and places for observation, deliberate attention to marginal persons and aspects of events, regular debriefing by informed colleagues, and use of holistic topical checklists to remind the participant observer to detail events seen, overheard, or experienced during fieldwork (Arnould and Wallendorf, 1994; Denzin, 1989; Lincoln and Guba, 1985; Marion et al., 2012a). In the second phase, data were collected on ten additional ventures, commencing in 2004 and ending in 2011. The same methodology of prolonged engagement was used for the second phase. The two phases resulted in ethnographic case studies of fourteen ventures that had completed all new product development phases.³

³ Some of these firms (approximately one-third) have been included in other data collection efforts and studies performed by the first author. However, no other published work has included this set of firms or the totality of data collected on these firms.

Following prior research (Tornikoski and Newbert, 2007), we relied on Reynolds and Miller's (1992) depiction of new venture emergence to develop our study. Reynolds and Miller (1992) operationalize the dimensions of emergence as investing personal commitment, hiring employees, receiving external financing, and making the first sale. Since all respondents in the sample have indicated personal commitment (that is, all were actively trying to start a new business at the time of the first interview), Reynolds and Miller's (1992) first dimension is a constant for all cases. Our distribution of firms also covers Reynolds and Miller's (1992) other dimensions. Each hired employees or outside contractors to perform functions during emergence. Our sample of firms also received financing, either from internal sources or from equity investment. Finally, each went through all phases of the new product development process with efforts to make the first sale.

4.2. An ethnographic study of new product development

In this paper, we study the dynamics of emerging ventures and their use of interorganizational relationships during the process of ideation through commercialization of new products. New product development – or the process and activities that firms undertake in conceptualizing, designing, testing, and commercializing a product or service for a market opportunity – is a fundamental entrepreneurial activity (Krishnan and Ulrich, 2001; Ulrich and Eppinger, 2011). The new product development process is arguably one of the most important capabilities within a firm (Nelson, 1991). Gartner et al. (1998) noted that “what entrepreneurs do during development” is a key determinant of survival. Recent research suggests that the product development process is an important area of research, and that approaches to the process can have an impact on firm outcomes (Marion et al., 2012b). Approaches to new product development often include the use of interorganizational relationships to bolster startup team knowledge, and capability, and the ability of the firm to commercialize. These relationships can form with industrial designers or engineers, manufacturers, sales and marketing personnel, and various professional services. Our lens is focused on interorganizational relationships of emerging ventures that impact the direct design, development and commercialization of a new product.

Using grounded theory, we initiated a ten-year, longitudinal qualitative study of emerging ventures that used interorganizational relationships. Grounded theory has been used extensively for theory building within qualitative studies centered on entrepreneurship (Khavul et al., 2013; Lee, 1999). As noted by Khavul et al. (2013, p. 34) “grounded theory is useful for examining the process by which actors construct meaning out of their intersubjective experiences.” In order to understand these experiences, in situ field investigation has been recognized as an invaluable tool in developing theory based on observation (Glaser and Strauss, 1967; Silverman, 2011).

We approach this ethnographic case research from a constructionist viewpoint. Constructionists “do not assume any single reality, and believe that empirical reality and theoretical concepts are mutually constitutive. For them, bridging is focused on narrowing the gap between concrete observations and abstract meanings using interpretive techniques” (Blatter J.K. in Given, 2008, p. 70). Comparison between cases is a foundation of constructivism (Given, 2008). George and Bennett (2005) note that in contrast to naturalistic

Table 1
Ethnographic research specifics.

Venture	Year started	First year engaged w/PI	Observation period (months)	Number of observations	Stage at first engagement	Stage at last engagement	Primary method of engagement
A	2002	2004	9	922	Conceptual, beta testing of technology	Trial production	In-person meetings, phone, email
B	2004	2004	12	246	Conceptual	Production	In-person meetings, phone, email
C	2003	2005	24	1642	Post-first product, from stage zero on product 3	Ongoing operations	In-person meetings, phone, email
E	2000	2000	42	7828	Idea	Post-bankruptcy	In-person meetings, phone, email
F	2003	2004	9	108	Conceptual	Post-termination of work	In-person meetings, phone, email
G	2008	2008	24	110	Idea	Production, field testing	In-person meetings, phone, email
H	2007	2007	12	52	Idea	Production	In-person meetings, phone, email
I	2010	2010	9	77	Idea	Trial production	Phone, email, wiki
J	2005	2005	6	30	Idea	Production	Phone, email
K	2003	2004	36	363	Production ramp	Ongoing operations	In-person meetings, phone, email
L	2009	2009	30	480	Idea	Trial production	Phone, email
M	2006	2006	6	30	Idea	Ongoing operations	In-person meetings, phone, email
N	2005	2007	40	2280	Idea	Ongoing operations	In-person meetings, phone, email
O	2009	2010	2	12	Design refinement	Trial production	In-person meetings, phone, email, wikis

case methods, the constructivist approach has a strong deductive element, which allows a comparative understanding of empirical findings.

Because this research delved into new territory, a prolonged engagement, ethnographic approach was the most viable research method given its attributes of helping to understand human behavior within a natural setting (Jackson, 2000). Ethnographic research has grown rapidly in the last decade, and has touched a variety of domains including education, law, media, sciences, management, and design (Wacquant, 2003). While once the province of anthropological studies (Mead, 1962), prolonged engagement is increasingly being used in studies where there are efforts to move beyond conventional, short-term case observation (Given, 2008).

For this research, we focused on the three distinct phases of new product development: 1) discovery, 2) development, and 3) commercialization (Barczak et al., 2007, 2009). During the discovery phase, markets are investigated, ideas conceptualized, and business cases vetted. During the development phase, detailed engineering and design are completed. During the commercialization phase, the product is readied for production and first sale. Manufacturing capacity needs to be established, pre-production units tested, and sales channel readied for volume introduction (Ulrich and Eppinger, 2011; Krishnan and Ulrich, 2001).

Because we were interested in the evolution of interorganizational relationships over the entire development initiative, this study utilized longitudinal data that tracked when, why, and how each of the emerging ventures created interorganizational relationships as well as the progress and outcomes from these relationships in each phase of the NPD process. Each of the fourteen ventures studied was engaged by the PI until at least trial production, although many were engaged well after product launch. Specifics of the ethnographic research for the fourteen case ventures are shown Table 1.

During the engagement period, the PI was allowed access to development and managerial meetings, teleconference and web-based calls, detailed financial data, and interactions with outside vendors/partners. Conversations were transcribed where applicable, and the PI had access to and was involved in electronic mail interactions with project principals. The mean engagement period for the first phase was approximately one year and for the second phase was approximately ten months (engagement ranged from one to forty-eight months). Memoing was performed throughout the prolonged engagement period. Additionally, over 1000 email records were reviewed post-engagement. To further reduce bias, a period of delay was inserted between last engagement and analyses to increase objectivity of the comparative, constructive analyses. To examine the data, all gathered information was collected, cataloged, and coded. This information was then transferred into spreadsheets and tables where applicable. To interpret the data, weekly research meetings among the authors were held to review the data and compare multiple theories by looking at both independent and dependent variables, per constructivist methodology. Table 2 illustrates our data collection and analysis methodology.

4.3. Sample characteristics

Research has shown that there are substantial differences in how emerging ventures in different industries approach new product development (Marion et al., 2012a). Our fourteen ventures all sought to design, develop, and commercialize consumer goods, thus representing a targeted investigation of ventures in a homogeneous industry. We focused on these ventures because each proceeded through all three NPD phases to produce a product that required detailed design, engineering, manufacturing and fulfillment. The operational aspects of these ventures were complex, and each venture utilized interorganizational relationships. This selection acts as a control and eliminates variability due to differences in the development of new products in various industries; e.g., software versus biotechnology. A summary of the ventures' critical characteristics is shown in Table 3.

Thirty-five percent of the ventures in the sample were funded by equity investment. The remaining sixty-five percent of the ventures were self-financed by the founding team. All ventures had a portion of start-up costs capitalized by the founders. Each

Table 2
Research and analysis roadmap.

Research phase	Number of firms	Data collected	Preliminary data analysis	Data coding	Data analysis
Pilot	4	Notes, interviews, emails, engineering and design files.	Open-ended coding consisting of field notes, memos.	Written text and coded spreadsheets, initial development of master file.	Long-term, structured review of data with research team. Weekly meetings held to review axial coding results for a period of 3 months. Pilot study interpretation centered on new product development processes.
Main study	10	Notes, interviews, emails, engineering and design files.	Open-ended coding consisting of field notes, memos, use of cloud-based hosted data collection and storage (wikis).	Written text and coded spreadsheets, continued development of master file.	Initial theoretical and practical constructs developed from the pilot study. Larger research team assembled to explore data analyses in more detail, from a multiple view perspective. Axial coding results reviewed weekly by the research team for a period of 12 months. Theoretical orientation and interpretation developed and vetted by the research team.

Table 3
Sample characteristics.

Venture	Industry	Equity investment (Angel/VC)	Year founded	# of co-founders	Hired outside resources and/or inside employees	Prior new venture experience	Age of founder(s)	Gender	Founder's experience with alliances' industry	Age of outsourced/alliance firm manager	Product commercialized	Development duration (months)	Third-year sales est. (\$)	Still in operation (as of 2013)
A	Consumer electronics/robotics	Yes	2002	2	Yes	Yes	Late 30s	M, F	No	Early 40s	Yes	18	\$1,250,000.00	No
B	Consumer products	No – self financed	2004	1	Yes	No	Late 30s	M	NA	Early 30s	Yes	12	\$25,000.00	No
C	Consumer products	Yes	2003	2	Yes	Yes	Late 30s and early 20s	M, M	Yes	Early 40s	Yes	9	\$2,500,000.00	Yes
E	Consumer products	Yes	2000	2	Yes	Yes	Late 40s, Late 20s	M, M	No	Early 50s	Yes	10	\$1,000,000.00	No
F	Consumer products	No – self financed	2003	1	Yes	No	Mid 30s	M	No	Early 40s	No	36	\$–	No
G	Electronics	Yes	2008	2	Yes	No	Late 30s	M	No	Mid 30s	Yes	36	\$–	Yes
H	Consumer products	No – self financed	2007	1	Yes	No	Mid 30s	M	NA	Mid 30s	Yes	24	\$125,000.00	Yes
I	Consumer electronics	No – self financed	2010	2	Yes	No	Early 40s	F, F	No	Late 30s	Yes	12	\$50,000.00	Yes
J	Promotional product	No – self financed	2005	1	Yes	No	Mid 30s	M	NA	Early 30s	Yes	6	\$–	No
K	Textiles	Yes	2003	2	Yes	Yes	Early 40s	M	NA	Early 30s	Yes	12	\$3,000,000.00	No
L	Educational supplies	No – self financed	2009	2	Yes	No	Late 50s	F, F	No	Late 30s	No	24	\$–	Yes
M	Industrial	No – self financed	2006	1	Yes	No	Early 40s	M	NA	Mid 30s	Yes	6	\$60,000.00	Yes
N	Consumer projects	No – self financed	2005	1	Yes	Yes	Mid 50s	M	Yes	Late 40s	Yes	12	\$100,000.00	Yes
O	Consumer products	No – self financed	2009	1	Yes	Yes	Late 40s	M	NA	Mid 30s	Yes	12	\$75,000.00	Yes

of the ventures in the sample was founded in the 2000s, with the most recent venture founded in 2010. Fifty percent of the ventures had two or three co-founders, while the remaining fifty percent were led by an individual entrepreneur. Twenty percent of the ventures had at least one female founder. The sample comprised a mix of entrepreneurial experience with six of the fourteen having prior new venture experience. As of 2014, fifty-seven percent of the ventures were still in operation. This ratio matches those found in previous studies (Headd, 2003). Venture J, although still in operation, had no discernible revenue. Four of the ventures still in operation achieved greater than \$100,000 in revenue. Three ventures had third-year revenue in excess of \$1 million.

5. Descriptive results

In this section, we review how the emerging ventures in the sample executed the discovery, development, and commercialization process with respect to outsourcing, formation of alliances and evolution of interorganizational relationships. To guide our investigation, we have tabulated each venture's use of relationships by development phase.

Each of the ventures in the sample managed multiple interorganizational relationships. These included industrial design firms, engineering services, and manufacturing and fulfillment providers. The average number of outside vendors/partners used by the sample ventures was five. A table of each venture's relationships by phase is shown in Table 4. A more detailed summary of each venture's relationships and characteristics is shown in Appendices A and B.

We found that during the discovery phase, almost all of the ventures' interorganizational relationships were simple transactional outsourcing arrangements. Outsourcing was used to buy resources that the emerging venture lacked. During the development stage, we found that ventures began to form alliances. While some interorganizational relationships were new during this stage, most alliances in the development stage resulted from the evolution of a transactional outsourcing relationship. Finally, during the commercialization stage, we discovered that the continued progression in the interpersonal relationship between alliance partners caused some interorganizational relationships to become enmeshed whereby the socioemotional bond between the two alliance partners overshadowed the business goals of the emerging venture. This ultimately led to poor outcomes (e.g., lower than expected sales, an inability to bring the product to market, or bankruptcy) in the commercialization stage if the emerging venture was not able to detach business needs from the socioemotional bond with an alliance partner.

5.1. The discovery phase

During the discovery phase, a majority of the emerging ventures established outsourcing relationships to perform market investigations, concept development, and preliminary engineering design. A typical arrangement would be to provide multiple design concepts and engineering mock-ups to the contracting emerging venture. Typically, fees would range between \$90 and \$120 per hour. While some of the entrepreneurs had technical backgrounds in engineering (for example, in Venture A, one of the entrepreneurs was a software engineer), each company required external technical expertise to begin the process of making its product idea tangible. This included industrial design for concepts, and mechanical and electrical engineering for the beginning of detailed design. In order to accomplish these tasks, the entrepreneurs approached outside development contractors to assist them. For example, Venture

Table 4
Relationships by phase.

Venture	Discovery	Development	Commercialization	Key quotes
A	Alliance	Alliance	Enmeshed alliance	Co-founder to team on the manufacturer: "We need to get control of this situation."
B	Contractual	Contractual	Contractual	Skeptical founder on design changes made in China: "I think the changes they made, made it worse."
C	Contractual	Alliance	Alliance	Founder on the empowered alliance partner: "He designed the entire prototype himself. He even did the exterior design."
E	Contractual	Alliance	Enmeshed alliance	Enmeshed manufacturer: "We really believed this would work."
F	Contractual	Contractual	Enmeshed alliance	Founder to an engineer: "We just can't get this quality issue resolved, but I know this can work."
G	Contractual	Enmeshed alliance	Contractual	Founder: "Overall, I am certainly frustrated with...the process...and that we are three times over the original cost estimate. However, I look forward to getting this into the hands of the people it was designed for."
H	Contractual	Contractual	Enmeshed alliance	Founder: "I'm going with another manufacturer, they are just not up to it."
I	Contractual	Alliance	Alliance	Co-founder forcefully directing the development team: "This is NOT what I wanted."
J	Contractual	Enmeshed alliance	Contractual	Founder to alliance partner: "Please, please just shoot me a quick message if you are going to do something that I'm not aware of."
K	Contractual	Contractual	Contractual	Founder to a vendor: "So, you travel to my plant, then have the nerve to travel to another client, and charge me for the rental and entire trip!? Who does that?"
L	Contractual	Alliance	Enmeshed alliance	Frustrated alliance partner regarding the founders: "They are not entrepreneurs...They have to have skin in the game and get their hands dirty."
M	Contractual	Contractual	Contractual	Founder to design team: "Today was the first live run. Everything worked perfectly."
N	Contractual	Alliance	Enmeshed alliance	Founder: "I should have never continued this. But now, I'm in too deep. I can't go back."
O	Contractual	Contractual	Contractual	Founder directing design decisions: "This photo shows my mock-up to a new solution. We'll go with this instead."

A approached an engineering firm and also contracted a freelance industrial designer to assist in design conceptualization. Similarly, Venture E contracted a small industrial design firm to provide design and prototyping services. During the discovery phase, the contractual relationships with outside vendors were explicit and discrete. The founder would ask for a set deliverable that would be provided by the contractor in exchange for monetary payment. From a psychological contract perspective, these interorganizational relationships were purely transactional (Dabos and Rousseau, 2004).

A few entrepreneurs monitored the output of their outsourcing partner's work very closely, almost to the point of micromanaging the project. Venture I's co-founder expressed frustration with the design direction, "*This is NOT what I wanted.*" Venture O's founder actually ignored the advice and concepts of the outsourced design team, and continued to work on the project himself. In an email to the outsourcing partner the founder noted improvements that he had made to the outsourcing partner's design, "*This photo shows my mock-up to a new solution. We'll go with this instead.*" As the discovery phase progressed the founder expressed doubt in the outsourcing partner's ability to complete the transaction according to specifications. Venture B expressed remorse for choosing the "cheapest" firm to contract with, and Venture K questioned if the partner possessed enough experience to complete the job to specifications. These entrepreneurs soon terminated their respective relationships and turned to new outsourcing partners with which to collaborate. In these instances, the partner failed to establish competency-based trust.

While most of the emerging ventures used outsourcing to solve a particular problem with explicit specifications, four of the ventures (C, E, M, and O) allowed their outsourcing partners to freely explore a wide range of concepts and influence design decisions based on their expertise. These entrepreneurs seemed to trust the ability and competence of their outsourcing partners, often due to the partners' established reputations in the field and apparent business success. Venture C noted that the "experienced" mechanical engineer they outsourced work to "*Designed the entire prototype himself. He even did the exterior design.*" Additionally, three founders, after expressing satisfaction with the quality of the exchange, began to establish closer ties with their outsourcing partners. Specifically, the emerging ventures looked to their established outsourcing partners to perform more integrated and complex work. For example, Venture E had originally planned to do certain design functions in-house, but after their outsourcing partner exceeded their expectations in terms of speed and additional features, they decided to offer the complex job to the partner. A similar situation occurred with Venture M.

In summary, during the discovery phase, the emerging ventures used transactional outsourcing relationships to assist with their NPD efforts. In some cases the entrepreneurs micromanaged the relationships, while in others the partner was given latitude based on performance. In the cases where the outsource partner met or exceeded expectations, trust began to form. Research suggests that positive interorganizational transactions encourage an emerging venture to develop competence-based trust with the outsourcing partner (Reina and Reina, 2008). The establishment of competency-based trust appears to be the critical first step in the evolution of these relationships.

5.2. The development phase

During the development phase, product concepts and initial investigations are cultivated more fully. Leading concepts are selected, and the process of detailed engineering and design begins (Ulrich and Eppinger, 2011). During this phase, the complexity of the project increases, as does the need for resources, both from a human capital and financial perspective. Nearly all of the ventures in our study used outsourcing relationships based on a contractual exchange during the discovery phase. Four of the ventures in our study transformed these relationships into alliances during the development phase. Emerging ventures that were dissatisfied with their outsourcing partners' work performance did not continue the relationships into the development phase. The establishment of competence-based trust was key in expanding into a more integrated and co-dependent relationship. In contrast to the atomized view of outsourcing relationships as discrete from alliances, what our results clearly indicated was that these relationships exist along a continuum and that they may progress along that continuum as the relationship expands.

Venture C developed an outsourcing relationship with an engineering firm during the discovery stage. The engineering firm was charged with the initial design of the product. After being satisfied with the skilled work of the outsourced engineering firm, Venture C's co-founders sought to establish a more synergistic relationship by offering the firm joint projects and a licensing agreement. The two firms began to work closely together to bring the product idea to the market. A founder of Venture C described how they managed their communication and collaboration, "*We just talked by phone during the entire development. We used email and phone to communicate daily. We also met a few times in LA and Taiwan.*" Over time the relationship between the two firms became so strong that the founders of Venture C issued shares of common stock to the engineering firm and agreed to share licensing profits once the product was sold in the marketplace.

Similarly, a relationship of Venture A evolved from an outsourcing relationship into an alliance that depended on both firms' resources and skills to develop Venture A's product. Venture A, whose product required approximately twenty-five complex parts that needed to be molded to precise specifications, developed an alliance with an outsourcing partner to help in the manufacturing of plastic injection molding. Venture E developed several alliances with previous outsource partners such as an industrial design firm to assist with developing packaging, logos and instructional documents. Venture E also developed an alliance with a manufacturing firm that possessed capabilities in product assembly. Over time, a deep alliance was formed between these two firms, where the manufacturer would maintain inventory at no cost and invoice at lengthened term intervals. Additionally, a socioemotional bond formed between the manufacturing CEO and one of Venture E's founders. Venture E's co-founder often looked to the manufacturing CEO for business advice. During production set-up, Venture E's co-founder 'lived' on-site, spending nearly all of his time with the manufacturing team and seeking input from the manufacturing firm's

CEO. Business continued on weekends, where the project would be discussed over ski trips between Venture E's co-founder and the manufacturing firm's CEO.

In examining each venture's portfolio of interorganizational relationships, we found that the ventures developed a substantial number of interorganizational relationships, averaging over five, but ranging from three to ten by the development phase. The majority of these relationships were well-contained and discrete outsourcing relationships. These were straightforward relationships that could be effectively managed with minimal investment and the partner was easy to replace. Weak or no socioemotional bonds were developed between the partners. Alliances tended to develop around more complex issues with partners who had established competency-based trust. Complex problems demanded greater involvement and a more advanced relationship between the firms. Often, these relationships were built while solving potentially fatal issues that required individuals to work closely for sixty to eighty hours per week. In many examples, while working late at night to solve engineering and manufacturing problems, alliance partners would learn about wives and children, share college stories, etc. Strong socioemotional bonds formed between those involved in the alliance.

Theory on cooperative interorganizational relationships proposes that when interpersonal commitments are executed in an efficient and fair manner, they will continue to progress and expand (Fontenot and Wilson, 1997; Ring and Van de Ven, 1994). Communication between parties fosters shared interpretation of the partnership and encourages reciprocity that strengthens the relationship. Additionally, prior cycles of successful exchanges create trust that deepens the relationship and encourages the development of socioemotional bonds between partners. Social penetration theory explains how strong socioemotional bonds are established through reciprocal behaviors involving informational exchange, sharing expressions, and participation in mutual activities (Taylor, 1968). The theory also recognizes the importance of situational factors, such as work proximity and shared goals, which strengthen socioemotional bonds. This is evidenced in our study by how many of the outsourcing relationships evolved into alliances, and also by the development of strong socioemotional bonds between these alliance partners.

Research on friendship in entrepreneurial teams suggests that as work relationships extend beyond formal roles to include self-disclosure between teammates, greater trust ensues (Francis and Sandberg, 2000). As a result, entrepreneurial teams comprised of friends are believed to have 'safe transactions' that promote accountability and honest information exchange that discourages opportunism. While research like this (Francis and Sandberg, 2000; Forbes et al., 2006) focuses on how established friends form startup teams, our study reveals how friendship, or strong socioemotional bonds based on personal relationships, can evolve between alliance partners of an emerging venture. Further, while research suggests that friends in startup teams must establish and maintain competency-based trust in addition to their well-established relational trust, our research appeared to demonstrate how competency-based trust can foster relational trust and the formation of socioemotional bonds between alliance partners.

Ring and Van de Ven (1994) hypothesized that psychological contracts often develop among partners managing strong interorganizational relationships. Psychological contracts refer to the system of beliefs that interorganizational partners hold regarding the terms of their exchange relationship (Rousseau, 1995). They are the unwritten, and often unspoken, set of expectations and assumptions held about each partner's prerogatives and obligations. Although psychological contracts may help to promote continuity of interorganizational relationships (Ring and Van de Ven, 1994), our study showed that when they are primarily built around socioemotional bonds as opposed to the business obligations of the alliance, they can become problematic for an emerging venture.

For emerging ventures struggling to make progress during the development stage, many of the entrepreneurs turned to their alliance partners for additional support, some business and some emotional. Venture G looked to their alliance partner to solve product design problems, giving the partner additional control over the product's development, which was well beyond the scope of the alliance. Venture N constantly sought reassurance from alliance partners that they were proceeding down the right path. This was particularly true of their engineering firm partner, who was asked to evaluate items such as website designs from other vendors, which was well beyond the scope of the alliance. Whether the emerging venture hoped to receive additional business assistance or emotional support from their alliance partner, the founders generally did not explicitly discuss the evolution of the relationship and, more specifically, the obligations of each party in the exchange. For those emerging ventures that continued to integrate their alliance partners more and more in the development of their products, the relationship tended to become governed less by explicit transactional exchanges or formal contracts and more by psychological contracts that were based on assumptions and informal, implicit agreements.

Therefore, during the development phase we found that the number of interorganizational relationships increased. Additionally, we discovered that due to the establishment of competence-based trust, many relationships evolved into alliances. However, because of the formation of socioemotional bonds, the partners rarely discussed the new business obligations associated with the evolving relationship.

5.3. The commercialization phase

In the commercialization phase, the product design is finalized and market entry begins. Commercialization is a pressure-filled phase, as the culmination of the product's development is completed and the venture must now entice customers to buy their new product. In fact, the last 10% of the project requires a significant amount of effort and is a source of stress and strain on the emerging venture and is often fraught with conflict between members of the start-up team that, if not resolved, can impede the launch of the new product (Meredith and Mantel, 2006).

Ring and Van de Ven (1994) argued that positive prior interactions between firms create trust that encourages the parties to make more substantial agreements in the future, but also leads parties to perceive a lower need for detailed transactional contracts. In contrast, Ariño and Reuer (2004) found that transactional contracts between partners with prior ties are as complex and explicit as those

between new partners because of the precedence set when the alliance was first formed. Our findings were more consistent with Ring and Van de Ven's work. Many of the relationships in our sample progressed from an outsourcing relationship to an alliance, but the emerging ventures tended to *not* update the transactional contracts, preferring instead to rely on relational contracts. Unlike transactional contracts, which are explicit and involve quid pro quo exchanges, relational contracts revolve around established trust (Rousseau, 1995).

However, in contrast to the predominant view in the alliance literature that suggests that socioemotional bonds and relational contracts increase the likelihood of alliance success (Artz, 1999; Deeds and Hill, 1998; Ring and Van de Ven, 1994), in our study, we unexpectedly found that in many cases they harmed the emerging venture during the commercialization phase. Self-interest and opportunism were not apparent problems, as often suggested by research (Deeds and Hill, 1998; Granovetter, 1985), but rather the socioemotional bonds between the two parties became so strong that the continuation and harmony of the interpersonal relationship took precedence over the purpose of the alliance. We consistently found that during the push to commercialization phase, the pressure to resolve design and manufacturing issues caused an increase in founders' psychological attachments to their alliance partners. Research on alliances has suggested that as the level of interaction between partners intensifies, the bilateral dependence between the partners increases (Teece, 1986), and greater emphasis is placed on the maintenance of the relationship (Deeds and Hill, 1998). Alliance research also emphasizes how relational contracts, which are based on informal agreements and relational trust, foster cooperation and sharing of information, thus helping to fill voids in transactional contracts that could leave parties exposed to opportunism (Puranam and Vanneste, 2009; Ring and Van de Ven, 1994). While this seemed true for some of the emerging ventures in our study, for others strong socioemotional bonds and the dependence on relational contracts (and lack of transaction contracts) caused significant problems for the emerging venture.

Although rarely applied to the interorganizational relationship literature, psychological contract theory suggests that as the psychological contract deepens and becomes more implicit and subjective; discrepancies can occur regarding each party's beliefs about what was promised and delivered (Morrison and Robinson, 1997; Rousseau, 1995). The stronger the socioemotional bonds between parties, the broader the array of subjective and implicit obligations (Robinson and Rousseau, 1994; Rousseau, 1989). Each party's subjective beliefs about what each owes the other is often based on interpretations of past exchanges, observations of the other party's skills and experience, and factors that a party may take for granted in an exchange such as fairness and goodwill (Robinson and Rousseau, 1994). Explicit communication is substituted for subjective and implicit understandings.

Our study found that alliance relationships that produced strong socioemotional bonds often experienced problems because the parties did not explicitly discuss the evolution of the relationship. For example, Venture J's founder finally expressed dissatisfaction with an alliance partner once he realized that there have been overcharges, and that the project was going over budget. He stated to the alliance partner, *"Please keep me in the loop in the future. I had no idea we were going over [budget]. You never even mentioned that it was a possibility...I wasn't aware that we would be moving away from the stated contract. Please, please just shoot me a quick message if you are going to do something that I'm not aware of."* For Venture L the alliance partner finally communicated dissatisfaction with the exchange, however not to the founders of the emerging venture but to an engineer at another vendor. The alliance partner told the engineer, *"They have no interest in being entrepreneurs. They just want us to do all the work. It doesn't work that way. They have to have skin in the game and get their hands dirty."* Another alliance partner expressed a sense of betrayal when he learned that the founders of Venture L planned to sell the business. He stated to a vendor, *"This is really the first I have heard that they wanted to sell the company. I did not realize that this is the way they work."*

While psychological contract theory suggests that a misalignment in perceived obligations causes a sense of psychological contract breach that often results in the dissolution of the relationship (Robinson and Rousseau, 1994; Rousseau, 1989; Turnley and Feldman, 2000), this was not the case for many of the emerging ventures in our study. Multiple firms remained committed to alliance partners, even after months and years of delays and poor quality. Venture F spent several years with an alliance partner attempting to debug parts from custom production tooling. The founder would repeatedly visit his alliance partner's manufacturing facility in hopes of getting injection molded parts to specifications. On the return from one visit he told an engineer, *"Looks pretty good...but needs some work as expected. I sent a guy over there and he is there this week. Schedule is going to be tight."* The engineering team was amazed by how the founder remained committed to his relationship with the manufacturer despite continuous quality problems. As one engineer spoke to another in a private meeting, *"I have no idea why he does not try to source to another manufacturer. We gave him several leads to follow-up on."* After several years, the issues were never resolved and the company ceased operation.

Another example is Venture A that remained committed to an alliance partner despite weeks of delays and substantial quality problems. Venture A's project manager visited the manufacturer, as did the outside contracted engineering team. In an act of desperation, Venture A's co-founder wired a substantial monetary bonus to the alliance partner as an incentive to complete the project. Venture A's project manager stated in a heated meeting, *"That is NOT what you normally do in a situation like this, you withhold payment!"* The co-founder countered, *"Trust me, my gut tells me this will work...He is a good guy."* The co-founder remained committed, sympathizing with the alliance partner. Writing in an email to his project manager, he stated, *"Relax. Everything is under control. It will get done. Leave them alone."*

Still other entrepreneurs ignored or forgave breaches in alliance agreements. For example, after several quality problems, Venture N's founder stated, *"I should have never continued this. But now, I'm in too deep. I can't go back."* While our interviews revealed such a pattern with some entrepreneurs, particularly when the alliance partner offered the founder a favor such as a discounted price or free storage, we discovered that it was more likely for entrepreneurs during the commercialization phase to further deepen their commitment to a close alliance partner despite an apparent breach. These entrepreneurs either increased their reliance upon the alliance partner by expanding their role, or they invested additional funds with the partner. Such entrepreneurs could be said to be throwing "good money after bad" to maintain their socioemotional bond with the alliance partner.

Our interviews revealed that very close socioemotional bonds between alliance partners led to diminishing returns for some of the emerging ventures. Specifically, the establishment of socioemotional bonds between alliance partners appeared to cause friendship ties to substitute for business obligations. We refer to this type of interorganizational relationship as ‘enmeshed.’ Consequently, decisions started to be made based on intentions to maintain the relationship rather than on the needs of the emerging venture.

Venture G exemplifies the development of an enmeshed alliance relationship. After two years of design iterations and budget overruns, Venture G continued to rely on the same engineering firm. The founder and engineering firm’s owner had developed a close friendship. Even with substantial delays and cost issues, the founder remained committed to the engineering partner. As an example, after multiple design delays the founder of Venture G suppressed frustration to maintain the alliance, “*Hopefully the new version will work well and hold up to field conditions. Overall, I am certainly frustrated with how long the process has taken and that we are three times over the original cost estimate. However, I look forward to getting this into the hands of the people it was designed for.*” Although the founder recognized how much their alliance partner cost them in terms of time and finances, he never looked to replace the alliance partner or considered imposing repercussions. An enmeshed relationship was also found in Venture J. A founder of Venture J formed a strong socioemotional bond with the alliance partner charged with finalizing design and manufacturing issues for the venture. Despite being significantly over budget, and behind schedule, and receiving warnings from associates to find another manufacturer, the founder refused to break ties with the alliance partner. After yet another problem with the design, the founder told the alliance partner, “*I am extremely pleased with the level of service you have provided so far. I would like it to stay that way.*”

As a final example, a founder of Venture E and an alliance partner worked closely together to commercialize Venture E’s product. Nearly every day they ate lunch together and spent time skiing together on the weekends. However, the alliance partner was never able to meet quality, cost, and inventory requirements. In fact, the partner significantly overproduced inventory at one point, completely ignoring maximum quantity levels that were agreed upon earlier in the relationship. Venture E eventually went bankrupt mainly due to excessive costs from the manufacturing partner. But that did not end the socioemotional bond between them. The two tried to purchase the business as a partnership during bankruptcy proceedings.

In line with *Lavie’s (2006)* theory on the competitive advantage of alliances, the nature of the relationship between the entrepreneur and alliance partner seemed to matter more than the type of resources exchanged. Contact frequency, reciprocity, emotional intensity, and intimacy appeared to strengthen the socioemotional bond between alliance partners. However, for entrepreneurs reporting a particularly strong socioemotional bond with an alliance partner, the boundaries between the two firms’ identities began to blur. The relationships became dangerously enmeshed whereby the authority of the entrepreneur was infringed upon by the alliance partner. We found instances of alliance partners communicating, making decisions, and even agreeing to business commitments for the entrepreneur. As an example, in an email between vendors working on behalf of Venture G, the vendors worked diligently to solve a problem as if it was their issue alone. The founder was completely removed from the back and forth discussions on a serious quality problem. Another example is Venture F that chose to follow the advice of an alliance partner regarding product specifications in spite of repeated warnings from several engineers working for the venture. The founder started to spend more time at the alliance partner’s facility than at his own business, and as a result decisions about the product became increasingly influenced by the alliance partner to the detriment of the venture’s product launch.

While socioemotional bonds benefited some of the emerging ventures in our study, for about one-quarter of ventures there appeared to be a tipping point where the alliance relationship became so dependent on socioemotional bonds that it was destructive to the emerging venture. Although “groupthink” and escalation of commitment have been acknowledged as harmful to new product development and interorganizational relationships (*Ring and Van de Ven, 1994; Van de Ven et al., 1989; Zahra et al., 2006*), our findings went beyond these to expose instances of alliance partners altering the direction and mission of an emerging venture to maintain the socioemotional bond.

Although prior research recognizes how a heavy reliance on relational contracts and trust can expose one to opportunism (*Nooteboom, 2002; Puranam and Vanneste, 2009; Zahra et al., 2006*), we did not find acts of opportunism. Instead we found biased, poor decisions that threatened the existence of the emerging venture due to strong socioemotional bonds. Even when these founders acknowledged the alliance partner’s encroachment on their business, they did not seek to minimize or stop it. Over time, the alliance partner’s authority became more entrenched and accepted in the emerging venture. Unfortunately, for some ventures in our study the enmeshed alliance relationship caused a series of bad decisions that led the emerging venture to fail in the launch of its product.

5.4. Recovering from an enmeshed alliance

While an enmeshed alliance, characterized by a relationship where socioemotional bonds supersede business obligations and role boundaries blur, proved to be problematic during the commercialization phase, four of the seven ventures in enmeshed alliances were able to recover. The founders of these ventures appeared to have a moment of reckoning spurred by an imminent threat to the emerging venture that led the entrepreneur to identify incompetence and the intrusion of the alliance partner on their authority, breaking the socioemotional bond. For example, the founders of Ventures A, G and H recognized that their alliance partners had encroached upon their authority and altered the course and progress of the emerging ventures. There were inconsistencies with pricing, inventory, and warehousing that worried the founder of Venture H. The worries mounted and eventually led the founder to terminate the relationship stating in an email to another vendor, “*I’m going with another manufacturer, they are just not up to it.*” A co-founder of Venture G expressed to the outside engineering team that was increasingly taking control over design decisions and company direction, “*We are going to take control of the design and all prototyping. All design direction comes from us now.*” In this example, the relationship

became strained over delays and design direction. After a heated meeting, the founding team finally made it clear that any design direction was to be derived from the founders.

Venture A also had a moment of clarity after receiving 500 units with sub-optimal quality. The founder recognized that although his socioemotional bonds with the alliance partner were strong, the partner was not competent. Venture A's founder made a bold decision. He told the team, "*We are [removing] the tooling from the manufacturer, and we have found a new source.*" After a substantial amount of invested capital, multiple site visits, and promises of new projects and equity, the relationship was severed. The team arranged shipment of the tools from the original manufacturer and delivered them to a new producer. This manufacturer quickly resolved the tooling issues and began producing units in volume. The relationship with the new manufacturer was a straightforward transactional contract. After Venture A switched manufacturing partners, they successfully launched their first product.

In a similar moment of clarity, spurred by the need for an infusion of additional capital, Venture G's founder realized that his close friend and alliance partner would not be able to meet his emerging venture's needs. Although Venture G's founder had worked closely with the alliance partner for over a year trying to make the alliance work, he ultimately decided to halt the alliance before taking a second mortgage on his home. Hundreds of thousands of dollars were spent on the venture, but hundreds more were on the cusp of being spent if the alliance had not been halted. He explained to his alliance partner, "*I'm running out of money and my wife is losing patience. I cannot take out a second mortgage to pay for the [production] tooling.*"

For those alliances that became enmeshed, generally a triggering event was necessary before the entrepreneur could consciously distinguish how the alliance partner was damaging the venture. In a moment of clarity they realized that the socioemotional bonds they had formed with an alliance partner clouded their judgment. Venture H explained to an engineer how he "*got burned*" by his friend and initial manufacturer, stating that he is "*not going to trust anyone now.*" He also explained that he should have recognized that the alliance partner could not meet their needs "*even though he said he could do it.*" When a founder of Venture A acknowledged that his relationship with an alliance partner had become enmeshed, and specifically, how his friendship caused him to repeatedly furnish the alliance partner with extra time and money despite problems, the founder eventually remedied the situation by replacing the partner.

Those entrepreneurs who were able to recover from an enmeshed relationship recognized a discrepant event or trigger rooted in the relationship. While other founders ignored "signs" or attributed alliance problems to external sources, the entrepreneurs who were able to recover from an enmeshed relationship finally came to attribute their struggles to the incompetence of their alliance partners. Competence-based trust was shattered and the alliance was finished. Of the four emerging ventures that recovered, three consciously recognized how they had allowed the alliance partner to encroach upon their business by "*calling the shots*" that hurt the progress of the emerging venture. This led them to reevaluate the alliance in terms of business obligations and not just socioemotional bonds. From a psychological contract perspective, this would suggest that these founders stopped evaluating the alliance based on generalized reciprocity gained from relational exchanges and instead turned to concentrate on equivalent reciprocity whereby they focused on evaluating comparable returns gained from the business transaction.

Once an emerging venture replaced their enmeshed alliance with a new partner, the new alliance was designed to be transaction and contract-based. Further, the entrepreneurs also redesigned their other alliances to be more transactional with clear expectations and obligations. These findings support Shore et al.'s (2004) argument that a firm often creates a meta-contract that reflects coherent and overarching features that align across organizational agreements. Venture A is an example of this. After recovering from an overly enmeshed relationship, they approached all future alliances in a pragmatic manner. They transformed not only their relationships with alliance partners, but also their entire approach to business. One founder explained, "*We have to make sure there is accountability. I want to be able to say 'this is what I told you to make, but what you did doesn't look like this'...Next time I see a problem I am going to address it right away. I'm keeping my guard up.*" To resolve their situation, Venture G requested budgets, schedules and deliverables, with consistent project management reports from their new alliance partner. The project was eventually launched after several years of development.

Once we discovered how some emerging ventures were able to establish a productive alliance after experiencing an enmeshed relationship, we further examined the alliances in our sample that avoided becoming enmeshed to determine if the relationships could be characterized as "balanced" psychological contracts whereby they combined the trust of relational contracts with the well-specified performance terms of transactional contracts (Rousseau, 1995; Dabos and Rousseau, 2004). Our analysis showed that alliances that avoided becoming enmeshed were able to establish clear boundaries that produced collective success. At Venture C, they kept a close, but clear-cut division of responsibilities and professionalism with alliance partners. They ensured that each alliance partner had clear project milestones and product specifications to guide them. While the projects encouraged the engineers to communicate regularly, their conversations tended to revolve around work and the problems at hand. As one of the founders at Venture C noted, "*The designers and engineers communicated daily...We gave them the idea and they developed it.*" Of all the ventures in the study, the most financially successful was Venture C. While they developed alliances with several firms, they did not become enmeshed. The relationships, while strong, revolved around business obligations. All parties were committed to success but not blinded by the strength of any socioemotional bonds.

Additionally, we also examined those emerging ventures that only used outsourcing throughout the product development process to determine if they had any advantage in managing interorganizational relationships. While two of the four ventures launched their products and reported stable, growing sales (M and O), the other two ventures struggled to launch (B and K). Founders of Ventures B and K appeared to have a difficult time trusting outsourcing partners as they repeatedly replaced one contractor with another. For example, Venture B replaced multiple manufacturers because the founder felt each was too expensive. With each replacement, the new manufacturer would need to start from the beginning, which ultimately added months to the launch and additional expense.

Although the product was eventually launched, it was quickly discontinued due to poor sales. Venture K, while ultimately successful, spent several years testing relationships and held a very skeptical view of contractors. Much time was wasted during this protracted commercialization period.

In contrast, the founders of Ventures M and O were comfortable delegating work to their outsourcing partners and seeking input based on their specific expertise, thus demonstrating trust in their competence. Firm O's founder, for instance, explained to an engineer how an outsourcing partner was performing, "Everything is progressing fine with [name withheld]. He has been able to modify the files and is ordering the materials needed to start production...I took their advice." As such, these findings support Gulati and Nickerson's (2008) research that found that trust complements the governance of relationships with suppliers and alliance partners. However, it extends their research by demonstrating that as interorganizational relationships progress, they need to remain based on *both* transactional and relational elements.

Although psychological contract research stresses the importance of reciprocity and trust, our research on interorganizational relationships offers a caveat. For emerging venture alliances to be productive, the establishment of reciprocity and trust needed to be based on competence. Those entrepreneurs who began to allow their socioemotional bonds with an alliance partner to compensate for the partner's inability to meet business obligations jeopardized the launch of their new product. These results extend previous research on interorganizational relationships that suggests that relational trust and friendship can facilitate economic exchanges, supplement voids in transactional contracts, and help resolve conflicts (Francis and Sandberg, 2000; Puranam and Vanneste, 2009; Ring and Van de Ven, 1994) by demonstrating how the progression from competence-based trust to relational trust can pose substantial risks for emerging ventures. While one would think outsourcing relationships may be less likely to become enmeshed due to their transactional nature, our study revealed that once competence-based trust was established in a narrow domain, many progressed into broader alliances that moved beyond the competency of the partner. In turn, only about half of the ventures that developed an enmeshed alliance came to reevaluate the partnership based on business obligations instead of socioemotional bonds.

6. Discussion

In this study, we applied an evolutionary perspective to the creation and emergence of new ventures. Specifically, we examined the initiation and evolution of interorganizational relationships in emerging ventures, and how these interorganizational relationships impacted the performance of emerging ventures, specifically how they aided or hindered the critical process of the discovery, development, and commercialization of an opportunity. In contrast to the work by Alvarez and Young (2015-in this issue), who examined the evolution of markets and industries, we examine the impact of interorganizational relationships on the creation and evolution of specific new ventures. Our findings complement the research by Alvarez and Young on the role of these relations and the impact of the entrepreneur on the emergence of new markets and new industries. It is quite clear from our work that the dynamic interaction of the entrepreneur's actions and the evolution of the venture's interorganizational relationships play an important role in shaping the venture and whether or not the venture finally emerges. A graphic of how emerging ventures approached these relationships in terms of the new product development process is shown in Fig. 1.

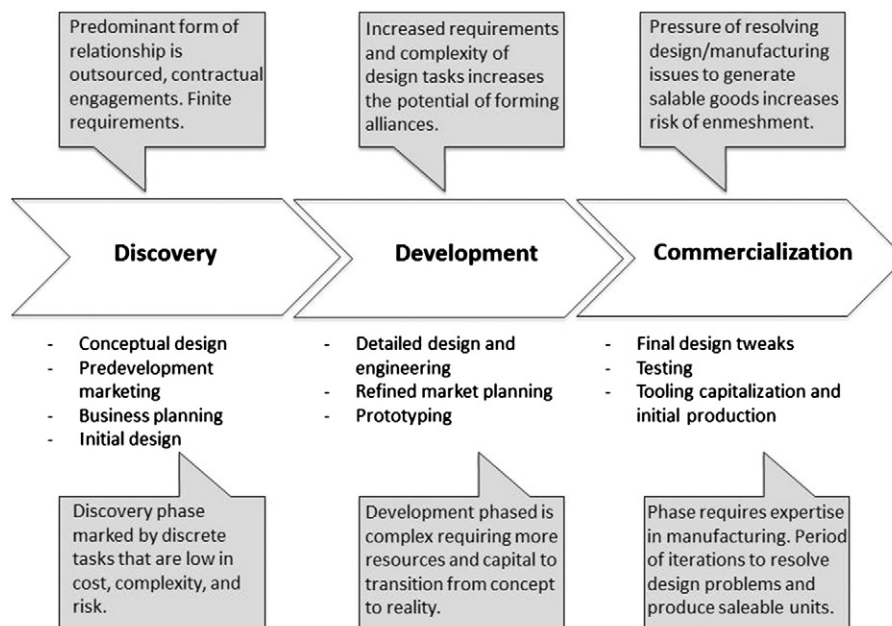


Fig. 1. Interorganizational relationship development and the NPD process.

One important contribution of our research is documenting and exploring the evolving nature of interorganizational relationships. We discovered that many of these new venture relationships began as transactional outsourcing arrangements and after the creation of competence-based trust, progressed into alliances. During this process, socioemotional bonds and relational trust were formed. While our research revealed that those founders who were able to cultivate interorganizational relationships that were based on a balance of competence-based trust and socioemotional bonds had an advantage, we also found that for some ventures socioemotional bonds began to substitute for competence-based trust. The relationships were often deepened and expanded with greater task roles, interdependence, and integration. This competence-based trust became the platform on which an alliance was built. The evolution from a transactional outsourcing agreement to an alliance was subtle and progressed over time as socioemotional bonds developed. These relationships frequently progressed beyond the competency of the partner, creating imminent problems for the emerging venture. Once the relationship became fully enmeshed, significant leeway and decision-making authority were granted to the partner based on the socioemotional bonds. This tipping point was reversed in only about half of the cases, when some type of triggering event caused the founders to reevaluate the alliance.

While research on networks, relational contracts and social capital suggests that the development of socioemotional bonds and relational trust promotes interorganizational success (Bolino et al., 2002; Bollingloft and Ulhøi, 2005; Johanson and Mattsson, 1987; Powell, 1990), and indeed for some ventures in our study this was the case, surprisingly our study also revealed that strong socioemotional bonds between alliance partners could jeopardize a new venture's success, particularly when the entrepreneur allowed these bonds to compensate for poor partner performance. In these cases, as the interorganizational partner became more involved with the emerging venture and the relationship progressed from an outsourcing relationship to an alliance, the collaborating firms often neglected to alter their original contracts, choosing instead to rely on implicit agreements, that is, a psychological contract. We observed this in several ventures, particularly in the development phase. Socioemotional bonds appeared to create a potential paradox for alliance partners. While socioemotional bonds fostered trust, commitment and reciprocity, as predicted by psychological contract theory (Rousseau, 1995), they could also lead to an enmeshed relationship whereby the entrepreneur began to value and evaluate the alliance based more on socioemotional benefits than on the business exchange. This suggests that entrepreneurs need to learn how to effectively manage different types of interorganizational relationships and most importantly, how to manage each as the relationship evolves.

Additionally, while researchers have discussed the different types of alliance partners in terms of their knowledge contributions (Deeds and Hill, 1998; Gulati, 1998), our research stresses the need to consider the entrepreneur's ability to successfully manage interpersonal bonds as a critical component of alliance management capability. Similar to Rothaermel and Deeds (2006) who argued that there is value in limiting the number of alliance relationships, our findings suggest that entrepreneurs should limit the breadth of their socioemotional bonds with alliance partners, being mindful that the relationship and sense of reciprocity are based on business obligations and not only on friendship.

When entrepreneurs placed greater emphasis on socioemotional bonds than on business obligations, a tipping point was found to emerge whereby the alliance became enmeshed. These relationships proceeded down a path of escalated commitment and psychological dependency, which ultimately had dire consequences for both parties. We found that these toxic, enmeshed relationships tended to occur during periods of the most tension, strain, and conflict. In this sample, this occurred during the commercialization phase, where the founders and alliance partners rushed to finalize designs, overcome manufacturing flaws, and meet production requirements. Consequences of these toxic relationships included bankruptcy and the termination of the venture before launch.

7. Future research

In this study we investigated how external relationships can evolve throughout the new product development process within emerging ventures. We have shown that these relationships can evolve over time, particularly when development and commercialization challenges increase. Within these evolving relationships we have uncovered several areas that present substantial opportunities for future research. Future research should investigate how entrepreneurs can best manage interorganizational relationships with outsourcing and alliance partners during the NPD process. Our research indicates that factors such as mentor relationships, interphase conflict, excessive design iterations, and partner capability should be explored. Research on how to ensure that socioemotional bonds produce psychological contracts that center on business obligations and not on friendship is also required. This appears particularly important as interorganizational relationships strengthen over time, yet often without explicit discussion of new expectations or business obligations with well-established outsourcing and alliance partners. Another area of interest for further research is to investigate the blurring of firm boundaries as these relationships become increasingly involved. Lastly, one of the key findings in our research was how competence-based trust could develop into relational trust that over time clouded the entrepreneur's judgment and ability to access the effectiveness of the interorganizational relationship. Future research should study this evolution and particularly how the early establishment of competence-based trust in an interorganizational relationship can limit an entrepreneur's willingness to question the competence of a partner as the relationship progresses. We hope our study inspires such research and helps entrepreneurs to develop effective outsourcing and alliance relationships that remain productive over time.

In conclusion, emerging ventures heavily rely on interorganizational relationships during the NPD process. While most begin as transactional outsourcing relationships, once competence-based trust is established they often evolve into alliances. However, we noticed that such an evolution in collaboration can be problematic as the competence-based trust is substituted by relational trust. As the relationship deepened, most entrepreneurs failed to explicitly discuss the new expectations of the interorganizational relationship, update the contract governing the relationship, and reevaluate the competence of the partner.

Instead, they tended to rely on psychological contracts to govern the relationship. Important to both academics and practitioners is our discovery of a tipping point where interorganizational relationships became so enmeshed that they impeded the venture. Entrepreneurs need to be conscious of this issue and guard against the emotional escalation that can result in an enmeshed relationship. In the end, founders of emerging ventures need to keep President Reagan's famous admonition in mind when dealing with interorganizational relationships – “Trust but verify.”

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Appendix A. Summary of venture relationships and outcomes

Venture	Outsourced relationships	Alliances	Relationship summary	Outcomes
A	Contracts established with nearly all service providers of all functions of the design and development process.	Alliances formed with manufacturing, project management, marketing and sales personnel.	Despite repeated problems with timing and milestones, both Firm A and the manufacturer continued to drive deeper into financial commitments. Co-founder ignored management team on actions.	After 6 months of the enmeshed relationship, the co-founder cut all ties to the manufacturer and moved production. Post-disentanglement, lower than expected sales, eventual business pivot.
B	Contracts established with designers, engineers, manufacturing and component suppliers.	No alliances formed.	Entrepreneur kept an arms length, near 'skeptical' view of all contracts and service providers.	Entrepreneur ended all relationships when viewed (by the entrepreneur) when judged to be no longer needed. Product had poor market performance, eventually discontinued.
C	Outside mechanical engineer and manufacturer contracted.	Alliance formed with both the electrical engineer and manufacturer nearly immediately based upon a standard royalty and amortized mold agreement	Although all personnel tasked with development spoke weekly, relationships maintained an 'arms length,' business relationship.	None taken, relationship remains in place after 10 years. Company launched a successful series of products, experienced high-growth.
E	All aspects of design, development, manufacturing, assembly and fulfillment were initially contract agreements.	Alliances (reduced fee and equity) were established between industrial designers and a manufacturer.	As the company grew, expectations rose. Deep, socio-emotional relationships between the designers, manufacturer, and co-founder developed.	Rapid growth then bankruptcy due to poor cost control. During bankruptcy proceedings the manufacturer attempted to purchase the company with one of the co-founders.
F	Founder utilized contracted marketing, design, engineering, and manufacturing personnel.	Alliance formed with the manufacturer in China.	Founder stood by manufacturer for a period of almost two years, buoyed by small improvements but no breakthroughs in manufacturability.	Founder did not give up until all available funds were extinguished. He did not seek another manufacturing source. The product did not reach market.
G	Design, engineering, prototyping, manufacturing and assembly were all contracted to outside vendors.	Alliance formed with the engineering team, eventually becoming enmeshed.	Despite design issues and running over budget, the founder remained committed to the engineering team.	Product eventually commercialized despite delays. Product currently in trial phases.
H	Outside contracted vendors used for all major tasks, from design to manufacturing and fulfillment.	Alliance formed with two manufacturers.	Founder remained skeptical of manufacturer and fulfillment partners, always hedging bets they would fail. Hence, he maintained a back-up resource at all times. However, his relationship with a local molder continued, and became enmeshed.	Founder remained unhappy with each manufacturer, and pulled tooling out of two US manufacturers after a period of six months in each case. The product reached market, but has experienced lower than expected sales. The business remains active.
I	Outside contractors used for all development, manufacturing, marketing and business development.	Alliance formed with outside marketing and business development firm.	Product development experienced problems due to an inexperienced project manager. Founders were committed to solve the problem and remained with the product development firm as it completed a redesign. Founders became forceful in directing development tasks.	Problems were resolved during the iterative ramp to production. The product was commercialized and remains on sale. Sales have been lower than expected.

(continued on next page)

Appendix A (continued)

Venture	Outsourced relationships	Alliances	Relationship summary	Outcomes
J	Design, engineering, prototyping, manufacturing and assembly were all contracted to outside vendors. Alliance formed with engineering company during development.	Alliance formed with mechanical engineering and prototyping company. Became enmeshed as tensions mounted to resolve issues near launch.	Founder became increasingly involved and task driven with the development team. Alliance ended as the product was commercialized.	The product was commercialized but did not gain traction in the marketplace. Despite interest from major resellers, no large sale was completed.
K	Outside contractors were used to help with business development and marketing.	No alliances were formed with product development personnel.	The founder was an experienced entrepreneur. No enmeshed alliances were formed. Outside contractor arrangements were specific, and not long-term.	The products were successfully commercialized and the company was sold five years after founding.
L	Nearly all aspects of the company were contracted to outside vendors. This included design, engineering, prototyping, manufacturing, business development and marketing.	An alliance was formed with a business development and marketing company, which became enmeshed during commercialization.	The founders had no experience in entrepreneurship or launching a new product. Eventually, they relied heavily on their alliance to launch the business, contributing little to the effort themselves.	The company was not successful in licensing their product to a large education company. They are proceeding with a limited launch via Internet sales.
M	The company outsourced all design, engineering and manufacturing to outside contractors.	No alliances formed.	Founder kept all relationships purely transactional.	The company launched its product and service in 2006. The company is stable and profitable, but not experiencing growth.
N	The company outsourced all design, engineering, prototyping and manufacturing to outside contractors.	An alliance was formed with the product development company. A separate alliance was also formed with the manufacturer.	The alliance formed with the product development company was not enmeshed, however the contract was terminated under stressed conditions. An enmeshed relationship between the company and manufacturer developed as the product launched.	Despite issues with product development and manufacturing, the company launched a series of new products. The company has since pivoted and added product offerings in a completely different segment.
O	The company outsourced all design, engineering, prototyping and manufacturing to outside contractors.	No alliances formed.	Founder keep all relationships purely transactional.	The founder methodically improved the product and was successfully launched in 2010. Sales have grown steadily since introduction.

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Appendix B. Relationship type by phase

		Venture					
		A	B	C	E	F	
Legend:	Outsourced Relationship						
	Alliance						
	Emmeshed Alliance						
Development Phase	Discovery Phase	Marketing Business Development		Mechanical Engineering	Industrial Design Mechanical Engineering	Prototyping	
	Development Phase	Industrial Design Electrical Engineering Mechanical Engineering Project Management Manufacturing Quality Engineering Packaging Design	Mechanical Engineering Prototyping Industrial Design	Mechanical Engineering Prototyping Manufacturing	Industrial Design Mechanical Engineering Prototyping Packaging Design Manufacturing	Marketing Business Development Mechanical Engineering	
Commercialization		Project Management Quality Engineering Manufacturing PCB Assembly	Injection Molding Web Development Packaging Design	Manufacturing	Manufacturing Fulfillment	Prototyping Manufacturing	
Firm							
Development Phase	Discovery Phase						
	Development Phase	Mechanical Engineering Electrical Engineering Prototyping Mechanical Engineering Prototyping Manufacturing	Mechanical Engineering Prototyping Mechanical Engineering Prototyping Manufacturing	Industrial Design Mechanical Engineering Electrical Engineering Industrial Design Mechanical Engineering Electrical Engineering Prototyping Marketing Business Development	Industrial Design Mechanical Engineering Prototyping Mechanical Engineering Prototyping	Business Development Marketing	
Commercialization		Manufacturing PCB Assembly	Manufacturing Fulfillment	Manufacturing Fulfillment Marketing	Manufacturing	Business Development Marketing Engineering	
Firm							
Development Phase	Discovery Phase						
	Development Phase	Industrial Design Mechanical Engineering Prototyping Mechanical Engineering Prototyping Business Development Marketing Fulfillment Marketing	Industrial Design Mechanical Engineering Prototyping Industrial Design Mechanical Engineering Prototyping	Industrial Design Mechanical Engineering Prototyping Industrial Design Mechanical Engineering Prototyping	Industrial Design Mechanical Engineering Prototyping Industrial Design Mechanical Engineering Prototyping	Business Development Marketing Engineering	
Commercialization		Manufacturing Fulfillment Business Development Marketing	Manufacturing	Manufacturing	Manufacturing	Business Development Marketing Engineering	

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