

Management team change in venture capital-backed firms

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Abstract

In this paper we elaborate on several theoretical explanations that underlie past empirical work on top management teams (TMT) and explore the factors driving TMT changes in new venture-capital backed firms. We found demographic and functional team heterogeneity, CEO tenure and prior start-up experience, and the presence of dismissal covenant to be positively related to the TMT change. We also examined and did not find support for team size and team conflict's relation to TMT change. We attempt to integrate our empirical results with well established TMT literature and suggest future research directions that may be helpful to researchers seeking to further explore these issues.

Keywords: Turnover, change, top management team, new venture, venture capital.

Introduction

While the bulk of top management team (TMT) research has been conducted on existing large firms, primarily because of the ready availability of secondary data, the richest and most interesting studies of TMTs are likely to involve new ventures (Ensley et al. 2002). Indeed, recent research reflects a growing interest in the entrepreneurial TMTs, which we define as the group of people involved in the creation and management of a new venture (Cooper & Daily 1997; Kamm et al. 1990). The interest in studying entrepreneurial TMTs stems in part from the recognition that team founded ventures are often more successful than those founded by solo entrepreneurs (Chandler and Hanks 1998; Roberts 1991). Entrepreneurship scholars and theorists further acknowledge that the skills and capabilities required of the team members who lead entrepreneurial firms change over time; thus, new team members need to be brought in and founders whose skills have become outmoded need to be replaced (Rubenson and Gupta 1996; Boeker and Wiltbank, 2005). This pervasive "firm life cycle" perspective on entrepreneurship makes understanding the impact of TMT composition and the lead entrepreneur characteristics on TMT change an important theoretical and empirical endeavor.

Yet, little research has systematically examined the dynamics of TMTs in general (Ucbasaran et al. 2003; Chandler et al. 2005; Forbes et al. 2006), and there are few studies that address team dynamics in the context of venture capital-backed high-technology start-ups (Ensley and Hmieleski 2005; Vanaelst et al. 2006; Beckman et al. 2007). Filling this research gap is important in helping VCs, universities, science parks, incubators and others who are interested in support of and dealing with high-tech small firms to avoid management changes that can be detrimental to venture success. In this paper we use and adapt multiple theories and perspectives to enhance our understanding of what are the antecedents of TMT change in new VC-backed firms.

Venture capitalists (VCs) consistently mention TMT quality as an important funding criterion (MacMillan et al. 1985; Zacharakis & Meyer 1998). This emphasis makes sense because while new ventures do not have history, inertia, and precedent, the entrepreneurial team is a relatively observable and controllable entity. Because changes can be a costly and ineffective way to improve venture performance, it is in a VCs' interest to know when to avoid funding ventures that are likely to be impacted by changes. Most importantly, if we understood the factors that were driving TMT changes, we could begin to evaluate how

changes might be used to create long-term value for a venture's backers. If well understood, the process of TMT change could be shaped to enhance ventures' chances of success.

The paper is structured as follows. First, we present the theoretical framework underpinning the study and develop the hypotheses exploring the factors that drive the change in entrepreneurial TMT of the VC-financed high-tech venture. Second, the sample, methodology and the variables utilized are discussed. Then, we discuss the results of the study identifying future directions that may be helpful to researcher seeking to further explore these issues. The final section presents conclusions, limitations, and suggestions for further research.

Theoretical perspectives on TMT change and hypotheses

The literature on the change in TMT suggests that change can be viewed in at least three different ways. First, it can be viewed as an attempt to attract team members who possess all the skills and knowledge necessary to survive in a highly dynamic and uncertain environment. This is a human capital interpretation that typically prescribes having a certain type and amount of prior experience on a team, as a means of ensuring that the TMT acts to maximize the venture's value. Looking at the type and amount of prior experience and gained knowledge within the team members is what VCs do prior to funding (Cooper et al., 1994; Gimeno et al., 1997; Schefczyk and Gerpott, 2000; Baum and Silverman, 2004).

Second, in contrast to the human capital perspective providing convincing reason for changes in new venture team, but offering not much guidance to the process for achieving optimal team configuration, organizational demography literature theorizes about team composition and diversity in addition to the existence of any particular experience. The change in TMT may be due to demographic heterogeneity or an effort to create desired heterogeneity (Reagans et al. 2004) and high levels of conflicts (Amason 1996; Jehn 1997).

Lastly, the life cycle literature suggests the high-tech ventures go through a number of phases of activity in their development and face different dominant problems in each phase (Kazanjian 1988; Vohora et al. 2004). In order to progress to the next phase the entrepreneurial team needs to develop or acquire resources and capabilities, including managerial capabilities. For instance, it is common for fresh expansion capital to be needed, and the management team then needs capital-raising skills and experience (Dorf and Byers 2007). Thus, as the venture develops, the emphasis on each core capability within the team changes, although a base level competence across all dimensions is needed for resilience and the venture success.

In the rest of this section we develop hypotheses by treating human capital issues first. Then we discuss issues related to organizational demography, including heterogeneity, conflicts and tenure. We conclude by examining those issues related to firm life cycle and timing.

Human capital

Human capital theory implies that teams should attract individuals who have the capacity to generate returns or to procure resources. Taken to its extreme, the human capital view may suggest that teams that possess all the skills and knowledge necessary to survive in a highly dynamic and uncertain environment should be formed. For example, building a successful technology company demands three types of business knowledge: knowledge of how to develop and manage a new company, knowledge of the process of product

development and production, and knowledge of the particular market in which the new company will operate (Shane, 2004). The problem is that “owning” all the resources necessary to compete and survive is rarely possible for young ventures (Stevenson & Gumpert 1985). Yet, by this logic alone, if a single individual possessed the skills and knowledge needed, building a team or adding even one member would be redundant.

As showed by Ensley et al. (1999) and Timmons (1979) even in organizations managed by entrepreneurial teams, there is a preeminent entrepreneur who shapes and maintains the organization’s collective vision. The lead entrepreneur brings value to the new venture as the person who identifies the opportunity, although he or she may have substantive skills needed by the venture as well. Team members bring skills needed by the venture which the lead entrepreneur does not have. The reasoning leads us to expect that if the lead entrepreneur has the necessary business knowledge needed it is less likely that he or she will bring more members to the team who have the same experience.

Research has shown that venture capitalists (VCs) state that the quality of the founding team is one of the most important criteria when they decide to invest in a start-up (Clarysse and Moray 2004). High-tech start-ups, especially academic spin-offs, tend to be founded mostly by homogenous teams including only engineers lacking commercial experience and networks (Vohora et al. 2004; Shane 2004; Ensley and Hmieleski 2005). Often, one of these engineers is acting as a champion and perceives himself as a future CEO of the company. VCs tend to react against these start-ups by looking for a CEO themselves and changing the founding team drastically before investing. In the same vein as mentioned above, the reasoning leads us to expect that if the lead entrepreneur has the necessary business knowledge needed it is less likely that the VC investor will insist on replacing the lead entrepreneur with an outside CEO. Formally stated these two hypotheses are:

H1: CEO’s working experience in the particular market/industry in which the new venture operates will be negatively related to TMT change.

H 2: Prior start-up experience of the CEO will be negatively related to TMT change.

Organizational demography

The theoretical underpinnings of organizational demography typically rely on one or two substantive traditions to explain the advantages and disadvantages of demographic heterogeneity (Beckman et al. 2007). Some scholars draw upon classic social psychological theories and emphasize group dynamics and interpersonal processes (Williams and O’Reilly 1998). Others draw upon sociological theories and emphasize social network correlates of demography (Hoang and Antoncic 2003). As Reagans et al. (2004) articulate, there are “optimistic” and “pessimistic” views of heterogeneity in both traditions. In the pessimistic psychological view heterogeneity is problematic because it disrupts group processes and produces interpersonal conflict. Similarly, in the pessimistic sociological view, there is a lack of social closure and trust. In contrast, optimists of both psychological and sociological persuasions emphasize the information advantages of heterogeneity. Demographic heterogeneity brings together people with different skills, experiences, and social ties and is advantageous because it expands network resources and provides more and better information.

Upper echelons and strategic decision-making literatures suggest that demographic heterogeneity (prior working experience in industry, education, age) among new venture team members may be related to the (in)stability of the team. Wagner et al. (1984) argued

that heterogeneity reduces social integration, communication, and cohesion. Past research (Harrison et al. 1998; Jackson et al. 1991; Wagner et al. 1984, Wiersema and Bird 1993) provides some indication that heterogeneity may be positively related to team turnover. Thus, both theoretical and empirical evidence suggest that team heterogeneity is likely to be associated with changes of membership in the new venture team.

H3: Demographic and functional heterogeneity in the new venture team will be positively related to TMT change.

The TMT's incentive to consume company resources to their own personal advantage is generally lower in VC-backed firms than in large, public firms where top manager's ownership is relatively small. However, at times the interests of the founders and VC-investors diverge. For example, if the venture has to raise additional funds to finance further development, it is in owner-manager's best interests to have the venture valued as high as possible so that less equity will be given up. Similarly, it is in VC's interests to have the value set as low as possible in order to gain greater equity. Existing VCs on the firm may also wish to discourage other groups of investors from providing funds so as to limit competition for equity (Sapienza et al. 2002). Entrepreneurial managers and VCs can also come to disagreements on strategic decisions and goals. These disagreements were shown to be associated with conflict (Sapienza and Gupta 1994). The conflicts often arise when the a priori expectations of the VC director and CEO are not met (Deakins et al. 2000). Greater potential for disagreement may encourage the team members to leave (Amason 1996; Jehn 1997). Hence, we expect that the new ventures teams experiencing the conflict are more likely to disband and thus experience change in TMT.

H 4: High level of conflict within a team is positively related to the change in TMT.

The Law of Requisite Variety (Ashby 1956) suggests that the variety of resources required is contingent on the conditions in the environment (Chandler et al. 2005). Because the task environment is not yet clearly defined for newly emerging organizations, it is unlikely that the new venture can clearly define the relevant resources, competencies, and capabilities from the outset, but only through experimentation (Sarasvathy 2001; Starr and MacMillan 1990). In addition, research evidence suggests that increased size has a negative effect on the social integration, informal communication, and communication frequency of teams. Amason and Sapienza (1997) found that larger teams often produced high levels of affective conflict, which has been shown to have negative impacts on group cohesion (Jehn et al. 1997). Taken together, these arguments lead to the following hypothesis:

H 5: The entrepreneurial TMT size is positively associated with changes in TMTs.

Relationship building and bonding takes time (Smith et al. 1994). During the emergent phase of a business, cohesive bonds are less likely to have formed, which also makes it easier to add or drop members. If team members like working together and share the same values and beliefs they are more likely to stay longer in the team than people who dislike each other and have conflicting views. The longer the member stays on management team, the stronger bonds and working routines are developed between this individual and

other members. The new venture team has always a leading entrepreneur, a champion who leads the team and the venture (Ensley et al. 1999). The longer the champion stays on the team, more commitment he or she gets to the team and more experience he or she gets of leading the team. If the CEO has not worked together with other team members for long period, it is easier for CEO to add or replace team members. Prior to funding, in addition to CEO's business knowledge discussed above the VC will look at the CEO's tenure (Franke et al. 2006). The longer CEO's tenure may serve as an indicator of the team members working well together under his/her supervision. Therefore, we anticipate the number of years spent by CEO in the venture to be negatively associated with team change. Hence:

H 6: CEO tenure in the new venture will be negatively related to change in TMT.

Firm life cycle and timing

Another aspect of entrepreneurial TMT composition is time and its affect on the team. The research has found that effects of diversity, especially for demographic characteristics, within the TMT decreased over time as the TMT engaged in lengthy discussions and solved disagreements and complex problems (Glick et al. 1993; Harrison et al. 1998). This may be beneficial to the venture as it develops and as tasks become routine which are more efficiently handled by homogeneous TMTs. However, the need for a heterogeneous TMTs may still be desired because the heterogeneous team can make more effective decisions. Therefore, a change in TMT composition may be desired, and a mechanism that will make departure from the TMT graceful is needed.

The practical value of having a life cycle view of the venture is that it helps the team to identify key points where change in the business will occur (Baxter et al. 2007). According to life cycle approach, the high-tech start-up goes through the different phases of development, in which the venture faces different dominant problems and needs to develop different resources and capabilities to solve the problems (Kazanjan 1998; Clarysse and Moray 2004; Vohora et al. 2004). This requires having different types of skills and knowledge on a TMT in different development phases (Vanaelst et al. 2006). In VC-backed firms a dismissal covenant is frequently used (Fiet et al. 1997) – conditions to force a change in the composition of the new venture team. Dismissals covenants are intended to prevent top managers from engaging in actions that would be in conflict with the profit-maximizing goals of the venture. These actions would be punished by dismissing the guilty team member. Adapting to entrepreneurial setting and applying the life cycle perspective the mechanism to force a change in the composition of the new venture TMT can be viewed as an important tool. With the help of the dismissal covenant VC directors can adjust an entrepreneurial TMT's demographic and cognitive composition according to the venture's needs, in terms of development stage and venture environment.

H7: The presence of covenant to potentially force a change in the TMT will be positively related to the TMT change.

The overview of all hypotheses may be found in figure 1.

Insert Figure 1 about here

Methodology

The data set originates from a survey addressed to the CEO of 240 current and newly exited portfolio companies in Norwegian venture capital funds. This sample constitutes the portfolios of the primary members of the Norwegian Venture Capital Association as of 2004. Seventy companies returned their questionnaires resulting in a response rate of 29%. Fifty-four of the respondents were CEOs. Sixteenth questionnaires were completed by others in the management team (e.g. Chair, CFO, CTO). Only twenty-seven of the respondents identified themselves as founder managers.

The sample comprises eight academic spin-offs, nine corporate spin-offs, and the remaining cases are classified as independent start-ups. We registered membership change in top management team in thirty-four firms. We evaluated non-response bias by comparing respondents and non-respondents according to business sector and sales. The analyses reveal no significant differences across these variables.

Measures

In the questionnaire, we asked if changes in the management team had taken place (yes/no). We also asked about the CEO prior experience with start-ups, industry, and within the firm. We measured team heterogeneity by three diversity items, and created a factor based on these items (capture diversity by education, industry experience and age). We also asked a set of questions regarding mechanism in the contract they had with their VCs. When measuring conflict, we used conflict items from the Intragroup Conflict Scale by Jehn (1995), and Shah and Jehn (1993). The nine conflict measures (with facets of goal, process and affective conflict) loaded on one factor, and this factor was used as a proxy for management conflict.

Analysis

Since we have a single measure of management member change, a discriminant analysis is the most appropriate assessment technique (Hair et al. 1998). Table 1 lists the variables that were employed in the discriminant analysis, and their effects. The canonical correlation is .50 which means that the metric variables account for 25 % of the variance in the categorical variable. The function is significant (Wilks' Lamda is 0.75, a Chi-square equivalent of 14.92; $p < .037$). The overall quality of the function is best demonstrated by its predictive ability, and the function classifies approx. 74% of the cases correctly based on these metric variables.

Insert Table 1 about here

Discussion

We did not find support for the first human capital based hypothesis. CEO's prior working experience in the particular market/industry in which the firm operates was not found to be negatively related to TMT change. Industry-specific expertise and knowledge enable a more accurate evaluation of the environment in terms of customers, suppliers, competitors, technology and the interaction between them (Cooper et al. 1994; Chandler 1996) and inform superior strategic issue processing (Jackson 1992). Experienced managers

may bring with them a network of customers, suppliers, and advisers that help to establish the credibility of the venture as it emerges (Cooper et al. 1994). As for VC-backed academic spin-off firms, industry-specific expertise and knowledge is the next most important resource after finance obtained by academic spin-offs from outside the firm through outside directors (Bjornali and Gulbrandsen 2008). As one fourth of all firms in our sample were identified as academic spin-offs, this may be the possible explanation for not finding the support of our first hypothesis. As for other types of VC-backed start-ups in our sample, that is corporate spin-offs and independent start-ups, we may only speculate that if the CEO does not have prior industry experience, this experience can be obtained in two ways: either through venture capitalists who back start-up or through outside board members with prior industry experience who are former or current CEOs in other companies operating in the same or related industry. Chambers et al. (1998) has shown that it is the balance of experience (prior industry, prior management, functional and start-up experience) that is crucial in new firm success. Future research is needed to examine in more details to which extent the (dis)balance of experience drives the changes in TMT.

Contrary to our expectations, we find a weak support for our next hypothesis that the prior-startup experience of the CEO is negatively related to TMT change in new VC-backed firms. Our firms in the sample are those already financed by the venture capitalists. In VC-backed firms, founders are likely to be replaced with experienced executives as firms grow and age (Hellmann and Puri, 2002) implying that venture capitalists place more emphasis on the presence of executive experience than start-up experience. This also means that prior start-up experience may be more important for the firm when it seeks VC capital. Once VC attracted, the executive experience on the team becomes more important. Further empirical investigation of these issues is needed.

Our data does not allow us to look closer whether the CEO is the original founder or appointed from outside. We can only speculate here in attempt to relating our finding to previous research. In case of CEO being the original founder of the firm Tashakori (1980) concluded that most entrepreneurial owner-founders were not able to make the transition to more formal professional styles of management, thus they may depart from the team leaving the leadership to professional executive. Roberts (1991) referred to “founder’s disease”, and noted that some entrepreneurs were inadequate managers from the start and others could manage the first stages competently but not later stages. We are unable to discern whether the companies from our sample were in earlier or later stages. Future research may want to take this into consideration and investigate in more details the effects of the founder-CEO and outside CEO on the TMT change in early and late stages of the firm growth.

Lastly, another alternative explanation may be linked to the individual characteristics of entrepreneur implying that CEOs with long prior-startup experience may be not interesting in running the company. Instead they may tend to be more attracted by the opportunity of starting a new company once they recognize that their skills are no longer needed in the company they started up (Russo 2008).

We found demographic and functional heterogeneity to be positively related to TMT change, which we measured by diversity items education, industry experience and age. Chandler et al. (2005) have also found support for three out of six indicators of heterogeneity that they used: major field of educations, years of industry experience, and diversity in functional expertise. These indicators all relate to the work activities that individuals perform in the firm, suggesting that individuals bring into the work environment cultural and disciplinary perspectives that impact the organizational dynamic. Teams composed of members whose disciplines and employment background yield alternative paradigmatic approaches appear to result in higher turnover, perhaps due to increasing levels of conflict as previous research suggests (Amason and Sapienza, 1997).

Another stream of research on teams stemming from social psychology suggests a phenomenon of a single “token” group member, which almost all teams have (Thompson 2000). Because they are different, token members attract more attention from others (Lord and Saenz 1985; Taylor et al. 1978) and are more aware of the characteristics that distinguish them from others (Cota and Dion 1986; Frable et al. 1990). Applying to our context of VC-backed high-tech firms such token member can be a VC-appointed CEO in the management team, which mainly consists of the original founders. Such outside CEO may differ from others by representing interests of the VC and emphasizing short-term financial goals, while the original founders may be more focused on the technology the firm is based on. This visibility that distinguishes token members from others in the team can distract such members from their tasks and interfere with their performance (Lord and Saenz 1985).

We hypothesized that high level of conflict within a team is positively related to the TMT change. Our findings do not support this hypothesis. Perhaps, the voluntary nature of participation in an entrepreneurial venture outweighs problems associated with interpersonal relations and group dynamics. In large established firms, internal promotion systems and bureaucratic politics can influence who occupies an executive position leaving incumbent executives with minimal voice in the choice of and little influence over the actions of their executive counterparts. In contrast, entrepreneurial TMTs are often deeply involved in the choice of prospective team members. Because founders decide to band together and subsequent new TMT members both choose to join and are also chosen by their peer incumbents, the interpersonal chemistry appears to be much less problematic in entrepreneurial settings than in established firm settings.

Another characteristic, which may outweigh problems associated with conflicts and which we were not able to control for, is the teams who have affiliation overlap (i.e., having worked for the same firm). Applying to the context of high-tech small firms, it often happens that a group of people have previously worked together on developing the technology while working in either university or large corporation before they decided to leave their jobs and establish the firm based on the developed technology. In the case, in which co-founders come from university, the firm is academic spin-off. In the case, in which co-founder come from the corporation, the firm is corporate spin-off. In our sample the half of all firms who have experienced TMT change was either academic spin-offs or corporate spin-offs. The other half was identified as ordinary start-ups.

The teams with affiliation overlap may be able to communicate effectively with each other and have a common frame of reference, especially since these individuals have chosen to work together in the new venture (Beckman et al. 2007). As previous research shows, founding team members who worked together before appear to be more effective and have greater trust (Eisenhardt and Schoonhoven 1990; Roure and Maidique 1986), and trust is an important component of social capital (Coleman 1988). These common work experiences may increase the likelihood that individuals have similar priorities and vocabularies and has been shown to affect the development of common beliefs and cultures (Chattopadhyay et al. 1999). With affiliation overlap, the internal network is likely to be stronger, with straightforward discussions and a clear sense of appropriate actions. This may lead to fewer conflicts, and thus fewer changes in the TMT. These common work experiences may also increase the sense of belonging, which is the indicator of team cohesion (Ensley et al. 2002). Teams whose members experience a high sense of belonging are shown to be better able to manage conflict than teams with a lower sense of belonging, thus, experiencing fewer TMT changes (Ensley et al. 2002). A detailed analysis of conflict in entrepreneurial top management teams is an interesting research path; however, it lies beyond the scope of this study.

As for the team size, we hypothesized that the increased team size is positively associated with TMT changes. This hypothesis was not supported. Also the previous research

shows contradicting results. A big problem of large teams has to do with the equality of member participation (Thompson 2000). Shaw (1981) shows that the equality of individual members' contributions decreases dramatically as group size increases. In contrast, there are advantages to smaller teams. Members of smaller teams work harder, engage in a wider variety of tasks, assume more responsibility for the team's performance, and feel more involved in the team (Arnold and Greenberg 1980; Thompson 2000). Having reviewed team literature Birley and Stockley (2000) concluded that no mention of optimum team size has been made. One research shows that large teams have been associated with success and faster decision-making (Eisenhardt and Schoonhoven 1990). Other research has failed to demonstrate that team size confers significant advantages, showing that large teams have a greater potential for heterogeneity (Jehn 1995), slowing decision-making (Hambrick et al. 1996) and increasing conflict level (Amason and Sapienza 1997). Taken all arguments together, we may speculate that the relation between team size and TMT change is curve-linear, in which too small and too large teams lead to the TMT changes depending on the firm's stage of development. Future research may want to investigate closer this relationship.

We found CEO tenure in the new venture to be negatively related to the change in the TMT, which is the support for our sixth hypothesis. We hypothesized that the longer the champion stays on the team, more commitment he or she gets to the team and more experience he or she gets of leading the team, and that the longer CEO's tenure may serve as an indicator of the team members working well together under his/her supervision. This appears to be confirmed and in line with previous research. Again, we do not know whether the CEO is also the original founder. However, founders were shown to be central to the creation of the firm (Schein 1983), and in technology-based firms, they may be central to the invention of the technology used by the firm (Chandler and Hanks 1998). The technological champion of the new venture team often automatically becomes CEO. This automatic evolution of the champion role into that of the business manager was demonstrated in the longitudinal studies by Burgelman (1983) and Clarysse and Moray (2004) showing that the transformation process from technological champion to the venture manager occurs almost naturally and automatically. In case of the outside or VC-appointed CEO, CEO's tenure may serve as an indicator of being not only a good leader, but also a person with a high integrating ability and the ability of overcoming difficulties of being a token member in the team.

We found the presence of covenant to potentially force a change in the TMT to be positively related to the TMT change. We hypothesized that with the help of the dismissal covenant VC directors can adjust an entrepreneurial TMT's demographic and cognitive composition according to the venture's needs, in terms of development stage and venture environment. For instance, using this covenant VCs may appoint the outside CEO after the initial VC funding is made and when the need for more professional management becomes clear. Assuming that VCs are not concentrated on short-term goals, which may be detrimental for the new ventures, but that they are adding value to the firm focusing on long-term goals, the covenant may be considered as an important tool to bring the venture on the path of long-term and stable growth. Future studies may explore in-depth how VCs use to implement the covenant to potentially force a change in the TMT (dismissal covenant) and under which conditions and when the dismissal covenant may serve as an appropriate tool for maintaining the desired team heterogeneity and cognitive composition in VC-backed high-tech start-ups.

Conclusions

The growing interest in entrepreneurial teams represents a promising and important development in the domain of entrepreneurship research. In this article, we have advanced that particular line of work dealing with the antecedents of top management team change in venture capital-backed young firms. In this paper we use multiple theoretical perspectives to explore the factors that drive the change in TMT in new VC-backed firms.

We find demographic and functional team heterogeneity, CEO tenure and prior start-up experience, and the presence of dismissal covenant to be positively related to the TMT change. We also examined and did not find support for team size and team conflict's relation to TMT change, which we tried to account for in this study.

Our work adds to existing research in a number of different ways. First, we have clarified the existing state of knowledge on TMT change in new VC-backed ventures by elaborating on the theoretical explanations and complementing to existing theoretical frameworks that underlie the past empirical work. In particular, by employing the human capital, organizational demography and life cycle approaches, we have helped to integrate past work with well-established theories and literature from various domains relevant to management research. Second, in contrast to the bulk of TMT research, which has been conducted on existing large firms from the US, we add to growing research on entrepreneurial teams by providing empirical evidence on VC-backed start-ups from outside US, namely Norway.

There may be some differences in the Norwegian and US culture and business environment. However, Hofstede (1984) shows that the United States and Norway are relatively close to each other with respect to individualism, power distance, and uncertainty avoidance. In his plots showing overall cultural similarity, the United States, Norway and Canada fall in one cluster. This suggests that there are many more similarities than dissimilarities between the cultures of the United States and Norway. We cannot eliminate a competing cultural explanation, but believe the effects that we have attributed to the VC-backed ventures and entrepreneurial setting to have a greater influence than cultural differences.

Our data are not as complete and extensive as data for more established firms. Our study is an exploratory study with a limited number of cases, in which we use a less stringent significance level as decision criterion. However, we attempt to integrate our empirical results with well established literature and past research on teams and identify the specific aspects of TMT change in VC-backed new ventures that are especially interesting and promising. While discussing the results we suggest future research directions that may be helpful to researchers seeking to further explore these issues. In particular, we suggest for the futures studies to distinguish between founder-CEO and outside or VC-appointed CEO. Our findings also suggest, in line with other team studies (e.g. Chandler et al. 2005), that when studying the factors driving the changes in the TMT it is important to take into consideration the firm's stage of development.

References

- Amason, A., 1996. Distinguishing the effects of functional and dysfunctional conflict on strategic decision making: resolving a paradox for top management teams. *Academy of Management Journal* 39 (1), 123–148.
- Amason, A.C., Sapienza, H.J., 1997. The effects of top management team size and interaction norms on cognitive and affective conflict. *Journal of Management* 23 (4), 495–516.
- Arnold, D.W., C.I. Greenberg 1980. Deviate Rejection Within Differentially Manned Groups. *Social Psychology Quarterly*, 43(4), 419-424.
- Ashby, W.R., 1956. *An Introduction to Cybernetics*. Chapman and Hall, London.
- 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.
- Baxter, C., P. Wing, Anderson B. And S. Kayll, 2007. Selection, recruitment and development of the spinout management team. In Tang, K. et al. (eds.) *Taking research to market : how to build and invest in successful university spinouts*. London: Euromoney books, 249 s..
- Beckman, C. M., M. D. Burton and C. O'Reilly, 2007. Early teams: The impact of team demography on VC financing and going public. *Journal of Business Venturing* 22, 147-173.
- Birley, S., S.Stockley 2000. *Entrepreneurial teams and venture growth*. In The Blackwell Handbook of Entrepreneurship.
- Bjornali, E., Gulbrandsen, M. 2008 “Exploring board formation and evolution of board composition in academic spinouts”, *Journal of Technology Transfer*, article under revision.
- Boeker, W., Wiltbank, R., 2005. New venture evolution and managerial capabilities. *Organization Science* 16, 123– 133.
- Burgelman, R.A., 1983. A process model of internal corporate venturing in the diversified major firm. *Administrative Science Quarterly*, 28, 223–244.
- Chambers, B.R., S.L. Hart, D.R. Dennison 1988. Founding team experience and new firm performance. In B.A. Kirchoff et al. (eds.), *Frontiers of entrepreneurship research*. Wellesley, MA: Babson College.: 106-118.
- Chandler, G.N. 1996. Business Similarity as a Moderator of the Relationship between Pre-Ownership Experience and Venture Performance. *Entrepreneurship: Theory and Practice*, 20 (3): 51-63.
- Chandler, G.N., Hanks, S.H., 1998. An examination of the substitutability of founders' human and financial capital in emerging business ventures. *Journal of Business Venturing* 13, 353– 369.
- Chandler, G.N., Honig, B., Wiklund, J., 2005. Antecedents, moderators, and performance consequences of membership change in new venture teams. *Journal of Business Venturing* 20, 705– 725.
- Chattopadhyay, P., Glick, W., Miller, C., Huber, G., 1999. Determinants of executive beliefs: comparing functional conditioning and social influence. *Strategic Management Journal* 20, 763–789.
- Clarysse, B. and N. Moray 2004. "A process study of entrepreneurial team formation: The case of a research-based spin-off." *Journal of Business Venturing* 19(1): 55-79.
- Coleman, J.S., 1988. Social capital in the creation of human capital. *American Journal of Sociology* 94, S95–S120 (Supplement).
- Cooper, A.C. & Daily, C.M. 1997. *Entrepreneurial teams, entrepreneurship 2000*. Chicago: Upstart Publishing.
- Cooper, A.C., Gimeno-Gascon, F.J., Woo, C.Y., 1994. Initial human and financial capital as predictors of new venture performance. *Journal of Business Venturing* 9, 371–395.
- Cota, A.L., Dion, K.L. 1986, “Saliency of gender and sex composition of ad hoc groups: An experimental test of distinctiveness theory”. *Journal of Personality and Social Psychology*, 50(4), 770-776.
- Deakins, D., O'Neill, E. and Mileham, P. , 2000. 'The role and influence of external directors in small, entrepreneurial companies: some evidence on VC and non-VC appointed external directors', *Venture Capital - An international journal of entrepreneurial finance*, 2:2, 111 – 127.
- Dorf R.C., Byers T.H., 2007. *Technology ventures: from idea to enterprise*. Boston: McGraw-Hill, 664 s.
- Eisenhardt, K., Schoonhoven, C.B., 1990. Organizational growth: linking founding team strategy, environment, and growth among U.S. semiconductor ventures, 1978–1988. *Administrative Science Quarterly* 35, 504– 529.
- Ensley M. D., A. W. Pearson and A.C. Amason 2002. Understanding the dynamics of new venture top management teams: cohesion, conflict, and new venture performance. *Journal of Business Venturing*, 17 (4): 365-386.

- Ensley, M. D. and K. M. Hmieleski 2005. "A comparative study of new venture top management team composition, dynamics and performance between university-based and independent start-ups." *Research Policy* 34(7): 1091-1105.
- Ensley, M. D., J. C. Carland, J. W. Carland and M. Banks 1999. "Exploring the existence of entrepreneurial teams." *International Journal of Management* 16(2): 276-286.
- Fiet, J. O., Busenitz, L. W., Moesel, D. D., & Barney, J. B. 1997. Complementary Theoretical Perspectives on the Dismissal of New Venture Team Members. *Journal of Business Venturing*, 12: 347-366.
- Forbes, D. P., P. S. Borchert, M.E. Zellmer-Bruhn, H.J. Sapienza. 2006. "Entrepreneurial Team Formation: An Exploration of Member Addition." *Entrepreneurship Theory and Practice*, March.
- Frable, D.E., T. Blackstone, C. Scherbaum 1990. Marginal and mindful: Deviants in social interactions. *Journal of Personality and Social Psychology*, 59(1), 140-149.
- Franke, N. M. Gruber, D. H, J. Henkel 2006. What you are is what you like—similarity biases in venture capitalists' evaluations of start-up teams. *Journal of Business Venturing*, 21, 802–826.
- Gimeno, J., Folta, T., Cooper, A., Woo, C., 1997. Survival of the fittest? Entrepreneurial human capital and the persistence of underperforming firms. *Administrative Science Quarterly* 42, 750–783.
- Glick, W. H., Miller, C. C., & Huber, G. P. 1993. The impact of upper-echelon diversity on organizational performance. In G. P. Huber & W. H. Glick: *Organizational Change and Redesign: Ideas for Insights for Improving Performance*. New York, NY: Oxford University Press.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. 1998. *Multivariate Data Analysis*. Upper Saddle River, New Jersey: Prentice Hall.
- Hambrick, D.C., T.S. Cho, M.J. Chen 1996. The Influence of Top Management Team Heterogeneity on Firms' Competitive Moves. *Administrative Science Quarterly*, Vol. 41, No. 4, 659-684
- Harrison, D. A., Price, K. H., & Bell, M. P. 1998. Beyond rational demography: Time and the effects of surface- and deep-level diversity on work group cohesion. *Academy of Management Journal*, 41, 96-107.
- Hellmann, T., Puri, M., 2002. Venture capital and the professionalization of start-up firms: empirical evidence. *Journal of Finance* 57, 169– 197.
- Hoang, H., Antoncic, B., 2003. Network based research in entrepreneurship: a critical review. *Journal of Business Venturing* 18 (2), 165– 187.
- Hofstede, G., 1984. *Culture's Consequences: International Differences in Work Related Values*. Sage Publications, London.
- Jackson, S.E. 1992. Consequences of group composition for the interpersonal dynamics of strategic issue processing. In P. Shrivastava et al. (eds.), *Advances in Strategic Management*, vol. 8 Greenwich, CT: JAI Press, 345-382.
- Jackson, S.E., Brett, J.F., Sessa, V.I., Cooper, D.M., Julin, J.A., Peyronnin, K., 1991. Some differences make a difference: individual dissimilarity and group heterogeneity as correlates of recruitment, promotions, and turnover. *Journal of Applied Psychology* 76 (5), 675–689.
- Jehn, K.A. 1995. A multimethod examination of the benefits and detriments of intragroup conflict. *Administrative Science Quarterly*, 40: 256-282.
- Jehn, K.A. 1997. A Quantitative Analysis of Conflict Types and Dimensions in Organizational Groups *Administrative Science Quarterly*, Vol. 42.
- Jehn, K.A., Chadwick, C., Thatcher, S.M.B., 1997. To agree or not to agree: the effects of value congruence, individual demographic dissimilarity, and conflict on workgroup outcomes. *International Journal of Conflict Management* 8 (4), 287–305.
- Kamm, J. B., J. C. Shuman, J. A. Seeger and A. J. Nurick 1990. "Entrepreneurial Teams in New Venture Creation: A Research Agenda." *Entrepreneurship Theory and Practice* 14(4): 7.
- Kazanjian R.K. 1988. Relation of Dominant Problems to Stages of Growth in Technology-Based New Ventures. *Academy of Management Journal*, 31, 2, 257-279.
- Lord, C.G., D.S. Saenz 1985. Memory deficits and memory surfeits: differential cognitive consequences of tokenism for tokens and observers. *Journal of personality and social psychology*, 49, 918-926.
- MacMillan, I.C., Kulow, D.M., & Khoylian, R. 1989. Venture capitalists' involvement in their investments: Extent and performance. *Journal of Business Venturing*, 4, 27–47.
- Reagans, R., Zuckerman, E., McEvily, B., 2004. How to make the team: social networks versus demography as criteria for designing effective teams. *Administrative Science Quarterly* 40 (1), 101– 133.
- Roberts, E.B., 1991. *Entrepreneurs in High Technology: Lessons from MIT and Beyond*. Oxford University Press, New York.

- Roure, J., Maidique, M., 1986. Linking prefunding factors and high-technology venture success: an exploratory study. *Journal of Business Venturing* 1, 295–306.
- Rubenson, G.C., Gupta, A.K., 1996. The initial succession: a contingency model of founder tenure. *Entrepreneurship Theory and Practice* 21, 21–36.
- Russo, P. 2008. Lecture on “The trends in the entrepreneurship”, NTNU 15.April.
- Sapienza, H. J. and Gupta, A. K. 1994 Impact of agency risks and task uncertainty on venture capitalist-entrepreneur relations, *Academy of Management Journal*, 37: 1618-1632.
- Sapienza, H. J., Korsgaard, M. A., Goulet, P. K. and Hoogendam, J. P. , 2002. “Effects of agency risks and procedural justice on board processes in venture capital-backed firms”, *Entrepreneurship & Regional Development*, 12:4, 331 - 351
- Sarasvathy, S., 2001. Causation and effectuation: toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review* 26 (2), 243–263.
- Schefczyk, M., Gerpott, T.J., 2000. Qualifications and turnover of managers and venture capital-financed firm performance: an empirical study of German venture capital-investments. *Journal of Business Venturing* 16, 145– 163.
- Schein, K.H. 1983. The Role of the Founder in Creating Organizational Culture. *Organizational Dynamics*, 1, 13-28.
- Shah, P., & Jehn, K. 1993. Do friends perform better than acquaintances? The interaction of friendship, conflict and task. *Group Decision and Negotiation*, 2: 149-166.
- Shane, S. 2004. *Academic Entrepreneurship: university spinoffs and wealth creation*. Massachusetts, USA, Edward Elgar Publishing
- Shaw, M.E. 1981. *Group dynamics: the psychology of small group behaviour*. McGraw-Hill series in psychology. New York : McGraw-Hill.
- Smith, K.G., Smith, K.A., Olian, J.D., Sims, H.P., O’Bannon, D.P., Scully, J.A., 1994. Top management team demography and process: the role of social integration and communication. *Administrative Science Quarterly*, 39, 412–438.
- Starr, J.E., MacMillan, I.C., 1990. Resource cooptation via social contracting: resource acquisition strategies for new ventures. *Strategic Management Journal* 11 (1), 79–92.
- Stevenson, H. & Gumpert, D. (1985). The heart of entrepreneurship. *Harvard Business Review*, 63, 85–94.
- Tashakori, M. 1980. *Management succession: From the owner-founder to the professional president*. New York: Praeger.
- Taylor S.E., S.T. Fiske, N.L. Etcoff, A.J. Ruderman 1978. Categorical bases of person memory and stereotyping. *Journal of Personality and Social Psychology*, 36, 778-793.
- Thompson, L. L. 2000. *Making the team: a guide for managers*. Upper Saddle River, NJ : Prentice Hall.
- Timmons, J.A. 1979. Careful self-analysis and team assessment can aid entrepreneurs. *Harvard Business Review*, November-December, 198-206.
- Ucbasaran, D., Lockett, A., Wright, M., Westhead, P., 2003. Entrepreneurial founder teams: factors associated with member entry and exit. *Entrepreneurship Theory and Practice* 28 (2), 107–127.
- Vanaelst, I., B. Clarysse, et al. 2006. "Entrepreneurial Team Development in Academic Spinouts: An Examination of Team Heterogeneity." *Entrepreneurship Theory and Practice*: 1042-2587.
- Vohora, A., M. Wright and A. Lockett, 2004. "Critical junctures in the development of university high-tech spinout companies." *Research Policy* 33: 147-175.
- Wagner, W., Pfeffer, J., O’Reilly III, C.A., 1984. Organizational demography and turnover in top management groups. *Administrative Science Quarterly*, 29, 74–92.
- Wiersema, M.F., Bird, A., 1993. Organizational demography in Japanese firms: group heterogeneity, individual dissimilarity, and top management team turnover. *Academy of Management Journal* 36 (5), 996–1025.
- Williams, K., O’Reilly, C., 1998. Demography and diversity in organizations: a review of 40 years of research. *Research in Organizational Behavior* 20, 77– 140.
- Zacharakis, A.L. & Meyer, D.G. 1998. A lack of insight: Do venture capitalists really understand their own decision process? *Journal of Business Venturing*, 13, 57–76.

Figures and Tables

Figure 1

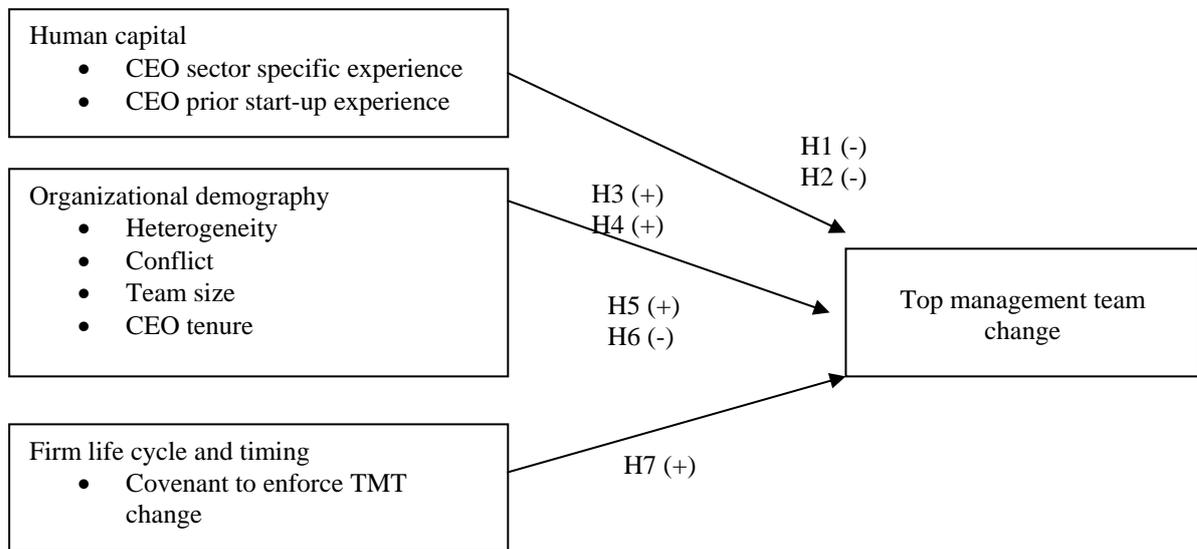


Table 1: Group means and their F equivalents

	Change	No change	F	Sig.	
CEO experience within the industry	11,24	14,94	2,717	,105	Not supported
CEO involvement in previous start-ups	2,12	1,38	2,744	,103	Supported*
Team heterogeneity	,43	-,27	8,684	,005	Supported
Team conflict	,21	-,11	1,433	,236	Not supported
# of team members	4,00	4,44	,786	,379	Not supported
CEO company exp	4,10	6,64	3,366	,072	Supported*
Mechanism in the contract with the VC_ conditions to force a change in the management team	3,32	2,22	5,175	,027	Supported

*As this is an exploratory study with a limited number of cases, we apply a less stringent significance level (.1) as a decision criterion.