

New Venture Teams: A Review of the Literature and Roadmap for Future Research

Anthony C. Klotz

Oregon State University

Keith M. Hmieleski

Texas Christian University

Bret H. Bradley

Lowell W. Busenitz

University of Oklahoma

As entrepreneurship research has matured, scholars have increasingly recognized that the formation of new ventures is commonly accomplished by teams as opposed to lone entrepreneurs. Over the past two decades, the upper echelons perspective has served as the primary lens for investigating new venture team functioning and performance. However, researchers have begun to move beyond the relationship between team characteristics and team outcomes, to explore intermediary mechanisms that more precisely explain how team inputs lead to team effectiveness. In this article we apply an inputs-mediators-outcomes framework, which has served as a foundation for teams research in organizational behavior over the past 50 years, to first organize and review prior work on new venture teams, and then to provide a roadmap for future research. By integrating the upper echelons approach from strategic management with the inputs-mediators-outcomes framework from organizational behavior, we clarify what is known about new venture teams and shed light on important issues that could help the field of entrepreneurship to develop a more comprehensive understanding of why some new venture teams, but not others, achieve successful outcomes.

Keywords: *new venture teams; entrepreneurship; founding teams; top management teams/upper echelon; group processes*

Corresponding author: Anthony C. Klotz, Oregon State University, College of Business, 339 Bexell Hall, Corvallis, OR, 97330, USA.

E-mail: anthony.klotz@bus.oregonstate.edu

When a start-up is successful, substantial credit is often attributed to the lone genius of the lead founder. Similarly, entrepreneurship research has largely focused on the influence of the lead founder as the active element driving the creation and development of new ventures (Baron, 2007). However, the vast majority of new ventures are founded and led by teams, rather than by individuals (Cooper, Woo, & Dunkelberg, 1989; Kamm, Shuman, Seeger, & Nurick, 1990; Lechler, 2001; Reynolds & White, 1997; West, 2007). Indeed, Beckman (2006) found that 90% of the new ventures sampled in her research were started by teams, not solo entrepreneurs. Furthermore, the results of a study by Ensley, Hmieleski, and Pearce (2006) showed that the shared leadership of new venture teams (NVTs) accounted for 10% to 15% of variance in firm performance above and beyond that which was accounted for by the vertical leadership of founding CEOs. Overall, there is strong evidence suggesting that NVTs are common and play an influential role in the development and performance of start-up firms (Carland & Carland, 2012).

While entrepreneurship research has begun to more frequently investigate phenomena related to NVTs, work on this topic has been fragmented. Thus, it lacks an organizing structure through which current knowledge can be summarized and from which future research directions can be drawn. As such, the primary goals of this article are to organize the extant literature on NVTs, to lay a foundation for subsequent work by identifying gaps in current knowledge of NVT functioning, and to highlight new avenues for future research.

The NVT Domain

What Constitutes an NVT?

We broadly define a new venture as a firm that is in its early stages of development and growth. In general, such firms are in the process of bringing their initial products/services to market, forming a customer base, and putting into place organizational processes and procedures. Some authors define new ventures based on the age and/or size of the firm (e.g., Amason, Shrader, & Tompson, 2006; Zahra, Ireland, & Hitt, 2000). We avoid doing so here because such boundary conditions tend to be context-specific and range in their appropriateness based on industry characteristics (e.g., complexity, technological intensity).

Teams leading new ventures have been referred to by a number of different terms, such as founding teams, entrepreneurial teams, or start-up teams. Prior definitions of these related terms have primarily focused on whether members have invested directly in the firm. For instance, Cooney (2005: 229) describes entrepreneurial teams as “two or more individuals who have a significant financial interest and participate actively in the development of the enterprise.” Focusing only on team members with a financial interest in the new venture, however, potentially ignores those who hold key leadership positions, but do not have a significant financial stake in the firm. At the same time, including all persons who are actively involved in new venture development could include investors who do not serve any functional role within the firm and board members who are not actively engaged in operations and strategic decisions. Since we are focused on the initial leadership of new ventures, we use the term new venture team (NVT) to describe *the group of individuals that is chiefly responsible for the strategic decision making and ongoing operations of a new venture*.

In so doing, NVTs include all team members that actively participate in both the development *and* implementation of the evolving strategy of new ventures (e.g., setting the vision

and mission, acquiring resources, recruiting employees). Conceptually, this definition is equivalent to that of a new venture top management team (TMT), but we avoid using this term because many researchers have defined TMTs based on specific functional titles and roles in larger organizations (e.g., vice president of finance; Boeker, 1997; Hambrick, Cho, & Chen, 1996; Sanders & Carpenter, 1998), whereas NVT members often lack clear titles and frequently play leadership roles across a wide range of business areas. Furthermore, when a new venture is started by family members, the NVT may include or be wholly composed of close relatives (Chua, Chrisman, Kellermanns, & Wu, 2011); however, even in these cases it is responsibility for the venture's strategy and operations, not familial relation, that determines NVT membership.

The Unique Nature of the New Venture Context

There are several reasons why the new venture context presents a unique and meaningful setting in which to study teams. First, there are few substitutes and blockers of leadership in new ventures; thus, NVTs must direct their start-ups through the various stages of the entrepreneurial process (Ensley et al., 2006). Second, the new venture context is characteristic of weak social situations in which there are few established norms with respect to appropriate behavior (Mischel, 1977). Thus, NVTs create the initial policies and procedures of their company, recruit the firm's first employees, and shape the culture of the organization (Staw, 1991). Third and finally, because NVTs have arguably greater managerial discretion and wider latitude of action than most teams (Hambrick & Abrahamson, 1995), their behavior has important imprinting effects on how the organization develops and grows over time. Moreover, elements of such imprinting effects often last well beyond the tenure of the NVT (Johnson, 2007). In sum, the business context facing NVTs is quite distinct from that of TMTs in established firms and other types of teams (e.g., project teams, virtual teams) operating at lower levels in organizations.

Integrating Upper Echelons Within Inputs-Mediators-Outcomes

Much of the existing research on NVTs has employed an upper echelons (UE) perspective from strategic management, exploring the relationship of TMT characteristics and behaviors with firm performance. Because the UE perspective considers the association of top executives' characteristics and behaviors with organizational outcomes (Hambrick, 2007), it has provided a useful lens through which to investigate the effect of NVTs on firm performance. Nonetheless, an important limitation of most UE research in entrepreneurship is its focus on relationships between TMT inputs (e.g., team member characteristics) and firm-level outcomes (e.g., profitability, revenue growth), to the exclusion of critical mediating mechanisms and moderating factors (Ilgen, Hollenbeck, Johnson, & Jundt, 2005; for exceptions see Barrick, Bradley, Kristof-Brown, & Colbert, 2007, and Smith, Smith, Olian, Sims, O'Bannon, & Scully, 1994). This limitation partly stems from the fact that entrepreneurship scholars have tended to emulate strategic management researchers by emphasizing main effects from secondary data to examine team-level phenomena. The examination of team-level mediating mechanisms, however, typically requires the collection and analysis of primary data. Entrepreneurship researchers have only recently begun investigating mediators of NVT

inputs and outcomes using primary data (e.g., Hmieleski, Cole, & Baron, 2012; Souitaris & Maestro, 2010), and we therefore know quite little about *how* and *when* NVTs influence the performance of start-ups.

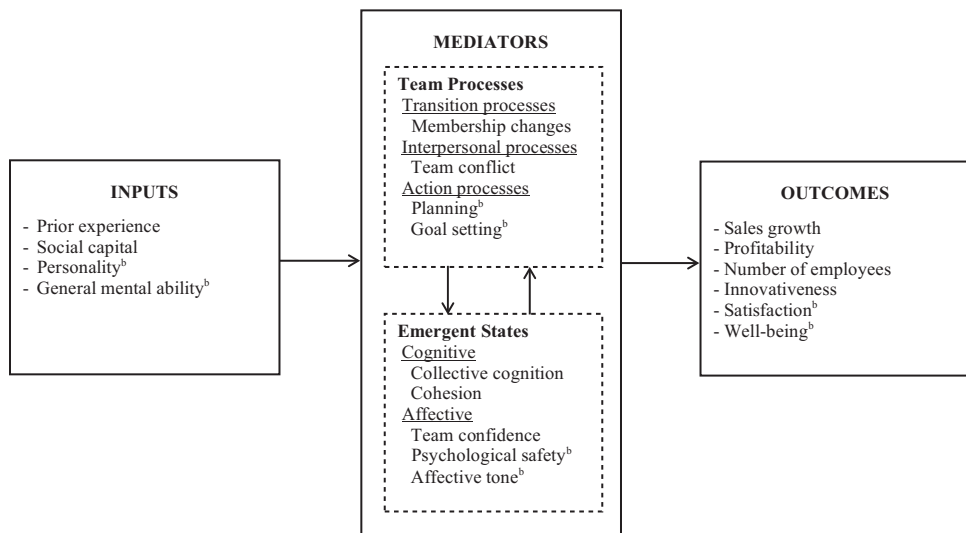
In contrast, within the field of organizational behavior, team processes have long been studied using an inputs-mediators-outcomes (IMO) framework (Mathieu, Maynard, Rapp, & Gilson, 2008; McGrath, 1964). This framework seeks to understand group performance and other team-level outcomes (O) as the consequence of the inputs (I) and mediators (M) that determine them. This perspective has produced considerable knowledge about team dynamics and performance that can inform NVT research beyond what the use of UE has yielded. Most notably, the UE perspective tends to overlook teamwork mechanisms that connect the inputs of executive teams with organizational outcomes. Stated differently, little research in the UE literature has examined the black box between TMT inputs and firm performance (Carpenter, Geletkanycz, & Sanders, 2004). On the other hand, teams researchers have spent decades studying the complexities of the vast middle ground that connects team inputs to team outcomes. Due to its comprehensive nature in capturing and categorizing nearly all aspects of team functioning, and the extensive empirical evidence and broad theoretical foundations on which it lies, we propose that the IMO framework provides a robust foundation from which entrepreneurship researchers can extend the study of NVTs.

Following the IMO model displayed in Figure 1, our article begins by reviewing studies that focus on NVT *inputs* (e.g., prior experience and social capital). We then discuss studies that have investigated mediators of the relationship between NVT inputs and new venture outcomes. Next, we examine the outcome of interest in most NVT studies—measures of firm performance (e.g., profitability, sales growth, employee growth). In this section, we also consider other team-level outcomes that may be of interest to entrepreneurship researchers. Within each section of our review, future directions for research are provided. We conclude with some overall observations regarding the current state of the NVT literature that are made apparent by our review, including existing gaps in knowledge and theoretical and methodological considerations for advancing this stream of research. In so doing, we not only contribute to the entrepreneurship literature by highlighting opportunities for NVT research, but also form linkages between UE research within strategic management and team effectiveness research within organizational behavior.

Scope of the Literature Review

Our review includes articles on NVTs in major management and entrepreneurship journals (*Academy of Management Journal*, *Academy of Management Review*, *Strategic Management Journal*, *Journal of Management*, *Organization Science*, *Management Science*, *Administrative Science Quarterly*, *Journal of Business Venturing*, *Entrepreneurship Theory and Practice*, *Journal of Small Business Management*, and *Strategic Entrepreneurship Journal*). Furthermore, the leading organizational behavior journals (*Journal of Applied Psychology*, *Organizational Behavior and Human Decision Processes*, *Journal of Organizational Behavior*, and *Leadership Quarterly*) were also included. Within these journals, we searched for combinations of the following terms with the word “team(s)”: start-up, entrepreneurial, new venture, founding, and nascent. This search yielded 42 empirical articles focused on NVTs that form the basis of our review and are presented in Table 1.

Figure 1
New Venture Team (NVT) Input-Mediators-Outcome (IMO) Framework^a



^aThe model includes common input, mediating, and outcome variables studied within the NVT literature. The list accompanying each type of variable is meant to be illustrative, rather than exhaustive.

^bThese constructs have not yet been widely examined in the NVT literature, but are offered in this review as directions for future research.

NVT Inputs

Consistent with the UE perspective, and as shown in Figure 1, most NVT research has examined the initial inputs of such teams, including how their demographic characteristics, composition, and social connections are associated with the development and performance of their ventures. Much like the stream of research seeking to determine the individual traits of successful entrepreneurs (e.g., Unger, Rauch, Frese, & Rosenbusch, 2011; Zhao & Seibert, 2006), entrepreneurship researchers have attempted to identify the essential ingredients for building effective NVTs. However, there appears to be no single set of factors that consistently predicts team effectiveness across all start-up and/or industry environments (Hmieleski & Ensley, 2007). There are, however, a number of more nuanced findings that have emerged with respect to the importance of certain NVT inputs.

NVT Prior Experience

The prior experience of NVT members has received the bulk of research attention on NVT inputs. The effect of this experience, conceptualized as the educational level, specialization, and functional background of team members (Amason et al., 2006), as well as prior company affiliation (Beckman, 2006), educational prestige (Lester, Certo, Dalton, Dalton, & Cannella, 2006), and prior success (Nelson, 2003) on firm outcomes has been integral to the study of

Table 1
New Venture Team (NVT) Studies.

Study	Sample	Inputs	Mediators	Outcomes	Key Findings
Amazon, Shrader, and Tompson (2006)	174 high-potential new ventures	Team size, team heterogeneity	N/A	New venture performance (sales, profitability, stock market performance)	As venture novelty and team heterogeneity increase, new venture performance decreases.
Barney, Busenitz, Fiet, and Moesel (1996)	837 new ventures with at least one round of VC funding	Team industry experience, team tenure in current venture	N/A	Acceptance of management advice from VC, new venture financial performance, venture technological innovativeness	Teams that have worked together in another industry welcome VC advice, those who have worked together in the new venture's industry are less likely to seek this advice.
Beckman (2006)	170 young high-tech firms	Team members' prior company affiliations	N/A	Exploration and exploitation behaviors, firm growth (measured by number of employees)	Teams with similar prior company affiliations engage in exploitation; those with diverse prior company affiliations engage in exploration. Teams with both common and diverse prior company affiliations foster venture growth.
Beckman and Burton (2008)	167 young and small high-technology firms	Breadth and depth of teams' prior functional experience	N/A	Functional organizational structure, member functional experience, time to VC, time to IPO	Broadly experienced teams receive VC and reach IPO faster than teams with narrow prior experience.
Beckman, Burton, and O'Reilly (2007)	161 young high-tech firms	Diversity of team prior company affiliations and prior experiences	Entrants to and founder exits from team ^a	Ability to attract VC and complete IPO	Team functional heterogeneity, prior management experience, prior affiliation diversity, and new member entrances help firms gain VC and complete IPOs.
Boeker and Wiltbank (2005)	86 semiconductor firms	Firm growth, strategic diversity, team experience, functional diversity, ownership, board independence, VC involvement	Changes to team ^a	N/A	Team industry experience and greater functional diversity negatively related to team member changes. Manager ownership negatively relates to team member change; CEO/VC ownership positively relates to team member change.
Brinckmann and Hoegl (2011)	178 German high-tech firms	N/A	Teamwork and collaboration with extrafirm individuals (relational capabilities) ^a	Team member additions, firm employment growth, and sales growth	Teamwork limits future team growth; team relational capability relates to team, employment, and sales growth.
Brinckmann, Salomo, and Gemuenden (2011)	212 German new tech-based firms	Team financial management competence (strategic, external financing, financing through operations, and controlling)	N/A	New venture sales and employment growth	Team financial competence is related to new venture sales and employment growth.

(continued)

Table 1 (continued)

Study	Sample	Inputs	Mediators	Outcomes	Key Findings
Bruneel, Yli-Renko, and Clarysse (2010)	114 young Belgian tech firms	Team experiential learning, congenial learning (based on prior experience), and interorganizational learning	N/A	Firm internationalization (foreign sales weighted by geographical and psychic distance from home market)	The lower a team's experiential learning, the stronger international experience and interorganizational learning relates to firm internationalization.
Busenitz, Fiet, and Moesel (2004)	183 VC-backed ventures	N/A	Team member dismissals ^a	Venture exits	NVT member exits caused by VC's negatively related to firm survival.
Busenitz, Fiet, and Moesel (2005)	183 VC-backed ventures	Team ownership of venture equity and individual wealth invested in venture	N/A	Venture exits	Team value signals and commitment signals do not relate to venture performance.
Busenitz, Moesel, Fiet, and Barney (1997)	116 firms funded by VCs	Governance mechanisms, team member industry experience, firm tenure, team tenure	Team perception of fairness of relations with VC ^b	N/A	Teams that have already worked together in another firm, but different industry, view VC involvement more positively.
Chaganti, Watts, Chaganti, and Zimmerman-Treichel (2008)	52 Internet ventures	Presence of ethnic immigrants on founding team, team size, team member age	N/A	Venture strategy, annual growth rate in sales, assets, and employees	Teams with ethnic immigrants pursue more aggressive strategies than those without; venture growth rate was the same for both groups. The effect of ethnic immigrants was stronger in small or younger teams.
Chandler, Honig, and Wiklund (2005)	408 Swedish emerging firms; 124 five-year-old ventures in the United States	Environmental dynamism, firm stage of development, team heterogeneity, team size	Team member departures and additions ^a	Venture performance (firm reached profitability; self-reported)	Larger teams experience higher turnover than smaller ones. Adding team members relates to lower firm performance, whereas member departures positively associate with firm performance.
Chowdhury (2005)	79 new ventures between two and five years old	Team member age, gender, and functional background diversity	Team commitment, team cognitive comprehensiveness ^b	Team effectiveness (self-reported)	Age, gender, and functional background diversity did not relate to team effectiveness. Commitment and cognitive comprehensiveness positively relate to effectiveness.
Eisenhardt and Schoonhoven (1990)	92 new semiconductor firms	Previous joint work experience, team size, heterogeneity of industry experience	N/A	Firm sales growth	Team size, past joint work experience, and heterogeneity in industry experience associate with higher sales growth.
Ensley, Hmieleski, and Pearce (2006)	66 U.S. start-ups; 154 young U.S. ventures	N/A	Vertical and shared leadership within team ^b	Annual revenue growth, employment growth rate	Both vertical and shared leadership predicted firm performance, although the effects of shared leadership were more robust.

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Table 1 (continued)

Study	Sample	Inputs	Mediators	Outcomes	Key Findings
Ensley and Pearce (2001)	158 fast-growing private firms	N/A	Cognitive and affective team conflict ^a ; team cohesion, shared strategic cognition ^b	Sales growth and profitability	Cohesion negatively related to cognitive and affective commitment. Cognitive conflict enhanced shared strategic cognition and firm performance; affective conflict harmed firm performance.
Ensley, Pearson, and Amazon (2002)	70 fast-growing private firms	N/A	Cognitive and affective team conflict ^a ; team cohesion ^b	Venture sales growth and profitability	Team cohesion negatively relates to affective conflict, but positively relates to cognitive conflict, which positively relates to venture growth.
Fern, Cardinal, and O'Neill (2012)	120 new entrants into the air transportation industry	Team member shared and unique knowledge/experience	N/A	Selection of product market, geographic market, and resource	Shared experience predicts geographic market selection; unique knowledge of team members predicts selection of all three outcomes.
Fiet, Busenitz, Moesel, and Barney (1997)	205 new firms with at least one round of VC funding	Covenantal team member salary limitations	Team member dismissals ^a		Covenants that limited venture manager salaries led to fewer team dismissals.
Foo, Sin, and Y'ong (2006)	51 new university spin-off ventures	Presence of a distinct leader and educational diversity	Social integration and open communication ^b	Member perceptions of team viability and member satisfaction	Distinct leadership led to satisfaction; educational diversity positively related to team viability. Social integration and open communication positively related to satisfaction and team viability.
Frank, Gruber, Harhoff, and Henkel (2006)	26 VC firms	Team similarity to VCs in terms of demographic and past experience	N/A	VC evaluations of teams	Teams with similar characteristics to VCs get better ratings from VCs.
Frank, Gruber, Harhoff, and Henkel (2008)	27 VC firms	Team industry experience, field and level of education, leadership experience, age, and type of prior experience	Team cohesion ^b	VC evaluations of teams	VCs prefer teams with industry and leadership experience and heterogeneous educational background. Experienced VCs prefer teams with high cohesion.
Higashide and Birley (2002)	58 U.K.-based VCs	N/A	Affective and cognitive conflict between VC and team concerning organizational goals and policy decisions ^a	Firm performance (composite of sales growth, market share, cash flow, ROI, and company value)	Cognitive conflict can help firm performance, but affective conflict is negatively related to performance.
Hmieleski and Ensley (2007)	66 fast-growing U.S. start-ups; 154 random young U.S. ventures	Team functional, educational specialty and level, and skill heterogeneity	Team leader behavior ^a	Firm revenue growth and employment growth	The best performing heterogeneous teams had directive leaders in dynamic environments, or empowering leaders in stable environments.

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Table 1 (continued)

Study	Sample	Inputs	Mediators	Outcomes	Key Findings
Iacobucci and Rosa (2010)	14 small Italian manufacturing firms (interviews)	Type of entrepreneurial team	N/A	N/A	Inductively developed three different types of entrepreneurial teams—entrepreneur involvement, employee involvement, and intrapreneur involvement.
Knockaert, Ucbasaran, Wright, and Clarysse (2011)	Case studies of 9 academic spin-offs	Proportion of researchers on founding team and knowledge composition of team	N/A	Speed to first product	Speed to first product is fastest when team contains higher number of original researchers and when commercial expertise is present.
Kor (2003)	73 high-tech firms	Founder participation in team; shared team- or industry-specific managerial experience	N/A	Annual rate of sales growth	Founder participation fosters team competence, but this effect weakens as team managerial experience increases.
Kroll, Walters, and Le (2007)	524 IPO firms	Team control of firm board, firm ownership by original team, distribution of team ownership, presence of experts on team	N/A	Post-IPO 24-month holding period returns	Original team member control of board and team ownership relate to post-IPO firm performance.
Lester, Certo, Dalton, Dalton, and Cannella (2006)	209 IPO firms	Team prestige (education, experience with corporate board, politics, nonprofit board, and previous offers)	N/A	IPO valuation	Team educational affiliations and educational attainment positively impact IPO valuation.
McGee, Dowling, and Megginson (1995)	210 high-tech firms	Team prior management experience (R&D, marketing, or manufacturing)	N/A	Average growth in sales	Teams with more functional experience in the firm's area more effectively used cooperative agreements with other firms to drive performance.
Perry-Smith and Coff (2011)	41 student teams	N/A	Team collective mood ^b	Generating and selecting creative business ideas	The most positive teams generated the most ideas; groups that were calm and relaxed best selected the most creative ideas.
Sardana and Scott-Kemmis (2010)	32 biotechnology firms	Composition of prior member experience on team	Entrepreneurial learning ^a	N/A	The composition of the team impacts team learning.
Shrader and Siegel (2007)	198 post-IPO high-tech ventures	Team experience		Strategy pursued, firm profitability, and sales growth	The fit between strategy and team experience predicts venture performance.
Sine, Mitsuhashi, and Kirsch (2006)	449 Internet service firms	Team role formalization, functional specialization, administrative intensity, team size	N/A	Moving average of revenue	Team formalization, specialization, and administrative intensity increased firm performance. Team size increased the impact of specialization on performance.

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Table 1 (continued)

Study	Sample	Inputs	Mediators	Outcomes	Key Findings
Soutiariis and Maistro (2010)	197 British new technology ventures	N/A	Strategic decision speed and comprehensiveness ^a ; team polychronicity ^b	Firm performance (ROTA and ROS)	Team polychronicity positively affects firm performance, which is partially mediated by decision speed and comprehensiveness.
Slam and Elfiring (2008)	90 new software ventures	Intraindustry network centrality and extraindustry bridging ties	N/A	Firm self-reported performance and sales growth	The relationship between entrepreneurial orientation and firm performance is strengthened by combination of high network centrality and bridging ties. If few bridging ties exist, network centrality weakens relationship.
Ubasaran, Lockett, Wright, and Westhead (2003)	90 British owner-managed small ventures	Team size, heterogeneity of functions and prior experience, team age	Team member entry and exit ^a	N/A	Team size negatively predicts member entry, functional heterogeneity links to entry, experience heterogeneity relates to exit.
Vanaelst, Clarysse, Wright, Lockett, Moray, and S'Jegers (2006)	10 academic spin-outs (case study)	N/A	Affective and cognitive interpersonal conflict ^a ; team shared cognition ^b	Team turnover	Affective conflict caused team members to exit team. New team members reinforce shared cognition.
Vissa and Chacar (2009)	470 Indian software ventures	Structural holes in teams' external networks and functional diversity	Team strategic consensus and cohesion ^b	Sales growth	Firm performance negatively relates to network constraint and positively relates to functional diversity. The benefit of structural holes is amplified by team strategic consensus and cohesion.
West (2007)	22 new tech-based ventures	N/A	Team collective cognition (level of differentiation and integration of strategic constructs within team) ^b	Venture performance (as perceived by company managers)	Differentiation and integration led to firm performance.

Note: VC = venture capitalist; IPO = initial public offering; ROI = return on investment; ROTA = return on total assets; ROS = return on sales.

^a Team processes.

^b Emergent states.

NVTs. For example, with regard to the shared prior experience of NVT members, ventures are often founded by teams of friends, family members, and work colleagues who share similar backgrounds and experiences. Thus, overlap in human capital and social capital by NVT members is quite common (Reynolds, Bygrave, Autio, Cox, & Hay, 2002).

Shared prior experience can enable NVTs to make quick and unified strategic decisions, which can be advantageous for the effective performance of start-ups in turbulent industry environments (Baum & Wally, 2003; Eisenhardt & Schoonhoven, 1990; Kor, 2003). However, shared prior experience also potentially constrains strategic choices. Indeed, Beckman (2006) found NVTs with common prior company affiliation tended to engage in exploitative strategic behavior, whereas those with diverse prior company affiliation were more likely to engage in explorative strategic behavior. Shared prior experience among NVT members has also been found to positively relate to choice of geographic market entry (Fern, Cardinal, & O'Neill, 2012).

Prior functional experience that is aligned with a new venture's competitive strategy also relates to important firm-level outcomes. McGee, Dowling, and Megginson (1995) found firm performance was highest when the functional experience of NVTs aligned with their competitive strategy (e.g., marketing experience was optimal for the execution of a market differentiation strategy and R&D experience was optimal for adopting a technological differentiation strategy). Building on this work, Shrader and Siegel (2007) discovered that NVT members' functional experience (i.e., industry experience, marketing experience, financial experience, and start-up experience) related to different types of strategies that they chose to pursue. Moreover, even though their findings failed to identify significant main effects between NVT characteristics and firm performance, their results suggested firm performance was highest for NVTs that followed strategies that were most closely aligned with their prior experience.

The diversity of NVT members' prior experience has also received significant inquiry. For example, Foo, Sin, and Yiong (2006) found the educational diversity of NVTs positively related to the satisfaction of team members, but not to the perceived viability of teams by their members. Similarly, Amason et al. (2006) found no direct relationship between the heterogeneity of NVTs' prior experience (in terms of level of education, specialization of education, and functional background) and firm performance. They did, however, find that the novelty of product and service offerings moderated the effect of NVT heterogeneity on firm performance, such that the association became more negative as the level of novelty increased. Hmieleski and Ensley (2007) further demonstrated the complexity of the relationship between the heterogeneity of NVTs prior experience (functional background, education level, educational specialty, and managerial skill) and firm performance by showing that in dynamic industry environments, heterogeneous NVTs achieve greater firm performance when led by a directive leader, whereas homogenous NVTs do best when led by an empowering leader. In contrast, within stable industry environments, heterogeneous NVTs achieved greater firm performance when led by an empowering leader, whereas homogenous NVTs perform best when led by a directive leader. It appears that directive leaders may be able to provide the structure—an often overlooked part of NVT effectiveness—needed for heterogeneous NVTs to achieve high performance in rapidly and unpredictably changing industry environments. Finally, Ensley and Hmieleski (2005) found that university-based start-ups were composed of more homogenous NVTs with less developed dynamics than their

independent counterparts, and that university-based start-ups were lower performing in terms of net cash flow and revenue growth than independent new ventures. Their results further showed that NVT heterogeneity positively related to performance for independent start-ups, but not for university-based start-ups.

NVT Social Capital

In addition to the experience that NVT members bring to the venture, their networks outside the NVT play an important role in the identification of entrepreneurial opportunities and the development of such opportunities into viable businesses (Baron & Tang, 2009). It appears, for example, that having a broad range of business-related connections is particularly important for identifying new venture opportunities, because such relationships provide a wide range of information inputs that, when creatively combined, form the raw material for developing entrepreneurial opportunities (Baron, 2006; Ozgen & Baron, 2007). In contrast, deep connections with close friends and family members who possess business-related knowledge are most important while the business is being launched (Zolin, Kuckertz, & Kautonen, 2011). During this stage, having deep personal relationships with trusted individuals who can be called on for business advice, financial resources, and critical labor needs can make an important difference in being able to navigate the tumultuous early development of the business—before systems and processes are established, cash flow is stabilized, and a functional set of employees is hired and trained. For these reasons, social capital is a growing area of interest within the NVT literature.

Moreover, Brinckmann and Hoegl (2011) found that NVT social capital was even more critical to the performance of new ventures than their initial teamwork capabilities. In particular, their study showed that network linkages to key resource partners are vitally important. Vissa and Chacar (2009) further showed that the social capital of NVTs was associated with high performance in new ventures. Specifically, NVTs with extensive social networks tend to achieve superior performance, and such effects complement, rather than replace, advantages gained by having a diverse or heterogeneous founding team.

Additional NVT Inputs Research

A few additional NVT inputs have also been examined. For example, Chaganti, Watts, Chaganti, and Zimmerman-Treichel (2008) found that the presence of ethnic immigrants on NVTs positively associates with the adoption of a prospector strategy (i.e., an aggressive strategy that involves taking high risks with the aim of achieving inordinate gains), but that NVTs with ethnic immigrants do not achieve higher firm performance than those without such members. In an examination of NVT structure, Sine, Mitsuhashi, and Kirsch (2006) discovered that mechanistic, rather than organic, organizational structures are optimal in turbulent environments. Finally, Kroll, Walters, and Le (2007) showed that new ventures with more founding members on their board or those with a board composed of members holding a balanced amount of equity in the firm achieved superior IPO performance.

A series of studies has also investigated how NVT inputs affect relations with VCs. Barney, Busenitz, Fiet, and Moesel (1996) found that NVT industry experience and current venture tenure negatively related to VC management advice and operational assistance, suggesting that more experienced NVTs are less interested in seeking the advice and assistance

of VCs, presumably believing that they do not need any help beyond the investment of financial resources. Busenitz, Moesel, Fiet, and Barney (1997) further examined the perceived quality of NVT-VC relationships, and discovered the presence of earn-out covenants, NVT members' industry experience, and average firm tenure of NVT members negatively related to perceptions of procedural justice in such relationships. Overall, however, NVT tenure was positively related to perceptions of fairness in NVT-VC relationships, suggesting that those teams that have worked together, but in different industries, view VC relationships more favorably. Finally, Busenitz, Fiet, and Moesel (2005) investigated the role of signaling in VC-NVT relationships and discovered that NVT investment in the firm did not associate with venture outcomes.

Future Directions for Research on NVT Inputs

Much remains to be understood concerning the effect of NVT inputs on the development and performance of start-ups. For example, it is unclear during which stages of the entrepreneurial process that certain NVT characteristics are more or less important. While studies have examined specific NVT characteristics at distinct points in the entrepreneurial process, such as at entry (Foo et al., 2006), during initial growth stages (Hmieleski & Ensley, 2007), and at IPO (Beckman, Burton, & O'Reilly, 2007), there is a lack of research that has longitudinally examined the characteristics of NVTs across all stages of the entrepreneurial process. This is an important concern because some evidence suggests that different team characteristics may be more or less important at various phases in the development of new ventures (Brixy, Sternberg, & Stüber, 2012). Moreover, some compositional variables inherently change over time (e.g., industry experience, functional skills), whereas others are likely to remain more stable (e.g., personality, affective dispositions). In investigating how the influence of NVT inputs change as ventures mature, it may be useful to draw from theoretical perspectives concerning the effect of time on firm development, such as organizational life cycle theory (Kimberly, 1981) and the dynamic states model (Levie & Lichtenstein, 2010).

Our understanding of the impact of NVT inputs on new ventures could be further extended by augmenting archival data sources with direct measurement of team characteristics such as personality, general mental ability, core self-evaluations, and other elements that research evidence has shown to impact team functioning and performance (Mathieu et al., 2008). In addition, future work should examine whether the effects of specific individual characteristics are isomorphic at the team level of analysis (Klein & Kozlowski, 2000). For example, prior research has demonstrated the importance of certain personality characteristics with respect to the identification and exploitation of entrepreneurial opportunities for individual entrepreneurs (Ciavarella, Buchholtz, Riordan, Gatewood, & Stokes, 2004; Rauch & Frese, 2007), yet the same personality characteristics could potentially operate differently within NVTs. For example, extraversion may facilitate entrepreneurial opportunity identification, but because extroverts are likely to have access to a greater number of information inputs than introverts, NVTs composed mainly of extroverts may suffer from information overload and disagree about what constitutes a viable opportunity and which opportunities to pursue.

Several important issues regarding how NVT social capital operates in new firms also remain unexplored. Indeed, we know little about how NVTs build social capital and whether it is best developed through individual members (as a configural team property) or as a unit (as a shared team property; Klein & Kozlowski, 2000). Questions also exist with respect to

which members' networks are most frequently leveraged, and the degree to which this relates to percentage ownership in the firm and position within the NVT. In other words, research advancements on this topic are likely to depend on studies moving past generalities concerning the possession of a certain amount or type of social capital, and toward the manner in which it is acquired and deployed. In addition, we know little about the extent to which, and for how long, NVT social capital acts as a substitute resource to help overcome limitations in financial, human, and psychological capital. Furthermore, prior work has not yet investigated the emotional support that social connections may provide to help NVTs cope with the many demands arising throughout the new venture development process (e.g., maintaining work–family balance, managing employees, and satisfying customer needs). Finally, since prestige is an important factor in terms of how top managers and their firms are evaluated by investors and by the public in general (Hayward, Rindova, & Pollock, 2004; Lester et al., 2006), future work should examine how prestige can be accrued through membership of NVTs in elite networks. Research on this topic would likely benefit from investigating the costs associated with building and maintaining such networks, because such efforts can potentially deplete other crucial resources (Portes, 1998).

NVT Mediators

As illustrated by the IMO model shown in Figure 1, two primary mechanisms link inputs to outcomes—behavior-based *processes* and affective- or cognitive-based *emergent states* (Marks, Mathieu, & Zaccaro, 2001). Team processes refer to activities through which members work together to convert resources into meaningful outcomes (LePine, Piccolo, Jackson, Mathieu, & Saul, 2008). Emergent states refer to cognitive and affective properties that teams possess at any given point in time (Marks et al., 2001). Teams researchers are now paying increased attention to the interplay between processes and emergent states (e.g., how team climate influences team conflict; Bradley, Postlethwaite, Klotz, Hamdani, & Brown, 2012), and we therefore model the two mechanisms such that they not only mediate the relationship between NVT inputs and outcomes, but also impact one another.

Team Processes

Team processes include activities such as strategic planning, coordinating efforts, and working through intrateam disagreements. Entrepreneurship researchers have begun studying NVT processes, most notably in the areas of team membership changes and team conflict.

NVT membership changes. Unlike the context in which traditional teams and TMTs typically operate, new ventures nearly always experience extraordinary changes as they transition from start-ups to established businesses. As new ventures develop and grow, team members who were well suited to lead a given aspect of the firm in an early stage of the venture's development may not be equipped to continue in that role as the business matures (Boeker & Wiltbank, 2005; Clarysse & Moray, 2004). Such change can occur for either positive reasons (e.g., founding NVT members have grown the firm beyond their functional abilities or teams members have achieved their goals and wish to move on) or negative reasons

(e.g., certain members are not fulfilling their responsibilities or the start-up is forced to change its strategy and requires different leadership). This is an important area of research because it reflects the fact that the composition of NVTs is not static, and can change frequently across the life of a venture (Boeker & Karichalil, 2002).

Early investigations of NVT turnover focused on understanding antecedents to the departure of existing members and the addition of new members. For example, Fiet, Busenitz, Moesel, and Barney (1997) focused exclusively on team member dismissals—when members are involuntarily removed from the NVT. Their findings suggest that in VC-backed ventures, covenants that limit NVT member compensation lead to fewer dismissals. Furthermore, they discovered that as new venture board size grows, dismissals decline, but that when a higher percentage of board seats are controlled by VCs, team member dismissals are more common.

Ucbasaran, Lockett, Wright, and Westhead (2003) were the first to demonstrate that different antecedents predicted different forms of NVT turnover (i.e., entry and exit). Their results indicated that while heterogeneity in terms of functional background led to new member entry, heterogeneity associated with prior entrepreneurial experience positively related to team member exits. Not surprisingly, as NVT size increased, member entry decreased, and NVT exits were lower in family firms than in nonfamily ventures. In addition, Boeker and Wiltbank (2005) found that higher functional diversity among NVT members led to lower levels of turnover. Moreover, although firm ownership by NVT members reduced turnover, ownership by chief executives and VCs contributed to NVT member changes. Finally, high-quality NVT collaboration with external partners increases the likelihood of member additions, whereas high-quality collaboration within the NVT results in fewer additions (Brinckmann & Hoegl, 2011).

Researchers have begun to investigate the relationships between changes in NVT composition and firm outcomes. In a longitudinal study, Busenitz, Fiet, and Moesel (2004) found that the dismissal of NVT members by VCs negatively impacted firm survival. Chandler, Honig, and Wiklund (2005) investigated both antecedents to and consequences of departures and additions of NVT members. Their results suggest that NVTs operating in unstable environments tend to add new members, and that as firms advance into later stages of development, the positive effect of departures becomes stronger. Beckman et al. (2007) further explored the relationship between NVT turnover and firm outcomes in a sample of pre-IPO high-technology firms in Silicon Valley. Their findings indicate that adding new members to NVTs, especially those with diverse backgrounds, enhances firms' chances of reaching IPO, whereas team member exits negatively relate to going public. They also showed that the departure of founders from the NVT actually relates to the likelihood that firms will eventually reach IPO.

NVT conflict. Team conflict has been the most heavily studied process in the teams literature (Mathieu et al., 2008), and a growing body of research on the dynamics of conflict in the context of NVTs is accumulating. Prior work has made a general distinction between two different forms of conflict among team members—relationship conflict and task conflict (Jehn, 1997). Relationship conflict (i.e., affective conflict) refers to team member disagreements emanating from interpersonal differences among one another; task conflict (i.e.,

cognitive conflict) describes disagreements among team members related to their differing ideas concerning the best way to accomplish the team's objectives (Jehn, 1997).

In an early examination of affective and cognitive conflict in an entrepreneurial context, Higashide and Birley (2002) examined how conflict between NVTs and VCs affects firm performance. These authors further distinguished between two additional types of conflict common to new ventures—goal and policy conflict (Bourgeois & Eisenhardt, 1988). Goal conflict describes disagreements between NVTs and VCs as a result of discrepancies in the goals of the two groups; policy conflict refers to disagreements emanating from policies adopted by NVTs that are unacceptable to VCs. Overall, their findings suggested that affective conflict between NVTs and VCs negatively relates to firm performance, but cognitive conflict leads to higher firm performance (Higashide & Birley, 2002). Furthermore, goal conflict seems to strengthen the relationships between affective and cognitive conflict and firm performance to a greater degree than policy conflict. Indeed, the positive effect of cognitive policy conflict on firm performance manifested itself only when cognitive goal conflict was also present.

Ensley and Pearce (2001) were among the first to examine the relationship between conflict within NVTs and firm performance. Their results indicated that cognitive conflict positively associates with profit, sales, and growth in new ventures. Furthermore, affective conflict inversely related to all three of these firm outcomes. In a similar study, Ensley, Pearson, and Amason (2002) provided further evidence of a strong negative relationship between affective conflict in NVTs and firm performance. Finally, Vanaelst, Clarysse, Wright, Lockett, Moray, and S'Jegers (2006) found that affective conflict predicted member exits from NVTs, and that cognitive conflict facilitated strategic decision making, thereby enhancing firm performance.

Future Directions for Research on NVT Processes

Prior theoretical work has distinguished among three primary types of team processes—transition processes, action processes, and interpersonal processes (Marks et al., 2001). *Transition processes* describe activities that teammates undertake between performance episodes to reflect on past accomplishments and prepare for future actions (e.g., mission analysis, goal specification, and strategic planning). *Action processes* describe activities during performance episodes that facilitate goal achievement (e.g., monitoring progress and team coordination). *Interpersonal processes* describe activities that involve the management of interpersonal relationships (e.g., conflict management, motivating and confidence building, and affect management; Marks et al., 2001). Although, as we have reviewed above, some research exists on some NVT transition and interpersonal processes, no prior work has specifically addressed NVT action processes. In general, then, future work should seek to gain a more balanced understanding of how each of these types of team processes influences NVT performance.

Prior work on NVT membership changes relate to transition processes to the degree that changes in the membership of NVTs prepare them for subsequent challenges and venture growth. However, much remains to be explored in terms of identifying how NVTs change as they build toward and adapt to different stages of the entrepreneurial process. New team members often bring with them innovative ideas and alternative approaches to problems that

can stimulate fresh perspectives for the NVT. In addition, new members can broaden the social networks and capabilities of the entire NVT (Chandler et al., 2005; Ucbasaran et al., 2003). However, additions to the NVT can also create challenges. For example, adding new members can upset the early development of team and organizational norms. As such, examining the values, beliefs, backgrounds, and decision styles of NVT members should be a fruitful area of inquiry. In addition, given that new members are often known by at least one incumbent member (Forbes, Borchert, Zellmer-Bruhn, & Sapienza, 2006), it would be informative to investigate how previous relationships influence the integration of new team members.

Overall, NVT research to date has largely corroborated findings in the teams literature that interpersonal conflict hinders team outcomes while cognitive conflict (i.e., task conflict) has the potential to enhance team performance. Importantly, this stream of research has moved beyond the team level to show that conflict in NVTs affects firm outcomes. However, there is an opportunity to gain a more nuanced understanding of the relationship between NVT conflict and firm performance, particularly for cognitive conflict. Indeed, prior research has shown that the relationship between task conflict and team performance is influenced by a number of contingencies (de Wit, Greer, & Jehn, 2012) such as task complexity (Jehn, 1995), psychological safety climate (Bradley et al., 2012), conflict management behavior (Behfar, Peterson, Mannix, & Trochim, 2008), and team personality composition (Bradley, Klotz, Postlethwaite, & Brown, 2013). Therefore, future research should examine whether these moderating effects also exist for NVTs, as well as explore other contextual variables unique to the new venture domain that may influence when cognitive conflict may contribute to or detract from firm performance. Future research can also further probe how NVTs build confidence and maintain motivation in the face of the daunting odds and constant setbacks inherent in leading new ventures.

NVT Emergent States

Emergent states represent the overall climate of the team and include constructs such as trust, efficacy, and creativity. Entrepreneurship researchers have made significant inroads in the study of NVT emergent states, particularly in the areas of shared cognition among team members and team cohesion.

NVT collective cognition. In studying emergent states, entrepreneurship researchers have given significant attention to group cognition (i.e., team mental models), or the extent to which team members' representations of different forms of knowledge and information coalesce as a group (Klimoski & Mohammed, 1994). For example, Chowdhury (2005) examined the relationship between cognitive comprehensiveness—how effectively NVTs developed a complete set of possible solutions to problems—and team effectiveness, and found that the relationship was positive even when controlling for demographic diversity of team members. West (2007) advanced a model of NVT collective cognition that positioned it as a mediating mechanism between antecedents such as individual team member cognitions, team composition changes, team processes, and industry/competitive information, and the outcomes of team decision making and subsequent new venture performance. His results supported an inverted *U*-shaped relationship between collective cognition and new venture

performance such that firms led by NVTs with very high or low collective cognition experienced lower levels of performance than those led by NVTs with moderate levels of collective cognitions.

NVT researchers have also studied shared cognition. Indeed, Ensley and Pearce (2001) developed a model linking shared strategic cognition to organizational performance, but found evidence that only cognitive conflict (an antecedent to shared strategic cognition), and not shared strategic cognition, predicted venture performance. This led the authors to conclude that “the process of developing shared strategic cognition is more important than the specific components of that cognition once formed” (Ensley & Pearce, 2001: 156). Vissa and Chacar (2009) examined the effect of NVT strategic consensus on venture growth, but did not find a relationship; however, strategic consensus did strengthen the relationship between NVT external networks and firm growth.

Entrepreneurship researchers have explored several other forms of shared cognition among team members. Ensley et al. (2006) found that intrateam shared leadership positively related to new venture growth rates. Furthermore, Perry-Smith and Coff (2011) demonstrated that different stages of creativity require different types of collective moods among NVT members. For example, NVTs that were most effective in generating creative ideas tended to collectively be in a pleasant mood, teams that excelled in selecting novel ideas tended to be in calm moods, and teams that were particularly adept at selecting highly useful ideas tended to, as a group, be simultaneously in both pleasant and unpleasant moods. Finally, Souitaris and Maestro (2010) examined NVT polychronicity—the alignment among team members concerning the temporal manner in which they prefer to complete tasks (e.g., simultaneously or intermittently). Their results suggest that higher levels of polychronicity relate to higher firm performance, and that this relationship is partially mediated by strategic decision speed and comprehensiveness.

NVT cohesion. Team cohesion—the extent to which team members are attracted to one another and committed to the team’s tasks (Beal, Cohen, Burke, & McLendon, 2003)—is one of the most heavily studied emergent states in the teams literature (Kozlowski & Ilgen, 2006). Perhaps due to this popularity and the positive link between cohesion and team performance (Mullen & Copper, 1994), it has received a significant amount of interest from NVT researchers as well. Foo et al. (2006) showed that social integration, which refers to the level of interpersonal interaction, pride, and excitement among group members, leads to higher perceptions of NVT viability and satisfaction among team members. In addition, Ensley and Pearce (2001) found that cohesion negatively related to affective conflict, which subsequently had a detrimental effect on new venture profit and revenues. Ensley et al. (2002) demonstrated that feelings of morale among team members (one facet of team cohesion) negatively related to affective conflict, yet positively related to cognitive conflict. Contrary to the authors’ expectations, however, team members’ sense of belonging (another facet of team cohesion) negatively related to cognitive conflict. Ensley et al. (2002) went on to show that the sense of belonging facet of cohesion also predicted firm sales growth, thereby linking NVT cohesion to firm performance.

Subsequent work has provided a deeper understanding of the link between NVT cohesion and higher level outcomes by testing Ensley, Pearson, and Pearce’s (2003) argument that

NVT cohesion should positively relate to a number of measures of firm performance. For example, Chowdhury (2005: 736) demonstrated that team commitment, conceptualized as “the extent to which members felt loyal, felt that they expected to stay with the same team for a long time, and felt that they trusted the team,” positively associated with NVT effectiveness. More recently, Franke, Gruber, Harhoff, and Henkel (2008) found that, compared to novice VCs, experienced VCs prefer to fund ventures with NVTs that possess high levels of cohesion. The findings of Vissa and Chacar (2009) suggest that the positive effect of NVTs’ external networks and firm performance, as measured by sales growth, is strengthened by team cohesion. That is, when strong bonds exist among team members, they are able to more effectively access external resources for their firm. In a related investigation, Brinckmann and Hoegl (2011) explored the effect of the quality of collaboration among NVT members (i.e., teamwork capability) and did not find that it related to new venture revenue or employment growth. However, relational capability (i.e., the quality of collaboration between team members and external partners) was positively associated with firm sales and employment growth. These findings provide support for the idea that cohesion between NVT and external stakeholders may be as important for new venture success as intrateam cohesion.

Future Directions for Research on NVT Emergent States

Two primary categories of emergent states are cognitive-based constructs and affective-based constructs (Barsade & Gibson, 2007). Cognitive constructs focus on thinking and decision making; affective constructs focus on feelings and moods. While the NVT literature has progressed in understanding collective cognitions, affective emergent states in NVTs remain understudied. Unlike the context in which many teams operate, poor performance by NVTs can directly cause the failure and dissolution of an entire venture. Given these high stakes, more confident NVTs may be particularly adept at facing down the challenges inherent in new ventures. Teams researchers have identified a number of emergent states related to team confidence that positively relate to team performance, such as team efficacy (the shared belief that the team is capable of executing a certain course of action to perform a certain task; Gully, Incalcaterra, Joshi, & Beaubien, 2002) and team potency (a shared general belief that the team will be effective; Lester, Meglino, & Korsgaard, 2002). Thus, it would be beneficial to examine the relationship between team confidence and new venture performance in future work.

NVTs are also unique in that they often include members who started working on the venture when it began, before others joined the team. Founders are likely to have stronger emotional ties to the venture (Gimeno, Folta, Cooper, & Woo, 1997)—which, combined with their legitimate power in the group, may cause challenges for the formation of favorable team climates. For example, the presence of founders may stifle the emergence of psychological safety—a shared belief that team members will not be embarrassed or punished for expressing their viewpoints (Edmondson, 1999). Future studies of NVTs, then, should explore the manner in which different team climates emerge and how these climates affect team performance.

In addition, further work on understanding the role of affect in NVTs could be very beneficial. For example, affective events theory, which posits that affective reactions are critical mediators between work events and subsequent attitudes and behaviors (Weiss & Cropanzano, 1996), has been used to explore the mediating role of constructs such as team affective tone,

and may be a useful theoretical framework for NVTs (Cole, Walter, & Bruch, 2008). In fact, given the dynamic NVT context, affect-based mechanisms may play a particularly important function in elucidating how various inputs such as a change in composition may impact team performance. Prior work has also shown that the degree to which team members, overall, feel autonomous and empowered positively relates to the affective tone of the team, and the team's performance (Kirkman & Rosen, 1999). However, the findings of Hmieleski and Ensley (2007) suggest that higher levels of NVT member empowerment may actually hinder firm performance under certain conditions. Given these conflicting findings, it would be useful to better understand how and when team empowerment and autonomy impact new venture performance.

NVT Outcomes

Researchers have investigated several different outcomes that reflect the effectiveness of NVTs. The majority of this work has considered firm-level performance to be a direct reflection of NVTs' effectiveness (e.g., Amason et al., 2006; Brinckmann & Hoegl, 2011; Sine et al., 2006). Such studies have generally used the UE perspective to argue that the performance of young firms should reflect the effectiveness of their NVTs, because such teams have a direct and inordinately large impact on the success of their firms (Hmieleski & Ensley, 2007). This logic appears reasonable considering that NVT members have been found to shape the initial development and implementation of their firm's vision and strategic direction (Baum, Locke, & Kirkpatrick, 1998). Moreover, due to the high degree of managerial discretion and wide latitude of action that is naturally possessed by NVTs (Hambrick & Abrahamson, 1995), the influence of their inputs, processes, and emergent states on firm performance is likely clearer and more direct than for executive teams leading large, established firms (Staw, 1991).

The outcome variables used in the articles in Table 1 reflect a great deal of consistency with the UE approach to the examination of performance. Indeed, the three most commonly used outcome variables used in the studies reviewed are growth in sales (34%), profitability (32%), and number of employees (15%). Just over half of these studies used at least one firm performance outcome as an indicator of NVT effectiveness. This is consistent with other reviews in the broader entrepreneurship literature. In a review of all empirical articles appearing in the *Journal of Business Venturing* from 1998 through 2003, Cohen, Smith, and Mitchell (2008) found that 48% of articles used at least one dependent variable involving firm-level performance. In their meta-analysis of human capital and entrepreneurial success, Unger et al. (2011) identified firm-level outcomes such as growth in sales, employees, profit, income, revenue, and ROA among others to be used as measures of performance. Of the 70 independent samples in their study, the use of sales and number of employees were most common.

Overall, outcome measures relating to venture sales, number of employees, and firm profitability are about as common in NVT research as in the general entrepreneurship literature. However, a number of other dependent variables are also being used, albeit less frequently, to better understand the impact of NVTs. Two alternatives to pure financial performance include venture exits (Busenitz et al., 2004, 2005) and market share (Higashide & Birley, 2002). Performance measures at the team level, such as team effectiveness (Chowdhury, 2005) and viability (Foo et al., 2006), have also been used. Given the entrepreneurial context, it is not surprising that NVT studies have also employed outcome measures such as speed of first product to market (Knockaert, Ucbasaran, Wright, & Clarysse, 2011) and

innovativeness (Barney et al., 1996; Perry-Smith & Coff, 2011). In sum, while financial measures are clearly used the most often in NVT research, other meaningful outcomes are also being examined.

Future Directions for Research on NVT Outcomes

Even though many studies in the NVT literature have used growth (primarily in terms of sales and employment) as a proxy for firm performance, few studies have considered the goals and motivations of team members. In some cases, such as for the development of high-tech start-ups, it is reasonable to assume that high growth is a desirable outcome for NVTs. This is, however, unlikely to be the case for all NVTs, as some may wish to achieve controlled growth or maximize profitability, while others may simply choose to keep their firm to a small or medium size (Mullins, 2010). The issue of growth aspirations could be particularly problematic if, for example, differences in team characteristics that are thought to influence firm performance (using measures of growth as proxies) are simply capturing differences in the motivation and goals of NVTs. Moreover, financial gain is often not the primary or only motivation for persons to enter into entrepreneurship; indeed, other factors, such as doing meaningful work and creating work–family balance, also drive people to start new ventures (Cooper & Artz, 1995). Furthermore, the work satisfaction of entrepreneurs and firm performance are often uncorrelated—presumably because efforts to achieve high growth can lead to burnout (Hmieleski & Corbett, 2008). Thus, future research should control for the growth aspirations of NVT members, and also consider the work satisfaction and subjective well-being of team members in addition to commonly used financial performance metrics.

Another important point to consider when evaluating NVT outcomes is the stage in the development of the new venture (Levie & Lichtenstein, 2010). Much of the entrepreneurship literature examines prelaunch issues—such as how entrepreneurial opportunities are discovered/created (Tang, Kacmar, & Busenitz, 2012), how NVTs form (Aldrich & Kim, 2007), and how resources are assembled (Alvarez & Busenitz, 2001). Since firms have not yet launched at this stage, other performance metrics that suit the research question and fit the phase of the entrepreneurial process need to be employed. Consistent with the process perspective of entrepreneurship (Baron & Shane, 2005), future research on NVTs should account for the reciprocal impact these outcomes have on subsequent inputs and mediators. Teams researchers are now advocating models that explicitly address the fact that team outcomes, such as performance, impact future team inputs and processes, such as team membership, team resource acquisition, and team cohesion (Ilgen et al., 2005).

Discussion

There are a number of challenges that entrepreneurship researchers must tackle to advance our current understanding of how NVTs contribute to the development and performance of new ventures. Namely, critical debates stemming from equivocal findings must be resolved, empirical investigations of NVT functioning need to move beyond main effects and demographic characteristics, measures of NVT effectiveness should be broadened, and NVT researchers should exploit opportunities to make theoretical and/or empirical contributions

that extend beyond the field of entrepreneurship. Below, we discuss these issues in further detail and provide suggestions for those who wish to advance current knowledge of NVTs.

Unresolved Debates

Heterogeneous versus homogenous NVTs. Thus far, no clear relationship between NVT heterogeneity and firm performance has emerged. While some studies have produced mixed findings (e.g., Ensley & Hmieleski, 2005), most have found no significant relationship between the NVT heterogeneity and performance outcomes (e.g., Chowdhury, 2005). To better understand this relationship, three important steps must be taken. First, there is little consistency in the types of factors that are considered when assessing NVT heterogeneity. Often a mixture of demographic characteristics is used to form an index of heterogeneity (e.g., educational attainment, functional work experience, age; Hmieleski & Ensley, 2007), which makes it difficult to compare findings across studies. Because many demographic variables do not operate similarly within NVTs, researchers should either delineate forms of heterogeneity rather than aggregating them to form indexes of heterogeneity or theoretically and empirically justify their reasoning for aggregation. Second, research in this area should consider the mechanisms through which heterogeneity influences performance outcomes. For example, heterogeneity, in general, likely increases both task (i.e., cognitive) conflict and relationship (i.e., affective) conflict (Mathieu et al., 2008). As such, the benefits of increasing task conflict may be canceled out by enhanced levels of relationship conflict (Ensley & Pearce, 2001). Without considering both mechanisms, however, research could produce misleading and/or nonsignificant results. Finally, the effects of certain types of heterogeneity are likely to be contingent on contextual variables. For example, NVT functional heterogeneity is likely to exert greater influence on performance in complex industries and when novelty is important (Shrader & Siegel, 2007). Thus, researchers should consider relevant moderators of the effect of NVT heterogeneity on firm outcomes.

What NVT characteristics are most important? Logically, NVTs with more financial, human, social, and psychological capital should perform better than those lower on these dimensions. With that said, most entrepreneurs face initial and ongoing resource constraints that require them to make trade-offs when forming NVTs. Furthermore, it is not clear whether an abundance of resources necessarily enhances venture success (Baker & Nelson, 2005). Given that limited resources are common in the start-up phase, should priority be given to certain characteristics when forming NVTs? For example, is industry experience more important than start-up experience? Is it better to have extroverted team members or agreeable ones or some combination? We know little about such trade-offs because very little research has made direct comparisons between such characteristics, and even less work has considered both dispositional (e.g., age, personality) and experience-based (e.g., education, work history) variables. Therefore, researchers should consider simultaneously examining a wider range of dispositional and experience-based variables, consider interactions between them, and make direct comparisons using modern analytical techniques (e.g., dominance analysis; Azen & Budescu, 2003).

What is the relative impact of NVTs versus founding CEOs? While our review has focused on NVTs, the question remains as to how their influence compares to that of founding CEOs. As noted earlier, there is strong evidence suggesting that new ventures are usually founded by teams (Beckman, 2006) and that such teams have a powerful influence on firm performance—which, on average, tends to extend above and beyond that of founding CEOs (Ensley et al., 2006). It is less clear, however, what the trade-offs are of having a high or low performing founding CEO versus having a high or low performing NVT. For example, is it a better bet to fund a start-up with a star founding CEO and otherwise weak NVT or one with a low performing founding CEO and otherwise strong NVT? Similarly, is it best for nascent firms to invest their limited resources in bringing onboard a star CEO or to instead hire highly qualified NVT members? The answers to such questions are likely to involve consideration of many factors, such as the nature of the competitive environment, stage in the development of the firm, type of industry, and growth aspirations of the firm. One way for entrepreneurship researchers to help fill this gap in the literature would be to adapt future data collections, when appropriate, to include questionnaires composed of items using dual-response formats that separately reference the founding CEO and the NVT (see, e.g., Pearce & Sims, 2002).

Future research should also examine the interface between founding CEOs and NVTs (see, e.g., Hmieleski & Ensley, 2007), particularly since leaders and teams tend to be mutually interdependent (Blatt, 2009), and as such, the quality of interaction between these two parties may be as important as their separate actions, behaviors, and characteristics. Of particular interest for such research would be consideration of the degree to which founding CEOs and NVTs shape the culture and strategic direction of new ventures. The charisma and vision of founding CEOs have received a great deal of attention (Baum et al., 1998; Schein, 2002), but much less is known about the degree to which NVTs may set the tone for new ventures.

Beyond Main Effects and Demographic Studies of NVTs

Most entrepreneurship research to this point has followed the lead of UE research from strategic management in using demographic data to measure differences in the characteristics and composition of NVTs (Carpenter et al., 2004). By relying on secondary data, such studies have traditionally been limited to publically available data, and have often failed to directly investigate the actual cognitions, motivations, emotions, and processes through which NVTs influence firm performance. As a result, these underlying properties have remained a “black box” for much of the literature on NVTs, mirroring similar concerns for TMT research in the strategic management literature (Priem, Lyon, & Dess, 1999).

Two particularly relevant steps can be taken for future research to move beyond such “black box” concerns. The first, around which we have organized this article, is to develop and examine IMO models of NVT functioning. The creation of such models would necessitate the collection of primary data regarding the processes and emergent states through which NVTs influence team outcomes and firm performance, and such data could ideally be examined in conjunction with secondary data regarding the demographic characteristics of NVTs and the performance of their firms. Uncovering the underlying mechanisms through which NVTs influence firm performance does not, however, go far enough. The second step is for

research on NVTs to move from the study of causes to conditions (Hackman, 2012). Even though mediating models of team effectiveness represent important theoretical and methodological advancements, such models can be incomplete or even misleading if they do not take into account the conditions under which specific indirect effects occur (Johns, 2006). To overcome this problem, future research should develop and examine conditional indirect effect models (e.g., moderated mediation; Preacher, Rucker, & Hayes, 2007) to determine both *how* and *when* NVT characteristics influence firm performance. In addition, qualitative methodologies may be particularly helpful in contextualizing the findings of quantitative studies of NVTs and for developing entirely new theory concerning the effectiveness of such teams (Hindle, 2004).

How NVT Research Can Contribute to Other Fields of Management

Contributing to the strategic management literature. There are several ways in which NVT research can contribute to the strategic management literature. First, NVTs directly shape the initial structure, systems, and processes of their firms. This influence has long-term imprinting effects that continue to impact the strategy of firms, often long after most NVT members have moved on and been replaced (Beckman & Burton, 2008). Thus, increased understanding of the initial imprinting effects of NVTs may help strategy researchers achieve a fuller understanding of how firms evolve and what factors influence their ability to develop and maintain competitive advantages in their industries. Second, since NVTs work in relatively weak situations compared to the stronger situations in which TMTs lead more mature firms, NVTs' actions and behaviors likely have a more direct influence on firm-level outcomes (Hmieleski & Ensley, 2007). For this reason, new ventures may provide a cleaner context for testing theory related to UE and the development and implementation of specific strategies and tactics (Carpenter et al., 2004; Staw, 1991). Third and finally, it is generally easier to collect primary data from NVTs than it is from TMTs of larger and more established firms. Thus, research on NVTs holds the potential to provide rich data that may be able to inform UE research on TMTs that has traditionally been restricted to more limited data sources (Priem et al., 1999).

Contributing to organizational behavior/human resource management. There are many ways in which NVT research can contribute to the organizational behavior/human resource management (OB/HRM) literature. First, as entrepreneurs, NVT members tend to exhibit extreme characteristics with respect to dispositions such as optimism, self-efficacy, and positive affect (Baron, Hmieleski, & Henry, 2012; Baron, Tang, & Hmieleski, 2011; Hmieleski & Baron, 2009). This is so because the odds for failure are high and the start-up process is fraught with uncertainty; therefore, only highly confident and positive individuals tend to take the leap into entrepreneurship (de Meza & Southey, 1996). NVT members may therefore represent a population of outliers in which the boundaries of theory on teams that have been examined primarily with samples that are more representative of the general population can be tested. Second, most research on teams performing under conditions of uncertainty conducted in OB/HRM has involved either laboratory experiments or field studies, and has used samples composed of students or lower level teams within organizations. Research on NVTs, then, may complement and add ecological validity to findings from the OB/HRM literature.

Finally, as research on positive organizational behavior (POB) increases (Luthans, Youssef, & Avolio, 2007), NVTs would seem to be a natural unit of examination with respect to groups that are truly agentic (i.e., actively able to shape their own fortunes; Bandura, 2001). While POB research examines how teams can flourish under challenging conditions for which they are typically assigned to work, entrepreneurship research could examine how NVTs actually shape their environment to flourish.

Conclusion

Entrepreneurial ventures and the NVTs that lead them are the lifeblood of most economies. They create firms that bring innovative products and services to market, generate new jobs, and increase tax bases. The demands on such teams, however, have never been greater. Rapid globalization and exponential increases in technological sophistication make the process of launching and developing new firms more complex and uncertain than ever. The time is ripe for research to investigate why some NVTs, but not others, achieve the success that they seek. For such work to provide meaningful insights, researchers must approach this question with a level of theoretical and methodological sophistication that matches the degree of complexity inherent to the new venture creation and development process. Studying input-to-output relationships is no longer enough. Future research must go further and capture underlying mediating mechanisms and contextual moderators, as the knowledge resulting from this research is essential for the field of entrepreneurship to develop a comprehensive theory of the entrepreneurial process and to provide evidence-based guidance for practicing NVTs.

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