ENTREPRENEURIAL STRATEGIC PROCESSES
ADVANCES IN
ENTREPRENEURSHIP, FIRM
EMERGENCE AND GROWTH

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AN INTRODUCTION TO THE SPECIAL VOLUME ON ENTREPRENEURIAL STRATEGIC PROCESSES

G. T. Lumpkin and Jerome A. Katz

This tenth volume in the series *Advances in Entrepreneurship, Firm Emergence, and Growth* focuses on entrepreneurial strategic processes. Papers related to strategic processes in entrepreneurship have been a recurring feature of the *Advances* series, starting with the second volume, which included Slevin and Covin’s (1995) article of record on entrepreneurial strategic behavior, as well as process-related strategy articles by Carsrud and Krueger (1995) and Bloodgood, Sapienza, and Carsrud (1995). Subsequent explorations included Volume 7’s material on corporate entrepreneurship, Fernhaber and McDougall’s (2005) work on strategic adaptation in Volume 8, as well as Salvato, Lassini, and Wiklund’s (2006) acquisition process model and Samuelsson’s innovative-imitative process comparison in Volume 9. Common to all of these has been the central intent of the strategy approach: the pursuit of organizational success.

This quest to understand what makes entrepreneurial organizations successful has, over the years, highlighted numerous possible explanations. The characteristics of the entrepreneur(s), the content of their strategies, the compositions of teams, the availability and type of resources, and
configurations of internal and external forces are all important categories that have been investigated for their role in entrepreneurial outcomes. One category that stands out, and to some extent cuts across all these other categories, is entrepreneurial processes. In some respects, the decisions and actions that are brought about by entrepreneurial processes are among the most profound. For example, in terms of the processes involved in going from opportunity recognition to new value creation to wealth appropriation, entrepreneurial processes are among the most potent agents of change. The purpose of this volume is to investigate such processes.

It does so in a strategic context. That is, the focus is on processes that have strategic implications and have their greatest impact on strategic outcomes such as organizing, learning, and contributing to outstanding financial performance. Hence, the theme of this volume is “Entrepreneurial Strategic Processes.” This focus was also selected in part because of the traditional distinction within the strategy literature between process and content (Bourgeois, 1980; Schendel, 1992a, 1992b), and the strategic focus differentiates this approach from the entrepreneurial process model based on the works of Shapero (1975) and Krueger and Carsrud (1993).

The distinction has served the fields of strategy and entrepreneurship well because it provides scholars with a framework for investigating the relationship between the elements of competitive superiority (content) and the decision-making styles and practices (processes) involved in taking action and implementing change. Entrepreneurial value creation requires that organizations distinguish between the actions it needs to take and how to effectively take them.

Despite the usefulness of the distinction to the development of entrepreneurship research (e.g., Lumpkin & Dess, 1996), some researchers have argued that the process-content distinction is at best a distraction and at worst spurious (Huff & Reger, 1987; Khanna, Gulati, Nohria, 2000; Zajac, 1992). For example, the emphasis on dynamic perspectives in strategy research such as the knowledge-based view (e.g., Grant, 1996; Spender, 1996) and the concept of dynamic capabilities (Teece, Pisano, & Shuen, 1997) are suggestive of a reintegration of process and content. In general, the argument is that the dynamic nature of strategic behavior involves not only the strength or uniqueness of an organizations resources and competencies but also the capabilities and routines needed to create value and appropriate wealth. We do not disagree with this argument. In fact, it is perspectives such as this that have created new knowledge about entrepreneurial strategic processes and led to the need for this volume. Thus, we believe that framing the conversation in terms of what
entrepreneurial firms do (content) and how they do it (process) provides a useful distinction.

Even with this frame-narrowing distinction, however, the reader will find that the essays in this volume cover a wide range of process-related issues. The chapters draw on both scholars new to the field as well as some of those who have previously made strong contributions to entrepreneurial process research. The chapters include several studies that address entrepreneurial processes in a corporate setting including both large- and medium-sized corporations. There are also several studies that address the entrepreneurial process challenges of young and small firms. Issues faced by entrepreneurial owners and managers in directing both themselves and their organizations are another topic in several of the chapters.

The chapter by Robert P. Garrett and Jeffrey G. Covin highlights the role of corporate entrepreneurship in strategic adaptation. Given the demands that companies face to continually improve in the face of rapid change in the environment, new technologies, and shifting demand, the authors argue that it is entrepreneurial processes that enable a firm to seize opportunities and make internal adjustments to their strategic profile to accommodate and capitalize on change. They address both intended and emergent entrepreneurial initiatives and the role of slack in enhancing adaptive capability. Adaptive capability, in fact, is highlighted as a desirable non-pecuniary outcome of entrepreneurial processes that is as valuable to organizations as generating new knowledge and developing innovative solutions.

The chapter by Dilene R. Crockett, G. Tyge Payne, and Jeffrey E. McGee poses the question “what processes do corporate parent firms use to exploit entrepreneurial opportunities?” Drawing on a unique data source – the Internet divisions of major newspaper companies – the authors examine the resource and decision-making processes involved in exploiting an entrepreneurial opportunity inside an existing corporation. The decision to pursue entrepreneurial opportunities requires companies to make major decisions about resource deployments and organizational control. Considering that some resources and corporate functional competencies are more critical to the success of internal entrepreneurial initiatives than others, the authors asked (1) how do companies decide how many and what type of resources to devote to a new initiative? and (2) should decisions about entrepreneurial efforts be controlled by the corporate parent or made autonomously within the divisions? The findings suggest that firm outcomes are contingent upon the fit between the expertise and appropriateness of the source of the resources and decisions, and the specific critical needs of the entrepreneurial initiative.
Curt B. Moore, Chad W. Autry, and Barry A. Macy define a new term labeled, “interpreneurship.” They define interpreneurship as the combining or bundling of entrepreneurial activities with relational resources. The basic argument of their study is that entrepreneurial factors (e.g., proactiveness) interact with relational processes or factors (e.g., organizational trust, organizational commitment, and organizational compatibility) among firms trying to gain competitive advantage via strategic alliances with their preferred customers. Support was found for the multiplicative effect of entrepreneurial orientation (EO) and relational social capital on organizational performance. By examining the effects of organizational social structure on the relationship between EO and organizational performance, the authors also found that small changes in either construct result in significant changes in performance, which supports their view regarding the synergistic effects of resource combinations.

The purpose of the paper by Martie-Louise Verreynne and Denny Meyer is to investigate the existence and importance of intrapreneurial strategy-making in small firms and to establish how the nature of the firm’s internal and external environment, as well as its choice of business strategy, may further influence performance in small firms that use intrapreneurial strategy-making processes. Prior research suggests that small firms do not engage in formal strategy making but do so only infrequently, sporadically, and reactively. Hence, it is thought that strategy-making theories developed in large firms are unlikely to apply to small firms. However, small firm owner/managers still have expectations that engagement in strategy making will enhance performance. An analysis of 454 small New Zealand firms indicates that intrapreneurial strategy making has a significant positive relationship with firm performance, depending on the size of the firm, its organizational structure, and the dynamism of the environment.

The chapter by Mark Simon, Susan M. Houghton, and Tom Lumpkin begins with the observation that several of the “visionary” companies in Collins and Porras’ (1994) study Built to Last were dismal start-ups. How, then, does a start-up emerge from dismal beginnings to become an outstanding success? Their key contention is that founding entrepreneurs who have a strong ability to learn and will apply strategic tools to enhance their information processing capability are more likely to succeed. They suggest that by assembling top management teams (TMT) with certain characteristics that facilitate communication, founders increase the double-loop learning capacity. Further, they argue that decentralized and organic organizational structures will influence learning by determining who and how many people receive information, and whether it will be used to adapt
to new conditions. By adjusting these factors, information-processing systems become double-loop learning oriented, which enables ventures to rapidly adapt and eventually to succeed even if the initial opportunity was based on an entrepreneur’s inaccurate perceptions.

The chapter by Alexander McKelvie, Johan Wiklund, and Jeremy C. Short addresses the role of absorptive capacity – a firm’s ability to acquire, assimilate, and use new knowledge – on the innovation efforts of new firms. Recent conceptual studies assert that the concept of absorptive capacity can be delineated into a number of individual components including knowledge acquisition, knowledge assimilation, knowledge conversion, and knowledge exploitation. The authors test the influences of each component on innovation using a sample of 318 new firms in the Swedish telecom, IT, media, and entertainment sectors. They also propose that two additional aspects of knowledge – market knowledge and technological knowledge – are germane to innovation processes in young firms. The findings suggest that although all of the components of absorptive capacity influence innovation in new ventures, acquiring new technological knowledge and employing mechanisms for exploiting new knowledge have the greatest effects.

Miri Lerner, Shaker A. Zahra, and Yael Gal Kohavi address the topic of time in the context of corporate entrepreneurship. In particular, they investigate how and to what extent the entrepreneurial activities of individuals in corporate settings are affected by organizational time norms and individual time structures. Organizational time norms, which are shaped by the firm, can be analyzed along different dimensions such as punctuality, flexibility, work pace, and routine versus variety. Individual time structures, which are shaped by individuals but influenced by how they relate to organizational norms, include factors such as persistence, present orientation, and sense of purpose at work. In this study of 99 employees in an Israeli manufacturing firm, results indicated that matching employee time structures with organizational time norms is essential for promoting entrepreneurial activity.

The chapter by Haibin Yang and Gregory G. Dess explores the origins of EO from an organizational embeddedness perspective. Entrepreneurial firms’ networks are critical in defining the competitive context, the information and resource flows, and even the mortality of entrepreneurial firms. Therefore, the authors examine the impacts of firms’ network embeddedness such as structural, positional, and relational on entrepreneurial behavior. Networks, they argue, have varying connotations for EO, how network structure affects EO, and, correspondingly, how entrepreneurs deploy resources to set up their network configuration. They develop a set of
testable propositions that relate embeddedness properties such as centrality, structural holes, direct/indirect ties, and network density to the magnitude of each of the EO dimensions of risk-taking, proactiveness, and innovativeness. The authors conclude that differential impacts of network embeddedness on EO dimensions depict a complicated mechanism for EO formation and pose major challenges to managers endeavoring to make decisions about the role and function of networks.

The concluding chapter, by Frances Fabian and Hermann Achidi Ndofor, notes that the term “entrepreneurial process” implies a single process that entrepreneurs follow to establish successful ventures. Yet the variety of individuals who become entrepreneurs, the resources they possess, the ventures they create, and actions they take – all in environments having different characteristics – suggests a plurality of processes for successful ventures with the potential for equifinality across different scenarios. The implications of a plurality of entrepreneurial processes, they argue, have not contributed substantially to theorizing and empirics on new venture performance. To illustrate the potential for expanding the understanding, the authors consider the appropriateness and effectiveness of three specific implementation processes – formulating business plans, relying on social networks, and seeking venture capital – and show how they differ depending on (a) the role of the entrepreneur and (b) the environmental context. This offers a fruitful avenue, they argue, for building some boundary conditions for the effectiveness of implementation processes in enhancing the performance of entrepreneurial firms.

In conclusion, it is clear to us that the breadth of topics represented by this collection of chapters confirms van de Ven’s (1992) observation that “the body of strategy process research is diverse and cannot be contained within a single paradigm.” The range of strategic decision-making practices and implementation processes, which entrepreneurial firms must draw on to be successful, suggests that the topic of entrepreneurial strategic processes extends well beyond what can be covered in a single volume. It is also clear that the topic has advanced far past the issues of planning and control that dominated the early days of process research. Indeed, it is in entrepreneurial arenas, where rapid growth and dramatic technological changes require companies to make fast decisions and alter processes on short notice, where researchers have observed how important it is to understand the dynamic nature of entrepreneurial strategic processes.

We hope these essays provide a useful leaping off point for continued exploration of the unique role entrepreneurial strategic processes play in creating new value and achieving competitive advantages.
REFERENCES


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A MODEL OF CORPORATE ENTREPRENEURSHIP AS A STRATEGIC ADAPTATION MECHANISM

Robert P. Garrett and Jeffrey G. Covin

ABSTRACT

In business environments characterized by intense competition, globalization, rapid technological diffusion, accelerated product life cycles, and evolving industry boundaries, the ability of firms to adapt effectively to their changing environments is a strategic imperative (Hitt, Keats, & DeMarie, 1998; Nadler & Tushman, 1999). The exhibition of strategic adaptability – the ability of a firm to alter its alignment with the environment through reactive and proactive behaviors (Evans, 1991) – is a function of the goodness-of-fit that exists between the capabilities of a firm and the demands imposed by its relevant industry context (Burgelman & Grove, 1996). When firm capabilities are well aligned with industry success factors, those capabilities constitute strategic assets for the firm, or resources that lead to the achievement of competitive success in that context (Amit & Schoemaker, 1993). The possession of strategic assets thus contributes to a state of adaptation, defined by Chakravarthy (1982) as a state in which an organization exhibits the capacity to survive...
the conditions of its changing environment. Because of the constantly shifting nature of the environment, a state of adaptation is not a permanent settling point for the organization, but rather a moving target for the organization as it attempts to remain “mapped on” to the exigencies of the environment.Entrepreneurial initiatives can play a key role in the achievement of a state of adaptation (Muzyka, De Koning, & Churchill, 1995). Entrepreneurial initiatives are behaviors and programs targeted at the exploitation of entrepreneurial opportunities. Such initiatives stretch the boundaries of an existing firm’s scope of operations and provide the variation in experience needed to drive the development of new capabilities (Zahra, Nielsen, & Bogner, 1999b). However, the precise role of entrepreneurial initiatives in the attainment of strategic adaptation is not well depicted in current theory. In particular, while several corporate entrepreneurship models have broadly linked the exhibition of entrepreneurial initiatives to the realization of strategic adaptation, or to the closely related outcome of strategic renewal, most models that have depicted this linkage have posited a direct effect (e.g., Sambrook & Roberts, 2005; Wielemaker, Elfring, & Volberda, 2000). That is, corporate entrepreneurial initiatives are depicted as causally adjacent to new and more favorable strategic positions. Thus, the process through which entrepreneurial initiatives enable strategic adaptation to occur is underspecified in extant theory.

This chapter examines the phenomenon of corporate entrepreneurship as a strategic adaptation mechanism. Its purpose is to clarify the process and variables that link entrepreneurial initiatives to the realization of strategic adaptation. In brief, the model herein proposed conceptualizes corporate entrepreneurship as a process through which entrepreneurial opportunities are pursued through both intended and emergent entrepreneurial initiatives. Intended entrepreneurial initiatives flow from the firm’s concept of strategy, while emergent entrepreneurial initiatives do not – they occur autonomously (Burgelman, 1983a). Both types of initiatives can expand the experience, knowledge base, and behavioral repertoire of a firm and, thereby, build the adaptive capability of the firm. When a firm is able to use its adaptive capability to develop the strategic assets required for success in its industry context, it achieves a state of adaptation. In this state of organization–environment fit, firms generate resource surpluses called “slack” (Chakravarthy, 1982). Slack fuels the corporate entrepreneurship process. That is, slack resources can enable (Covin & Slevin, 1991) and
facilitate the effectiveness (Wilkund & Shepherd, 2005) of entrepreneurial initiatives and, thereby, enhance the firm’s ability to achieve future states of adaptation. Thus, we model corporate entrepreneurship as a strategic adaptation mechanism that, if managed correctly, leads in a virtuous circle to the generation of rents that make the pursuit of future entrepreneurial initiatives possible.

In developing the current model, we draw on the research of others who have described linkages between subsets of the variables portrayed within our model. In particular, our discussion of the link between firm strategy and entrepreneurial initiatives is based on insights initially provided by Burgelman (1983a, 1991). The theorizing of Floyd and Wooldridge (1999), McGrath, Venkataraman, and MacMillan (1994), and Zahra et al. (1999b) is then used as a basis for our discussion of the link between entrepreneurial initiatives and adaptive capability. The segment of our model that links adaptive capability to a state of adaptation is based on Chakravarthy’s (1982) discussion of the strategic adaptation process. Chakravarthy’s theory also provides insights regarding how the achievement of adaptation can stimulate the pursuit of future entrepreneurial initiatives. In short, our model is composed of three overlapping segments, each of which is well supported by prior theory. Our overall model and the segments of which it is composed are presented below.

**A MODEL OF CORPORATE ENTREPRENEURSHIP AS A STRATEGIC ADAPTATION MECHANISM**

Fig. 1 depicts our model of corporate entrepreneurship as a strategic adaptation mechanism. Strategic adaptation is an outcome of corporate entrepreneurship that is often neglected in the scholarly literature. Researchers have, in general, emphasized other intended outcomes of corporate entrepreneurship including: increasing corporate profitability (Zahra, 1991), generating strategic renewal (Guth & Ginsberg, 1990), promoting innovation (Baden-Fuller, 1995), and developing knowledge that may be used later in the creation of future revenue streams (McGrath et al., 1994). Although the development of a strategic adaptation capability may be among the less emphasized outcomes of corporate entrepreneurship, this model proposes that it is a notable outcome, nonetheless. Clarification of the linkage between corporate entrepreneurship and strategic adaptation may help researchers and practitioners alike to better appreciate the causal
mechanisms through which entrepreneurial initiatives create continuously morphing organizations that sustain tight organization–environment alignments under conditions of environmental dynamism.

In describing how corporate entrepreneurship operates as a strategic adaptation mechanism, we have divided our discussion into three sections: (1) The Link between Firm Strategy and Entrepreneurial Initiatives; (2) Entrepreneurial Initiatives as Antecedents and Consequences of Adaptive Capability; and (3) Adaptive Capability and the Moving Target of Strategic Adaptation.

The Link between Firm Strategy and Entrepreneurial Initiatives

Entrepreneurial Opportunities and the Concept of Strategy
As with any recursive model, there is no one true starting or ending point. Rather, a convenient point within the model is taken as a fitting location to begin the description. By taking a starting point, we wish to neither emphasize nor de-emphasize the role of the remaining elements in the model as inputs or outcomes in the process. For example, organizational slack is a key outcome in this model because it represents what a state of adaptation can “buy” for an organization, but it also can be conceived of as input to the model because it is described as a critical enabler of entrepreneurial initiatives. For the purposes of our discussion, we chose a starting point that would facilitate a coherent description of the model and allow us to clarify the role of each element.
In the current case, we start with “entrepreneurial opportunities” as a suitable beginning for our narrative. Entrepreneurial opportunities, as defined by Eckhardt and Shane (2003, p. 336), are “situations in which new goods, services, raw materials, markets and organizing methods can be introduced through the formation of new means, ends, or means-ends relationships.” Entrepreneurial opportunities are discovered through a variety of mechanisms. At the individual level, several opportunity identification approaches are commonly utilized, including systematic search, passive search, fortuitous discovery, and learning (Detienne, 2004). At the firm level, entrepreneurial opportunities are also likely to be discovered through various formal and structured channels. Top management may sponsor a systematic search or program to discover and develop potential opportunities within the firm, or opportunities may be found in a more fortuitous manner by employees who “happen upon” them within the organization.

As shown in the model, a firm’s concept of strategy can be a driver of the entrepreneurial opportunities it discovers. The concept of strategy is likely to be based, at least in part, on retrospective sense-making and on what the top management has learned about the basis for the firm’s success (Burgelman, 1991). The concept of strategy is defined and articulated by top management, and it reflects their vision of what will best facilitate the long-term performance of the firm (Lovas & Ghoshal, 2000). It may also be embodied in oral or written statements about the technical, economic, or cultural factors that have been associated with past success (Haggerty, 1981; March, 1981; Pettigrew, 1979; Pfeffer, 1981; Weick, 1987). Conceived this way, the concept of strategy identifies the distinctive competencies of the organization, defines its goals, delineates its action domain, and defines its character (Andrews, 1971; McKelvey & Aldrich, 1983; Selznick, 1957).

In general, a firm’s concept of strategy plays two instrumental roles in the process of corporate entrepreneurship. First, it directs entrepreneurial efforts in directions harmonious with targets defined by management. Second, it minimizes the costs associated with the pursuit of strategically irrelevant or otherwise questionable entrepreneurial opportunities. Notably, through manipulating the “working” definitions of strategy adopted by firms, management can influence the types of entrepreneurial opportunities identified by their firms (Burgelman, 1983a). Moreover, because the concept of strategy determines how resources are configured within the firm and what projects those resources are applied to, the firm’s concept of strategy guides the direction of the evolutionary process (Lovas & Ghoshal, 2000), including both the deliberate and serendipitous discovery of entrepreneurial opportunities.
Just as the concept of strategy can affect what is defined by managers as an entrepreneurial opportunity, the converse is also true; the entrepreneurial opportunities identified within a firm can affect the concept of strategy. Conceptualizations of strategy often reflect the factors top managers perceive as having influenced past or current performance. However, the concept of strategy also reflects managers’ vision of what will drive future performance. Management relies on its awareness of entrepreneurial opportunities to form a concept of strategy that best captures the positive potentialities of these opportunities. When managers consider how to shape the future of the firm into the most desirable outcome, entrepreneurial opportunities are often incorporated into the firm’s concept of strategy. Thus, the entrepreneurial opportunities within a firm can drive the firm’s concept of strategy.

A final observation on the relationship between entrepreneurial opportunities and a firm’s concept of strategy concerns the moderating role of organizational slack. In particular, the presence of organizational slack (i.e., surplus resources (Cyert & March, 1963; Amit & Schoemaker, 1993)) can, depending upon their relevance to the identified opportunities, enable firms to consider the possibility of acting on those entrepreneurial opportunities. When opportunities are deliberately chosen by top managers for pursuit, they contribute to the definition of the firm’s concept of strategy. Thus, organizational slack can strengthen the relationship between recognized entrepreneurial opportunities and the incorporation of those opportunities into the firm’s concept of strategy. Likewise, slack can facilitate the pursuit of more autonomous entrepreneurial initiatives that do not flow from strategically validated entrepreneurial opportunities (Chakravarthy, 1982). As such, slack also moderates the relationship between entrepreneurial opportunities and the pursuit of emergent entrepreneurial initiatives.

It is important at this stage of the model to recognize the facilitating role of slack in the process of corporate entrepreneurship. Specifically, when slack is readily available, organizations tend to invest in corporate entrepreneurship programs; when slack is in short supply, these programs are often terminated (Burgelman & Valikangas, 2005). This is because entrepreneurship programs and the individual initiatives of which they are comprised tend to be resource consuming in nature. Wiklund and Shepherd (2005, p. 78) argue that slack enables firms “to experiment with new strategies and innovative projects that might not be approved in a more resource-constrained environment.” Thus, greater quantities of slack will facilitate the conversion of perceived entrepreneurial opportunities into active entrepreneurial initiatives. Conversely, less entrepreneurial activity
will occur in firms whose uncommitted resources are in short supply, that is, low-slack situations. As a theoretical matter, firms might engage in entrepreneurial activity despite the absence of slack if currently allocated resources in zero-slack firms – or what Cyert and March (1963) refer to as “perfectly efficient” firms – are redeployed toward entrepreneurial initiatives. However, the redeployment of resources would be a slack-creating process inasmuch as the resources released from current commitments would, themselves, constitute slack in their interim state. Therefore, as a practical matter, the presence of slack operates as a boundary condition for the pursuit of corporate entrepreneurship (Yasai-Ardekani, 1986).

Types of Entrepreneurial Initiatives
As suggested above and depicted in our model, there are two distinct types of entrepreneurial initiatives: intended and emergent. Intended entrepreneurial initiatives are entrepreneurial programs and activities (e.g., internal corporate venturing, new product development) that result from purposeful action taken by managers as part of the firm’s implementation of its concept of strategy. These are deliberate efforts aimed at appropriating economic value from entrepreneurial opportunities that are aligned with a firm’s strategic intentions (Lovas & Ghoshal, 2000). As such, intended entrepreneurial initiatives represent a type of induced strategic behavior as described by Burgelman (1983a).

On the other hand, some entrepreneurial opportunities are pursued without ever having been formally recognized as part of the firm’s strategic domain. These emergent entrepreneurial initiatives do not have their origins in the concept of corporate strategy but, rather, represent a form of autonomous strategic behavior as defined by Burgelman (1983a). Emergent entrepreneurial initiatives are potentially valuable as a source of variance to a firm’s chosen domain of activity. These initiatives often evolve in serendipitous manner and are difficult to predict. Nonetheless, they are often linked to the current businesses or technologies of the firm and, as such, are constrained by existing competencies (Burgelman, 1991). Because emergent entrepreneurial initiatives are not associated with a firm’s concept of strategy, their appropriate evaluation can be a challenge to management. This is where a firm’s internal selection environment comes into play, as discussed below.

The Internal Selection Environment and Emergent Entrepreneurial Initiatives
Emergent entrepreneurial initiatives are an inevitable by-product of firm operations (Burgelman & Valiikangas, 2005), and some such initiatives will
have great potential relevance to the firm’s strategy and future performance. As such, it is important that managers have a system in place to assess emergent initiatives’ possible significance to the firm. In order for an emergent entrepreneurial initiative to be retained by the firm, it must be linked to the firm’s concept of strategy (Floyd & Wooldridge, 1999). The processes, systems, and assessments used to determine an initiative’s relevance to the concept of strategy is called the internal selection environment.

According to Burgelman (1991), an organization is an ecology of strategic initiatives that compete for limited organizational resources. The role of the internal selection environment is to regulate the allocation of the company’s resources to initiatives that are consistent with the concept of strategy. The internal selection environment operates according to “variation-selection-retention” principles, as defined within the evolutionary theory of organizations (Nelson & Winter, 1982). Specifically, variation in emergent entrepreneurial initiatives occurs as individuals pursue their own interests via “pet” projects. Selection occurs via mechanisms that allocate firm resources and attention to different strategic initiatives. Retention results in organization-level learning and the development of distinctive competence around the initiative as it is carried out as part of the firm’s concept of strategy.

As depicted in Fig. 2, there are three determinations that may be made when considering the relevance of an emergent entrepreneurial initiative: (1) that the initiative is strategically relevant; (2) that it is not strategically relevant; or (3) that the strategic relevance of the initiative is unclear. Each of these three scenarios has different managerial implications.

If an emergent entrepreneurial initiative is regarded by the firm’s key decision makers as strategically relevant – it is recognized as pertinent to existing or desirable definitions and operationalizations of the firm’s purpose and direction – the firm’s concept of strategy should be modified to fully leverage and exploit this initiative. Future strategy should be responsive to entrepreneurial innovations and discoveries, whether or not these innovations and discoveries were proactively created. As suggested by Morris (1998), Knight (1997), Burgelman (1983a), and others, the strategic evaluation of the outcomes of entrepreneurial processes enables firms to reinvent themselves opportunistically for the purpose of creating or sustaining competitive advantage.

If an emergent entrepreneurial initiative is regarded by the firm’s key decision makers as strategically irrelevant, the managers have at least three potentially defensible alternatives. The option taken should reflect the
frequency with which strategically irrelevant outcomes are produced. If the firm produces consistently irrelevant initiatives, the managers may wish to modify the outcome-producing behaviors or processes. The assumption here would be that strategically irrelevant initiatives are results of entrepreneurial behaviors and processes that are somehow flawed (and these behaviors and processes should, therefore, be modified). For example, the frequent identification of business opportunities in product–market arenas where the firm’s core competencies are meaningless could signal that the firm’s resources and historical bases for comparative advantage are inadequately factored into the opportunity identification process.

The creation or emergence of occasionally irrelevant initiatives, on the other hand, would suggest that other options be explored. These options are based on the recognition that “good” entrepreneurial behaviors and processes sometimes result in strategically irrelevant initiatives. The firm might choose, for example, to simply eliminate further investments in the initiative. Similar to the situation presented above, this option might be explored if the effective exploitation of a newly recognized business opportunity requires the creation

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**Fig. 2.** A Normative Model of the Internal Selection Environment.
of core competencies significantly different from those on which the firm’s current strategy is based. In this case, resources that could be allocated in support of the new business initiative would be withheld to effect the termination of the business development process. The strategic reasons for terminating the potential business’s development would, of course, be communicated by the relevant decision makers to those who identified and would pursue the new business opportunity.

Alternatively, managers could respond to an initiative that is deemed strategically irrelevant by leveraging the entrepreneurial outcome for non-strategic purposes. The licensing of an opportunistically developed yet non-strategic technology, for example, could be one means through which an organization could benefit from its strategically irrelevant entrepreneurial initiatives. Financial yet non-strategic benefit could also accrue to a firm that invests in developing “spin-off” businesses for which the corporation can provide no “parenting advantage” (see Campbell, Goold, and Alexander (1995) for a discussion of the parenting advantage concept).

Thus, the creation or emergence of strategically irrelevant initiatives should not necessarily be viewed as wholly undesirable occurrences. In fact, many managers grant their employees permission to allocate a certain percentage of their time to work on projects whose outcomes have no immediately identifiable strategic value to the firm. This may be done because managers recognize that what is strategically relevant can and will change over time due to variations in the competitive environment or managerial objectives. Also, allowing employees to work on “personal” projects can enhance their creativity, motivation, and morale, which can spur future innovation (Kerin, Varadarajan, & Peterson, 1992). In short, even though a specific entrepreneurial initiative may be judged as strategically irrelevant, the totality of effort preceding that outcome will not necessarily have been misspent. Strategically entrepreneurial firms realize that entrepreneurial activity creates, in essence, a portfolio of corporate entrepreneurship initiatives, and it is this portfolio rather than the individual corporate entrepreneurship initiatives that should be critically evaluated.

If the potential strategic relevance of an initiative is unclear, at least three options might be considered. First, the firm’s managers could explore possible redefinitions of the corporate concept of strategy. By pursuing this option, managers may be able to strategically rationalize entrepreneurial initiatives that are beyond the firm’s presently accepted and understood scope of operations. The mission of the firm would, in essence, be expanded or redirected to incorporate and justify the pursuit of opportunities created
by the emergent initiative. In turn, the strategy of the firm would be modified to reflect the reconstituted mission. Evidence suggests that this sort of fundamental, opportunistic modification to a firm’s mission may be a fairly common occurrence among intensely entrepreneurial firms (e.g., Sathe, 2003; Stopford & Baden-Fuller, 1994).

A second way of dealing with an emergent entrepreneurial initiative whose strategic relevance is unclear is to treat that outcome in accordance with its level of operational relatedness to the firm’s other activities. Burgelman (1984) has noted that the “design alternatives” for managing entrepreneurial initiatives should vary in relation to the initiative’s strategic importance and relatedness to organizational operations. His arguments are premised on the observation that entrepreneurial projects or initiatives need not be clearly strategically important to warrant retention within the firm’s organizational architecture. In particular, Burgelman (1984) argues that for initiatives whose strategic importance is uncertain, a “micro new ventures department” is an appropriate design alternative if the operational relatedness of the initiative is strong; a “new venture division” is an appropriate design alternative if the operational relatedness of the initiative is modest; and an “independent business unit” is an appropriate design alternative if the initiative is operationally unrelated to the organization’s other activities. (For details on these prescriptions, the reader is referred to the original Burgelman (1984) reference.)

A third option for dealing with an initiative whose strategic relevance is unclear is to invest in the further development of that initiative until its irrelevance is established. The logic behind this suggestion is that by acting as if the initiative is strategically relevant, managers can minimize “missing-the-boat” risk, defined by Dickson and Giglierano (1986, p. 62) as “the likelihood that a very attractive opportunity will be overlooked, dismissed or lost”. Consistent with such a perspective on opportunity seeking and risk minimization, many entrepreneurial firms, such as Sharp Corporation, have policies of not abandoning investments in emerging technologies until those technologies are shown to be non-viable (see Noda, 1993). Thus, by assuming that a questionably relevant initiative is relevant and acting accordingly, the firm retains the possibility of strategically benefiting from the corporate entrepreneurship outcome. If, on the other hand, the initiative is ultimately judged (i.e., after investments designed to move the opportunity exploitation process forward) to be strategically irrelevant, it can be handled accordingly.

In sum, emergent entrepreneurial initiatives represent a source of evolutionary change with respect to a firm’s concept of strategy. Within
the parameters set by firm strategy, individuals have some leeway in pursuing a variety of initiatives. However, desirable entrepreneurial opportunities will often be overlooked if the firm’s concept of strategy embraces only those initiatives that are formally planned. As such, the internal selection environment plays an important role in enabling firms to opportunistically appropriate value from emergent entrepreneurial initiatives, thereby facilitating effective strategic adaptation. The internal selection environment is used to assess the strategic relevance of an entrepreneurial initiative and provide a set of options for the initiative based on its relevance.

Entrepreneurial Initiatives as Antecedents and Consequences of Adaptive Capability

The acquisition of knowledge is typically based on experiencing something new (Kogut & Zander, 1992). Whether intended or emergent, entrepreneurial initiatives constitute new activity for a firm and thus represent opportunities for the firm to develop new knowledge and higher order capabilities (Pinchot, 1985; Zahra, Jennings, & Kuratko, 1999a). Capabilities have been defined as “the bundles of complementary resources … administrative skills, routines, and physical assets with the flexibility to generate adaptive and valuable inputs” (Miller, 2003, p. 964). The development of capabilities is an evolutionary process that frequently entails considerable experimentation (Zahra & Filatotchev, 2004; Zahra & George, 2002). A premise of the current chapter is that the experimentation that leads to capability development will often occur in the form of entrepreneurial initiatives.

Floyd and Wooldridge (1999), McGrath et al. (1994), and Zahra et al. (1999b) offer theoretical models that portray the development of organizational capabilities through the pursuit of entrepreneurial initiatives. Significantly, each of these models is fundamentally consistent in its depiction of the capability development process. In particular, according to these models, the pursuit of entrepreneurial initiatives results in the accumulation of firm-specific knowledge that is foundational to capability emergence.

Of particular importance for the purposes of the current discussion, corporate entrepreneurship can facilitate the development of an adaptive capability within the firm. We define adaptive capability as the ability of an organization to adjust its strategy, structure, or deployment of resources
according to imperatives created by changing environmental conditions. The specific means by which entrepreneurial initiatives build adaptive capability are many and varied. For example, corporate entrepreneurship activities have been argued to facilitate the emergence of competencies pertaining to market assessment and the creation and commercialization of new technologies, products, processes, and services (Burgelman, 1983b, 1983c; Kanter, Ingols, Morgan, & Seggerman, 1987; Zahra, 1995). These competencies, in turn, constitute some principal tools through which new organization–environment alignments are created.

Because environmental contexts are continuously evolving, an adaptive capability is critical to achieving and sustaining alignment between the organization and its environment (Hitt, Keats, & DeMarie, 1988; Nadler & Tushman, 1999). Responding to environmental exigencies in either reactive manners or proactive manners is the essence of strategic adaptation (Green, Covin, & Slevin, 2006; Evans, 1991). Significantly, as argued by Zahra et al. (1999b, p. 170), entrepreneurial initiatives “can create new knowledge that can improve the firm’s ability to respond to changes in its markets by enhancing the company’s competencies.” Thus, entrepreneurial initiatives have the potential to build adaptive capability within organizations, thereby enabling them to sustain a state of adaptive fit with the environment.

Just as entrepreneurial initiatives can build adaptive capability, such capability can iteratively facilitate the pursuit of new entrepreneurial initiatives through surfacing new and actionable entrepreneurial opportunities. More directly, an adaptive capability enables firms to both recognize entrepreneurial opportunities and align their resources with those opportunities, thereby allowing entrepreneurial initiatives to occur. Of particular importance, because an adaptive capability enables firms to deviate from known strategic paths, it can expand the scope of the entrepreneurial opportunity set considered by the firms.

Adaptive Capability and the Moving Target of Strategic Adaptation

Strategic Asset Evolution as a Challenge to the Attainment of Adaptation

A state of adaptation, as described by Chakravarthy (1982), is a niche or position in which an organization can survive the conditions of its environment. Due to the constantly changing nature of the environment, a state of adaptation is not a permanent position, but rather a moving target that the organization must constantly respond to in order to remain in the “sweet spot.” To maintain a state of adaptation, there must be a continuous
renewal of organization–environment fit. As noted by Chakravarthy (1982, p. 42), “The process of adaptive generalization [i.e., strategic adaptation] … requires that an old fit be consciously disturbed for the sake of a new and higher fit.” This new fit is achieved when the evolving demands of the environment are recognized and the firm is able to reposition itself and its resources to match those demands.

There are, essentially, two drivers of a state of adaptation: the varying requirements placed upon an organization by the relentlessly changing environment, and the organization’s internal ability to redirect the deployment of its resources according to those demands. Changes in the environmental demands placed upon a firm lead to changes in the resources needed to enact the firm’s strategy, a phenomenon we refer to as strategic asset evolution. Strategic asset evolution is the process of the environment redefining the set of appropriate assets, resources, and competencies that are necessary for the firm to survive. Strategic assets are resources that are key to competitive success (Thornhill & Amit, 2000), or those assets that best align with the factors that determine success in a competitive arena. Strategic assets are not defined by the existing asset base of the organization, but rather by the constantly evolving demands placed upon it by the environment. This, then, is the “moving target” produced by the environment to which the firm must respond using its adaptive capability if it hopes to achieve a productive organization–environment alignment, that is, a state of adaptation.

Thus, strategic asset evolution represents the changing set of resources that are necessary for firm survival and adaptive capability represents the firm’s ability to match the demands of this evolution. Adaptive capability implies that the firm is able to learn new competencies and develop new resources. Under conditions of strategic asset evolution, the organization can direct its efforts to the development of specific competencies and resources that will be relevant within the new environmental context. As discussed earlier, the development of an adaptive capability can be a direct outcome of corporate entrepreneurship initiatives (even though it will not necessarily be an intended outcome). Importantly, an adaptive capability enables firms to achieve and maintain a state of adaptation despite the presence of inevitable strategic asset evolution.

Organizational Slack as an Adaptation Outcome

The achievement of a state of adaptation is only theoretically and practically important to the extent that it “buys” something of value for the organization. So what does a state of adaptation buy for organizations?
Above and beyond mere survival, when an organization achieves a state of adaptation “the firm generates a surplus of contributions over the inducements that it provides” (Chakravarthy, 1982, p. 42). This surplus is commonly called “slack” (Cyert & March, 1963). Slack, in essence, represents resource-based returns to the firm in excess of what is needed as input to sustain firm operations. Although slack is frequently conceived of in monetary terms, it can also be represented by a surplus of other valuable and uncommitted resources including, for example, intellectual capital or technological capability. Importantly, slack has been identified as a significant factor affecting the level at which entrepreneurial initiatives can be supported within organizations (Burgelman, 1991). Additionally, slack resources in the form of access to capital have been shown to improve the performance associated with a firm’s exhibition of an entrepreneurial orientation (Wiklund & Shepherd, 2005).

Slack can be appropriated in two ways through entrepreneurial activity in organizations. First, slack can enable managers to select more resource intensive (and/or a greater number of) entrepreneurial opportunities for adoption as intended entrepreneurial initiatives consistent with the firm’s concept of strategy. Second, slack can be informally allocated toward or acquired in support of emergent entrepreneurial initiatives. Thus, slack plays a facilitating role in the corporate entrepreneurship process by providing a resource base that enables the pursuit of recognized entrepreneurial opportunities. If the process of investing slack is managed properly, its presence can sustain a firm’s ability to strategically evolve in concert with changing industry success factors (Chakravarthy, 1982; Yasai-Ardekani, 1986).

DISCUSSION AND CONCLUSION

To summarize the preceding arguments, corporate entrepreneurial initiatives build a firm’s repertoire of competencies. The exploitation of this repertoire to match the demands of strategic asset evolution represents an adaptive capability for the firm that allows it to create organizational slack. Slack is an input to the entrepreneurial process that enables a firm to pursue select entrepreneurial opportunities that match and help define its current concept of strategy. Additionally, slack in its various forms is used in unofficial contexts to sustain emergent entrepreneurial initiatives. Thus, entrepreneurial opportunities are linked to entrepreneurial initiatives in the presence of organizational slack. These initiatives build adaptive capabilities
that enable firms to sustain a state of adaptation despite the disruptive forces of strategic asset evolution. Through these processes, corporate entrepreneurship operates as a strategic adaptation mechanism.

Theoretical Implications

The proposed model of corporate entrepreneurship as a strategic adaptation mechanism has several principal implications. First, as an entrepreneurial outcome, strategic adaptation occurs through both planned and unplanned entrepreneurial activity. Of particular note, effectively managing emergent entrepreneurial initiatives may be especially important to the successful attainment of a state of adaptation. This is true because emergent entrepreneurial initiatives frequently serve as advance warning signals of a need for strategic change. On this point, Burgelman and Grove (1996) have observed that in organizations which need to adapt strategically, the voices sounding danger ahead will typically arise from the middle-management ranks, and middle managers are typically the locus of emergent entrepreneurial initiatives in organizations (Kuratko, Ireland, Covin, & Hornsby, 2005).

Second, the sustainment of a state of adaptation requires more than just strategic decisions that reposition the firm. It requires capability development. Stated differently, creating a strong organization–environment fit is not simply about deciding to strategically adapt through pursuing entrepreneurial initiatives. Rather, entrepreneurial initiatives facilitate adaptation because of the capabilities they create for the firm. This point is noteworthy because strategic adaptation can be conceived of as a strategic choice outcome in which more productive organization–environment alignments are simply selected by the firm (Child, 1972). Alternatively, strategic adaptation can be conceived of as a more autonomous or deterministic phenomenon in which the environment “selects” which firms will remain viable and which will not (Hannan & Freeman, 1984). The current model recognizes that strategic adaptation is not simply a matter that is wholly within the firm’s ability to choose, nor is the firm’s future simply dictated by larger environmental forces. Rather, consistent with the tenets of the resource-based view (Wernerfelt, 1984), the current model implies that successful strategic adaptation is principally a function of what a firm can “do” as reflected in its capabilities.

Third, the proposed model implies that the sustainment of a state of strategic adaptation requires more than creating an organizational
architecture that value and fosters entrepreneurial activity. The sustainment of strategic adaptation requires the deliberate pursuit of entrepreneurial initiatives that stretch the organization and, most significantly, its capabilities. Although this observation may border on the obvious, it should be noted that the need to build self-sustaining “entrepreneurial” organizations is often described as top managers’ primary responsibility (e.g., Bartlett & Nanda, 1996; McGrath & MacMillan, 2000). The importance of having an appropriate architecture that values and fosters entrepreneurial activity is undeniable. However, managers’ roles in employing corporate entrepreneurship as a strategic adaptation mechanism go beyond simply building appropriate organizational structures and then letting the naturally occurring entrepreneurial process play themselves out. Managers must play a directive role, consciously screening and selectively backing or withdrawing support from particular entrepreneurial initiatives such that the entrepreneurial energy of the organization is appropriately harnessed for adaptation purposes.

Fourth, the proposed model emphasizes a critical insight about the role of entrepreneurship in turbulent environments. In particular, the model demonstrates why firms must “run to stand still” when their competitive landscapes are evolving. It also demonstrates why corporations are not absolved from an obligation to internally innovate as a response to environmental change (Burgelman & Valikangas, 2005). The metaphor of the innovation treadmill is quite apt (King, Covin, & Hegarty, 2003). Specifically, the evolution of strategic assets dictates that firms must continuously renew their capabilities, and stretching the boundaries of existing knowledge through pursuing entrepreneurial initiatives is a logical and effective approach to doing this. The internal form of corporate entrepreneurship, where investments are made in internal entrepreneurial initiatives, may be particularly effective in this regard because internal capabilities are most efficiently and effectively built through first-hand experience (Cohen & Levinthal, 1990). Thus, while corporate business renewal strategies commonly mix internal, cooperative, and external innovation modes (Gee, 1994), successful strategic adaptation may best be facilitated when internal entrepreneurial initiatives are part of the mix.

Finally, the proposed model implies that defining the domain of entrepreneurial opportunity may be one of the most important tasks managers can perform in their pursuit of successful strategic adaptation. Pertaining to this point, Covin and Slevin (2002) observed that strategic leaders are tasked with several entrepreneurial imperatives, two of which are “revisit the deceptively simple questions” and “make opportunities make
sense” for the firm. Both of these imperatives relate to how the domain of opportunity is defined within the firm. In particular, by revisiting the deceptively simple questions, managers ask fundamental questions like “what business are we in?” How firms define their businesses affects what is perceived as an opportunity. Likewise, the “opportunity radar screen” embraced by a firm’s members is a direct reflection of how broadly or narrowly management defines the rightful scope of the firm’s business operations. These insights are pertinent here because the current model recognizes that the corporate entrepreneurial activity begins with the recognition of entrepreneurial opportunity. Most critically, as part of the strategic adaptation process, opportunity recognition is too important to be treated with benign neglect. Effecting successful strategic adaptation will most readily be accomplished when managers play a conscious and active role in defining and communicating the domain of entrepreneurial opportunity.

**Future Research Directions**

Research into the operations of corporate entrepreneurship as a strategic adaptation mechanism might productively focus on several topic areas. Three particularly promising research foci are suggested here. First, research should seek to further clarify and document the alternative means through which firms effectively blend variance-reducing behaviors designed to efficiently appropriate value from current business operations with entrepreneurial, variance-enhancing behaviors designed to identify and place the firm on new growth trajectories. Ambidextrously responding to the concurrent needs for stability and change is not a new theoretical challenge, nor is it a novel managerial requirement (Tushman & O’Reilly, 1996). Nonetheless, what is missing from the current discussion of how entrepreneurship is injected into the mainstream of organizational operations are theoretical models of organizational adaptation that adequately reflect the great variety of approaches employed by organizations in their pursuit of being strategically entrepreneurial (see Covin & Miles, 2007). In short, research that further explores the variety of means through which an effective “innovation-to-organization interface” (Dougherty, 1992) can be created may significantly enhance our understanding of the strategic adaptation process.

Second, research should seek to provide a better understanding of the relationship between strategic adaptation success and the novelty or “radicalness” of the entrepreneurial initiatives pursued. Current theory
(e.g., Garvin, 2002; Zook & Allen, 2003) suggests that entrepreneurial success will best be assured when initiatives are pursued in technology, product, or market domains adjacent to a firm’s existing scope of operations. However, strategic adaptation under conditions of rapid or, particularly, discontinuous environmental change will often require that firms embrace radically different core technologies and/or strategic recipes. Entrepreneurial initiatives that do not stretch or depart appreciably from the firm’s current knowledge base may not generate sufficient new knowledge to allow the firm to successfully navigate its novel competitive landscape. Research that informs managers on the matter of the appropriate degree of entrepreneurial initiative “newness” under various rates and types of strategic asset evolution could be very informative.

Third, research should investigate the matter of when a state of adaptation should be sought through pursuing unexplored or underexplored entrepreneurial opportunities within a firm’s current product–market domain versus when a state of adaptation should be sought through pursuing entrepreneurial opportunities in new product–market domains via bypass (Fahey, 1989), pioneering (Lieberman & Montgomery, 1988), or “blue ocean” strategies (Kim & Mauborgne, 2005). Firms are sometimes able to proactively create new markets, thereby redefining their relevant environmental contexts, through their entrepreneurial actions (e.g., Miller & Friesen, 1984; Morris & Kuratko, 2002). In such cases, the strategic renewal challenge is less one of adapting the firm’s capabilities to align with product–market opportunities than it is one of proactively creating new market space in which the firm’s capabilities constitute a good fit. In short, a state of strategic adaptation can be reached by fitting the organization to its environment or by shaping the environment to fit the organization. Knowing how and when to be reactively adaptive (where the organization is the object of adaptation) versus proactively adaptive (where the environment is the object of adaptation) via entrepreneurial initiatives may prove to be increasingly critical to firm success as competitive intensity levels increase across industries.

In conclusion, just as it is appropriate to conceive of corporate entrepreneurship as a driver of strategic renewal (e.g., Stopford & Baden-Fuller, 1990; Sambrook & Roberts, 2005), it is also appropriate to conceive of corporate entrepreneurship as an adaptation device. However, the process and variables that link corporate entrepreneurial initiatives to the attainment of a state of adaptation are poorly depicted within the relevant literature. This chapter has sought to rectify this situation by proposing a parsimonious yet integrated model of corporate
entrepreneurship as a strategic adaptation mechanism. The current model links relevant portions of pre-existing entrepreneurship and adaptation models and extends these models by integrating novel lynchpin concepts (e.g., the concepts of strategic asset evolution and organizational slack) as appropriate. Hopefully, the current model will stimulate future theoretical discussion and empirical research on the topic of corporate entrepreneurship’s role within the strategic adaptation process.

REFERENCES


EXPLOITATION OF ENTREPRENEURIAL OPPORTUNITIES IN THE CORPORATION: AN EXPLORATION OF FUNCTIONAL-LEVEL SUPPORT, DECISION AUTONOMY, AND PERFORMANCE

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ABSTRACT

This chapter examines the role that resource support and decision autonomy play in the successful launch of corporate entrepreneurial initiatives. Specifically, this study assesses whether entrepreneurial initiatives receiving higher levels of support from top management and more resource contributions in key functional areas actually have higher levels of performance. Additionally, this study investigates whether or not the entrepreneurial initiatives that receive greater decision autonomy in the same critical functional areas will experience higher levels of
performance. Hypotheses arguing these points are tested using data obtained from the Internet divisions of major metropolitan newspapers. This allows for the discovery and evaluation of an opportunity (i.e., the Internet) to be held constant, so that a better understanding of the exploitation stage of the entrepreneurial process might be obtained. Results suggest the importance of resource support and decision autonomy to initiative performance, but with more importance being placed on the marketing functional group for resource support and the accounting and legal functional areas for decision autonomy.

INTRODUCTION

Shane and Venkataraman (2000) identified the entrepreneurial process as one of three primary domains of entrepreneurship research. The entrepreneurial process involves discovering, evaluating, and exploiting opportunities to create commercial or societal gain (Shane, 2000; Shane & Venkataraman, 2000). In this general domain, several works have been published that address the first stage in the process of entrepreneurship – discovery (Shane, 2000). These studies focus on the decisions involved in searching for and recognizing opportunities (e.g., Baron, 2006; Gaglio & Katz, 2001; Keh, Foo, & Lim, 2002). Likewise, studies dealing with the second stage in the entrepreneurial process, evaluation, have explored the decisions defining when and if an opportunity will be pursued (Choi & Shepherd, 2004). To date, research on exploitation, which considers how opportunities are commercialized, has been less popular. Most research in this third stage of the entrepreneurial process has only addressed the modes and types of entrepreneurial structures used to pursue opportunities. For instance, Shane and Venkataraman propose two institutional modes of exploitation, “the creation of new firms (hierarchies) and the sale of opportunities to existing firms (markets)” (2000, p. 224).

Despite limited research in the area, the opportunity exploitation stage of the entrepreneurial process is especially important in the context of established companies that are trying to expand operations by seizing new markets or capitalizing on new technologies. Whether such organizations purchased an opportunity on the market, as Shane and Venkataraman (2000) suggest, or developed the opportunity internally, it seems that exploitation of opportunities for commercial benefit is often an issue of major importance to corporations. Indeed, in the corporate context, a key
question in need of further exploration is, “what processes do corporate parent firms use to exploit entrepreneurial opportunities?”

Research in corporate entrepreneurship has long examined the modes of exploiting opportunities, identifying much needed types for the budding entrepreneurship field (Ginsberg & Hay, 1994; Covin & Miles, 1999; Miles & Covin, 2002). Existing corporate entrepreneurship research has also acknowledged that the implementation of an entrepreneurial initiative requires a great deal of resource support (Venkataraman, 1997; Ahuja & Lampert, 2001). However, by themselves these studies do not provide a unified answer to the question of corporate processes expressed above; there remains much that is unknown. This study, then, contributes to the field by providing an examination of the resource and decision-making implications of the implementation processes involved in exploiting an entrepreneurial opportunity inside an existing corporation.

Toward this end, this study seeks to answer two related, yet separate research questions; these are more specific than the general question mentioned above. These questions are built on two issues that are central to the venture exploitation processes taking place within corporations: resource availability and decision-making autonomy. First, the resources that have been identified in the literature as important to a successful launch of an internal entrepreneurial initiative are considered. These include initiative support from the top management team (TMT) and internal stakeholders (Hitt, Nixon, Hoskisson, & Kochhar, 1999; Nonaka & Takeuchi, 1995), as well as support in the form of material provisions and corporate competencies. In keeping with the general upper echelons theory (e.g., Hambrick & Mason, 1984) and resource-based views (RBVs) (e.g., Barney, 1991; Peteraf, 1993), this paper suggests that a TMT’s support is a firm resource that may have an important impact on the outcomes of an entrepreneurial initiative. This is supported by studies of TMTs in new independent ventures (e.g., Ensley, Pearson, & Pearce, 2003) and corporate venture champions (e.g., Greene, Brush, & Hart, 1999). As Greene et al. (1999, p. 106) argue, TMT’s “underlie the decisions about resource combinations and deployment that can determine success or failure.”

In addition to top management support, the fact that established corporations already possess material resources (e.g., financial and human capital) and competencies (e.g., distribution, manufacturing, and marketing) suggests that they could be leveraged to increase the likelihood of initiative success (Bloodgood, Sapienza, & Almeida, 1996; Burgelman, 1983; Zahra, 1993). However, not all resources and competencies affect the success of a venture equally. Considering that some resources and corporate functional
competencies are more critical to the success of internal entrepreneurial initiatives than others, the following question is presented: “What is the best source of critical resources for exploitation initiatives?”

The second major issue considers the plethora of decisions that must be made throughout the implementation phase of an entrepreneurial initiative. Extant research suggests that the owner of resources often expects to maintain control of decisions about the use of those resources (Bruton, Fried, & Hisrich, 1997). In the case of corporate entrepreneurial initiatives, the corporate parent is often the initial provider of the resources and competencies needed to ensure the initiative’s success. Therefore corporate representatives, either in functional areas or in divisions, may prefer to maintain decision control over the resources being provided to the initiative. However, this is not typically a good practice; the extant research has shown that corporate initiatives react better to their dynamic environments if they possess more flexibility in decision making (Block, 1983, 1989). These kinds of decision control issues make corporate entrepreneurial initiatives especially complex. Therefore, the second key question is: “Where is the best place for decision-making control to reside when exploiting entrepreneurial initiatives?”

The thesis of this manuscript is that the answers to these two research questions are contingent upon the fit between the expertise and appropriateness of the source of the resources and decisions and the specific critical needs of the entrepreneurial initiative. For example, the managers of an internal entrepreneurial initiative may be more successful if they procure resources from outside the corporation, as independent ventures do, rather than obtaining them from inside the corporation; this is especially true if the outside sources offer a better fit with the needs of the initiative than that which is available internally to the corporation (Thornhill & Amit, 2000). Likewise, decision autonomy in the functional areas critical to the venture’s success may best remain with those whose expertise most closely fits the needs of the venture regardless of whether they come from the corporation or are independently garnered by the initiative (MacMillan, Block, & Narasimha, 1986).

To examine such contingencies, a sample was needed that allowed for the isolation of corporate initiatives in the implementation stage of the entrepreneurial process. The sample of firms needed to share a commonly defined, already discovered opportunity about which the firms had already evaluated and chosen to pursue. In this way, the discovery and evaluation of opportunities can be held constant and allow for the study to focus on the effects of the resource and control decisions made during the
implementation phase of the entrepreneurial process. The newspaper industry and its exploitation of the Internet to deliver news content to new and existing customers seemed to provide an excellent context of study. In other words, the news industry provides an appropriate sample for this study because the Internet represented a new, uncertain technology and each newspaper chose a variety of implementation strategies aimed at commercializing the opportunities that the new technology created (Amit & Zoot, 2001).

This study proceeds as follows. First, this chapter reviews the applicable literature relating to corporate entrepreneurial initiatives and develops testable hypotheses relating functional resource support and decision autonomy to entrepreneurial initiative performance. Next, this chapter explains the methods used in the research and outlines the results of the empirical analyses. Finally, a discussion of the findings is given, including an overview of the limitations and contributions of the research.

THEORY AND HYPOTHESES

While many definitions for corporate entrepreneurship abound in the literature, most scholars agree that corporate entrepreneurship is broadly involved in the discovery, development, and exploitation of opportunity, which requires some form of resource assembly/marshalling from existing organizations (Hamel, 1997; Miles & Covin, 2002; Shane & Venkataraman, 2000; Venkataraman, 1997). Further, incremental improvements in an existing market, product or process, while innovative, may not be entrepreneurial. Covin and Miles (1999) suggest that for a corporate initiative to be truly entrepreneurial, it must include a renewal or redefinition of the organization, the market, or the industry. This suggests that corporate entrepreneurial initiatives must be fundamentally different in at least one area (market, product, technology) from that of the corporation that is sponsoring (funding) its development.

Despite this difference, it is expected that some resources from the parent corporation will be applicable to the new initiative. The RBV of the firm provides a useful perspective to investigate the exploitation stage of an entrepreneurial initiative. Alvarez and Busenitz (2001), following the works of Chrisman, Bauerschmidt, and Hofer (1998), and Conner (1991), propose that RBV is an important and effective means of addressing such entrepreneurial questions as those proposed in the introduction of this study. RBV suggests that the successful exploitation of a new product or
service is dependent on access to resources such as enabling technologies, a capable management team, and sufficient TMT support (Choi & Shepherd, 2004). Following such ideas, this study makes its first contribution to the entrepreneurship literature by examining functionally aligned resources and their relationship to the success of the entrepreneurial initiative’s launch and implementation. As such, this study leads to a deeper understanding of the resources and integrative mechanisms that are important to an organization’s success in commercialization.

Resource Support

As stated earlier, TMT support for an entrepreneurial initiative is considered a highly valuable resource of the firm and serves to enhance the initiative’s chances of success (Greene et al., 1999; Barney, 1991). But while a TMT may create a corporate orientation that is generally supportive of entrepreneurial endeavors and therefore influences their success (Lumpkin & Dess, 1996), TMTs can more actively support their new initiatives with personal involvement. Senior management commitment can be seen in its sponsorship of new products and innovative activities, which empower those initiatives to succeed (Lester, 1998). There are potential practical limits to the personal attention that senior managers can give to new initiatives. Still, personal involvement from senior management has been found to be an important influence in the success of corporate entrepreneurial activities. For example, in their longitudinal study of a cross-functional new product development team, Hitt et al. (1999) found that organizational politics resulting from a lack of corporate management support gravely hindered the team’s success. Further, Nonaka and Takeuchi (1995) found that the lack of frequent communication between corporate management and development teams and the lack of visible and informal top management support were the most significant contributors to the disintegration of the team. It follows, then, that TMT support is central to the successful exploitation of the opportunity by the new initiative.

Other researchers have recognized the critical role that corporate management support plays in the success of entrepreneurial strategies (Brown & Eisenhardt, 1995; Hitt, Hoskisson, & Nixon, 1993). Hisrich and Peters (1986) surveyed 100 firms to determine how important corporate management support was to their success. They identified several important ways corporate management could directly support initiative teams, including “supporting the proposals of initiative management; helping to
resolve conflicts; providing direct budget allocations in terms of funds and staff; and providing indirect budget allocations to ensure that other departments commit resources” (Hisrich & Peters, 1986, p. 308). They pointed specifically to the need for corporate parents to resolve conflicts with other divisions by not allowing “turfs” to be protected but instead insist that no opportunity parameters inhibit free, creative problem solving. This kind of interdepartmental/divisional cooperation is necessary for corporate entrepreneurs to realize the synergies they believe exist between their established businesses and their entrepreneurial initiatives. This leads, then, to the first hypothesis:

**H1.** Entrepreneurial initiatives receiving higher levels of corporate TMT support will have higher levels of performance.

Ahuja and Lampert (2001) suggest that regardless of the attractiveness of an innovation, technology, market, or idea, considerable resources are often required to take them to commercial success. Prior theory then implies that cash-rich companies are better suited to speculative and experimental pursuits than newer, leaner counterparts (Bloodgood et al., 1996; Burgelman, 1983; Zahra, 1993). Similarly, incumbent companies are better able to spread risk over an established sales base and have a foundation of human capital from which to build (Nooteboom, 1994). The literature on corporate entrepreneurship suggests that leveraging a competence requires cooperation across departments or divisions within an organization (Chandler & Hanks, 1998; Teece, Pisano, & Shuen, 1997). For example, Cooper and Kleinschmidt (1986), and Zirger and Maidique (1990) separately explain how important corporate support in the form of the provision of resources (both financial and practical) is to successful product development and commercialization. Researchers are split on how the initiative and its sibling divisions and departments can best work together to leverage core competencies across markets, products, and technologies (Dougherty, 1995; Sorrentino & Williams, 1995). For example, researchers have theorized that the inertial forces which inhibit sharing of resources across functional departments and divisions in corporations are mostly cultural, alternately naming them core rigidities (Leonard-Barton, 1992), competency traps (Miller, 1993), and core incompetencies (Sayles, 1993). Dougherty explained the results of her research about the sharing of resources between corporate departments and new corporate ventures in a most evocative fashion. She stated, “I also infer(ed) that a scaffolding of rigid rules of thumb, which I labeled core incompetencies, had grown around these core competencies, like vines run amok. The incompetencies had trapped
the competencies and … had perhaps choked them off” (Dougherty, 1995, p. 130).

Sorrentino and Williams (1995), on the other hand, found that the competencies of the established departments and divisions of the corporation had no impact on the success of the corporate venture. However, they did not discuss whether the firms, in implementation, were unable to effectively share those competencies with the venture or whether they were actually shared but made no difference in the outcomes of the venture. Despite these inconclusive findings, researchers generally agree with Roberts (1980) in his conclusion that the resources of the firm must be available and easily accessible to a new initiative if they are to have an effect on their success. This leads to the second hypothesis concerning general resource support:

**H2.** Entrepreneurial initiatives receiving higher levels of overall functional resource sharing from the corporation will have higher levels of performance.

**Functional Area Contributions**

The literature suggests that venture competencies that are closely aligned with those of their parent corporations allow ventures to share resources and have access to their parent’s established marketing channels, branding or capital-intensive processes, or distribution networks (Dougherty, 1995; MacMillan et al., 1986). Alternately, scholars claim that these similarities work against venture success or have no effect on it at all (Burgelman, 1983; Ginsberg & Hay, 1994; Sykes & Block, 1989). It seems that these results are not necessarily incongruent. Initiatives often compete in technologies and markets, which are different than those of the corporation. Therefore, the competencies needed to succeed in the initiative’s competitive domain should drive the sharing of resources. In other words, the new competitive domain should be explored for those functional competencies that will be critical to the initiative’s success. Unfortunately, the requirements for success in the new domain are not often the first consideration in the study of potential corporate synergies. Instead, corporate entrepreneurship is often driven from the opposite direction – corporations identify their competitive advantage and try to find ways to leverage it in other domains.

Following this general argument, the next hypothesis builds on the prior one regarding overall resource support. However, the third hypothesis
suggests that it is not just the general level of resource support that initiatives receive from the corporation that influences the initiative’s performance. Instead, the effect that the support has on performance is different for different functional areas, depending on the nature of the initiative. In other words, the general relationship suggested in the second hypothesis should vary according to the more specific functional area in question. Thus, the functional areas designated as most important to the success of the entrepreneurial initiative should also demonstrate a stronger relationship to performance, if those functional areas are supported by the corporation. This basically argues for an interaction effect between the importance of the functional area and level of corporate resource sharing for that same functional area. It suggests that the success of the initiative is enhanced when there is a “fit” between the importance of the functional resource and the corporate sharing of the functional resource with the initiative. Thus, the third hypotheses states:

**H3. The relationship between levels of functional resource sharing and venture performance depends on the level of the functional importance.**

**Decision Autonomy**

Decision autonomy is thought to be related to resource contributions because the providers of resources for a business generally use that contribution to hold control over that business (Bruton et al., 1997). According to Geringer and Hebert (1989), control is present when one party influences the behavior and output of another party. Control is exercised through a number of different mechanisms (Etzioni, 1965), but as a whole it is expected to affect any firm’s ability to achieve its goals. In corporate entrepreneurship, formal control is alternately expected to inhibit innovative behavior (MacMillan et al., 1986; Zahra, 1991) and provide direction for it (Kanter, 1989; Kuratko, Hornsby, Naffziger, & Montagno, 1993). Considering the inconclusive evidence in this stream of research, this chapter makes its second contribution to the entrepreneurship literature by examining functionally aligned decision making and its relationship to the success of the entrepreneurial initiative’s launch.

It was once generally perceived that parental control “is the death knell of entrepreneurial activities” (Oates, 1971, p. 65) because venturing is designed to give entrepreneurs the freedom and flexibility to pursue opportunities (Jones & Wilemon, 1973). Peterson (1967) hypothesized that when many people are on a decision, it is less likely that bold steps will be taken.
Hambrick and Finkelstein (1987) later suggested that without managerial discretion, initiatives would be more constrained and less likely to pursue innovative strategies. Many researchers agree that corporate initiatives need the flexibility to react to the changing environment and that the pressures from corporate parents impede their ability to do so (Block, 1983, 1989; Dougherty, 1995). However, other empirical research has shown that corporate control over an initiative plays no role, direct or indirect, in initiative performance (Sorrentino & Williams, 1995; Yan & Gray, 1994).

While the literature suggests that parent corporations will most often exercise implementation control in areas they consider to be most critical to the initiative’s success (Geringer & Hebert, 1989), the efficacy of this approach is uncertain. A recent study by Thornhill and Amit (2000) suggests that parental control exercised in critical areas leads to better venture performance. Hill and Hellriegel (1994), on the other hand, found a positive relationship between venture functional autonomy and future performance, especially in the early stages of the commercialization of the initiative. This functional autonomy was found to be more important to initiative success than were the parent–partner support and contributions. Following some of the arguments developed for the third hypothesis, the fourth hypothesis suggests that the success of the entrepreneurial initiative is enhanced when the initiative maintains decision control in the areas deemed most important to the success of the initiative. The fourth hypothesis, then, follows Hill and Hellriegel’s (1994) perspective and states:

**H4. The relationship between decision autonomy and initiative success depends on the level of functional importance.**

A review of the literature on control between a parent corporation and its business units suggests that business managers are closer to the business strategy than corporate managers (Campbell, Goold, & Alexander, 1995). This suggests that business managers are in a better position to make strategic decisions for the business. This argument serves as the backbone of the fourth hypothesis. However, there is alternative position that should be explored. The alternative argument suggests it is possible that the best functional decisions are actually made by the party who holds the maximum competence in that function, regardless of their position in the corporation or the importance of the particular functional area to the initiative. For example, one might argue that decisions on legal issues are best handled by legal experts (i.e., the corporate lawyer or legal team). From this point of view, then, a corporate competence could best be leveraged if the corporate unit providing the resource would maintain decision control over that
resource and its use, even when it is used to exploit an entrepreneurial opportunity in a different competitive domain.

It would follow, though, that in areas outside their expertise, units outside the initiative’s boundaries would want to relinquish decision control. Further, seeking “to control some decision areas more closely than others … may have differential performance implications” (Hill & Hellriegel, 1994, p. 596). This perspective is supported by evidence from the joint venture literature which suggests that parent corporations will most successfully exercise control and influence in those areas where they contribute competence or resources (Harrigan, 1985; Lyles, 1988, 1993; Schaan & Beamish, 1988). This implies that the relationship between decision autonomy and initiative success will be moderated by the competence provided in each of the functional areas. In other words, the fifth hypothesis competes with the fourth and suggests that initiative performance will be enhanced if the level of granted decision autonomy fits with the level of shared resource competency, rather than residing exclusively in the initiative’s hands. Formally, the fifth hypothesis states,

**H5. The relationship between decision autonomy and initiative performance depends on the level of corporate competency sharing.**

Findings regarding these last two hypotheses will shed a great deal of light on the conditions under which a corporation should most successfully grant or deny decision autonomy to its corporate entrepreneurial initiatives during the implementation stage of the entrepreneurial process. Such results represent a significant contribution to both the scholarship and practice of entrepreneurship within existing firms.

**METHODS**

*Sample and Design*

The sample was drawn from respondents in the Internet divisions responsible for the websites of major metropolitan daily newspapers. A single industry study provides several advantages. It allows macro-industry effects to be controlled by the elimination of multiple and diverse macro-industry groups from the sample (Slevin & Covin, 1997). Further, it complies with Schwartz and Teach’s (2000) recommendation to use industry-specific empirical data to best analyze managerial relationships in entrepreneurial firms. The newspaper industry was specifically chosen
because it is mature, has strong profit margins, and has established business methods. Further, the Internet offers the same opportunity to each of the newspapers in the sample, thus holding constant the opportunity discovery and evaluation elements of the entrepreneurial process. In keeping with Shane’s (2000) explanation, not all newspapers will pursue the Internet opportunity in the same manner. These differences in entrepreneurial strategy and process after opportunity recognition are the focus of this study. Although most newspapers decided they must embrace the Internet, they were generally ill equipped to do so because it appealed to new customers and audiences, requiring new and different business models and methods. The newspapers’ movement toward establishing Internet divisions came in the wake of steadily declining readerships and falling profit margins that were partially due to Internet displacement effects occurring industry-wide (Dimmick, Chen, & Li, 2004).

A cross-sectional survey research design was utilized, informed by content analysis and in-depth personal interviews with industry experts, both before and after survey distribution. To qualify for inclusion in the survey, the Internet divisions were required to be freestanding (profit or cost) centers with their own personnel, budgets, and charters. Additionally, the respondents had to be identified (in the content analysis or by an industry expert) as the primary individual responsible for strategic decisions for the website and as a person who has line responsibility for the implementation of strategy for the venture. These venture leaders served as “key informants” for the ventures because they were believed to be the most informed individuals on their venture’s strategies, operations, and interactions with the corporate parent (Hambrick, 1981; Huber & Power, 1985). The respondents were guaranteed confidentiality in an effort to reduce social desirability bias, which may occur when a respondent believes others will identify him or her with his or her answers (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). In that case, he or she may not answer the questions honestly but instead give answers that he or she believes others want to hear. Respondents were also offered a two-page executive summary of the findings to motivate participation in the study.

The data collection instrument for this research was developed following recommendations by Podsakoff et al. (2003) to minimize common method biases. These include reducing commonalities between the dependent and independent variables by changing item response formats, scaling and adding verbal labels to the midpoints of the scales. Additionally, validation of the performance ratings was sought from self-reported audience information published independently in the Interactive Media Guide of the
Standard Rates and Data Service and from expert estimates of the advertising market share held by a subset of the websites. This triangulation was intended to further reduce the potential effects of common method variance. The sample was examined for normality, multicollinearity, and the potential impact of any outliers. There was no indication of any influential outliers. Also, variance inflation factor scores suggest that multicollinearity is not problematic in these data (Neter, Kutner, Nachtsheim, & Wasserman, 1996). Significant correlations between predictor variables do exist; however, “the fact that some or all predictor variables are correlated among themselves does not, in general, inhibit our ability to obtain a good fit nor does it tend to affect inferences about mean responses or predictions of new observations” (Neter et al., 1996, p. 289). Select correlations are available in Table 1. All correlations are present except those between accounting, legal, production and R&D competencies, and marketing, human resources, sales, customer service, technical and strategy competencies; these were removed from the table in the interest of space and parsimony. Complete correlations are available from the first author.

The survey was administered online with respondent recruitment and follow-up being administered by MORI Research. MORI is one of the newspaper industry’s premiere research companies, specializing in industry studies, consulting, and newspaper and online custom research. MORI utilized its relationships with the industry associations and media groups, its presence at industry functions, seminars and conferences, and its involvement in industry list services, newsletters and forums to secure 78 high-quality completed questionnaires. This represents approximately 40% of the study population (i.e., U.S. daily newspapers with qualifying websites). In addition, the principal researcher contacted eight industry experts and conducted pre- and post-survey interviews with them. The experts helped the researchers avoid item ambiguity by providing industry-appropriate language and improving the comprehensibility of the questionnaire. The experts also identified functional lists for importance scoring and gave recommendations for contacts at each newspaper. Information on the experts is listed in the appendix.

Descriptive statistics revealed that respondents had been in their positions for between 1 and 10 years with 80% holding their jobs for 5 years or less. This is to be expected in an entrepreneurial, technology-based venture. Fifty-five percent of the respondents worked for public companies with the remaining 45% working for private companies. Further, the ventures ranged in size from a few employees to 150 employees (the largest was usatoday.com).
Table 1. Correlations.

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<td>−0.16</td>
<td>0.02</td>
<td>0.01</td>
<td>0.04</td>
<td>−0.02</td>
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<td>−0.09</td>
<td>−0.04</td>
<td>−0.11</td>
<td>−0.30**</td>
<td>−0.21</td>
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</tr>
<tr>
<td>Production</td>
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<td>0.12</td>
<td>0.15</td>
<td>0.18</td>
<td>0.18</td>
<td>−0.22*</td>
<td>−0.20</td>
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<td>−0.09</td>
<td>−0.15</td>
<td>−0.14</td>
<td>−0.29*</td>
<td>−0.26*</td>
<td>−0.33**</td>
<td>−0.35***</td>
<td>−0.28**</td>
<td>−0.36***</td>
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<tr>
<td>R&amp;D</td>
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<td>0.04</td>
<td>0.09</td>
<td>0.28*</td>
<td>0.014</td>
<td>−0.10</td>
<td>−0.09</td>
<td>0.01</td>
<td>0.02</td>
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<td>0.030</td>
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<td>−0.20</td>
<td>−0.26</td>
<td>−0.28**</td>
<td>−0.27*</td>
<td>−0.24*</td>
<td></td>
</tr>
</tbody>
</table>

*p ≤ 0.05.

**p ≤ 0.01.

***p ≤ 0.001.
Measures

Initiative Performance
The measurement of organizational performance has been a topic of debate throughout the years of organizational studies (Biggadike, 1976). In the area of strategic management, financial indicators, such as profitability, have most commonly been used (Mosakowski, 1991; Smith, Bracker, & Miner, 1987). New initiatives, particularly those located within an existing corporation, complicate the use of profitability as a measurement for performance. First, new initiatives “simply do not have profit histories” (McGee, Dowling, & Megginson, 1995, p. 569) and are not expected to exhibit profit initially (Engel, Gordon, & Hayes, 2002; Mosakowski, 1991). Second, even if profitability data were available, it would be very difficult to interpret, as different firms have different objectives for their initiatives (Cooper, 1979). Therefore, profit may not be the primary motivation for creating an internal initiative (Maidique & Zirger, 1985). For example, some corporations create initiatives with the goal of protecting other business lines from potential competitors rather than the goal of a certain return on investment defined with a corporate hurdle rate (Amit & Zoot, 2001; Watson, Stewart, & BarNira, 2001). For this reason, many researchers define performance in terms of the expectations of the parent company – the degree to which the initiative achieved the strategic objectives set before them (Yan & Gray, 1994). Chandler and Hanks (1993) found that a “satisfaction with performance index” had strong internal consistency and strong inter-rater reliability.

This research, then, first elicited a list of the internal milestones that have been established for these types of initiatives from the industry experts (Frayne & Geringer, 1987; Hoang & Antoncic, 2003). Following Miles, Covin, and Heeley (2000), and Gupta and Govindarajan (1984) before them, the research instrument then asked respondents to identify the relative importance of the different milestones. Respondents were then asked if the initiative had been able to meet the milestones on schedule (Thornhill & Amit, 2000). The scale of agreement was from 1 = strongly disagree to 7 = strongly agree. The importance scores were arithmetically converted to sum to 1 and were combined with the agreement scores on each milestone. Then these composite scores were summed across milestones to create a weighted average index of performance (Zahra, 1993). The strategic milestones identified by the experts, and affirmed by the managers, included customer satisfaction, technical development, product/market development, and audience growth (Cronbach’s alpha = 0.68).
TMT Support

TMT support indicates the level of personal involvement and protection that the TMT of the corporation provides to the initiative. Knight (1989) compared the obstacles faced by independent and corporate entrepreneurs; he found that independent entrepreneurs were most challenged by marketing difficulties surrounding their new products and services. In contrast, the problems of corporate entrepreneurs were most often internal. Knight states, “Their problems were more often defending their ideas to management within the corporation, obtaining funding and other resources within the firm, and finding a corporate mentor to assist them in such areas as fighting political battles, providing rewards and incentives for team members, and creating the proper overall environment or culture for innovation within the corporation” (1989, p. 281).

Eight items adapted from Thornhill and Amit’s (2000), and Lovett’s (1997) measures of corporate parental involvement were used in the survey instrument to measure the TMT’s involvement in and protection of the initiative. The items included such questions as whether funds promised to the initiative are ever diverted and if the parent would withdraw support if the initiative were to experience adverse conditions. Also included were questions about the frequency of communication with the CEO, whether the initiative manager works to obtain buy-in, and the initiative’s position on the parent’s business agenda (Cronbach’s alpha = 0.70).

Functional Importance

Prior to issuing the survey instrument, some industry experts were asked to identify the internal functional resources that are most critical for the success of digital media initiatives. The experts identified 10 major areas of importance, which include marketing (product; promotion), human resources (hire/fire; compensation), sales (incentives; strategies), customer service (policies), technical choices (platforms), strategy (positioning; markets), accounting/credit/collections, legal (contracts/relations), production/operations, and R&D/competitive intelligence. Using these 10 functional areas, respondents to the questionnaire were asked to record the overall importance of each functional area to their individual initiatives using a scale from 1 to 9. These scores were used separately as functional importance scores in the analyses of the third and fourth hypotheses.

Functional Resource Sharing

Related to the above measures, respondents were asked to record the percentage of resources for each functional area that is supplied to the
initiative directly by the corporation or another department or division in the corporation using a scale from 1 to 9. These scores were used as a summation to measure overall resource sharing in the analyses of Hypothesis 2 (Cronbach’s alpha = 0.92) and individually as functional resource sharing in Hypothesis 3. This is similar to the approach used by Hill and Hellriegel (1994) to study joint venture partner contributions.

Decision Autonomy
Researchers have been using decisions as measures of autonomy for some time. Dang (1977) first employed this method by defining autonomy of a subsidiary by 17 key decisions. Next, Killing (1983) and, later, Beamish (1985) adjusted this scale to include nine types of decisions: pricing policy, product design, production scheduling, manufacturing process, quality control, replacement of managers, sales targets, cost budgeting, and capital expenditures. Geringer (1988) encouraged conceptualizing autonomy as a continuous variable measuring the “extent” of autonomy and Schaan (1983) made an important contribution by suggesting that firms sometimes do not seek total control but instead seek control over specific “strategically important activities”. This introduced the idea of the “focus” of autonomy. Geringer and Hebert (1989) supported this concept further by suggesting that parent firms not only choose “what” they will most desire to control, but also use resources in a “parsimonious and contingent way” to control their initiatives.

In the research instrument, respondents were asked to list the percentage of initiative decisions that require approval from the parent company in each of the 10 areas identified by the experts as important to the success of the initiative. These items have been adapted from Cray’s (1984) index outlining the location of certain important decisions and the extent that the function was controlled by the parent company. Hill and Hellriegel’s (1994) autonomy measures of the number and types of decisions that the initiative is allowed to make alone by functional areas of decision making also influenced the instrument, along with ideas from Garnier (1982), and Van de Ven and Perry (1980).

ANALYSES AND RESULTS
Hypotheses 1 and 2 were tested using regression analysis while Hypotheses 3–5 were tested using moderated regression analysis because they hypothesized contingency effects. These contingency effects are reflected
in the significance of interaction terms. Interaction terms are the cross product of two main effect variables (Sharma, Durand, & Gur-Arie, 1981). Moderated regression has been advocated as a particularly straightforward and conservative method for identifying contingency effects through interaction terms (Arnold, 1982; Covin & Slevin, 1988; Schoonhoven, 1981) because the main effects are included in the equation so that only an incremental change in $R^2$ suggests that a significant interaction is present. Further, as McGee and Dowling (1994) explained, “partial $F$-tests for increments of $R^2$ for cross-product terms are valid even when the terms are correlated thus minimizing the effects of serious multicollinearity (Cohen & Cohen, 1975)” (1994, p. 57). General results of the regression models for all hypotheses are presented in Table 2. Again, in the interest of parsimony, Table 2 only gives the most relevant information concerning the analyses. It does not show beta results for the main effects variables for each of the functional regression equations containing interaction terms. However, the full set of results and tables are available from the first author.

Hypotheses 1 and 2 were tested by regressing the main effects variables, TMT Support and the Resource Sharing composite measure, on performance. Both variables were statistically significant and explained 7% of the variance in performance. TMT Support was a significant positive predictor of performance ($p < 0.05$), providing support for Hypothesis 1. The resource sharing composite measure was statistically significant at the $p < 0.10$ level, lending some support to Hypothesis 2.

The regression models testing for interactive effects were used for Hypotheses 3–5. As previously suggested, the importance of these different functional groups varied. Hypothesis 3 was supported for the marketing ($p < 0.01$) function, and Hypothesis 4 was somewhat supported for the accounting and legal functional areas ($p < 0.10$). For Hypothesis 5, the interactions for the human relations and legal functions were found to be significant at $p < 0.10$ and the accounting function at $p < 0.01$. However, contrary to expectations the interaction terms were positive suggesting a strengthening, rather than diminishing effect on the relationship between decision autonomy and initiative success.

**DISCUSSION AND CONTRIBUTIONS**

This chapter purposed to inform the entrepreneurship field about the general question of what processes corporate parent firms use to exploit entrepreneurial opportunities. As such, it examined the resource and
**Table 2.** Results of Regression Analyses for Hypotheses 1–5.

<table>
<thead>
<tr>
<th></th>
<th>Main Effects</th>
<th>Interactive Effects</th>
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<tbody>
<tr>
<td></td>
<td>H1 (TMT support),</td>
<td>H3 (functional importance x</td>
</tr>
<tr>
<td></td>
<td>H2 (composite functional</td>
<td>decision autonomy)</td>
</tr>
<tr>
<td></td>
<td>resource sharing)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H4 (functional importance x</td>
<td></td>
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<td></td>
<td>decision autonomy)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>H5 (functional importance x</td>
<td></td>
</tr>
<tr>
<td></td>
<td>decision autonomy)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beta</td>
<td>Adj. $R^2$</td>
</tr>
<tr>
<td>TMT support</td>
<td>0.023*</td>
<td></td>
</tr>
<tr>
<td>Composite resource</td>
<td>0.21†</td>
<td>0.07*</td>
</tr>
<tr>
<td>sharing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functions</td>
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<td></td>
</tr>
<tr>
<td>Marketing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Human relations</td>
<td>1.4**</td>
<td>0.21**</td>
</tr>
<tr>
<td>Sales</td>
<td>0.10</td>
<td>0.21</td>
</tr>
<tr>
<td>Customer service</td>
<td>−1.10</td>
<td>0.21</td>
</tr>
<tr>
<td>Technical</td>
<td>0.67</td>
<td>0.07</td>
</tr>
<tr>
<td>Strategy</td>
<td>−0.38</td>
<td>0.07</td>
</tr>
<tr>
<td>Accounting/credit/</td>
<td>0.11</td>
<td>0.02</td>
</tr>
<tr>
<td>collections</td>
<td>Legal</td>
<td>0.71</td>
</tr>
<tr>
<td>Production/operations</td>
<td>0.61</td>
<td>0.10†</td>
</tr>
<tr>
<td>R&amp;D</td>
<td>0.04</td>
<td>0.07</td>
</tr>
</tbody>
</table>

* $p \leq 0.05$.
† $p \leq 0.10$.
‡ $p \leq 0.01$.
§ $p \leq 0.001$. 

Exploitation of Entrepreneurial Opportunities in the Corporation
decision-making implications of the implementation processes involved in exploiting an entrepreneurial opportunity inside an existing corporation. Like prior research (Brown & Eisenhardt, 1995; Hitt et al., 1993), this study confirmed that corporate entrepreneurial initiatives receiving personal support from the TMT will be more successful. In practical terms, then, corporate executives seeking to launch entrepreneurial initiatives inside their existing corporations must be prepared to invest themselves and their personal time in support of the venture. They will need to provide communication and political support to the initiative. While this may seem intuitive, several of the experts consulted for this research suggested that many of the newspaper managers in the sample lacked vision for their digital initiatives, but knew that they needed to do something to respond to the emergence of the new technology and competition (Dimmick et al., 2004). For some, these initiatives were simply an effort to “throw something out there and see what sticks”, as one of the industry experts stated. While this may be an artifact of this single industry, it may also be representative of the kinds of general responses that firms in mature industries apply to new and unproven technologies.

The results of this research also enhance prior empirical study by discriminating between the sources of resource provision for new initiatives rather than only examining the overall levels of resource support provided to an initiative from their corporate parent. For example, other researchers have learned that higher overall levels of resource support result in more successful entrepreneurial initiatives (Cooper & Kleinschmidt, 1986; Zirger & Maidique, 1990). This study, instead, focuses on the specific process of resource sharing between corporate divisions or departments and the new initiatives. These findings suggest that the corporate sharing of resources in marketing, in particular, has a significant impact on initiative performance when marketing is critical to the success of the venture. Therefore, the best source of critical marketing resources for exploiting opportunities is that found in the existing marketing divisions of the corporation. This finding may extend an explanation to Knight’s (1989) comparison between independent and corporate entrepreneurs. Knight (1989) found that marketing is the number one challenge of independent entrepreneurs. These findings suggest that it may not be so different for corporate entrepreneurs who must develop the ability to share the marketing resources of other corporate divisions and departments if their initiatives are to be successful. In other words, corporate practitioners must place a priority on addressing the issues inherent in the sharing of marketing resources through incentive plans, which promote cooperation in branding,
distribution, and promotion of the new initiative. All in all, the results of this study should encourage corporations to explore the resource needs of their new domain and use those to drive the sharing of corporate resources for new initiatives.

The results of this research also contribute to the field’s understanding of the decision-making implications of the implementation process required to exploit an entrepreneurial opportunity. The research question was presented in the form of two competing hypotheses, which are representative of the disparate results provided by extant research. On the one hand, researchers have found that decision control should rest within the initiative as they are closest to the new domain and would be best able to react to the evolving conditions in the domain (Block, 1983, 1989; Campbell et al., 1995). Hypothesis 4 is consistent with this logic. Other researchers, however, have found that it is best if decision control rests with those that provide the resource and therefore provide the expertise for the function (Harrigan, 1985; Lyles, 1988, 1993). Hypothesis 5 is consistent with this logic.

This research contributes a deeper understanding of these issues to the field by investigating the questions according to the functional area of the corporation. As such, the effects that decision autonomy had on initiative success were found to be enhanced when the legal and accounting functions were more critical to the success of the venture. Contrary to theoretical expectations, however, it was also found that the more successful initiatives kept decision autonomy within the initiative even when the human relations, and legal and accounting functions were provided by the divisions and departments of the corporation. These surprising results would suggest to both practitioners and researchers that domain-specific information is more important to the success of an entrepreneurial initiative than function-specific information. Future research could substantiate these findings by testing a similar set of competing hypotheses in a different industry or among a more generalizable sample.

**THE NEWSPAPER INDUSTRY: IMPLICATIONS FOR BUSINESS PRACTICE**

While the single industry study is an excellent way to control for industry effects, it also limits the generalizability of the survey results. Perhaps the media industry is unique in its evolution. Some media scholars believe that the newspaper industry is undergoing “wrenching changes” which are
resulting in a transformation which is sweeping over the companies trying to compete in this changing landscape (Knowledge@Wharton, 2006). Further, these industry experts claim that the Internet represents the first truly disruptive technology to hit the newspaper industry since its inception just under 400 years ago. Indeed, the newspaper industry has been challenged by new media before and emerged the winner, touting a superior profit margin, flush with cash and operating happily in many markets with near monopolistic market conditions. This long-lived supremacy, according to Wharton professor Lawrence Hrebiniak, could be contributing to the newspaper industry’s confused and chaotic reaction to the threats and opportunities provided by the Internet (Knowledge@Wharton, 2006).

Even though Internet publishing is approaching its tenth anniversary, the debate about the future of print newspapers is still raging. For example, proponents of digital media would say that the future of print newspapers is bleak. They would say that newspapers saw the Internet as a way to “defend and extend markets” ... to “continue doing what we’ve always done – maintain high margins and control markets”, but that instead the Internet is changing the role that news organizations serve in society (Synapses, 2005). For example, “journalists have been slow to let go of the ‘we write, you read’ dogma of modern journalism”, and adapt to the interactivity available on the Internet where consumers are sharing the news themselves through their blogs and other networked membership sites (Singer, 2006, p. 265). If individuals displace journalists, then, doomsayers reason that it represents a redefinition of the news business. However, proponents of traditional media take a more positive stance: “Are newspapers in a death spiral? Don’t believe everything you read. While newspaper circulation has gradually eroded, newspapers’ readership continues to be strong” (Newspaper Association of America, 2007).

Considering the strong, controlled culture of this industry, embedded as it is in democratic societies, one might expect a conservative and confident reaction to the challenges of the Internet. In contrast, the artistic, free and relatively avant guarde approach of the Internet movement is sure to create a sharp contrast in culture from the more conservative corporate parent organizations. Therefore, it is reasonable to expect that in this sample the corporate parents were more likely to restrict decision autonomy and withhold corporate resources and competence from their digital initiatives than parents might in other industries. Then again, the Internet has created similar discontinuities in many industries including the movie industry and the music industry, which are both mammoth and mature, but may not be
as monopolistic and culturally conservative as the newspaper industry. Many retail industries have also had to face the Internet, but have adapted quickly, possibly because they have always existed in a competitive landscape where they have had to be consumer-focused.

Perhaps because newspapers are so invested in their “watch dog” societal role, they are particularly protective of their reputations and brand images. This could be a factor in explaining the results of this research regarding Hypothesis 3, which lent evidence for an entrepreneurial initiative’s need for corporate resource sharing in the area of marketing. For a digital publication to gain readership and strength, it may have a particular need to be associated with an established brand. Perhaps “the best asset newspapers have for recommending their online services is the quality of the newspapers they publish each day. The Wall Street Journal’s online news service’s success in attracting subscribers may very well be because of the reputation the newspaper has across the country” (Martin & Hansen, 1998, pp. 106–107). This would most likely be true for any industry whose business was largely dependent on brand imaging and reputation. Further, there are many industries where marketing is a critical success factor. Certainly, brand image is important in any consumer-oriented industry and reputation is important for any business with discretionary customers.

In the newspaper industry, however, the sharing of marketing resources may be especially problematic. For example, when the Wall Street Journal digital initiative first launched it was not directly linked to the Wall Street Journal print edition. Instead, it branded its website “wsj.com”, which was shorter and practically easier to type into a web address. This may have been because the newspaper did not want its reputation to be exposed by Internet journalists who were outside of their control. Or, it could have been that the digital team wanted to address the Internet in a fresh and different fashion. This degree of branding separation, however, did not last long and the website is now branded with both logos. Similar conflicts appeared in newspapers all over the United States. It is rumored that in one Midwestern city, the publishing company’s two divisions (digital and print) were at odds about the capitalization of the name of the enterprise. The digital group wanted to brand the website with the lowercase version as it would be most effective in the web address and would be viewed as more contemporary. The print staff wanted the name to appear exactly as it did in the print edition. The digital group tried to explain that all web addresses are written in lower case and that it would be a good change. The print group was not interested in a change. The final
branding compromise was an animated logo, which “morphs” between the
two logos.

Perhaps the most obvious example of the conflicts inherent in branding
and marketing resource sharing appears in the website of the Arkansas
Democrat-Gazette. Their marketing compromise is a split website; one
website simply supplies PDF images of the original print edition, while the
other website is a standard Internet edition, which includes the text and
linking format of a traditional website.

Some media companies are large enough to have both print and
broadcast divisions, in addition to their digital initiatives. In these
companies, sales and distribution channels present another perilous area
of marketing resource sharing and residually – accounting resource sharing.
This leads to the results of the tests of the fourth and fifth hypotheses.
Hypotheses 4 and 5 lend evidence to the need of the successful
entrepreneurial initiative to retain decision autonomy for decisions in the
legal and accounting functional areas. For digital media initiatives, most
successful resource sharing of this sort has come from the broadcast side
(if applicable) of the parent media company, rather than the newspaper side.
The sales and distribution channels of the broadcast media, though not
complete, are more applicable to an Internet site than those of a newspaper.
First of all, broadcast media deal in increments of time that, once gone, are
no longer available for sale. Newspapers, on the other hand, deal in “real
estate” that if not sold, will not be printed. These are two very different
philosophies of selling and inventory control. Internet sites deal in both real
estate and time, with the added dimension of interactivity and data-based
serving of advertising. These complexities make the relatively simplistic and
old-fashioned advertising and circulation accounting systems of the newspa-
per especially inappropriate. The new technology of the Internet also
brings with it new metrics which must be obtained from website log reports
and traffic analyzers, to name a few. Therefore, because accounting systems
are so closely tied to the business model and the business model for the new
Internet ventures are so very different than those of the other divisions and
departments of their corporate parent, decision autonomy in the accounting
area is paramount in this industry. Testing these hypotheses in other
industries where the business models of the entrepreneurial initiative more
closely matches those already active somewhere in the corporate parent
organization may produce different results.

Likewise, the Internet has introduced a host of legal challenges to
organizations, including content ownership, privacy, legal ownership of
domain names, the use of meta-tages, cybersquatting, deep linking, and issues related to copyright or trademark violations, COPPA (the Children’s Online Privacy Protection Act) and the WAI (the Web Accessibility Initiative). “Although many Internet related legal issues involve many of the same issues covered under Intellectual Property rights, an additional understanding of legal problems specific to the Internet can be important to your case,” advises the oncallgeeks.com training tutorial on running an Internet business (oncallgeeks.com, 2007). It is likely that any Internet business would encounter these unusual legal challenges and require help from a specialized attorney. In this way, then, this sample is no different than many other samples containing Internet initiatives.

CONCLUSION

Conclusions drawn from this study should be regarded with caution because of a number of limitations with the data; the data come from a single informant, are cross-sectional, and represent only a single industry. Given such limitations, a natural extension of this study would be to observe the studied relationships over time. It could be hypothesized that domain-specific information is waning in comparison to function-specific information as the new domain matures and becomes more mainstream. Likewise, corporate resource sharing in the marketing area may become less critical to the venture over time as it establishes its own boundary-spanning activities. Future research could help us further to understand these internal processes and how they change as the venture grows.

Another interesting approach to future research would be to study the effect that success has on these relationships. As an initiative proceeds through the exploitation process and becomes a commercial success, the political balance within the corporation may change, affecting the way decision autonomy and resource sharing combine to influence continued initiative success. In the meantime, this study has demonstrated that the best source of critical marketing resources for the exploitation of entrepreneurial opportunities in an existing firm is the marketing function already found within the departments and divisions of the corporation. However, the best source of decision-making control for the human relations, legal and accounting functions of a new initiative lies with the initiative regardless of the source of the function.
REFERENCES


APPENDIX A. PRE-TEST INDUSTRY EXPERTS

Patty Mitchell, General Manager, Knight Ridder Digital.
Nora Paul, Director, Institute for New Media Studies, University of Minnesota.
Rich Gordon, Chair, Newspapers & New Media, Medill School of Journalism, Northwestern University.
Michael Fibison, Associate Director for Minnesota Opinion Research Inc. Digital.
Robert Runett, Director, Electronic Media, Newspaper Association of America.
Jeannine Warner, Multimedia Program Manager for the Western Knight Center for Specialized Journalism, a partnership of the University of Southern California and the University of California at Berkeley.
Rusty Coats, Director of New Media, MORI Research.

POST-TEST INDUSTRY EXPERTS

Rich Gordon, Chair, Newspapers & New Media, Medill School of Journalism, Northwestern University.
Gordon Borrell, President and CEO, Borrell Associates.
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ABSTRACT

This chapter introduces the term “interpreneurship” to refer to entrepreneurship that occurs through inter-organizational alliances, which represent a salient vehicle for combining complementary resources and capabilities across firms in order to gain a competitive advantage. The interpreneurship concept implies the integration of internal (firm) and external (network) resources through alliance formation and management. The purpose of this research is to introduce social structure to the rational action paradigm by examining the complementarity of

The authors would like to thank Greg Dess, Gary Bruton, and G. Tyge Payne, as well as editor Tom Lumpkin, for insightful comments and reviews. An earlier version of the paper was presented at the 2004 National Academy of Management meeting in New Orleans, LA.
entrepreneurial and relational resources in achieving organizational goals in an alliance context. In this study, interpreneurial capability is operationalized as the combination of entrepreneurial resources (via an internal growth strategy) with relational resources (via an external growth strategy). These effects are assessed through the examination of three competing research models. The hypothesized interaction-only model tests the impact of complementarity of entrepreneurial and relational resources on firm-level performance for both partners to an alliance. A second model tests relational resources as a mediator of the relationship between entrepreneurial resources and the alliance partners’ performance. Finally, a third model assumes that the two resources have independent effects on the alliance partners’ performance. We find that the interaction-only model yields the strongest relationship to organizational performance, supporting the interpreneurial perspective we proffer in this chapter.

Organizations are experiencing intense competition in the “new competitive landscape,” which has resulted in, among other things, increased business risk and uncertainty (Bettis & Hitt, 1995). The competitive rivalry of modern industry has “heightened the need for organizations to become more entrepreneurial in order to survive and prosper (Dess, Lumpkin, & McGee, 1999, p. 85).” However, in addition to the necessity for firm-centric entrepreneurial focus, precedent research has shown that as market uncertainty increases, firms increasingly interact with other firms in order to address competitiveness issues (Podolny, 1994; Lorenzoni & Lipparini, 1999). Thus, combining entrepreneurship theory with discrete theory addressing inter-organizational relationships presents a distinctive opportunity for advancing the field of entrepreneurship. This integration of research streams is justified by current business practice. For example, previous research in the context of biotechnology has found that entrepreneurial innovation occurs at the inter-organizational network level, due to the complexity of domain-specific knowledge and the rapidly expanding sources of expertise involved in R&D and product/service innovation management (Powell, Koput, & Smith-Doerr, 1996). Similarly, in the personal computer industry, Dell Computer appears to be entrepreneurial due to cutting-edge process innovation extending across their supply chain, in spite of their lack of actual product innovation. In the case of Dell, strong supplier relationships coupled with well-developed internal brand management and manufacturing processes create a fresh and
unique type of competitive capability in the aggressive and volatile computer marketplace.

In this chapter, we use the term *interpreneurship* to refer to the combination of internally- and externally based entrepreneurial resources directed toward increased business-level competitiveness. Interpreneurship draws on and combines two extant entrepreneurial concepts, namely intrapreneurship and alliance entrepreneurship. The term intrapreneurship was originally coined by Pinchot (1985) in discussing how the entrepreneurial spirit can be cultivated within established companies and refers to a more macro (i.e., firm) level conception of entrepreneurship (e.g., corporate entrepreneurship). Intrapreneurship has also been used to refer to entrepreneurship occurring within lower organizational units (e.g., strategic business units (SBUs)) in larger firms (Lumpkin & Dess, 1996). Thus, intrapreneurship is used to identify entrepreneurship within an organization or business unit. Similar to intrapreneurship, the interpreneurship concept introduced herein adopts a macro-level perspective, with innovative activity occurring at the firm level of analysis (e.g., corporate entrepreneurship). However, interpreneurship is conceptualized to occur between, rather than within, firms, and takes a relational view of the entrepreneurial process.

Alliance entrepreneurship (Sarker, Echambadi, & Harrison, 2001) is also tangential to interpreneurship in that each of these concepts adopts a multi-firm perspective on the locus of entrepreneurship. However, alliance entrepreneurship is primarily concerned with a focal firm’s proactiveness in identifying and responding to partnering opportunities. Alternatively, interpreneurship represents a capabilities-based approach to understanding entrepreneurship between partners and takes more of a relational perspective to inter-organizational relationships. With interpreneurship, we are most concerned with the “how,” i.e., how the quality of the relationship not only relates to the focal firm’s entrepreneurial capabilities (i.e., the supplier firm in the current study) but also importantly, to both partners’ competitive advantage (i.e., both the supplier business units and its customers in the current study).

In our development of the interpreneurship concept, this chapter studies the effects of combining external (alliance) and internal (entrepreneurial) growth strategies. Successful resource combination requires effective integration of resources in order to realize synergy (Harrison, Hitt, Hoskisson, & Ireland, 2001), and the firm’s ability to manage relationships with alliance partners is central to the ability to integrate resources. Thus, in this chapter, we hypothesize an “interaction-only model” (Lumpkin & Dess, 1996; Boal & Bryson, 1987) that tests the complementarity of
entrepreneurial and relational resources. We find that the interaction-only model has a significant relationship with organizational performance.

The remainder of the chapter is organized as follows. First, reviews of entrepreneurship theory and social capital provide the theoretical background for our research. Following these two sections, specific hypotheses are derived that illustrate two existing models of entrepreneurial performance that compete with the proposed interpreneurial model. The three models are comparatively tested and evaluated with respect to their ability to explain firm-level performance for both members of the alliance. We conclude with a section directing the implementation of interpreneurial capabilities, including anecdotal evidence from existing firms.

A REVIEW OF PERTINENT ENTREPRENEURSHIP THEORY

Different market participants hold varying beliefs and make differential valuations of resources allocated for entrepreneurial opportunity in factor and product markets (Kirzner, 1997). Drucker (1985) finds that entrepreneurial opportunity exists according to an entity’s ability to exploit market (product and factor) inefficiencies resulting from information asymmetry. In addition, entrepreneurial activities also create value when they facilitate “access relationships” to resources and capabilities that are strategic to competitiveness and performance (Stuart, 2000). Thus, entrepreneurship theory is concerned with not only the product markets, but also factor markets. With respect to these issues, our view of entrepreneurship is most aligned with Morris’ (1998) definition, in which he conceptualizes entrepreneurship as the process through which individuals and teams create value by bringing together unique packages of resource inputs to exploit opportunities in the environment. Using Morris’ definition, entrepreneurship can occur in any organizational context, and can result in a variety of possible outcomes, including new ventures, products, services, processes, markets, and technologies.

Many firms that are not necessarily viewed as being product innovators may still be considered entrepreneurial if they are able to obtain resources that enable the organization to obtain above-normal returns and maintain a competitive advantage (Hunt, 2000). Therefore, we ground our study using concepts from the resource-based view of the firm, which holds that the existence of imperfect strategic factor markets (Barney, 1986) and incomplete
strategic factor markets (Dierickx & Cool, 1989) provides firms with a basis for a competitive advantage. The core idea of the resource-based view is that firms are heterogeneous in terms of their endowments of productive resources and the resulting efficiency differences yield differential rents (Barney, 1986, 1991; Dierickx & Cool, 1989; Amit & Schoemaker, 1993; Conner, 1991; Hunt, 2000). Additionally, the utilization and bundling of sets of these resources is organized in an administrative framework and yields different “services” when organized and structured differently (Penrose, 1959).

Although numerous definitions and perspectives describing entrepreneurship exist (e.g., Cooper & Dunkelberg, 1986; Schollhammer, 1982; Webster, 1977), there had until recently been little consensus between researchers as to its conceptual boundary, definition dimensions, and/or purpose. However, over the past decade, the entrepreneurial orientation (EO) approach has emerged, proposing that the degree to which a firm or business unit acts entrepreneurially can be viewed in terms of the organization’s innovativeness, risk-taking, and proactiveness (Lumpkin & Dess, 1996; Zahra, Jennings, & Kuratko, 1999; Covin & Slevin, 1991; Hitt, Ireland, Camp, & Sexton, 2001; Hitt & Ireland, 2000). The EO is a managerial, process-oriented approach to the study of entrepreneurship. Rather than attempting to identify individual traits, such as personality attributes, EO takes a process approach in identifying capabilities that organizations develop to increase their ability to compete.

Researchers studying corporate actors and entrepreneurship’s relationship to performance often use EO (Covin & Slevin, 1988, 1991; Miller, 1983) dimensions as prominent theoretical foundations. One dimension of the EO construct is proactiveness. In our study, we conceptualize proactiveness as a multi-dimensional construct and use it as a proxy for entrepreneurial capability. Consequently, we perform a fine-grained analysis of proactiveness and its relationship to the firms’ relational resources.

**STRATEGIC PROACTIVENESS**

Proactiveness is the ability of the entrepreneur to notice and react to market opportunities. Proactiveness is central to the Austrian economics perspective of an entrepreneur whom Kirzner (1997) defined as having the ability to perceive new opportunities. In fact, when people consider entrepreneurship, they often envision individuals, teams, or organizations developing innovative products and value-added services, and advancing them to market before their rivals. Although proactiveness represents a single dimension of
EO (Covin & Slevin, 1991; Lumpkin & Dess, 1996; Zahra et al., 1999; Hitt & Ireland, 2000; Hitt et al., 2001), in this chapter we offer a more granular conceptualization of proactiveness. Established entrepreneurship research has tended to focus exclusively on the external component of proactiveness; however, the literature suggests that this perspective may be incomplete. In this article, we use the term strategic proactiveness to jointly identify a higher-order construct including internal (operational) and external (market) dimensions. The entrepreneurship literature supports this reconceptualization, suggesting that the traditional approach to proactiveness would be improved by including both internal and external proactive capabilities. For example, Gerybadze and Reger (1999) find evidence that competitive advantage is a “triumvirate” function of three value-creating activities: marketing, R&D, and innovation. Their findings demonstrate the strategic nature of proactiveness, where managers combine internal and external processes for innovation, resulting in entrepreneurial rents. Academic research addressing strategic proactiveness is surprisingly infrequent, especially given its vital role in determining the entrepreneur’s financial performance.

This research considers both the internal and external perspectives in developing proactiveness capabilities. The internal dimension of strategic proactiveness, termed operational proactiveness, refers to a characteristic of individuals or business teams in an organization to proactively seek solutions to problems and continuously improve operations. Thus, operational proactiveness is an inveterate, operations-level approach to competing in the firm’s chosen market (Hyatt & Ruddy, 1997). However, there is also an external dimension of strategic proactiveness, termed market proactiveness. Market proactiveness is “an opportunity-seeking, forward-looking perspective involving introducing new products or services ahead of the competition and acting in anticipation of future demand to create change and shape the environment” (Lumpkin & Dess, 2001, p. 431). Adopting this definition, market proactiveness implies the taking of a proactive approach when dealing with downstream supply and demand chain partners. Compared with other firms, market-proactive firms have more interaction with their environments (Luo, 2004), especially when those environments are hostile, dynamic, and complex (Tan, 1997). As technological change and globalization transform the new competitive landscape (Bettis & Hitt, 1995), market proactiveness is requisite for firm survival and wealth creation (Ireland, Hitt, Camp, & Sexton, 2001). In fact, highly market-proactive firms are posited as more effective at finding and exploiting new product and market opportunities (Miles, Snow, & Meyer, 1978). Therefore, strategic
proactiveness, formed by operational and market proactiveness, constitutes a productive capability, and a key entrepreneurial resource.

**RELATIONAL RESOURCES**

Relational resources are also a key foundation of the interpreneurship concept. In this chapter, we use social capital as a representation of relational firm-level resources. The central thesis in social capital theory is that certain interfirm relationships provide an important and valuable component to the firm’s resource mix. The social capitalist may be an individual or a collectivity such as a group, business unit, or entire organization. Like other forms of capital (e.g., human, financial, structural, customer, and relationship), social capital is productive, in that it facilitates action (Adler & Kwon, 1999; Coleman, 1988). One approach to accessing resources outside the firm is via inter-organizational alliances. In fact, strategic alliances are vehicles to combine inter-organizational resources (Harrison et al., 2001). Although corporate entrepreneurship research has focused on single firms, in this chapter we apply entrepreneurship theory to firms as they enter into a variety of relationships with other organizations in order to obtain complementary resources that augment existing resources and develop capabilities from internal resources (Sarker, Echambadi, & Harrison, 2001). We introduce the term interpreneurship to identify a capability that takes an inter-organizational perspective on firm entrepreneurship. Thus, interpreneurship allows the firm to implement entrepreneurial strategy processes that “exploit product-market opportunities through innovative and proactive behavior” (Dess et al., 1999, p. 85) by leveraging relationships with alliance partners.

To gain access to external resources, managers routinely turn to strategic alliances. Vertical alliances (i.e., between buyer and supplier) are a subset of strategic alliances aimed at creating competitive advantage by organizing exchange activities across both value chains (supply and demand) among trading partners (Conner & Prahalad, 1996; Monczka, Petersen, Handfield, & Ragatz, 1998). For example, in 2003, Toyota launched a joint program with its suppliers to cut prices (30%) for all key components on new models. Toyota experienced a $2.6 billion savings in 2003 and approximately $2 billion savings in 2004 by leveraging its relationships with suppliers. Vertical alliances serve as vehicles for combining interfirm resources across the value chain and constitute “external growth strategies.” Today, organizations are pursuing record numbers of alliances in lieu of pursuing growth through
increased vertical integration. Simultaneously, firms also employ internal growth strategies such as corporate venturing, new product development, organizational change, and process innovation, with the goal of growing their businesses.

However, no identifiable research has assessed the concurrent utilization of both internal growth strategies and external alliances, and there is reason to believe that these initiatives must be aligned in purpose and scope. Ford and Motorola provide excellent examples of the effects of failing to leverage both internal and external growth strategies. Both firms attempted to maintain their independence and rely solely on internal growth until each began to lose to Japanese competitors in the 1970s and 1980s and consequently developed external growth strategies by partnering with other global firms. While each continued to develop innovative products and invest in R&D, each also pursued alliance partners successfully. Consequently, Ford and Motorola remain powerful, global enterprises today.

Viewing organizational “social capital as a resource is one way of introducing social structure into the rational action paradigm (Coleman, 1988, p. S95).” The first systematic study of social capital by Pierre Bourdieu (1986) defined the concept as “the aggregate of the actual or potential resources which are linked to the possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition (Bourdieu, 1986, p. 248),” thereby indicating the presence of multiple resource factors. We conceptualize social capital herein as a latent construct formed or caused by three dimensions of an inter-organizational relationship: trust, commitment, and compatibility. Each of these three dimensions are indicative of those elements of social relationships that constitute useful firm resources.

Organizational Trust

The first dimension of social capital is organizational trust. The social capital literature often notes trust between actors (e.g., a supplier and its preferred customers) as an indicator of social capital (Coleman, 1984, 1988; Adler & Kwon, 1999). In general, the typical discussion of trust and trustworthiness corresponds to the economic nature of trust (Deutsch, 1958), in which trust emerges through interaction and facilitates exchange relationships between the parties. Organizational trust is a key enabler of organizational innovation (Fountain, 1998) and key to all positive relational exchanges between organizations (Dwyer, Schurr, & Oh, 1987; Morgan & Hunt, 1994; Spekman,
1998), and also to creating intellectual capital in organizations (Nahapiet & Ghoshal, 1998). Additionally, positive capabilities for actors in a given society, which are the direct result of the degree of trust between societal actors, arise from social capital (Fukuyama, 1995). Finally, organizational trust has explanatory power for the success of alliances by mitigating risk associated with malfeasance, as well as leveraging complementary resources (Ring & Van De Ven, 1992; Dyer & Singh, 1998; Jap, 1999; Monczka et al., 1998; Das & Teng, 2001; Sivadas & Dwyer, 2000). This conceptualization of organizational trust as a dimension of organizational social capital is consistent with the egocentric approach, in which social capital is a productive resource that an organization or business unit may leverage (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998; Walker, Kogut, & Shan, 1997).

**Organizational Commitment**

The second dimension of social capital, organizational commitment, creates the structure necessary for relational resources and capabilities to be productive. Organizations that have increased relational capital, as evidenced by being committed to relationships with other organizations, tend to be willing to forego short-term losses for long-term gains as well as constrain opportunism (i.e., the principle of reciprocity) (Chung, Singh, & Lee, 2000). Organizational commitment facilitates the creation of organizational trust (Coleman, 1988), which has significant empirical support in organizational relationships in the marketing literature (e.g., Morgan & Hunt, 1994), community relationships in the sociology literature (e.g., Putnam, 1993), and strategic alliances in the management literature (e.g., Ring & Van De Ven, 1992). Additionally, long-term, committed relationships with other organizations increase a firm’s ability to compete because they are the firm’s resources that lead to competitive advantage (Arnett, German, & Hunt, 2003; Hunt, 1997, 2000; Hunt & Morgan, 1995). Organizational commitment is one of the main factors influencing the success of inter-organizational relationships (Anderson & Narus, 1990; Lambe, Spekman, & Hunt, 2002; Mohr & Spekman, 1994; Morgan & Hunt, 1994; Ring & Van De Ven, 1992; Sivadas & Dwyer, 2000), resulting in the formation of organizational social capital.

**Organizational Compatibility**

The third dimension of social capital, organizational compatibility, also constitutes a productive resource. Organizational compatibility has positive
empirical support for enhancing the effectiveness of relationships between functional departments (Ruekert & Walker, 1987) and inter-organizational relationships (Van de Ven & Ferry, 1980). Organizational compatibility provides a role in the development of synergy between resources, especially with complementarity of resources having a significant effect on alliance success (Chung et al., 2000). In fact, under the VIRO framework (Barney, 1991), resources must be bundled and fit within the organization’s cultural context in order to lead to competitive advantage. Consequently, in the case of inter-firm resources in strategic alliances, organizational compatibility is an important relational resource that enhances business performance. Furthermore, organizations that are more compatible with one another are more likely to fully commit to and invest in these inter-organizational relationships (Dwyer et al., 1987; Morgan & Hunt, 1994). Thus, organizational compatibility helps form organizational social capital.

HYPOTHESIS DEVELOPMENT

The previous sections have developed two constructs that are central to the understanding of interpreneurship: strategic proactiveness and social capital. First, the degree of strategic proactiveness represents the internal capability of a firm to act entrepreneurially. Second, the organization’s relational resources allow the firm to leverage its entrepreneurial capabilities in its relationships with other firms. Each of these resource bases are thought to engender corresponding organizational capabilities. As Helfat (2003) notes “an organizational capability refers to an organizational ability to perform a coordinated task, utilizing organizational resources, for the purpose of achieving a particular end result.” Providing greater specificity, Amit and Schoemaker (1993) refer to capabilities as tangible or intangible assets, which have the following characteristics: firm-specific, created over time through complex interactions among the firm’s resources, and based on developing, carrying, and exchanging information through the firm’s human capital. The marketing literature uses the term “competence” to refer to the same construct and defines a competence as higher-order, socially complex, interconnected, combinations of basic resources in that they are knowledge-based skills and abilities to combine, accumulate, and leverage existing stocks of resources (Hunt & Arnett, 2003; Hunt, 2000). Each of these definitions highlights the role of accessing and combining resources that result in the development of capabilities. This view is consistent with a
broader conception of Schumpeter’s (1934) entrepreneurial innovation as resulting from new combinations.

Schumpeter (1934) defined entrepreneurship as new combinations including doing new things or the doing of things that are already being done in a new way. He included examples of new combinations such as: (1) introduction of new good, (2) new method of production, (3) opening of a new market, (4) new source of supply, and (5) new organization. Previously, we discussed the role of resource combination in the development of capabilities. In extending Schumpeter’s (1934) concept of entrepreneurship as new combinations, it can be argued that the most basic combination is that of resources and/or capabilities. Consequently, an interpreneurial capability is the consequence of the combination of strategic proactiveness and organizational social capital. Innovation contributes to the dynamism of competition and the creation of value. An interpreneurial capability is an intangible, socially complex capability that organizations leverage in order to innovate and is created by combining entrepreneurial and relational capabilities. In this case, the combining of entrepreneurial (e.g., proactiveness) and relational (e.g., social capital) resources results in an innovative, interpreneurial capability. This is modeled as an interaction-only effect (e.g., Lumpkin & Dess, 1996; Boal & Bryson, 1987) and stated formally as (see Fig. 1):

H1. An interpreneurial capability is formed by the interaction between strategic proactiveness (formed by operational proactiveness and market proactiveness) and social capital (formed by organizational trust, commitment, and compatibility).

The basic argument of this study is that entrepreneurial factors (e.g., operational proactiveness, market proactiveness) interact with certain relational processes or factors (e.g., trust, commitment, and organizational compatibility) for firms trying to gain competitive advantage and venture growth via strategic alliances with their preferred organizational customers (see Fig. 2). Consequently, the expectation is that small changes in either construct result in large changes in performance, which support the synergistic effects of resource combination (Hunt, 2000; Dierickx & Cool, 1989; Amit & Schoemaker, 1993; Black & Boal, 1994).

Strategic proactiveness entails market and operational action aimed at developing and disseminating value-added resources to customers and end consumers (Lumpkin & Dess, 2001). Social capital is especially important as more of the resources needed to take a product from development to market lie outside of a single organization (Lesser, 2000). Consequently, social capital is central to resource exchange and combination between actors and
Fig. 1. Interpreneurship Capability: Higher-Order Measurement Model.

Fig. 2. Hypothesized Interaction-only Model.
results in product innovation (Tsai & Ghoshal, 1998; Nahapiet & Ghoshal, 1998). Social capital facilitates action by actors (Coleman, 1988) with direct ties (Sandefur & Laumann, 1988; Walker et al., 1997), such as those between vertical alliance partners. Thus, the alliance relationship is critical for the strategic proactiveness of supplier firms to be useful and result in marketplace actions. Vertical relationships characterized by organizational trust, commitment, and compatibility are appropriable, meaning a supplier’s relationships with customer firms act as a conduit for proactive behavior to positively affect supplier performance outcomes. In order to optimize the success of product and service offerings, supplier firms must have vertical linkages to populations of end-users having need for the offering (Kotabe, Martin, & Domoto, 2003; Helfat & Raubitschek, 2000). Strategically proactive firms are better able to access marketplace consumers when social ties with their direct customers – who serve as intermediaries linking them to end consumer bases – are strong. Conversely, strategically proactive firms without social capital are able to develop resources with significant market value (Lumpkin & Dess, 2001), but rendered unable to fully leverage marketplace opportunities due to the weakness of their customer linkages (Uzzi, 1996). Thus, strategic proactiveness and social capital each represent necessary but insufficient conditions for business-level success; both conditions must be present in order for firms to perform optimally, especially in vertical alliances where the customer firm holds a significantly powerful position in its own industry (i.e., holds disproportionate market share).

In vertical alliances with customers, one might expect that the interaction between strategic proactiveness and social capital will result in significant competitive and economic advantages based on the preceding discussion. Such firms should experience enhanced sales growth as a result of increased exchange with end-users (Uzzi, 1996, 1997). Formally stated:

\[ H_2. \text{ The interaction between strategic proactiveness and social capital will be positively associated with the supplier sales growth.} \]

Strategically proactive suppliers also may expect greater than normal competitiveness due to their access to higher quality, asymmetric information (Lin, 2001). Social capital has an intangible character compared to other forms of capital (e.g., financial) (Bourdieu, 1986; Coleman, 1988). Additionally, the literature both theoretically and empirically supports linkages between social capital and organizational knowledge and product innovation (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998), and has described social capital as a key enabler of innovation in science and
technology (Fountain, 1998). Thus, product and service innovation, the ultimate goal of strategic proactiveness, is central to supplier firms’ ability to compete, especially since this competition occurs in the consumer markets of their customers. Therefore:

**H₃.** The interaction between strategic proactiveness and social capital will be positively associated with the supplier’s competitive advantage.

Strategic proactiveness and social capital interactions may also have positive impacts on the performance of the customer firm. Proactive suppliers monitor a wide range of environmental conditions and events, in search of new product and service opportunities that generate customer demand (Lumpkin & Dess, 1996). In fact, Uzzi’s (1997) study of suppliers and buyers found that social capital from embedded relationships caused both firms to forgo short-term, market transactions for long-term relationships of mutual consideration and obligation, thereby making supplier resources available to the customer. Therefore, via social capital, new offerings become available to the customer firm (Uzzi, 1996, 1997; Granovetter, 2005). The increase in available market offerings tailored to the customer firm’s consumer base allows the customer firm to offer greater perceived service levels to end-users (Bruyneel, Dewitte, Vohs, & Warlop, 2006). Thus, customer firms can leverage strategic proactiveness–social capital interactions for competitive advantage. Formally stated:

**H₄.** The interaction between strategic proactiveness and social capital will be positively associated with customer’s competitive advantage.

**METHODOLOGY**

The unit of analysis for this study is the collective set of supplier business units or profit and loss centers of employees acting as “enterprise teams” (see Fig. 7). Organizations internally construct enterprise teams or business teams at the interface between the supplier and their preferred customers in order to implement the front-end of the front-back organizational structure (Galbraith, 2002, 2005). The enterprise teams included in the current study interact with one to four preferred customers and serve as a relational conduit between preferred customers and the supplier firm. The focal enterprise teams have a great deal of autonomy and are multifunctional with sales, marketing, production, finance, information technology, and logistics represented within the general skill set.
Sample

Given the difficulty of gathering dyadic data, we enlisted the assistance of a large global consumer products manufacturer that uses enterprise teams to serve its key customers. The manufacturer agreed to: (1) supply us with information regarding its enterprise teams, (2) provide us with access to enterprise team members and their direct (and indirect) team leaders, and (3) encourage its key customers to participate in the study. Enterprise teams typically function as stand-alone, modified profit centers, much like an SBU and operate as a mini-business (Macy, Arnett, & Wilcox, 2003; Arnett, Macy, & Wilcox, 2005; Macy, forthcoming). The manufacturer in this study has 44 enterprise teams in North America, each assigned to one or more key customers, which represent the largest retailers in North America. Since the manufacturer considers each enterprise team to be a separate business (i.e., a modified profit/loss center) for the organization, it gives considerable discretion concerning how it operates (i.e., the processes, procedures, and structure that it uses).

Four of the supplier enterprise teams elected not to participate in the project. Therefore, 40 usable responses (91%) were acquired from the supplier side of the dyad. Given that social capital is a key concept in this study, and that establishing validity of the social capital measure requires data from the customer, key customers corresponding to the 40 remaining enterprise teams were contacted and asked to participate. Of the 40 customers contacted, 75% agreed to participate in the study, resulting in 30 buyer-supplier pairs. Key respondents identified in each customer organization were responsible for coordinating their firm’s relationship with the supplier’s enterprise team. The titles of the customer-firm respondents include vice-president of merchandising, vice-president of purchasing, vice-president of procurement, head of category management, and vice-president of marketing. Following the pairing process, data related to sales growth for the 30 enterprise teams were obtained from the manufacturer as an objective performance measure.

The sizes of the enterprise teams vary directly with the size of key customers. The average enterprise team consists of 48 people, ranging from a minimum of 20 to a maximum of 108. The average enterprise team member has worked for the supplier for 7 years (sd = 1.54), is 39 years of age (sd = 3.57), and is paid $84,000 (sd = $11,000) annually. The supplier uses a three-tier system to rate the success of its enterprise teams as a whole (bottom, median, and exemplar). Of the enterprise teams included in the final sample, 9 were “bottom,” 11 were “median,” and 10 were “exemplar.”
The current study found no differences for constructs based on any enterprise team or individual characteristics. All customer interviews were one-on-one.

**Data Collection**

All data were gathered through structured interviews. Multiple respondents were interviewed from each of the supplier firm’s enterprise teams to remove common-method bias. Respondents included the business unit leader and multiple individual members. In addition to the two types of individual interviews collected, a group of members not interviewed individually was convened for each enterprise team. This group, interviewed collectively, agreed on the answer to each interview item.

**ITEM MEASUREMENT**

*Strategic proactiveness* (Fig. 1) was conceptualized as a higher-order construct consisting of two formative dimensions. The first dimension, *market proactiveness*, was tapped using the self typing paragraph approach in which a Prospector “purity score” is computed with respect to the four Miles, Snow and Meyer (1978) archetypes as performed by Doty and Glick (1994) and Fox-Wofgramm, Boal, and Hunt (1998). This method was further validated by James and Hatten (1995). The second dimension, *operational proactiveness*, was measured using a summated scale containing five items as developed by Hyatt and Ruddy (1997). Each dimension was used as a formative indicator for the strategic proactiveness construct.

*Social capital* was conceptualized as a higher-order construct consisting of three formative dimensions (see Fig. 1). All of the social capital measures come from the structured interviews with 30 customer firms. Therefore, the customer firms are responding to questions about their level of organizational trust, commitment, and compatibility with their key supplier. The first dimension, *customer trust*, was computed using a single item. The second dimension, *customer commitment*, was measured using a summated scale containing five items as developed by Morgan and Hunt (1994). The third formative dimension, *customer organizational compatibility*, was measured using a summated scale containing five items as developed by Bucklin and Sengupta (1993) and Ruekert and Walker (1987).

Business outcomes included customer and supplier competitive advantage, as well as hard record data of the suppliers’ sales growth over time.
Customer competitive advantage and supplier competitive advantage was each measured using the same 4-item formative scale. The suppliers and the customers were asked to evaluate the other on a 7-point scale (no competitive advantage to an enormous competitive advantage), the degree to which they have a competitive advantage over rivals on each of four different factors: distribution, product quality, ability to implement plans and strategies, and fully dedicated customer business teams. Tables 2 and 3 contain the measurement properties for the reflective and formative measures. Organizational performance is a multidimensional construct, and the measurement of only a single dimension produces biases that impact the size of the relationship to performance (Lumpkin & Dess, 1996). Consequently, we measure performance as the objective sales growth data for the supplier enterprise teams and include perceptual measures of buyer and supplier competitive advantage. Thus, we significantly reduce the likelihood of having a level of bias that ultimately impacts the size of the relationship to performance.

Interpreneurship capability was indexed using the Partial Least Squares Product Indicator Approach developed by Chin, Marcolin, and Newsted (1996), and is modeled herein as the interaction between relational social capital and entrepreneurship. Product indicators are developed by creating the linear combination from the two sets of indicators. Consequently, each indicator is a multiple of the three relational social capital dimensions and two strategic proactiveness dimensions.

ANALYSIS AND RESULTS

The analysis chosen for this study is Partial Least Squares (PLS) analysis as developed by Wold (1980). PLS offers a number of advantages for this study: (1) it can be used to estimate models that use both formative and reflective indicators; (2) it does not suffer from indeterminacy problems like other causal modeling techniques (e.g., covariance analysis techniques using EQS or LISREL); (3) it is a nonparametric technique and, therefore, does not assume normality of the data; and (4) it often allows researchers to work with more complex models than other causal modeling techniques. Each of these advantages apply in the case of the current study. In addition, PLS analysis accommodates small sample sizes. Chin (1998) suggests that PLS sample sizes should be at least equal to the larger of the following: (1) five times the scale with the largest number of formative indicators, or (2) five times the largest number of structural paths directed at any one
construct in the structural model (Chin, 1998). Following this rule of thumb, the minimum allowable sample size for this study is 30. (There are six items in interpreneurship construct.) Therefore, our sample size ($n = 30$) is acceptable.

A final strength of PLS is the ability to detect and accurately estimate the strength of interaction effects. Chin et al. (1996) posit that PLS yields more accurate estimates of interaction effects by accounting for additional incremental measurement error. The results of the Monte Carlo simulation conducted by these authors show that multiple regression under conditions of measurement error consistently underestimates the true interaction effects. However, the authors found that PLS provided closer estimates of the true interaction effects. Rather than assuming equal weights for all indicators of a scale, the PLS algorithm allows each indicator to vary in how much it contributes to the composite score of the latent variable. Thus indicators with weaker relationships to the related construct are given lower weightings. In this sense, PLS is preferable to techniques such as regression that assume error-free measurement (Wold, 1982, 1985, 1989).

**Measurement Model**

The psychometric properties of the constructs and their measures are assessed using approaches developed by Arnett, Laverie, and Meiers (2003). In PLS analysis the measurement model is tested within the imposed structure of the hypothesized model (Barclay, 1991). Table 1 shows the means, standard deviations, and correlations among the variables. Table 2 shows the reliability and variance extracted for the reflective measures. All internal consistency measures for the reflectively measured constructs are above the .70 level set by Nunnally (1978). Therefore, the scales demonstrate internal reliability.

Table 3 contains the results of the measurement model and supports Hypothesis H1. Strategic proactiveness is being driven by the market proactiveness dimension ($\beta = .98$, $p < .01$). The social capital construct is being driven largely by the organizational compatibility dimension ($\beta = .90$, $p < .01$) with some significance with the trust measure ($\beta = .34$, $p < .10$). The interpreneurship construct, which was modeled as the interaction between strategic proactiveness and social capital, has more consistent measurement results. All but one of the product indicators are significant at .05 level and most are significant at the .01 level. The interaction term displays strong measurement properties.
### Table 1. Means, Standard Deviations, and Correlations.

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<th>Mean</th>
<th>Standard Deviation</th>
<th>Strategic Proactiveness</th>
<th>Operational Proactiveness</th>
<th>Trust</th>
<th>Commitment</th>
<th>Organizational Compatibility</th>
<th>Sales Growth</th>
<th>Supplier’s Competitive Advantage</th>
<th>Buyer’s Competitive Advantage</th>
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<td>Market proactiveness</td>
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<td>.18</td>
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<tr>
<td>Operational proactiveness</td>
<td>5.09</td>
<td>.56</td>
<td>.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>5.6</td>
<td>.90</td>
<td>.08</td>
<td>−.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commitment</td>
<td>5.13</td>
<td>.82</td>
<td>.23</td>
<td>−.06</td>
<td>.82</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organizational</td>
<td>4.22</td>
<td>1.39</td>
<td>.05</td>
<td>−.25</td>
<td>.67</td>
<td>.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>compatibility</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sales growth</td>
<td>.05</td>
<td>.03</td>
<td>.36</td>
<td>.23</td>
<td>.22</td>
<td>.22</td>
<td>.39</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supplier’s competitive advantage</td>
<td>4.87</td>
<td>.54</td>
<td>.40*</td>
<td>.09</td>
<td>.28</td>
<td>.33</td>
<td>.10</td>
<td>.50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Buyer’s competitive advantage</td>
<td>4.91</td>
<td>.96</td>
<td>.28</td>
<td>.24</td>
<td>.10</td>
<td>.07</td>
<td>.08</td>
<td>.33</td>
<td>.15</td>
<td></td>
</tr>
</tbody>
</table>

*Correlation is significant at 0.05.

**Correlation is significant at 0.01.
In addition to the commonly invoked $R^2$ statistic, a $Q^2$ statistic, which represents the Stone-Geisser test of predictive relevance (Geisser, 1975; Stone, 1974), is utilized to assess and compare the results of the structural model.

**Table 2. Reliability of Reflective Measures.**

<table>
<thead>
<tr>
<th>Component</th>
<th>Standardized Reliability</th>
<th>Variance Extracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneurial orientation components</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategic proactiveness$^a$</td>
<td>N/A</td>
<td>.77</td>
</tr>
<tr>
<td>Operational proactiveness</td>
<td>.77</td>
<td>.78</td>
</tr>
<tr>
<td>Relational social capital components</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commitment</td>
<td>.70</td>
<td>.53</td>
</tr>
<tr>
<td>Trust$^a$</td>
<td>N/A</td>
<td>.66</td>
</tr>
<tr>
<td>Organizational compatibility</td>
<td>.82</td>
<td>.74</td>
</tr>
<tr>
<td>Supplier competitive advantage</td>
<td>.78</td>
<td>.56</td>
</tr>
<tr>
<td>Customer competitive advantage</td>
<td>.70</td>
<td>.54</td>
</tr>
</tbody>
</table>

$^a$Single indicant.

**Table 3. Properties of Measurement Model for Formative Measures.**

<table>
<thead>
<tr>
<th>Component</th>
<th>Standardized Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic proactiveness</td>
<td></td>
</tr>
<tr>
<td>Market proactiveness</td>
<td>.98***</td>
</tr>
<tr>
<td>Operational proactiveness</td>
<td>.38</td>
</tr>
<tr>
<td>Social capital</td>
<td></td>
</tr>
<tr>
<td>Trust</td>
<td>.34$^*$</td>
</tr>
<tr>
<td>Organizational compatibility</td>
<td>.90***</td>
</tr>
<tr>
<td>Commitment</td>
<td>.19</td>
</tr>
<tr>
<td>Interpreneurship (strategic proactiveness × social capital)</td>
<td></td>
</tr>
<tr>
<td>Trust × operational proactiveness</td>
<td>.68***</td>
</tr>
<tr>
<td>Trust × market proactiveness</td>
<td>.63**</td>
</tr>
<tr>
<td>Organizational compatibility × operational proactiveness</td>
<td>.55***</td>
</tr>
<tr>
<td>Organizational compatibility × market proactiveness</td>
<td>.74***</td>
</tr>
<tr>
<td>Commitment × operational proactiveness</td>
<td>.32$^*$</td>
</tr>
<tr>
<td>Commitment × market proactiveness</td>
<td>.60**</td>
</tr>
</tbody>
</table>

$^* p < 0.10.$

$^** p < .05.$

$^{***} p < .01.$

**Structural Model**

In addition to the commonly invoked $R^2$ statistic, a $Q^2$ statistic, which represents the Stone-Geisser test of predictive relevance (Geisser, 1975; Stone, 1974), is utilized to assess and compare the results of the structural model.
model (Arnett et al., 2003). Rather than utilizing one sample to estimate the model parameters and another to assess the validity of the estimates, the $Q^2$ statistic is computed by a jackknifing procedure that repeatedly splits the data set at hand into an “estimation set” comprising $n-1$ cases and a “confirmation set” involving just one case (Stone, 1974). Thus, the $Q^2$ statistic can be interpreted as an $R^2$ value evaluated without loss of degrees of freedom (Wold, 1982) and indicates to what extent the cross-validation was successful for the analyzed data set. A negative $Q^2$ value indicates that the trivial prediction in terms of the sample mean of the outcome variable is superior to predictions derived from the tested model equation and generally indicates an outcome of considerable variation or instability of parameter estimates if individual cases are deleted. On the other hand, with positive $Q^2$ values, the tested model relation has more predicative relevance the higher the $Q^2$ values are (Wold, 1982). Table 4 contains the results of the structural model.

### RESULTS

**Hypothesized Model (Model 1)**

The results reveal that 100% of the estimates of the structural paths ($\beta$) are significant. Supplier sales growth is related positively ($\beta = .48$, $R^2 = 36\%$, $Q^2 = .08$) to the interaction between strategic proactiveness and social capital, supporting H2. In addition, the interaction between strategic proactiveness and social capital is significantly, positively related to the

<table>
<thead>
<tr>
<th>Variables</th>
<th>Supplier Sales growth</th>
<th>Supplier Competitive advantage</th>
<th>Customer Competitive advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic proactiveness $\times$ social capital</td>
<td>$\beta$</td>
<td>$R^2$</td>
<td>$Q^2$</td>
</tr>
<tr>
<td>0.48**</td>
<td>0.36</td>
<td>0.08</td>
<td>0.98**</td>
</tr>
</tbody>
</table>

*p < .05.

**p < .01.

---
supplier’s competitive advantage ($\beta = .98$, $R^2 = 30\%$, $Q^2 = .21$) and buyer’s competitive advantage ($\beta = .64$, $R^2 = 24\%$, $Q^2 = .14$), which provides support for H3 and H4.

The results are largely consistent with existing EO and alliance research. Both EO and social capital consistently possess strong relationships to organizational performance. However, existing research generally only includes objective or perceptual performance measures, whereas this study includes both. In addition to the supplier’s sales growth and competitive advantage, a measure of the customer/buyer’s competitive advantage was included as an organizational performance construct. Research has yet to examine if the level of EO in one organization has any relationship to the performance in another organization. These results indicate that the relationship between the interaction of strategic proactiveness and social capital is significantly positive for all three performance measures (supplier’s sales growth, supplier’s competitive advantage, and customer/buyer’s competitive advantage).

**Supplementary Analyses**

We performed additional statistical analyses due to the exploratory nature of the study by testing two other models. The hypothesized model (see Fig. 2) conceptualizes social capital and entrepreneurship as an interaction without any main effect. However, two other alternative, competing models could possibly exist, namely (a) one positioning social capital as a mediator (Model 2, Fig. 3) and (b) one suggesting a direct relationship with the dependent variables (Model 3, Fig. 4).

Competing models are especially appropriate for exploratory analysis, such as the study proposed herein, when research on a construct suggests differing relationships with other constructs. For example, the marketing literature tends to position relational constructs as mediators. Examples of relationally oriented mediators in empirical marketing studies include Morgan and Hunt’s (1994) key mediating variable model using trust and commitment as mediators; long-term orientation as a mediator in Kalwani and Narayandas (1995); trust and cooperation as mediators in Anderson and Narus (1990); and trust and cooperation as mediators in Smith and Barclay (1997). Therefore, Model 2 (see Fig. 3) treats social capital as a mediating variable.

In addition to a mediating model, an alternative competing model would be social capital having a direct relationship with performance variables (see Fig. 4). The management literature tends to use relational constructs (e.g., social capital, organizational trust) as having a direct effect on
organizational performance. Examples of relationally oriented constructs having direct effects include the use of social capital as a direct effect by Nahapiet and Ghoshal (1998) in the development of intellectual capital within organizations; organizational social capital as a driver of alliance formation by Chung, Singh, and Lee (2000); commitment, trust, joint problem solving, and information sharing between organizations having a direct effect on the success of an alliance by Monczka et al. (1998); having
had a prior organizational relationship, similarity between organizational partners, organizational partner reputation, and shared decision making having a direct effect on alliance outcomes by Saxton (1997); and organizational trust having a direct effect on risk perception in strategic alliances by Das and Teng (2001, 1998).

The competing model approach provides an analytical technique to compare and test the three models that have some degree of theoretical support. This study argues that social capital and EO (proactiveness) are both sufficient and necessary conditions for the organizational units in this study. Therefore, a relationship, even a significant one, can exist between the independent constructs (firm-level entrepreneurship and social capital) and dependent constructs (firm performance) as prior research supports. However, the argument in this study is for organizations involved in alliances with their customers; the interaction between the strategic proactiveness and social capital will prove to have the strongest relationship with the organizational performance constructs, which is somewhat contrary to existing research in marketing and management.

Mediation Model (Model 2)

The mediation model positions social capital as a mediator between strategic proactiveness and organizational performance (see Table 5). All path estimates (Betas) are significantly positive. Additionally, this model accounts for 15% of variance in sales growth, 22% of the variance in supplier’s competitive advantage, and 15% of the variance in the buyer’s competitive advantage. The $Q^2$ statistics are all positive for the mediating

<table>
<thead>
<tr>
<th>Variables</th>
<th>Social Capital</th>
<th>Sales growth</th>
<th>Supplier performance</th>
<th>Customer performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$R^2$</td>
<td>$Q^2$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Strategic proactiveness</td>
<td>.32</td>
<td>.10</td>
<td>−.07</td>
<td></td>
</tr>
<tr>
<td>Social capital</td>
<td>.36**</td>
<td>.15</td>
<td>.04</td>
<td>.48**</td>
</tr>
</tbody>
</table>

*p < .05.

**p < .01.
model’s organizational performance constructs, as well. However, the $Q^2$ statistic for social capital is negative ($Q^2 = -.07$), which indicates the model lacks predictive relevance for the social capital construct.

**Direct Effects Model (Model 3)**

The direct effect model links strategic proactiveness and social capital directly to organizational performance (see Table 6). The direct effects model accounts for 20% of the variance in sales growth, 24% of supplier’s competitive advantage, and 19% of the buyer’s competitive advantage. The model lacks predictive relevance for supplier sales growth ($Q^2 = -.20$) and buyer’s competitive advantage ($Q^2 = -.04$). None of the six paths (Betals) in the direct effects model is significant.

These results provide support for the interaction-only model having the best performance of the three tested models. We made the argument that the interaction between social capital and strategic proactiveness would have a strong, positive relationship to the supplier’s sales growth (supporting H2), supplier’s competitive advantage (supporting H3), and the buyer’s competitive advantage (supporting H4). The findings ultimately supported all three of these hypotheses. Following the testing of the hypothesized interaction-only model, we tested two alternative models (i.e., mediating and direct effects models). While the models were essentially exploratory due to lack of existing theory, we expected the interaction-only model to have the strongest relationship to the performance measures. By comparing the $R^2$ and $Q^2$ statistics of the three models, it is clear that the direct effects and mediating models lack explanatory power when compared to the interaction-only model.

**Table 6.** Results of PLS Analysis – Direct Effects Model.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Supplier Sales growth</th>
<th>Supplier Competitive advantage</th>
<th>Customer Competitive advantage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strong proactiveness</td>
<td>$\beta = .38$</td>
<td>$R^2 = .20$</td>
<td>$Q^2 = -.20$</td>
</tr>
<tr>
<td>Social capital</td>
<td>$\beta = .29$</td>
<td>$R^2 = .21$</td>
<td>$Q^2 = -.17$</td>
</tr>
</tbody>
</table>

* $p < .05$.  
  ** $p < .01$.  

*Interpreneurship: How It Drives Competitive Advantage*
DISCUSSION

We defined the term “interpreneurship” as the combining or bundling of entrepreneurial resources with relational resources. The basic argument of this study is that macro-business, entrepreneurial factors (e.g., strategic proactiveness) interact with relational processes or factors (e.g., organizational trust, organizational commitment, and organizational compatibility) for firms trying to gain competitive advantage via strategic alliances with their preferred organizational customers. Support was found for the multiplicative effect of EO and relational social capital on organizational performance, by examining the effects of organizational social structure on the relationship between EO and organizational performance. As a result, small changes in either construct result in significant changes in performance, which supports the synergistic effects of resource combination.

The RBV literature has identified multiple sources of competitive advantage, including both the nature of the resource(s) and the management of resources. A common prescription is for firms to develop resources “in-house” based on the internal analysis of the firm because a firm’s heterogeneity is based on its endowment of resources (Barney, 1986; Dierickx & Cool, 1989). However, research that focuses on the management processes related to resources is significantly under-researched and suggests a theory of firm entrepreneurship. The various organizational processes of combining of resources, network relationships of resources, and accumulation of resources are all types of managerial processes that impact the ultimate value of resources (Dierickx & Cool, 1989; Barney, 1986; Teece, Pisano, & Shuen, 1997; Wenerfelt, 1984; Amit & Schoemaker, 1993; Black & Boal, 1994).

This chapter finds more support for conceptions of resource-based competitive advantage that focus on the relationships between resources (e.g., Black & Boal, 1994; Amit & Schoemaker, 1993) rather than the nature of resources. Most significant are the processes by which managers develop and combine resources. While entrepreneurial resources and relational resources meet the VIRO framework set forth by Barney (1991), they do not appear to have independent effects on the competitive advantage of an organization. What appears to be most important to creating a competitive advantage and increasing sales growth is the managerial processes, systems, and strategies of combining resources and/or capabilities, which represent the core concept of the interpreneurial activity recommended herein.

In addition to the process of combining resources, we found the effect that resources and capabilities have upon one another is important. Hunt (1997,
p. 437) defines resources as “tangible and intangible entities available to the firm that enable it to produce efficiently and/or effectively a market offering that has value to some market segment(s).” Thus, the “resource-advantage theory” concept explicated by Hunt (1997) expands the view of resources to include any entity that has an “enabling capacity.” An organization’s EO provides this enabling capacity. In a similar fashion, relationships with customers can provide an enabling capacity that is available to, rather than owned by, the supplier firm. By using measurements of the quality of network ties between organizations, rather than only the number of external ties, the study finds that the strategic relationships between organizations strongly relate to the performance of both organizations. However, the study finds that the quality of the close-knit relationships between organizations (i.e., relational social capital) is a necessary, but not sufficient, condition for both organizations’ competitive advantage. Again, we find that the process of managing resources and capabilities goes beyond simple ownership. Managerial processes that combine and extend existing stocks of resources and capabilities were found to be the strongest source of competitive advantage and financial performance.

Our research not only provides insight into the RBV literature, but also extends existing theory in the areas of knowledge and competitive advantage. As one researcher noted, “…so long as we assume markets are reasonably efficient … it follows that competitive advantage is more likely to arise from the intangible firm-specific knowledge which enables it to add value to the incoming factors of production in a relatively unique manner” (Spender, 1996, p. 46). For the supplier business units in our sample, being proactive was an insufficient condition to produce competitive and economic results. Competitive advantage for the buyer and supplier was the consequence of both proactive behavior and social capital. Previous social capital research has explored its role in producing organizational knowledge (Nahapiet & Ghoshal, 1998; Tsai & Ghoshal, 1998). Proactiveness has to do with the creation of resources (Lumpkin & Dess, 2001). Our research suggests that the combination of social capital and proactiveness provides each alliance partner with a competitive advantage. The process of combining these factors results in socially complex, intangible knowledge resource.

Research in contingency theory has provided significant support for the notion that structure is contingent upon strategy. Recent research has argued that the process involves “structural adaptation to regain fit (Donaldson, 1987, p. 1)” when new strategies are implemented. Where there is misfit between the firm’s strategy and structure, a misfit penalty is
likely to exist for the organization (Gresov & Drazin, 1997). Additionally theorists have suggested that environment adversity may hasten structural adjustment, because lack of exogenously created slack does not allow mismatch to continue (Chandler, 1962; Child, 1972; Williamson, 1970). This process of regaining fit has significant effects on the financial performance of firms (Payne, 2006). Consequently, there is strong evidence that changes in strategy require changes in organizational structure. In the concluding section we explore the practice of implementing strategies based on an interpreneurial capability.

IMPLEMENTING INTRAPRENEURSHIP: EVIDENCE FROM PRACTICE

“The powerful forces of globalization are fundamentally changing the nature and dimensions of strategy (Eisenhardt, 2002, p. 88).” Global organizations are facing massive amounts of instability, complexity, and change. Neoclassical economics has given way to Austrian and Schumpeterian economics that are more able to deal with disequilibrium, the inner workings of the firm, and entrepreneurship. We have argued for the combination of entrepreneurial and relational capabilities that result in a higher-order capability referred to as interpreneurship. In this section we examine firms that appear to have interpreneurial capabilities.

ABB

ABB is a manufacturing and service firm specializing in electrical products and services. ABB was formed from the merger of two companies in 1988 and resulted in 1,000 companies with 5,000 business teams as profit centers. ABB was originally characterized by autocratic leadership at the top of the organization. As ABB experienced mounted competitive pressure to become more efficient and entrepreneurial, it began to push decision making to lower business units in the organization and develop closer relationships with its customers. ABB’s sales grew from $17 billion to more than $30 billion in 4 years (1993–1997). In 1997 alone, sales grew 14%. This was accomplished by proactively entering many countries, especially Eastern Europe. ABB was then able to leverage its close customer relationships and provide services to these customers that entered countries behind ABB.
Consequently, ABB’s business strategy consisted of being a first mover geographically.

The interpreneurship concept provides a likely explanation for why the changes ABB implemented improved performance so dramatically. By combining entrepreneurial initiatives with a stronger reliance on social capital in decision making, the company was able to strengthen customer relationships “at the local level” which enhanced their ability to succeed as they entered heterogeneous markets. Although this proactive business model represents a process innovation rather than a product innovation, it created a unique competitive advantage for ABB and its key customers. By creating an entrepreneurial climate and developing mutual interdependencies with customers, ABB was able to be an early mover and to provide services to its customers as they entered new countries in which ABB was already present (Galbraith, 2005).

Procter and Gamble (P&G)

In the late 1980s, large retailers began to exercise power and demanded such things as a single interface and just-in-time supply. P&G made two critical changes to its structure (see 2006 P&G annual report, pp. 4–6). The first change was a change in their micro-structure (enterprise teams) in 1989. Before their redesign in 1998, P&G relied on selling teams consisting solely of sales people focused on category management (see Fig. 5). After their worldwide redesign, multifunctional enterprise teams were intentionally designed to consist of sales, market development, finance, product supply, logistics, and HR employees (see Fig. 6). These business teams were mirrored by its key customers. For example, if Wal-Mart experienced a logistics problem, the logistics person on the P&G enterprise team would be contacted. This resulted in a large customer having to deal with a single business unit, their respective enterprise team, rather than possibly having to deal with 2,380 organizations (17 SBUs × 70 product groups × 2 matrix organizations). This resolved a number of problems such as time to respond to customers, communication, coordination, interface, integration, power/ control, and matrix complexity.

P&G did another redesign in 1998. This second major change was in their macro-structure. P&G was organized in a matrix structure around 17 geographic SBUs and 70 Product groups from 1980 to 1998. As North American retailers (e.g., Wal-Mart, Target) began to exert more control and grow into global firms, P&G subsequently reorganized into a global
business units (GBUs) structure that is designed to sell a set of products on a global basis. Currently P&G comprises six global product GBUs and one market development organization, which has resulted in global pricing, global sourcing, and global customer business development. In order to be capable of responding to their largest customers (e.g., Wal-Mart, Target, Kroger), enterprise teams were designed to manage all business with their respective key customer (see Fig. 7).

These major changes in structure allowed P&G to leverage its key customer relationships more fully and manage a customer’s business at the
enterprises team level rather than going to SBUs. The enterprise teams were given autonomy and made into and referred to as profit centers, which resulted in an increase in North American net outside sales dollar volume by 6% and case volume by 4%, while sales-related costs remained constant. P&G also increased customer commitment and satisfaction, also increasing product development. P&G’s interpreneurial capability has resulted in some retailers, such as Wal-Mart, to outsource the management of their product categories and aisles to P&G.

CONCLUSION

As contingency theory would predict, the firms chosen to illustrate the managerial practice of interpreneurship have unique structures that allow them to leverage entrepreneurial and relational factors. The research in this chapter has presented the argument that interpreneurship creates a competitive advantage by combining a firm’s entrepreneurial capability with its inter-organizational relationships. Our statistical results and anecdotal evidence from existing firms provides strong support for the interpreneurship capability. The forces of globalization will continue to drive change and require innovative business practices. One way in which firms can deal with competitive pressures is to leverage entrepreneurial capabilities through their inter-organizational relationships.

The entrepreneurship capabilities demonstrated through the above firm’s inter-organizational relationships can be best depicted by the current CEO (A.G. Laftey) of P&G in their 2006 Annual Report. He states:

We get the full value of the Company’s strengths with a unique organizational structure and supporting work systems. P&G is the only consumer products company with global business unit profit centers, a global market development organization, and global shared business services, all supported by innovative corporate functions …

The primary benefit of allowing business units to focus singularly on consumers, customers, and competitors in their individual categories is evident in the growth of
P&G’s Skin Care, Oral Care, Feminine Care, and Home Care businesses. These four businesses have delivered 11% average sales growth over the past six years, adding nearly $1 billion per year in sales since the beginning of the decade. In the old structure (prior to 1998), and with past strategies, these businesses were not a priority. They did not get full attention from business leaders who had to keep core businesses growing while also supporting all the go-to-market and business services activities that were vertically integrated within the business units.

In the much more agile, flexible, and responsive current structure, these limitations have been stripped away and businesses such as Skin Care and Home Care have become strong global businesses in their own right, with the resources and focus necessary to grow. Their growth potential has been unleashed, and these businesses have emerged as disproportionate growth drivers – even as core businesses such as Fabric Care, Baby Care, and Hair Care have continued to grow ahead of their categories simultaneously.

Organizational structure can be a liability, particularly for large, diversified multi-national companies. By linking structure so tightly with strategies and strengths, we have made organization design and supporting business systems critical enablers of sustainable growth.

This inter-organizational relationship is indeed a value-added capability (P&G 2006 Annual Report, p. 6).

ABB and P&G are just two among many firms that could attribute their success to an “interpreneurial” approach. IBM’s Insurance Research Center, which was created to bring researchers together with lead customers to develop applications for the insurance industry, provides another example. One result of this effort was to develop IBM’s insurance application architecture (IAA) that has been used with 40 different insurance and financial services companies. Again, this is an example of a firm that was enabled to capture new business by coupling its entrepreneurial abilities with key customer relationships to create a new capability. This new combination can be leveraged to achieve competitive advantage and venture growth. Interpreneurship, therefore, as a process that draws on both internal entrepreneurial skills and external strategic alliances, provides numerous promising avenues for future research.

NOTES

1. We use the term resources to refer to both resources and capabilities throughout this chapter, which is consistent with research addressing the RBV of the firm.

2. The ability to perceive and size new opportunities is the mechanism that corrects the market and brings it back toward equilibrium.
3. Our “market proactiveness” corresponds to Lumpkin and Dess’ (2001) “proactiveness”.
4. Referred to as the Construction of Cost Competitiveness for the 21st Century or “CCC21”.
5. From Doz and Hamel’s (1998) discussion in Chapter 2 of Alliance Advantage.
7. In PLS analysis, measurement paths for both reflective and formative scales are estimated. In contrast, in covariance structure analysis (using programs such as LISREL or AMOS), only the measurement paths for reflective scales are estimated.

REFERENCES


Interpreneurship: How It Drives Competitive Advantage


MODELING THE ROLE
OF INTRAPRENEURIAL
STRATEGY-MAKING IN
SMALL FIRM PERFORMANCE

Martie-Louise Verreynne and Denny Meyer

ABSTRACT

Intrapreneurs are those employees who identify and pursue opportunities in a firm. By pursuing these opportunities with new products, services or processes, intrapreneurial employees may influence the strategic direction of the firm, a process called intrapreneurial strategy-making. Little consideration has been given to how small firms may use this process to improve performance. To this end this paper describes the results of an empirical study conducted with 454 small firms. Analysis of the data indicates that intrapreneurial strategy-making has a significant positive relationship with firm performance, depending on the size of the firm, its organizational structure and the dynamism of the environment. It further shows that differentiation strategies may mediate this relationship.
INTRODUCTION

In an ongoing pursuit of improved performance, small firms can benefit greatly from allowing intrapreneurial employees to identify and implement product, service or process innovation in markets. The concept of intrapreneurship was coined by Pinchot (1985) and has been supported by a number of other authors, both academic (e.g. Antoncic & Hisrich, 2003) and popular (e.g. Robinson, 2001). Intrapreneurship is often defined as entrepreneurship within an existing firm (Antoncic & Hisrich, 2003) or a process of renewal in a firm (Ámo & Kolvereid, 2005). However, a more useful definition is that of Stevenson and Jarillo (1990) who define it as the process that individuals inside a firm use to identify and pursue opportunities. Intrapreneurship is related to a number of concepts, such as corporate entrepreneurship (Zahra, 1991), innovation (Drucker, 1985), generative strategy-making (Hart, 1991) and innovative strategy-making (Lumpkin & Dess, 1995). This paper focuses on the latter concept, and investigates both its existence in and its importance to small firms.

Although intrapreneurial or innovative strategy-making was identified by Lumpkin and Dess (1995), they extended and renamed it two years later (Dess, Lumpkin, & Covin, 1997) as entrepreneurial strategy-making. More than just semantics, these intrapreneurial and entrepreneurial strategy-making processes are vastly different when applied in firms, the first being an emergent strategy-making process and the second deliberate (Mintzberg & Waters, 1985). Intrapreneurial strategy-making (ISM) is therefore a generative process (Hart, 1992) through which risky, innovative ideas are created in a dynamic manner and implemented emergently by employees (Bourgeois & Brodwin, 1984). Both entrepreneurial strategy-making and ISM have been under-investigated in the literature and, when addressed, it is often exploratory research (Mintzberg, 1973) or addressed as part of studies with a different focus (Hart, 1991, 1992; Lumpkin & Dess, 1995; Mintzberg, 1973). Most importantly, those studies were not conducted in the firms where Mintzberg (1973) first suggested that entrepreneurial processes would fit best, namely small firms. This type of research may be very important to small firms, which have been accused of neglecting strategy-making (Robinson & Pearce, 1983), probably because received wisdom has it that they do not engage in formal strategy-making processes. Such research may also be able to explain performance differences in small firms that employ different approaches to strategy-making.
It is arguable whether approaches to strategy-making in small and large firms will be similar (Dean, Brown, & Bamford, 1998). Most studies that investigate strategy-making behavior in small firms agree that these firms do not engage in rational or formal strategy-making (Ogunmokun, Shaw, & FitzRoy, 1999) as will be explained in this paper. Indeed, strategy-making processes in smaller firms have been described as special, frequently unique (Beaver & Jennings, 2000; Cooper, 1979), unstructured, irregular, incomprehensive, incremental, sporadic and reactive (Sexton & Van Auken, 1985; Robinson & Pearce, 1983). Hence, the theories developed in large firms are unlikely to apply to small firms. However, small firm owners/managers still have expectations that any engagement in strategy-making will enhance performance (Ogunmokun et al., 1999).

This performance expectation when making strategy is a common thread in a number of studies. Storey (1994) explains that growing firms tend to plan more. Small firms may also choose to engage in strategy-making to outperform firms that do not employ any strategy-making practices. According to Frost (2003) it can be argued that a small firm’s commitment to strategy-making is crucial and that small firms can improve their performance significantly through strategy-making. This highlights the importance of the research reported in this paper, and with small firms constituting the majority of firms worldwide, such research may also enhance the theory of strategy-making process in general.

However, evidence regarding the performance implications of intrapreneurial processes is mixed. In studies conducted mainly in large firms or large small and medium enterprises (SMEs) with up to 500 employees, authors find variously that it improves (Covin & Slevin, 1989) or impedes (Dess et al., 1997; Hart, 1991) performance. These authors further suggest that the relationship between ISM and firm performance may be influenced by a variety of other factors, such as the organic nature of the organizational structure, the dynamism of the environment and the type of strategies that the firm chooses.

The purpose of this paper is therefore to investigate the existence and importance of ISM in small firms and to establish how the nature of the firm’s internal and external environment, as well as its choice of business strategy, may further influence performance in small firms that use an ISM process. In order to do this, a literature review is used to develop a set of hypotheses that are tested in a large-scale survey of small firms. Findings are presented which address these hypotheses. The paper concludes with a discussion in which the implications for researchers and small firm owners/managers are considered.
THEORETICAL BACKGROUND AND HYPOTHESES
DEVELOPMENT

Strategic-Making

Dess et al. (1997) describe strategy-making as “a process that involves the range of activities that firms engage in to formulate and enact their strategic mission and goals” (p. 679). Firms use a variety of approaches during the process of strategy-making. Some firms prefer rational, formal approaches, while others prefer the informality of participation between employees during their strategy-making process (Hart, 1991; Mintzberg, 1973). Firms also often use different processes in different situations; for example, different processes in different business units or at different stages of their life cycle (Gibson & Cassar, 2002; Mintzberg, 1978). The rational, formal strategy-making processes which were so popular with researchers and managers 40 years ago (Ansoff, 1965), therefore seem less important nowadays (Mintzberg & Lampel, 1999) and have been replaced by the recognition that firms will approach strategy-making in ways that best suit their unique circumstances.

Several approaches to strategy-making have been described in the literature. These include the rational, adaptive, entrepreneurial, participative, symbolic, simplistic, transactive, command and political modes (Dess et al., 1997; Hart, 1991; Mintzberg, 1973). These approaches have mostly been developed with large firms in mind, and few researchers have investigated the nature of strategy-making processes in small firms. Where this has been done, the research tends to focus on performance outcomes of formal processes such as rational strategy-making processes (Bracker, Keats, & Pearson, 1988; Robinson & Pearce, 1983) rather than focusing on the more specific nature of the process, as found in the literature described above.

This paper addresses this gap in the literature by investigating the existence and performance implications of one such strategy-making process, namely ISM. The remainder of this section presents a model of ISM and performance in small firms as illustrated in Fig. 1. Hypotheses that describe the relationship between ISM and firm performance, as well as the mediating role of differentiation strategies and the moderating role of size, organizational structure and environmental uncertainty in this relationship, are presented. Each hypothesis is indicated in the model by a corresponding number.
Researchers investigating the strategy-making processes of small firms typically approach their research from a different point of view than that explained above. They investigate the absence or presence of strategy-making processes in small firms, often using the presence of formal strategic plans as a proxy for the use of “strategic planning”, as this stream of research is called (Ogunmokun et al., 1999). These researchers conclude that few small firms use formal strategy-making processes (e.g. Bracker & Pearson, 1986). This lack of strategic planning in small businesses is typically attributed to a variety of factors, including a lack of time and know-how and pressing operational issues (e.g. Robinson & Pearce, 1983). As with most strategic management authors the aim of these researchers is to establish whether the use of strategic planning can improve small firm performance. Once again, in this regard the evidence is contradictory with some authors finding that small firms that plan perform better (Frost, 2003; Storey, 1994), while other authors find the opposite (Robinson & Pearce, 1983), or that no correlation exists at all (Orpern, 1985).

Two major fundamental problems exist with this approach to research. First, it assumes that strategic plans are created through a process conducted by the firm itself, and not only for the purposes of obtaining finance. Second, and more important, this approach takes the view that all strategy-making processes are formal, or that they are by default non-existent. This view disagrees with that espoused by strategy-making scholars who classify strategic planning as a sub-set of the strategy-making process. As Mintzberg (1973) and Mintzberg and Lampel (1999) explain, strategic
planning is a planned approach to strategy-making which is one of several modes of strategy-making, also termed the rational mode by Hart (1991). This means that the focus of strategy-making research in small firms has been on the presence or absence of a rational approach.

In contrast, seminal works on strategy-making process such as Hart’s (1991, 1992) research suggest that strategy-making processes can be placed on a continuum ranging from formal (deliberate) to informal (emergent). When small firm researchers are discussing strategic planning they are referring to the rational (Hart, 1991) or planned (Mintzberg, 1973) approach. This is the most formal approach identified in firms while ISM is the most informal process discussed by Hart (1991). Similarly, Burgelman (1983) suggests that strategy is either induced (deliberate) or autonomous (emergent). Autonomous strategic behavior in this case leads to the redefinition of markets and other entrepreneurial activity, therefore leading to ISM. Therefore, when small firm researchers find that these firms do not plan, it is possible that they may just be using an emergent approach such as ISM rather than a deliberate approach such as rational strategy-making. An approach such as ISM may be suitable in small firms where the owner/manager is often too caught up in operational issues to provide both strong direction and innovative initiatives to the firm (e.g. Beaver, 2002; Frese, Van Gelderen, & Ombach, 2000; Miller & Toulouse, 1986; Verreynne, 2006).

Intrapreneurial Strategy-Making

The intrapreneural mode of strategy-making implies independent behavior by innovative employees who are encouraged and sponsored by top-management to experiment and take risks with, for example, product/service ideas. ISM can be described as a mode of strategy-making in which innovative employees come up with new ideas for products, services or processes which are entrepreneurial in nature, and which therefore emerge from within the firm. ISM is a relatively unexplored concept in small firms, but has been studied in large firms where it has been termed variously organic (Ansoff, 1987), crescive (Bourgeois & Brodwin, 1984) and generative (Hart, 1992) strategy-making.

Although few conceptual studies attempt to explore this concept, the existence of an ISM mode, or aspects thereof, has been identified through empirical studies. For example, Miller and Friesen (1977, 1978) identify product–market innovation as a measure of innovativeness (based on the
number and novelty of new products, services and markets of the firm); proactiveness of decisions as a measure of the relationship between the firm and its environment (whether the firm attempts to shape the environment, or merely reacts to it); and risk-taking as an explanation of the degree of risk that managers are willing to take with the resources of the firm. Hart (1991, 1992) and Hart and Banbury (1994) discuss the “generative” mode of strategy-making, which implies that employees act autonomously and that strategy-making is facilitated by intrapreneurial employees who allow ideas to flow upwards in the firm. Strategic direction is therefore shaped by the employees when eventually the ideas resulting from ISM are integrated into the strategic direction of the firm (Burgelman, 1983). Furthermore, experimentation and risk-taking are encouraged and managers seek and nurture high-potential strategies.

Bourgeois and Brodwin (1984) identify the “crescive” mode. The CEO of a firm that employs the crescive mode (literally meaning “growth” mode) defines the purpose of the firm and then challenges employees to come up with innovative ideas on how to attain the goals set by top management. This mode has advantages, such as that the CEO does not have to monitor all the opportunities and threats and that there are more developmental opportunities for employees. But the approach does have disadvantages such as complicated reward systems and strategies that are based on perception, rather than fact. However, it is only the potential relevance of this process to small firms that is the issue under investigation in this paper.

Although not explicitly studied in small firms, Hart (1991) suggests that size will have no influence on the use of ISM. He explains that large firms using ISM act like small entrepreneurial ventures, generating innovative strategies for approaching daily operations, thereby implying that ISM is suited to small firms. More specifically, Beaver and Jennings (2000) explain that formulation and implementation are often intertwined in small firms and Chen and Hambrick (1995) and Spillan and Ziemnowicz (2003) explain that smaller businesses initiate competitive challenges more actively, and are speedier and more secretive in executing their challenges than larger firms. All these studies suggest an approach followed in small firms which is similar to Hart’s (1991) generative strategy-making, thereby suggesting ISM. It can therefore be proposed that:

**H1. Intrapreneurial strategy-making is an important mode of strategy-making that small firms exhibit.**
Intrapreneurial Strategy-Making and Firm Performance

There has been much debate about the performance outcomes of entrepreneurial processes in small firms, including those processes that exhibit similarities with the intrapreneurial mode of strategy-making. For example, Beaver and Jennings (2000) posit in this regard that the “relationship between enterprise performance, management actions (or inaction) and the value and contribution of strategy is extremely tenuous and very difficult, if not impossible, to demonstrate conclusively” (p. 400). Much of what has been written about the role of entrepreneurial and intrapreneurial employees in strategy-making, and its performance implications in both the popular press and academic journals, assumes that entrepreneurial processes will lead to growth and profitability for the firm (Antoncic & Hisrich, 2001; Covin & Slevin, 1991; Miller & Toulouse, 1986; Peters & Waterman, 1982). The capacity of these processes to provide firms with the ability to continuously deliver on ever-increasing consumer demands may lie at the heart of this assertion. However, entrepreneurial processes are driven by the entrepreneur or owner/manager of the small firm, and are therefore deliberate in nature with the entrepreneur providing direction for the firm. As indicated earlier, formal and deliberate processes are likely to have a positive relationship with firm performance and therefore these findings may have little bearing on the performance outcomes of ISM which is viewed as an emergent concept. In fact, research such as that carried out by Dess et al. (1997) and Hart (1991) found empirically that ISM may have no association with performance, or that it may even impede performance.

The question therefore remains: will ISM contribute positively to performance in small firms? This paper argues that it will, explaining that in small firms it is unlikely that the owner/manager, often tied-up in operational issues, will provide the firm with strategic direction. Therefore, the presence of intrapreneurial employees who suggest innovative products or processes may present the small firm with an opportunity to differentiate itself, thereby developing competitive advantage and improved performance. Furthermore, in this process, top management may not exercise strategic control over the firm, which means that in large firms large-scale developments which require coordination across units may not take place, which may explain the negative impact on performance found in the studies quoted earlier. However, in small firms this is not a problem (Hart, 1991). Also, Carrier (1996) explains that small firms, even those that are not growth orientated, may benefit from the sharing of innovation through
intrapreneurship. More conclusively, Covin and Slevin (1989) find that intrapreneurship is a predictor of performance in small firms. Therefore, it is hypothesized that:

**H2. Intrapreneurial strategy-making is positively related to firm performance in small firms.**

**Business Strategies**

The choice of a specific strategy is central to the success of a firm. Although it is recognized that strategies exist on all firm levels, most research generally focuses on business or competitive strategies (Parnell, 2002; Porter, 1980; Segev, 1987). Business strategies show how single product/service firms, or individual business units of larger firms, compete in a specific industry or market (Bowman & Helfat, 2001) and are therefore particularly relevant to small firms. Porter (1980) has developed a typology of business strategies that is widely used in teaching, research and practice, which suggests that firms can maximize performance by employing one of three broad strategies, namely differentiation, cost-leadership or focus. Miller (1988) extends this typology by suggesting that differentiation strategies in small firms can be viewed as either innovative differentiation or marketing differentiation. According to Porter (1980), differentiation and cost-leadership strategies can be placed on opposite sides of a continuum and are therefore seldom utilized simultaneously. The middle of the continuum is aptly called “stuck in the middle”. Furthermore, both of these strategies can have different degrees of focus. He also posits that small firms do not have the economies of scale, which underlie the success of a cost-leadership strategy, and will therefore follow either differentiation or focus differentiation strategies. Although these studies suggest that a focus or differentiation strategy is most likely to be used by small firms, there is evidence which suggests that it is differentiation strategies that are most likely to contribute positively to performance. This assertion is supported by Miller and Toulouse (1986) who suggest that a differentiation strategy which is innovative in nature is most suited to small firms. It is also supported by Miller (1988) who finds that cost-leadership strategies are inappropriate for small firms in dynamic or hostile environments. There is also evidence to suggest that any business strategy will improve small firm performance, as long as the firm is not “stuck in the middle” (Baum, Locke, & Smith, 2001; Sapienza & Herron, 1990). Furthermore, Variyam and Kraybill (1993) suggest that small firms use numerous strategies, including product development, marketing and
innovation in order to gain competitive advantage. More specifically, Miller (1988) compares the behavior of high- and low-performing firms and finds that innovative differentiation is most likely to be pursued by high performers in uncertain environments.

Strategies are viewed as the outcome of strategy-making processes, and should therefore act as mediating factors between strategy-making and firm performance. The links between entrepreneurial processes and differentiation (e.g. Dess et al., 1997) and differentiation and firm performance (e.g. Sapienza & Herron, 1990) have both been supported in the literature. Specifically, it can be argued that the use of a differentiation strategy would strengthen the effect of entrepreneurial processes such as ISM on firm performance. Although the support for such a mediating relationship between ISM, differentiation strategies and performance is not conclusive, it is strong and this paper is therefore interested in investigating the following hypothesis for small firms:

**H3.** The relationship between intrapreneurial strategy-making and firm performance is mediated by the use of innovative and marketing differentiation strategies.

*Environmental Uncertainty*

Firms react or cope with environmental uncertainty in various ways. These include various aspects of ISM such as risk-taking, innovative behavior, proactive strategies and pioneering (Khandwalla, 1987; Miller, 1983). Different dimensions have been used to characterize the uncertainty that the environment holds for firms. These include aspects such as unpredictability, dynamism and heterogeneity (Dess et al., 1997); complexity, dynamism and munificence (Dess & Beard, 1984); dynamism, hostility, heterogeneity, restrictiveness and technological sophistication (Khandwalla, 1976/1977); and hostility, dynamism and benign environments (Covin & Slevin, 1989). In general these dimensions refer to the nature and scope of change in a firm’s environment that arises from factors such as government regulations, competition and technological progress (Zahra, 1993). This paper specifically investigates environmental dynamism and hostility and defines dynamic environments as unstable, but with relative simple structures and predictable change, and hostile environments as dynamic, complex and changing in unpredictable ways (Hart & Banbury, 1994).
It is important to understand how small firm owners/managers perceive the environment of their firm, because it is likely that these managers will react with a variety of behaviors as a result of such perception (Smircich & Stubbart, 1985). Miller and Cardinal (1994) explain that firms in uncertain environments need to plan more to deal with the uncertainty in the environment. Ideally such firms must study these environments in-depth to ensure mastery of the environment, using the information gained in a rational, formal strategy-making process. However, few small firms have the resources (e.g. time, money, experience) to undertake such in-depth analysis. ISM processes, as indicated earlier, are informal processes that may provide a mechanism to deal with this disadvantage of small size and demanding environments, either hostile or dynamic, by using intrapreneurial employees to contribute innovative ideas, which can be incorporated in the strategic direction of the firm.

An overview of the research articles that compare strategy-making process, external environment and firm performance generally reveals that the external environment is considered as a moderating factor on the strategy-making – firm performance relationship. Simply put, this means that certain modes of strategy-making will have a greater impact on performance in, for instance, a dynamic than a benign environment. Similar conditions exist when the relationship between ISM, the environment and performance is investigated. For example, Dess et al. (1997) find that ISM will have a positive association with performance when it is combined with both the appropriate strategy and environmental conditions. Khandwalla (1976/1977) finds in his study of 103 public Canadian companies that firms in hostile environments employ the entrepreneurial mode of strategy-making, while firms in dynamic environments employ entrepreneurial and rational strategy-making. Hart (1991) suggests that ISM is well suited to firms in dynamic and hostile environments because of its lack of coordination and control by top management. Furthermore, Hart (1992) proposes that ISM is unlikely to be associated with high performance unless it is in complex environments where prospecting is important. Antoncic and Hisrich (2001) explain that hostility stimulates intrapreneurial activities by creating threats, which the firm reacts to through these activities, while dynamism creates market opportunities. More specifically, Frese et al. (2000) find that ISM is more likely in a dynamic environment and less likely in a hostile environment. Although the results from the previous studies are somewhat contradictory, it seems that the intrapreneurial mode of strategy-making is more likely to occur in a hostile or dynamic environment and that environment has some influence on the
relationship between ISM and performance. It can therefore be hypothesized that:

**H4a.** The relationship between intrapreneurial strategy-making and firm performance is moderated by environmental hostility or dynamism so that the influence of intrapreneurial strategy-making on performance will be more positive in these situations.

Organizational Structure

Organizational structures can be placed on a continuum, ranging from formal to informal. Burns and Stalker (1961) refer to a continuum from mechanistic to organic structures. Organic organizational structures are often investigated for their contribution to entrepreneurial behaviors and processes in firms (e.g. Bouwen & Steyaet, 1990; Miller, Droege, & Toulouse, 1988). An organic structure is characterized by flexible administrative relations, informality, one or few top managers and delegation (Mintzberg, 1979). Small firms often have structures that “develop around the interests and abilities of the entrepreneur and are likely to be organic and loosely structured” (Beaver & Jennings, 2000, p. 399). This is supported by Mintzberg who suggests that organic structures are more often found in young, small and often vulnerable firms.

Organic organizational structures are believed to facilitate certain kinds of innovation. Many authors suggest that these structures allow for rapid organizational response to changing external forces in unpredictable environments, something that is crucial for firms that want to be innovative (Burns & Stalker, 1961; Covin & Slevin, 1989; Lawrence & Lorsch, 1976). Furthermore, authors such as Covin and Slevin (1988), Dess et al. (1997), Miller and Friesen (1978), and Mintzberg (1973) all indicate that entrepreneurial processes are more successful in firms with organic organizational structures. More specifically, Covin and Slevin (1988) find in a study of 80 firms that an organic organizational structure moderates the entrepreneurial style and firm performance relationship. Another study that investigated organizational structure, planning behavior and firm performance in small firms is provided by Chaston (1997). He finds support for his hypothesis that an organic structure and entrepreneurial management style together improve firm performance. Antoncic and Hisrich (2001) also explain that open communication to ensure information sharing and empowerment is crucial for innovation. This strengthens the argument that an organic structure and ISM have a combined positive effect on firm
performance. This study draws on the works of Chaston (1997), Covin and Slevin (1988), and Dess et al. (1997) as well as the previous arguments to hypothesize that:

**H4b.** The relationship between intrapreneurial strategy-making and firm performance is moderated by an organic organizational structure so that the influence of intrapreneurial strategy-making on performance will be more positive in organically structured firms.

**Size of Firm**

Firm size has also been found to influence strategy-making and firm performance. As indicated earlier, the general consensus is that larger firms are more likely to use rational processes while smaller firms are more likely to use adaptive or entrepreneurial processes or no strategy-making at all. It is even possible that more pronounced size differences may be a moderating factor in studies of firm performance in small firms (Covin & Covin, 1990). Indeed, according to Chen and Hambrick (1995), size is one of the most important variables in firm-level studies.

Although ISM is hypothesized to exist in small firms and to contribute to performance in these firms, it is hypothesized that it will contribute more to performance in larger small firms with more resources. For instance, Snyman (2006) finds in a study of the US trucking industry that firm size moderates the relationship between strategy-making processes and firm performance, in that larger firms that do not use strategy-making processes perform better. Covin and Covin (1990) find that size has a moderating effect on the relationship between competitive aggressiveness, environmental hostility and firm performance. Hart and Banbury (1994) obtain a similar finding to Snyman, supporting the moderating role of size on the strategy-making – firm performance relationship. Generally entrepreneurial processes require investment in resources by the firm, usually in the form of human resources and/or money. These resources are used for tasks such as environmental scanning, strategy formation processes, innovative processes and to fund risk-taking activities. The requirement of resource richness implies that a firm has to be of sufficient size. Schumpeter (1947) also suggests that large firm size is a prerequisite for innovation and other entrepreneurial activities. Combined, these studies indicate a requirement for a larger or more resource-rich firm in order for entrepreneurial processes to be successful. However, these researchers are all referring to deliberate entrepreneurial processes, and, as indicated earlier, this research investigates...
a different type of entrepreneurial process, one which is more emergent in nature, and may therefore not require extensive resources as is the case with deliberate processes.

Not everyone agrees, however, that a size requirement exists for entrepreneurial processes. For instance, Åmo and Kolvereid (2005) find that smaller firms are more likely to foster innovative behavior than large firms. Khandwalla (1976/1977) finds that entrepreneurial strategy-making is more descriptive of small and medium than large firms. However, Burgelman (1983) argues that intrapreneurial behavior is dependent on “the pool of unused resources existing at any given moment in the firm’s development” (p. 1353). Åmo and Kolvereid (2005) agree and explain that these resources can be acquired wherever they are available. The implication here is that the firm must have sufficient resources to allow intrapreneurial behavior, again suggesting that it is only possible for ISM to fully contribute to performance in the case of larger firms. Hart and Banbury’s (1994) finding that strategy-making is more successful in larger firms supports this view. It can therefore be proposed that:

**H4c.** The relationship between intrapreneurial strategy-making and firm performance is moderated by the size of the firm so that the influence of intrapreneurial strategy-making on performance will be more positive in larger firms.

The preceding hypotheses are summarized in Fig. 1 and were investigated in a large-scale empirical study as described next.

**RESEARCH METHOD**

**Sample and Data Collection**

This paper explores the six hypotheses formulated earlier through a survey conducted among small firms. A total of 2,000 questionnaires were mailed to small firms with less than 100 full-time equivalent employees (FTEs) in New Zealand, chosen randomly from the Kompass database. This number of FTEs was deemed appropriate because, even though no unified internationally recognized definition of small firms using employee numbers exists, Ghobadian and O’Regan (2000) argue that firms with 250 employees can not only be considered SMEs, but also be treated as a homogeneous grouping. From this an inference is made that a number of 100 FTEs is an appropriate upper limit for a small firm. Of the 2,000 questionnaires sent
out, 477 useable questionnaires were returned. However, previous studies have shown that organizational processes do differ for very small firms (O’Regan & Ghobadian, 2004), so only firms with at least five full-time employees were considered in this study, leading to a final number of 454 firms which were included in the analysis. These data were imported into SPSS and analyzed with the use of a number of data analysis techniques designed to test these types of hypotheses. In particular, factor analysis, correlations and moderated structural equation modeling (invariance testing) were used.

Measurement Instrument

A questionnaire was constructed in order to collect information for the scales described below. The questionnaire was tested for validity and reliability before being distributed. Six different scales were used to collect the data required to test the hypotheses. Strategy-making mode was measured with the Hart (1991) scale as modified by Dess et al. (1997). Their scale consists of 25 items and is scored on a 5-point Likert scale, ranging from 1 “Strongly disagree” to 5 “Strongly agree”. The analysis of data pertaining to this scale is described in the findings.

A scale developed by Khandwalla (1976/1977) was used to measure environmental uncertainty. The respondent’s ratings on each sub-set of items were averaged to arrive at a single index for environmental hostility and dynamism. Both factors loaded as expected, with the exception of two items, namely “competition in product quality” and “technological sophistication”. Both these items were deleted to improve the alpha coefficients of the factors. The organic nature of the organizational structure was measured following the approach of Covin and Slevin (1989). To measure structure, a 7-item scale by Khandwalla (1976/1977) that measures the organic versus mechanistic nature of a firm’s structure was used for this study. Respondents were asked to indicate on a 7-point Likert scale to what extent each item measured the collective management style of the firm. The items of the scale were aggregated to measure the extent of each firm’s organic structure. A higher index indicated that the organizational structure was more organic.

Porter’s (1980) business strategies were tested with the 7-item scale developed by Miller (1988). Miller (1988) based this scale on the works of Hambrick (1983) and Dess and Davis (1984). The scale is a 7-point Likert scale, ranging from 1 “Not important at all” to 7 “Extremely important”. An exploratory factor analysis using the principal axis factoring method extracted two factors from these data. After a promax rotation these two
factors suggested constructs for innovative differentiation and marketing differentiation (as illustrated in Fig. 2).

The dependent variable, *performance*, was measured by using the financial performance scale developed by Covin and Slevin (1989) and Gupta and Govindarajan (1984). Covin and Slevin had small firms in mind when they developed this scale. Respondents had to indicate the “importance” of 10 financial measures, namely sales level, sales growth rate, cash flow, return on shareholder equity, gross profit margin, net profit margin from operations, profit to sales ratio, return on investment, ability to fund business growth from profits and overall firm performance, to the firm. Thereafter they were asked to indicate their satisfaction with the firm’s performance for the same 10 performance measures. The “satisfaction” scores were multiplied by the “importance” scores and aggregated in order to compute a weighted average performance index for each firm. Weighing satisfaction with importance scores is the same method followed by Covin and Slevin (1988, 1989). The higher the aggregate score on this relative index, the better is the perceived level of firm performance.

Data Analysis

Indices were constructed for environmental hostility and dynamism, for organic structure and for performance. An exploratory factor analysis using
principal axis factoring with a promax rotation was then used to test the first hypothesis and to identify the items associated with ISM. Confirmatory factor analysis was used to validate the ISM scale as well as the scales relating to innovation and marketing differentiation (CMIN/df < 3, GFI > 0.90, RMSEA < 0.06). The measurement model for these three constructs was found to have discriminant validity in that all items loaded strongly on only one construct. Structural equation modeling was applied in order to investigate the relationship between ISM and performance, taking into account the influence of differentiation strategies. Scales were constructed for the ISM ($\alpha$ = 0.78), innovative differentiation ($\alpha$ = 0.64) and marketing differentiation ($\alpha$ = 0.69) constructs, showing adequate reliability in terms of Cronbach’s alpha (Hair, Anderson, Tatham, & Black, 1998). This allowed a correlation analysis for these constructs and the expected moderator variables (size, organic structure, environmental hostility and environmental dynamism) as shown in Table 1.

Moderation tests were then performed for the four moderator variables. A median split of the data was applied in order to separate firms with organic structures from firms with mechanistic organizational structures. Similarly, firms operating in dynamic and hostile environments were separated from firms in environments with low dynamism and low hostility, and smaller firms (with less than 16.45 employees) were separated from larger firms, all using the median as a point of division. The median splits created groups of firms with high and low values for size, organicity, hostility and dynamism. These groups explained 70 percent of the variability in size after a log transformation, 64 percent of the variation in the organic

### Table 1. Descriptive Statistics and Pearson Correlation Coefficients for Scales.

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<tr>
<td>Mean</td>
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<td>31.17</td>
<td>3.60</td>
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<td>2.88</td>
<td>3.44</td>
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<td>Standard deviation</td>
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<td>0.02</td>
<td>0.09</td>
<td>-0.02</td>
<td>0.20**</td>
<td>0.14*</td>
</tr>
<tr>
<td>(2) Organic structure</td>
<td>0.05</td>
<td>1.00</td>
<td>0.12*</td>
<td>0.13*</td>
<td>-0.07</td>
<td>0.35**</td>
<td>0.18**</td>
<td>0.10</td>
</tr>
<tr>
<td>(3) Hostility</td>
<td>0.08</td>
<td>0.12*</td>
<td>1.00</td>
<td>0.42**</td>
<td>0.07</td>
<td>0.21**</td>
<td>0.36**</td>
<td>0.28**</td>
</tr>
<tr>
<td>(4) Dynamism</td>
<td>0.09</td>
<td>0.13*</td>
<td>0.42**</td>
<td>1.00</td>
<td>0.03</td>
<td>0.09</td>
<td>0.28**</td>
<td>0.16**</td>
</tr>
<tr>
<td>(5) Log(size)</td>
<td>-0.02</td>
<td>-0.07</td>
<td>0.07</td>
<td>0.03</td>
<td>1.00</td>
<td>-0.06</td>
<td>0.06</td>
<td>0.07</td>
</tr>
<tr>
<td>(6) Intrapreneurial SM</td>
<td>0.20**</td>
<td>0.35**</td>
<td>0.21**</td>
<td>0.09</td>
<td>-0.06</td>
<td>1.00</td>
<td>0.25**</td>
<td>0.16**</td>
</tr>
<tr>
<td>(7) Innovative differentiation</td>
<td>0.15**</td>
<td>0.18**</td>
<td>0.36**</td>
<td>0.28**</td>
<td>0.06</td>
<td>0.25**</td>
<td>1.00</td>
<td>0.25**</td>
</tr>
<tr>
<td>(8) Marketing differentiation</td>
<td>0.14*</td>
<td>0.10</td>
<td>0.28**</td>
<td>0.16**</td>
<td>0.07</td>
<td>0.16**</td>
<td>0.25**</td>
<td>1.00</td>
</tr>
</tbody>
</table>

* $p<0.01$.  
** $p<0.001$.  
*** $p<0.001$.  

Modeling the Role of ISM in Small Firms
structure index, 67 percent of the variation in the hostility index and 69 percent of the variation in the dynamism index, suggesting good discrimination between high and low categories. Loglinear analysis was used to test for interactions between these variables, and their moderation effects were assessed in the above performance model.

RESULTS

The findings in this section are presented according to the hypotheses formulated earlier. First, Hypothesis 1 was tested with factor analysis as shown in Table 2. Principal axis factor analysis with a promax rotation produced four factors. Careful consideration of the resulting four factors revealed that these factors describe constructs similar to those defined by Dess et al. (1997), namely participative, entrepreneurial (intrapreneurial in this study), simplistic and adaptive strategy-making. All of the variables have significant factor loadings (≥0.30) (Hair et al., 1998). The interpretation and labeling of the dimensions presented by the different questions were reasonably straightforward when compared to the modes of strategy-making processes identified in previous studies. Specifically, “Intrapreneurial SM (strategy-making)” includes aspects such as risk-taking, a dynamic process, and experimentation – indicating the entrepreneurial nature of the process. Furthermore, aspects such as the making of decisions at the appropriate level, consensus decisions and people having input into decisions that affect them, indicate that this is a bottom-up or emergent process. The emergent focus of this mode, without strong direction provided by the entrepreneur or owner/manager, leads it to be labeled ISM. Support for Hypothesis 1 is therefore strong.

Taking all the variables with a loading of above 0.30 (Hair et al., 1998) into account, confirmatory factor analysis was used to validate this ISM construct as well as a measurement model for differentiation. Using these constructs, the model in Fig. 2 was constructed in order to test the second and third hypotheses. This figure describes the data well, showing a significant direct link between ISM and performance as suggested in Hypothesis 2. Furthermore, Hypothesis 3 is supported by the relationship between ISM and performance, which is partially mediated by innovative and marketing differentiation. It seems that ISM supports a strategy of innovative differentiation, which in turn supports performance-enhancing marketing differentiation. The second hypothesis is therefore supported with a standardized total effect size of 0.234. The third hypothesis is also supported in that 24
percent of this effect is due to the differentiation strategies that are supported by ISM within a firm.

The model shown in Fig. 2 was found to exhibit significant moderation effects in the case of organic structure ($\chi^2(21) = 33.6, p = 0.040$), firm size ($\chi^2(21) = 33.9, p = 0.037$) and environmental dynamism ($\chi^2(21) = 35.4, p = 0.026$). However, the moderation effect for environmental hostility was not significant ($\chi^2(21) = 27.7, p = 0.150$). As shown in Table 3, there are in all instances significant links between ISM and innovative differentiation and between innovative differentiation and marketing differentiation. However, it seems that the effect of these strategies on firm performance is governed by the dynamism of the environment, an organic organizational structure and firm size.

**Table 2.** Factor Analysis for the Strategy-Making (SM) Process.

<table>
<thead>
<tr>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participative SM</td>
<td>Intrapreneurial SM</td>
<td>Adaptive SM</td>
<td>Simplistic SM</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Initial eigenvalues (%)</th>
<th>6.62 (26.5)</th>
<th>2.30 (9.2)</th>
<th>1.43 (5.7)</th>
<th>1.32 (5.3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variance explained after rotation</td>
<td>5.63</td>
<td>3.86</td>
<td>3.64</td>
<td>1.48</td>
</tr>
<tr>
<td>Cooperation and collaboration are encouraged</td>
<td>0.762</td>
<td>0.006</td>
<td>−0.060</td>
<td>−0.058</td>
</tr>
<tr>
<td>Work as part of a team</td>
<td>0.742</td>
<td>0.098</td>
<td>−0.103</td>
<td>−0.091</td>
</tr>
<tr>
<td>Clear and consistent set of values</td>
<td>0.701</td>
<td>−0.146</td>
<td>0.080</td>
<td>0.180</td>
</tr>
<tr>
<td>People with unpopular views are heard</td>
<td>0.697</td>
<td>−0.050</td>
<td>0.030</td>
<td>−0.301</td>
</tr>
<tr>
<td>Most people are treated equally</td>
<td>0.611</td>
<td>0.189</td>
<td>−0.112</td>
<td>−0.090</td>
</tr>
<tr>
<td>Modus operandi is well suited to the business</td>
<td>0.550</td>
<td>0.140</td>
<td>−0.046</td>
<td>0.279</td>
</tr>
<tr>
<td>Long-term potential is valued more than short-term performance</td>
<td>0.535</td>
<td>0.021</td>
<td>−0.039</td>
<td>0.084</td>
</tr>
<tr>
<td>Conflict is often suppressed</td>
<td>0.518</td>
<td>−0.122</td>
<td>0.020</td>
<td>−0.118</td>
</tr>
<tr>
<td>Common set of management practices</td>
<td>0.488</td>
<td>0.038</td>
<td>−0.054</td>
<td>0.466</td>
</tr>
<tr>
<td>Most people have input to decision making</td>
<td>0.411</td>
<td>0.368</td>
<td>0.034</td>
<td>−0.142</td>
</tr>
<tr>
<td>Work roles and expectations clearly defined</td>
<td>0.334</td>
<td>−0.213</td>
<td>0.120</td>
<td>0.143</td>
</tr>
<tr>
<td>Most people are willing to take risks</td>
<td>−0.180</td>
<td>0.841</td>
<td>−0.064</td>
<td>0.040</td>
</tr>
<tr>
<td>People are very dynamic and entrepreneurial</td>
<td>−0.024</td>
<td>0.650</td>
<td>0.105</td>
<td>0.096</td>
</tr>
<tr>
<td>Business strategy decisions by consensus</td>
<td>0.268</td>
<td>0.404</td>
<td>0.072</td>
<td>−0.024</td>
</tr>
<tr>
<td>Decision making at level with best data</td>
<td>0.193</td>
<td>0.351</td>
<td>0.123</td>
<td>0.047</td>
</tr>
<tr>
<td>Experimentation is encouraged</td>
<td>0.203</td>
<td>0.300</td>
<td>0.148</td>
<td>0.066</td>
</tr>
<tr>
<td>Stakeholders involved in our planning</td>
<td>−0.192</td>
<td>0.027</td>
<td>0.703</td>
<td>−0.001</td>
</tr>
<tr>
<td>Listen to what stakeholders say</td>
<td>0.003</td>
<td>0.059</td>
<td>0.599</td>
<td>−0.052</td>
</tr>
<tr>
<td>Business planning is ongoing involving all</td>
<td>0.077</td>
<td>0.116</td>
<td>0.534</td>
<td>−0.090</td>
</tr>
<tr>
<td>Continuous adaptation to market feedback</td>
<td>0.118</td>
<td>−0.028</td>
<td>0.489</td>
<td>0.114</td>
</tr>
<tr>
<td>Planning is an internal process</td>
<td>−0.058</td>
<td>0.130</td>
<td>−0.057</td>
<td>0.456</td>
</tr>
<tr>
<td>CEO places his mark on almost everything</td>
<td>−0.160</td>
<td>−0.036</td>
<td>−0.011</td>
<td>0.429</td>
</tr>
<tr>
<td>Avoid failure at all costs</td>
<td>0.224</td>
<td>−0.155</td>
<td>0.060</td>
<td>−0.419</td>
</tr>
<tr>
<td>Top-down decision making</td>
<td>0.131</td>
<td>−0.094</td>
<td>0.081</td>
<td>0.383</td>
</tr>
<tr>
<td>Clear blueprint for strategy</td>
<td>0.199</td>
<td>−0.112</td>
<td>0.095</td>
<td>0.300</td>
</tr>
</tbody>
</table>
The data analysis and resulting model also reveals further results. For example, innovative differentiation can only be directly associated with performance in the case of firms with a mechanistic structure. For these firms, marketing differentiation is not a successful strategy suggesting that the intrapreneurial people in the organization are creative in a technical rather than a marketing perspective. Marketing differentiation appears to be a successful strategy when there is little environmental dynamism, especially when the firm is relatively small in size with an organic structure. Also of interest is the relationship between innovative differentiation and marketing differentiation. This link is stronger in the case of more stable environments and in the case of smaller firms (<16.45 FTEs), suggesting that it is easier to commercialize and market innovative products/services in these situations.

However, as shown in Table 3 there are some situations when ISM generates good performance for reasons other than the use of a differentiation strategy. In particular when larger firms with organic structures (H4b) exist in dynamic industries (H4a) they can expect to be more successful, even when they do not follow differentiation strategies. However, in stable environments, direct effect sizes are much smaller, especially for small firms with mechanistic structures. A loglinear analysis confirms that for small firms (<16.45 FTEs) more mechanistic structures are more common in stable environments

Table 3. Significant Moderation Effects.

<table>
<thead>
<tr>
<th>Moderation Variable</th>
<th>Dynamism</th>
<th>Organic Structure</th>
<th>Size (Full Time Equivalent)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Stable</td>
<td>Dynamic</td>
<td>Mechanistic</td>
</tr>
<tr>
<td>Number of firms</td>
<td>225</td>
<td>229</td>
<td>203</td>
</tr>
</tbody>
</table>

Standardized ($\beta$) coefficients

| $\beta$ Intrapreneurial SM $>$ performance | 0.082 | 0.255* | 0.082 | 0.239* | 0.105 | 0.242* |
| $\beta$ Intrapreneurial SM $>$ marketing differentiation | 0.151 | -0.002 | 0.048 | 0.125 | 0.124 | 0.075 |
| $\beta$ Intrapreneurial SM $>$ innovative differentiation | 0.423* | 0.235* | 0.294* | 0.356* | 0.271* | 0.438* |
| $\beta$ Innovative differentiation $>$ marketing differentiation | 0.375* | 0.230* | 0.396* | 0.346* | 0.464* | 0.268* |
| $\beta$ Innovative differentiation $>$ performance | 0.042 | 0.135 | 0.246* | -0.003 | -0.049 | 0.132 |
| $\beta$ Marketing differentiation $>$ performance | 0.210* | 0.120 | 0.043 | 0.224* | 0.292* | 0.053 |

$R^2$ and effect sizes

| $R^2$ (%) intrapreneurial SM $>$ performance | 7.4 | 12.6 | 9.1 | 12.9 | 9.7 | 11.6 |
| Standardized direct effect intrapreneurial SM $>$ performance | 0.082 | 0.255 | 0.082 | 0.239 | 0.105 | 0.242 |
| Standardized indirect effect intrapreneurial SM $>$ performance | 0.083 | 0.038 | 0.079 | 0.047 | 0.060 | 0.068 |

*p < 0.05.
(55.9 percent) than in dynamic environments (31.0 percent), while in the case of larger firms more organic structures are more prevalent in dynamic environments (57.5 percent) than in stable environments (50 percent). These results provide support for Hypotheses 4b and 4c with partial support for H4a, since environmental dynamism moderates the relationship between ISM and performance while environmental hostility does not.

DISCUSSION

This paper provides evidence that the intrapreneurial mode of strategy-making is an approach used by small firms. ISM in this context is emergent and is characterized by experimentation, risk taking and consensus by firm members at any level. It is therefore very similar to Hart’s (1991) generative mode of strategy-making, which is also described as dynamic and entrepreneurial. Furthermore, it leads to innovative ideas and risk is accepted as normal in this mode of strategy-making. Intrapreneurial employees in these firms are similar to Burgelman and Sayles’s (1986) autonomous innovators who introduce new concepts in the areas of products or services, processes or opportunity recognition, without explicit stimulation from managers. This finding makes an important contribution to the understanding of the strategy-making processes of small firms by showing that many small firms do make strategy. The search for only formal and deliberate processes has lead to findings which dispute this (Robinson & Pearce, 1983) when emergent strategy-making processes, such as ISM, are indeed being used by small firms.

This study shows a stronger relationship between ISM and performance in comparison to the previous research of Dess et al. (1997) which shows only a weak relationship in the short run, even when context factors are taken into consideration. No support has been found for Hart’s (1992) conclusion that ISM is more likely to be associated with poor performance. This suggests that Hart’s (1992) argument that firms with intrapreneurial employees operating in a generative mode are less likely to be high performers, may be applicable to large firms only. Furthermore, this relationship is stronger in larger small firms, indicating that Mintzberg (1979) and Schumpeter’s (1947) suggestion that larger firms are more likely to sustain entrepreneurship or intrapreneurial processes can be supported, even for small differences in firm size as illustrated in this study.

The results of this study become even more interesting when the mediating effects of business strategies are considered. ISM in a small firm is likely to
lead to the use of innovative differentiation strategies. This suggests that the intrapreneurial actions of employees are captured in the form of new and innovative products, services and/or processes, indicating that even without the explicit direction of the owner/manager, small firms are capable of bringing new products/services to market through intrapreneurial employees. The structural model further shows that these innovative differentiation strategies support marketing differentiation, suggesting that small firms with new products/services are able to communicate to the market that their product/service offering is different, allowing them to charge premium prices for their offering. All these factors, when considered together, lead to improved performance.

When considering the role of context factors, the picture changes somewhat. In firms with a mechanistic organizational structure, for instance, innovative differentiation can be directly associated with performance without the mediating effect of marketing differentiation. In fact, marketing differentiation does not contribute significantly to performance in these firms, suggesting that mechanistically structured firms are less likely to have strengths in marketing, and that these firms should address this issue.

The results further indicate that the performance of firms in dynamic environments improve when using ISM. This result indicates that ISM may provide firms in dynamic environments with the ability to deal with issues that are prevalent in these environments, such as a high rate of product/service obsolescence and a requirement to change marketing and operations practices frequently. Firms in a dynamic environment that engage in an emergent strategy-making process such as ISM, are actively engaging staff in strategy-making and simultaneously acting in entrepreneurial ways to deal with the dynamism of the environment. This supports Rothwell and Dodgson’s (1991) assertion that small firms are likely to be able to respond to their environment in a timely manner. However, it was also proposed that environmental hostility would moderate the relationship between ISM and firm performance. No evidence to support this hypothesis was found, which means that the effect of this mode of strategy-making on performance is similar in hostile and non-hostile environments.

The strategic management literature suggests that it is actions (in the form of strategies), and not the processes that they result from that have the most direct effect on firm performance. This means that the indirect effect of ISM on performance should be greater than its direct effect. Table 3 suggests that this is not true for small firms in the case of differentiation strategies. In particular, ISM has a significant direct effect on performance, especially in the case of larger firms with more organic structures, particularly when
the environment is more dynamic. For these firms the direct effect of ISM on performance is much larger than its indirect effect (via differentiation strategy), suggesting that the process of ISM tends to improve performance regardless of the differentiation strategy used.

However, this study does confirm the view that there is sometimes a relationship between business strategy and performance. In particular it seems that marketing differentiation may be a successful strategy for very small firms when firms have an organic structure, while innovative differentiation is more likely to be a successful structure for more mechanistic firms. The study also confirms Miller’s (1988) assertion that environmental factors will have a significant impact on strategy choices in that ISM is more likely to result in an innovative differentiation in the case of stable environments. The results show that in this situation it is likely that marketing differentiation strategies will then be adopted in order to commercialize the new products or services. Innovative differentiation is a more likely product of ISM in the case of larger firms while the commercialization of new products or services, through marketing differentiation, is more likely in the case of smaller firms.

Smallbone, Leigh, and North (1995) argue that small firms will grow successfully if they develop their organizational structure in such a way that the owner/manager can delegate operational tasks and focus on higher level strategic functions. The results of this study confirm this view in that there is a stronger link between ISM and performance in firms with a more organic structure. This indicates the need for an internal environment where staff can interact easily and ideas can flow freely, if ISM is to improve performance. However, this study does suggest that innovative differentiation will be a more successful strategy when firms are more mechanistic. This raises the question whether informality in both process and structure may lead to lost opportunities for firms in terms of the technological innovation required to produce successful new products and services.

CONCLUSION

This research contributes to the theory of strategy-making in small firms by conceptualizing ISM and explaining the circumstances in which it can be expected to occur in small firms. It finds that the intrapreneurial mode of strategy-making is an important mode of strategy-making used by small firms. In the intrapreneurial mode, strategy-making is driven by innovative employees, instead of a commanding entrepreneur. It is therefore a generative, emergent process that creates risky, innovative ideas in a dynamic
manner. Hence, ISM is defined as a dynamic process for the small firms studied in this paper, through which employees generate entrepreneurial strategies in an emergent, risk-accepting manner.

ISM has a profound impact on small firm performance, especially for those firms that are larger in size (> 16.5 FTEs), with organic structures, operating in dynamic environments. This paper further explains the importance of following ISM processes for firms wishing to maximize performance via innovation strategies and marketing differentiation. It therefore transpires that the context and sometimes the strategies of a firm dictate which mode of strategy-making is more appropriate to a particular firm.

This study offers a number of implications for business practice. The results indicate that small firm owners/managers need to capitalize on the intrapreneurial processes of their firms. Furthermore, small firm owners/managers should also be mindful that the effect of intrapreneurial processes on performance would be enhanced if these processes were followed up by innovative and differentiated market offerings. They need to ensure that innovative product/service offerings are communicated well to the market by differentiating their products/services in the market through advertising, appropriate pricing and other marketing strategies. This study also shows that it is important to ensure that small firms use strategy-making processes that are appropriate to the internal and external environment of the firm.

A number of limitations have to be kept in mind when reading the results of this study. Specifically, since data were collected from small firms in New Zealand, the generalizability of the results to other settings has to be established. Furthermore, the cross-sectional design may have another limitation (Bowen & Wiersema, 1999; Schwartz & Teach, 2000) in that the short-term effect of ISM on firm performance may skew the results. A longitudinal study may provide some advantages. It is therefore suggested that further research be conducted on the influence of strategy-making processes on firm performance, using a quantitative longitudinal study for a larger group of firms.

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REFERENCES


MAKING LEMONADE OUT OF LEMONS: THE ROLE OF INFORMATION PROCESSING AND STRATEGY IN MANAGING “MISPERCEIVED” START-UPS

Mark Simon, Susan M. Houghton and G. T. Lumpkin

ABSTRACT

The entrepreneurs’ ability to identify opportunities can lead to wealth creation and competitive advantage. Often, however, opportunities that are innovative may defy up-front analysis suggesting that the entrepreneurs may have had somewhat inaccurate perceptions and need to refine their ideas after the ventures are started. This paper therefore focuses on mitigating the negative impact of early misperceptions through the use of learning-oriented information processing systems to refine opportunities post starting a venture. Specifically, it suggests that an experienced and heterogeneous top management team and a decentralized, organic structure enhance the system’s ability to gain knowledge from acting on early misperceptions and may even form the basis for a distinctive capability that leads to competitive advantage.
Recognizing opportunity is a critical activity that occurs in the earliest stages of wealth creation (Venkataraman, 1997). Entrepreneurs are able to generate economic rents, according to Kirzner (1973), because they have a distinctive ability to perceive and act upon unique opportunities stemming from market disequilibriums that others fail to identify. Often these innovative opportunities stem from a discontinuous environmental event, which the entrepreneur is able to take advantage of as a function of a superior ability to employ a higher-level learning (Cope, 2003, 2005). They are able to reinvent existing means–ends frameworks (Gaglio & Katz, 2001) and unlike the market in general, engage in framebreaking or double loop learning (Argyris & Schon, 1978; Cope, 2003; Miner & Mezias, 1996). Double loop learning requires a reconceptualization of a situation to arrive at a new underlying logic, or premise, from which to make decisions. Single loop learning, in contrast, takes place incrementally, within an existing premise, to fill out the current understanding more richly (Argyris & Schon, 1978). This double loop capability may be a key source of competitive advantage for new ventures (Mosakowski, 1998). Furthermore, some suggest that it is these very innovative opportunities that are missed by others that have the greatest potential for large returns (Kirzner, 1973).

Innovative opportunities, however, may be difficult to investigate fully pre-startup because accurate and relevant information is often unavailable, precisely because the opportunities are novel (Simon & Houghton, 2003). This suggests that the entrepreneurs’ understandings are often incomplete in this situation. Instead, the entrepreneurs rely on metaphors, cognitive biases, and heuristics that, while beneficial to gain an initial understanding and motivation upon which to act, are often overly simplistic, highly abstract, and imprecise (Hill & Levenhagen, 1995). Thus, the conclusions reached by the double loop process may be false. Thus, we suggest that these potentially promising opportunities are often especially risky and, to an extent, misperceived at the outset. In fact, Busenitz and Barney (1997, p. 26) explain that although the use of heuristics in strategic decision making may create advantages during start-up, “it may also lead to the demise of a business as a firm matures.”

Despite this seemingly bleak scenario, we do not believe that ventures that are formed on the basis of misperceived opportunities are destined to fail. Instead, in this paper we address reasons why the link between venture formation and venture success does not depend on the accuracy of initial perceptions or the quality of the inputs that went into the original decision to form the venture. The business press is rife with examples of companies that arguably began with misperceived information that later became
enormously successful. In Collins and Porras’ (1997) study, *Built to Last*, for example, a number of their “visionary” companies, including Sony, 3M, and Hewlett-Packard, were dismal start-ups. In fact, only 3 of the 18 great companies were successful with their initial product or service. Thus, the question becomes, “How does a start-up emerge from dismal beginnings to become an outstanding success?” Of course, correcting early misperceptions is far from automatic and many entrepreneurs fail to make adjustments to their initial idea quickly enough (McCarthy, Schoorman, & Cooper, 1993). Furthermore, conclusions reached as a function of biases are often difficult to change (Hogarth, 1987).

One key to understanding the transition from misperceived beginning to eventual success lies in the fact that most innovative opportunities begin in the mind of a single entrepreneur, but with the passage of time an entire top management team (TMT) and firm will grow around implementing and possibly shaping this idea. As such, the venture may become a learning-oriented information processing system that analyzes the venture’s ongoing experiences, responds quickly to feedback, and develops more accurate assessments (Lyles & Schwenk, 1992), thereby correcting the initial errors made by the entrepreneur. Thus, the organizational system itself must be oriented toward a double loop learning capability to create new interpretations or knowledge from the unfolding situation. This new knowledge can be used to make the adjustments that a firm needs to improve and sustain its competitive position. Schindehutte, Morris, and Kuratko (2000) specifically argue that this adaptive behavior is a function of the entrepreneur and the firm, and that those firms with greater adaptive capacity will have better performance.

Our key contention is that insights from the domain of strategic management can be used to explain how a new venture’s characteristics can facilitate the entrepreneur’s double loop learning ability. We suggest that by assembling TMT with certain characteristics and using organizational structures that facilitate communication, founders increase the double loop learning through their effects on the firm’s information processing system (Hambrick & Mason, 1984; Lant, Milliken, & Batra, 1992; Meyer, 1982; Milliken, 1990; Thomas & McDaniel, 1990). Specifically, the past experiences and prior knowledge of TMTs create frameworks and filters through which new information is noticed, interpreted, and acted upon, thereby influencing the organization’s capacity to relearn (Hambrick & Mason, 1984; Lant et al., 1992; Thomas & McDaniel, 1990). Further, decentralized and organic organizational structures will influence learning by determining who and how many people receive information, when they get it, and whether it will be used to adapt to new conditions (Meyer, 1982;
Milliken, 1990). We argue, therefore, that by adjusting these factors, information processing systems become double loop learning oriented and allow ventures to rapidly adapt and eventually to succeed (Thomas, Clark, & Gioia, 1993) even if the initial opportunity was based on an entrepreneur’s inaccurate perceptions.

The remainder of the paper is divided into four parts. In the next section, we turn to an example from business practice that demonstrates how an entrepreneurial firm used strategic insights to resolve a “crisis of partial misperception.” We then briefly review the literature in three related areas: entrepreneurial cognitions, learning capabilities, and information processing. We then discuss how the use of TMTs and organizational structure influence the nature and effectiveness of an entrepreneurial firm’s information processing system and offer propositions that relate these ideas to venture performance. Finally, the article discusses the theoretical and practical implications of the model as well as future research directions.

AN EXAMPLE FROM BUSINESS PRACTICE

Sapient Health Network (SHN), an Internet-based health care information subscription service, illustrates how strategic practices were used to resolve crises arising from initial misperceptions. In response to the growing use of the Internet, an entrepreneur had the cutting edge idea to create an Internet community for people suffering from chronic diseases. The firm would provide paid subscribers with expert information, resources, and chat rooms so that people suffering from the same ailments could provide each other with information and support. It seemed to have gotten off to a good start: the venture raised $5 million in investor capital and beta tests supported the business concept. As such, the Internet entrepreneur was certain that the innovative idea would fly.

During the beta tests, however, the service had been offered for free. SHN’s troubles began when it tried to convert its trial subscribers into paying ones, yet this was an assumption that was important in making the idea work. Fewer than 5% signed on, far less than the 15% they had projected. SHN began burning through $400,000 per month, with little revenue to show for it. Given the shortfall, the entrepreneur knew the venture was in trouble, but he was not sure how to make his subscriber model work.

Instead of continuing in the same direction using a single loop learning rubric (i.e., seeking more ways to pursue his original dream of converting free members), the entrepreneur was able to rely on additional TMT and
board of director experiences and input. Importantly, by the time the company began to encounter problems, the venture opportunity had moved from the mind of the single entrepreneur to an established venture overseen by a diverse TMT – each member with his own ideas and power base – and an engaged board. According to SHN Board member Susan Clymer, the founder sought their help “to figure out how we could wring value out of what we’d already accomplished.” Then, they evaluated their resources. One thing SHN had created was an expert software system that SHN used to collect detailed information from its subscribers. SHN was sure that the expert system was its biggest selling point. But, how to use it? The Board and TMT members realized that there might be a market for aggregate data about patient populations gathered from the website. They tried out the idea on the market research arm of a huge East Coast health care conglomerate. The officials were intrigued. SHN realized that its expert system could become a market research tool.

SHN would still create Internet communities for chronically ill patients, which was the entrepreneur’s initial frame-breaking insight, but the service would be free. Instead, SHN transformed itself from a company that processed subscriptions to one that sold market research. To do so, SHN needed more health care industry expertise. It hired an interim CEO, Craig Davenport, a 25-year veteran of the industry to steer the company in its new direction. In a matter of just 2 years, revenues jumped to $1.9 million in 1998. Early in 1999, SHN was purchased by WebMD and, less than a year later, WebMD merged with Healtheon (Cresswell, 2000; Raths, 1998).

We believe that the situation above is typical of successful new ventures. First, the entrepreneur utilizes double loop learning to perceive unique opportunities stemming from radical environmental changes (Cope, 2003, 2005). However, by virtue of innovativeness, the idea will be based in part upon some misperceptions and erroneous assumptions (in the SHN case, misperceptions that a certain percent of the clientele would pay for the service). The venture then must interpret real-time feedback, such as the inadequate conversion rates that SHN experienced and the feedback from the East Coast health care conglomerate about the value of the company’s data, to adjust their strategy. The learning now requires letting go of the original conceptualization because of discordant feedback and coming up with a new interpretation of the situation, i.e., organizationally driven double loop learning. This is especially critical given that entrepreneurs (1) often have short windows in which to make adjustments, (2) start based upon biased beliefs that tend to persist, and (3) are better with innovative rather than incremental learning (Buttner & Gryskiewicz, 1993, 1999).
ANTECEDENTS OF INFORMATION PROCESSING SYSTEMS

The example above demonstrates how strategic practices and learning can help young firms survive a crisis of initial misperception. The firm was able to learn because it applied strategic insights that, according to the information processing literature, can enhance performance (e.g., Thomas et al., 1993). Our emphasis, in terms of developing propositions and setting forth a model, is on the application of strategic factors to enhance the double loop learning that emerges from information processing systems. However, we take a holistic approach to model development. Therefore, before we can investigate the information processing systems of interest, we first discuss the gestation of these initial misperceptions. This is important because we believe that how founders approach learning in the earliest stages of innovative opportunity recognition will affect the learning components of the information processing systems that are ultimately implemented.

In this section, therefore, we address two aspects of entrepreneurial learning and strategy that correspond to the earliest stages of new venture development. The first is the entrepreneurial cognitions that an individual entrepreneur or team of founders experience during the early stages of opportunity discovery and formation. The second is the learning capabilities that are developed in the organizing stage after the venture has been launched. Before we explore these two conditions, however, we establish the baseline proposition of our model: misperceptions have a negative effect on performance, ceteris paribus.

A Baseline Proposition

We want to highlight several reasons why inaccurate perceptions are so common among innovative business start-ups and the direct consequences of such perceptions, if not moderated by other factors. We set out these arguments here in a “baseline” proposition. First, the venture start-up context, especially as it relates to innovation, is inherently uncertain. Often, little is known and much may be unknowable in terms of market potential, performance expectations, operational issues, and so forth. This condition of uncertainty may lead entrepreneurs to use cognitive biases (mental shortcuts that can lead to fundamental errors in judgment) in differing degrees. Many entrepreneurs are especially susceptible to these biases
In fact, several authors (e.g., Katz, 1992; Simon, Houghton, & Aquino, 2000) suggest that the very creation of their firms may depend upon the use of these biases. As a result, entrepreneurs may overestimate key venture success factors, such as the size of a potential market, access to capital, the firm’s overall skill level, and so forth (Barnes, 1984; Schwenk, 1984; Simon & Houghton, 2003). These overestimations put the venture on precarious grounds, right from the start.

We suggest, therefore, that absent moderating factors, entrepreneurs who pursue an innovative opportunity based upon inaccurate perceptions may fail to achieve their intended outcomes, much less a competitive advantage. Specifically, the strategic management literature suggests that the willingness to act on misperceptions may not be valuable because accurate information helps in making effective strategic decisions (Bourgeois, 1985). Sutcliffe (1994) argues that the majority of work on performance in strategic management implicitly requires managers to have accurate perceptions to succeed. Along a similar line, studies have found that the further the perceptions of the environment are from the actual environment, the worse the organization will perform (e.g., Bourgeois, 1985; Sutcliffe, 1994). Thus, we suggest the following proposition regarding entrepreneurs who base their initial opportunity upon misperceptions.

**P1.** The greater the inaccuracy of the founder’s initial perceptions, the lower the new venture’s performance.

### Entrepreneurial Cognitions

Recent research has suggested that entrepreneurs may employ a unique kind of decision-making process that allows them to go forward with a business launch even in the face of uncertainty (Busenitz & Barney, 1997). This approach has been labeled “entrepreneurial cognition” and is defined as “the extensive use of individual heuristics and beliefs that impact decision making” (Alvarez & Busenitz, 2001, p. 758). Use of heuristics is especially prevalent when new ventures engage in more innovative activities (Houghton, Simon, Aquino, & Goldberg, 2000), which is the type of venture this paper focuses on. Heuristics, in this context, are nonrational decision rules or cognitive mechanisms that simplify an entrepreneur’s decision-making process. These simplifying strategies enable entrepreneurs to seize opportunities by providing decision-making shortcuts in complex decision settings (Tversky & Kahneman, 1974). Thus, compared to
managers of large firms, entrepreneurs are more likely to make decisions based on limited information. This, in turn, increases the likelihood of “misperceptions.”

The use of a heuristics-based logic explains, in part, why it may not be necessary for the initial perception of an opportunity to be especially accurate. First, entrepreneurs are willing to make significant leaps in their perception of opportunities in ways that other decision makers may be unable to. Furthermore, more accurate assessments of opportunities might lead many entrepreneurs to refrain from starting ventures even though, over time, they may have been able to correct their erroneous perceptions. Finally, opportunities that can easily be identified and analyzed are unlikely to confer any distinct advantage because they may be less rare, valuable, and more imitable. Unique insights or unanalyzable situations, by contrast, may push entrepreneurs to be more inventive and risk taking, yet simultaneously shield their creative opportunity from detection by competitors (Daft & Weick, 1984; Mosakowski, 1998). For example, SHN might never have been launched if its founders perceived that its subscription model would not work. The critical issue is how they thought about their venture – their cognitions – and how they were able to adjust their thinking and perceptions by processing information and learning.

Many theorists agree that entrepreneurial situations that involve innovations are typically unanalyzable (e.g., Minniti & Bygrave, 2001). If this is so, entrepreneurs have little choice but to make decisions and move on. That is, entrepreneurial decision making propels an entrepreneur down a corridor where one decision or event leads to another. Along such a decision path, some outcomes will be positive, others negative. Therefore our use of the term “misperceptions” is not meant to suggest “one big mistake,” but rather decisions that are inaccurate because they are made under conditions of uncertainty in unanalyzable situations. Whether or not this cognitive style will lead an entrepreneur to eventual success may depend on his or her learning capabilities and the learning capabilities of the subsequent organizational system.

Learning Capabilities

Even though entrepreneurial cognitions may explain why entrepreneurs often act on the basis of inaccurate perceptions, it does not explain whether they will be successful. In this section, we suggest that depends on their style of cognitive learning and their use of new knowledge. Knowledge
creation in a small new venture that engages in innovative activities requires the capacity to absorb knowledge and technology from outside and integrate it in unique ways inside the firm (Cohen & Levinthal, 1990). The emphasis on survival in new ventures generates an inherent openness to new ideas in contrast to the “Not Invented Here” syndrome that can plague older firms. Thus, entrepreneurial ventures with an openness to incoming information may have a higher absorptive capacity than larger firms, even though their levels of R&D spending may be proportionately lower.

According to research by Nonaka (1988, 1994), the qualities for enhancing individuals’ ability to create information and knowledge – intention, autonomy, and fluctuation – are much more likely to exist in small and new firms than in large corporations. These qualities are best supported in an environment of “creative chaos, which triggers the process of organizational knowledge creation” (Nonaka, 1994, p. 28).

The more chaos or fluctuation an organization has inside its built-in structure, the more likely it is to have a lively information-creation activity. Chaos is used here interchangeably with such concepts as freedom, fluctuation, randomness, redundancy, ambiguity, and uncertainty. A lively activity is created since the positive role of fluctuation or chaos widens the spectrum of options and forces the organization to seek imagination and new points of view. (Nonaka, 1988, pp. 60–61)

This approach is related to the resource-based view of strategy because it holds that the knowledge creation process itself creates unique competencies with which a firm can compete. As such, organizational learning leads to an increase in the “organization’s capacity to take effective action” (Kim, 1993, p. 43) as well as to the “mobilization of tacit knowledge held by individuals [that can] provide the forum for a ‘spiral of knowledge’ creation” (Nonaka, 1994, p. 34). Such learning, in turn, leads to greater firm effectiveness (Barney, 1991).

This suggests the need for an environment in which decisions are not “final,” but instead are analogous to experiments that may foster a heightened level of learning (Cope, 2003). The entrepreneur’s role in such a setting is to support the creation of new knowledge. Entrepreneurs who are themselves able to learn in these settings and encourage others to learn are more likely to be successful. Additionally, we believe, they are more likely to build double loop learning organizations. Implementing team approaches, for example, may enhance this type of learning if the team is constructed appropriately. This however requires a proactive approach to learning and information processing. It is that topic that we turn to next.
Entrepreneurial cognitions and learning capabilities improve the chances that a new venture will survive and succeed, even if it is started on the basis of misperceptions. That is, despite the face validity of Proposition 1, entrepreneurs who start their firms with initial misperception are not necessarily doomed to fail. Nevertheless, once a firm grows beyond the control of its founder(s), double loop learning systems are needed at the organizational level. Entrepreneurs can increase their chances of continued success if their organizations can rapidly and effectively generate new conceptualizations of the emerging situation. While such learning is important even to the alert entrepreneur, it is especially crucial to those who start with misperceptions because it allows the firm to reinterpret information and readjust its actions accordingly (Lant et al., 1992). In fact, as we have noted, the willingness to initially act on misperceptions combined with superior learning may even generate a distinctive capability. By virtue of taking a unique action (even though based on a misperception), the firm may be able to gather feedback that others cannot easily obtain, making the action yield rare and imperfectly imitable insights. By adjusting its actions based upon what it has learned, the venture now may act on a true opportunity, suggesting value creation. Thus, the combined activities could lead to a competitive advantage (Alvarez & Busenitz, 2001). In this section, we develop propositions that address how a young firm can use strategic insights to strengthen its organizational-level double loop learning capabilities.

One way of promoting double loop learning is through an organization’s information processing system. Organizational information processing flows through three stages recursively (Daft & Weick, 1984; Milliken, 1990; Thomas et al., 1993). First, input information, which can stem from feedback generated by the firm’s prior actions or from other factors in the firm’s surroundings, must be noticed by the system. The system’s ability to notice may be affected by managerial talents, organizational structures, and the venture’s operating environment. In some firms, this “corrective” type of learning may be more likely to be incremental, especially if there were no initial misperceptions (Cope & Watts, 2000). To stimulate new ways of understanding the marketplace, however, ventures need to emphasize double loop information processing systems that have broader and deeper noticing capabilities than other systems (Lant et al., 1992).

Second, the noticed information must be interpreted by the organization to form causal attributions about relationships between events (Daft & Weick, 1984). Information that is fairly routine will contribute to single loop
learning, adapting, modifying, and perfecting previous understandings. However, information that is inconsistent with initial causal attributions may trigger a reinterpretation of causal attributions. We suggest that double-looped learning-oriented information processing systems encourage reinterpretation (Meyer, 1982).

Third, the interpretations must lead to some form of action (Meyer, 1982), which may or may not be consistent with previous behavior. If new information has not caused much reinterpretation, the organization may not change much beyond fine-tuning its existing action course. Conversely, with reinterpretation, the organization has an opportunity to test the new causal attributions with a changed course of action. Information processing systems that allow for new action, then, are more likely to stimulate fresh learning (Lant et al., 1992). The results of the action provide further feedback information to the organization that can potentially be noticed as the information processing cycle continues. It becomes clear why learning systems are couched in terms of a “loop!”

Further, learning can be enhanced if information processing speed is increased, thereby allowing more iterations through the noticing, reinterpretation, new action, and feedback cycle. As the cycle progresses, information is converted into knowledge and these knowledge assets are added to the firm’s storehouse of learning. The above suggests that information processing systems that facilitate broader and deeper noticing, reinterpretation, new action, and multiple iterations promote radical, double loop learning and cause information processing to be a value-adding activity that can correct initial misperceptions.

Organizational information processing cycles may be dominated by a tendency to reinforce existing interpretations, i.e., they often generate only single-looped learning. It is the more unusual system that can encourage double-looped learning. Why is the default information processing cycle prone to reinforcing, rather than frame-breaking, outcomes? Again, it makes sense to start looking at individual information processing patterns for insight here. First, individuals rarely notice all the information needed for a decision and they tend to ignore indicators that suggest that their initial action, or interpretation, was ill advised (Hogarth, 1987). Second, if relevant but discordant information is noticed, it may not be interpreted correctly. Input information is often ambiguous and the original conclusions formed from biases tend to persist (Cooper, Woo, & Dunkelberg, 1988). Third, the firm must have the freedom to adjust its actions in ways that are consistent with the new interpretation if the venture is to succeed. Too much redirected action signals to key stakeholders a confusion of purpose and is
often discouraged in established firms. Further, in established firms, organizational incentives and other reporting systems embed inertial tendencies and resistance to change. Even in new ventures, a headstrong entrepreneur, who has launched a firm in a given direction, may be difficult to redirect (Mone, McKinley, & Barker, 1998). Finally, time may be an issue. Correcting misperceptions may require cycling through multiple iterations of noticing, interpreting, and acting, yet new ventures often have only small temporal windows for action. And unlike the ability to make rapid decisions when heuristics are invoked for the initial opportunity, a changed course of action requires a more time-consuming, complex process of reframing the situation; this new conceptualization explicitly denies the intuition that the heuristic initially provided, and thus, heuristics cannot be relied on at this point to speed up the process.

Using Strategic Factors to Enhance Double Loop Learning Information Processing Systems

At the most general level, then, the above arguments suggest that organizations typically find it difficult to (1) increase the breadth and depth of information noticed, (2) reinterpret data, (3) generate new action, and/or (4) decrease cycle time, because they have limited capacity or interest (Cope, 2005; Miner & Mezias, 1996) to process novel information (Daft & Weick, 1984). Several strategic management scholars, however, assert that key strategic factors may increase the capacity of organizations to process novel information or may decrease the demand placed on the organization’s information processing system (Lant et al., 1992; Meyer, 1982; Thomas & McDaniels, 1990). It is important, therefore, to identify these factors if one wishes to enhance the ability of an information processing system to generate double loop learning (Meyer, 1982; Milliken, 1990). Specifically, consistent with the literature on new venture performance and strategic management (e.g., Sandberg & Hofer, 1987; Thomas & McDaniels, 1990), we propose that two factors – TMT characteristics and organizational structure – may help the information processing system accommodate double loop learning, which, in turn, moderates the relationship between initial misperceptions regarding an opportunity and venture performance. Although these two strategic arenas, and the specific factors within each, are not exhaustive, we believe they represent a critical set of possible influences on a firm’s information processing system that can enhance performance by modifying the initial perceptions. The overall model of these relationships is pictured in Fig. 1.
Researchers have investigated TMT characteristics with respect to new ventures and firm performance (e.g., Duchesneau & Gartner 1990; Keeley & Roure, 1990; Wiersema & Bantel, 1992). We propose that the presence of two TMT factors – TMT experience and TMT functional heterogeneity – may strengthen the double loop learning capabilities of the information processing systems of new ventures.

**TMT Experience**

Prior research indicates that TMT members who have experience in an industry or experience with new venture formation are more likely to be associated with new venture success (Duchesneau & Gartner 1990). We propose that, even for ventures begun on the basis of misperceptions, TMT experience may also improve new venture performance by fostering a learning-oriented information processing system within the new firm.

The new venture’s TMT may range from being highly experienced to extremely inexperienced in new venture formation. The TMT may also vary in its experience in the new venture’s product market. Strategy researchers have argued that extensive experience in an industry reinforces the manager’s commitment to an organization’s status quo (Hambrick, Geletkanycz, & Frederickson, 1993) and the organization’s conformity to the central tendency.
of the industry (Finkelstein & Hambrick, 1990). We contend that prolonged industry tenure, however, does not necessarily decrease organizational innovation (e.g., Bantel & Jackson, 1989). Further, Hambrick et al. (1993) acknowledge that teams with established industry wisdom can benefit those who have new ideas because that wisdom can inform the new ideas. In new venture formation, we believe experience may enrich the learning orientation of the TMTs. For instance, experienced TMTs may have access to more information sources, such as key customers, suppliers, and even competitors. From a cognitive perspective, experienced team members may be more able to notice subtle differences in information patterns that naïve observers may overlook (Fiske & Taylor, 1991; Gaglio & Katz, 2001) and notice information more quickly than others because of their easier access to information sources and their ability to rapidly assimilate incoming information. Thus, TMTs with new venture formation or product/market experience may have broader, faster, noticing capabilities than other teams.

Experienced TMTs may also be able to reinterpret information more readily than other teams. Experience has given managers a complex system of causal relationships that have already been through substantial revision. Therefore, experienced TMT members can avoid the novices’ false starts regarding causal relationships. Reinterpretation for experienced managers is faster and can be at a deeper, more refined level of causal attributions than for inexperienced managers, leading to accurate perceptions more quickly. Eisenhardt (1989), for instance, found that TMT experience is important when one is likely to encounter inaccurate information, suggesting that executives with extensive industry experience can provide high-quality feedback. TMTs with experience in either product/market or venture formation, therefore, are better able to correct misperceptions than teams that lack experience in these areas.

Finally, experienced TMTs may have more time to cycle through the information processing system than other teams because they may be perceived as more legitimate. This legitimacy may give the team more credibility, so, when their misperceptions are apparent they may get more leniency from their stakeholders, in terms of time and financial resources, to learn and adjust their perceptions of the situation (Stinchcombe, 1965). And, of course, a team has more person hours to invest per day than the individual entrepreneur, which opens up the possibility that the team could process information more quickly than an individual if it could process parts of the information in parallel.

Consistent with these ideas, high levels of experience may confer “expert” status on certain TMT members. Experts have valuable information
processing characteristics that can guide and support a team to use feedback information to form more sophisticated causal understanding of the new domain. For example, Chi (2006) defines an expert as someone who can, with minimal effort, recognize fundamental patterns and their subtle distinctions in order to efficiently interpret new information in an accurate light. According to Chi (2006, p. 22) the expert is “the distinguished or brilliant journeyman, highly regarded by peers, whose judgments are uncommonly accurate and reliable, whose performance shows consummate skill and economy of effort, and who can deal effectively with certain types of rare and ‘tough’ cases.”

Thus, TMT experience may lead to a double loop learning information processing system by broadening noticing, allowing for more reinterpretation, processing more quickly, and getting more iterations through the system than other teams. This double loop learning process will be especially beneficial to new ventures when entrepreneurs initially misperceived opportunities, which leads to Proposition 2:

P2. TMT experience will moderate the relationship between inaccuracy of initial perceptions and venture performance: TMT experience will have a more positive effect on the venture performance of entrepreneurs who had inaccurate initial perceptions than on the venture performance of entrepreneurs who had more accurate initial perceptions.

TMT Functional Heterogeneity
Functional heterogeneity of the TMT includes the distribution of functional backgrounds, educational curricula, and/or industry experience (Wiersema & Bantel, 1992). Functional background heterogeneity has been hypothesized to improve the learning component of team processing because there is an expectation that TMT members with different backgrounds will bring different perspectives, broadening both the noticing and the interpreting components of team information processing (Hambrick & Mason, 1984; Lant et al., 1992). TMTs with heterogeneous functional backgrounds have been associated with adaptability (Murray, 1989), and better performance (Norburn & Birley, 1988). Education heterogeneity has also been associated with change (Wiersema & Bantel, 1992). In the new ventures literature, occupationally heterogeneous teams have been found to outperform other teams (e.g., Keeley & Roure, 1990) and teams with industry experience heterogeneity were associated with new venture growth (Eisenhardt & Schoonhoven, 1990).

We propose that TMT heterogeneity will be particularly important for those entrepreneurs that rely on heuristics based decision making
because having members from diverse backgrounds will increase the number and variety of the approaches/models and theories, thereby increasing the probability of deriving an optimal solution. Further, it may be through its effect on the capacity to experience double loop learning that TMT heterogeneity improves an organization’s ability to change or innovate.

TMT functional heterogeneity may promote a double loop learning information processing system that can correct early errors in perception (Lant et al., 1992). Specifically, these teams may have broader noticing capabilities because team members can draw on a wider variety of expertise and information bases, which leads to a diverse set of views (Bantel & Jackson, 1989; Hambrick & Mason, 1984). In addition, functionally heterogeneous TMTs may be more likely to have reinterpretations of their initial causal attributions because their differing perspectives provide natural grist for discussion and reinterpretation of information, consistent with Wiersema and Bantel’s (1992) finding that heterogeneity is associated with change. This reinterpretation may lead to improved accuracy of subsequent managerial perceptions. The reinterpretation process, however, may be costly in terms of TMT time and team social dynamics. The cost may be worth the investment when the new venture TMT begins with inaccurate perceptions but for TMTs that begin with accurate perceptions, the marginal benefits of reinterpretation may not be substantial enough to offset any potential costs because these teams do not require as much reinterpretation of perceptions. Collectively, the discussion above suggests the following proposition:

**P3.** TMT functional heterogeneity will moderate the relationship between inaccuracy of initial perceptions and venture performance: TMT functional heterogeneity will have a more positive effect on the venture performance of entrepreneurs who had inaccurate initial perceptions than on the venture performance of entrepreneurs who had more accurate initial perceptions.

*Organizational Structure Factors*

In addition to TMT characteristics, organizational structure may dictate the extent of double loop learning that a firm-level information processing system can achieve (Daft & Weick, 1984; Rajagopalan, Rasheed, & Datta, 1993). Some researchers have studied the relationship between organizational characteristics and venture performance (e.g., Covin & Slevin, 1990).
In the following section, we propose that two structure factors – decentralization and organicity – may affect the information processing systems of new ventures.

**Decentralization**
Decentralization refers to the extent to which major decisions are made at a lower versus higher level in the organization (Van de Ven, Hudson, & Schroder, 1984). Most of the entrepreneurship studies examining decentralization found that it improves the performance of new ventures (Van de Ven et al., 1984). For example, Duchesneau and Gartner (1990) determined that successful entrepreneurs encouraged participative decision making at the strategic and operational levels and shared command with lower ranking employees.

We further argue that decentralization is especially important for entrepreneurs who relied on a heuristics-based decision logic to initiate the venture because decentralization may facilitate a double loop learning information processing system within the firm (Milliken, 1990). Sutcliffe (1994), for instance, found that decentralization improves the accuracy of a firm’s perceptions of its environment. This may happen because of broader noticing available to the firm, where multiple and diverse boundary spanners are participating in decision making. Because decision making is decentralized, individuals who reinterpret causal relationships may have more autonomy to initiate new actions based on this changed perception.

Greater centralization, in contrast, narrows the firm’s perspective to that of the entrepreneur and his or her initial misperceptions, which may increase commitment to past actions (Staw, 1981) rather than encourage new actions. Finally, in decentralized firms, because more people are responsible for noticing, feedback from action may be more immediately apparent, increasing the cycling speed of the information processing system. Thus, decentralization accomplishes two goals: first, it may increase the firm’s ability to notice and accurately interpret relevant feedback, and second it may grant others in the organization the power to refine strategic initiatives based upon that feedback, thereby increasing the firm’s competitive advantage. Proposition 4 follows:

**P4.** Decentralization will moderate the relationship between inaccuracy of initial perceptions and venture performance: Decentralization will have a more positive effect on the venture performance of entrepreneurs who had inaccurate initial perceptions than on the venture performance of entrepreneurs who had more accurate initial perceptions.
Organicity

Another organizational factor studied in the new venture literature is the extent to which a firm is organic or mechanistic (Burns & Stalker, 1961; Covin & Slevin, 1990). An organic firm is characterized by informality, open communication channels, and adaptiveness. Mechanistic firms, in contrast, have formal structures, restricted communication channels, and consistent actions. Interestingly, entrepreneurship studies have reached contradictory results regarding the effects of an organic structure on venture performance, with different justifications for their findings, suggesting there may not be a direct relationship between venture performance and level of organicity. For example, Stuart and Abetti (1987) found that organic structures decreased performance. They explained that control was more important than the ability to adapt because new venture activities were very chaotic. In contrast, after finding that successful firms were more organic than less successful firms, Duchesneau and Gartner (1990) argued that an organic structure helped the firm cope with changing environmental conditions.

Although venture performance is critically important for young firms, effective learning is another outcome that facilitates long-term success. High organicity, we believe, will facilitate double loop learning. The explanations above related to performance suggest that an organic structure becomes especially important when entrepreneurs base initial actions on misperceptions because organic structures emphasize learning. If one starts with accurate perceptions, the control provided by a more formal structure will help the firm stay on a predetermined path. If, however, perceptions were inaccurate, an organic structure facilitates needed communication to enhance reinterpretation and allows the firm to make the changes needed to adapt to unfolding truths. That is, organicity is especially important for both reinterpretation and new action. This assertion is consistent with Dougherty’s (1990) finding that firms that introduce new products to new markets succeed by refining their perceptions through multiple cycles in which individuals in different functional areas and at different organizational levels share their understanding. Proposition 5 follows:

P5. Organicity will moderate the relationship between inaccuracy of initial perceptions and venture performance: Organicity will have a more positive effect on the venture performance of entrepreneurs who had inaccurate initial perceptions than on the venture performance of entrepreneurs who had more accurate initial perceptions.

Returning briefly to our example from business practice, we believe SHN illustrates some of the proposed relationships. In the case of SHN, insights
from a heterogeneous group including the TMT, as well as Board members who were consulted, helped SHN resolve its crisis. Once a solution began to emerge, a 25-year-old veteran of the industry, where SHN had shifted its attention, was hired for his experience and contacts. The decentralized and organic structure allowed the venture to act on this change in a timely fashion.

**DISCUSSION**

The essence of entrepreneurship is perceiving and acting upon opportunities (Bygrave & Hofer, 1991; Venkataraman, 1997). More specifically, some suggest that innovative learning, alertness, or heuristic-based cognitions allow entrepreneurs to perceive opportunities in discontinuous environmental change that others do not perceive (e.g., Cope, 2003, 2005). The performance ramifications of these actions, however, may depend upon whether one has accurate or inaccurate perceptions about the nature of the opportunity. The very novelty of the opportunity suggests that entrepreneur’s initial perceptions may, in part, be erroneous. Entrepreneurial insights that are difficult to analyze or are based on highly unusual new combinations do not lend themselves to a conventional “planning and analysis” approach. Thus, paradoxically, “misperceived” start-ups may be the rule rather than an exception in innovative ventures.

Recently, however, a study of major leading companies indicated that accuracy of perceptions at start-up, as reflected in the quality of initial product/service offerings, may not be critical for long-term success (Collins & Porras, 1997). This suggests that founders must draw on other resources to be successful. How, then, do start-up entrepreneurs nevertheless succeed? We suggest that it is a function of radical, double loop learning across several stages and levels of analysis in the process. In the earliest stages of venture formation, an entrepreneur’s capacity for innovative learning is critical: those that can see an opportunity that others do not are more likely to potentially gain competitive advantage. Once the firm grows beyond the founders, however, firms with information processing systems that facilitate double loop learning are needed to correct any early misperception. This latter area is the focus of this paper. We have identified four aspects of a double loop learning information processing system that we believe provide a strategic approach to managing misperceived start-ups.

Specifically, we offered propositions suggesting that a more experienced and diverse TMT adds breadth and depth to a firm’s learning processes that
enable it to notice subtle differences and make more informed causal attributions when interpreting subsequent events. We also theorized that decentralized and organic structures enhance double loop learning by fostering communication and information exchange that leads to company-wide efforts to make valid reinterpretations and take quick action. Because these constructs help the firm make needed corrections, they are especially important when entrepreneurs start with inaccurate perceptions related to an opportunity. This, in turn, may allow entrepreneurs who act on opportunities that are “false” to eventually achieve a competitive advantage.

We believe the model provides several insights regarding earlier entrepreneurship and strategy research. First, we have taken a developmental approach recognizing that firms often begin with a single entrepreneur and his/her entrepreneurial insight and then grow into more complex organizations. As such, we follow Cope (2005) recommendation to explore learning pre- and post start-up.

Taking this cross-level perspective also helps explain how entrepreneurs may overcome a learning challenge implied by the literature. In some respects, single loop (adaptive) learning and double loop (innovative) learning are mutually exclusive (Buttner & Gryskiewicz, 1993, 1999). Further, most organizational information processing structures have a natural tendency to emphasize adaptive, single loop learning that reinforces and strengthens existing perspectives. This paper may help explain how successful entrepreneurs can meet the requirement for the innovative, double loop learning that is needed at the outset to recognize novel (and therefore potentially valuable) opportunities and needed by the ongoing venture to correct initial misperceptions.

In addition, the paper sheds new light on some early findings about new venture performance. For example, while most scholars studying TMT heterogeneity implicitly argue that it enhances new venture performance by increasing a firm’s functional skill base, we suggest it may also affect performance by improving the firm’s ability to modify initial interpretations. The paper adds further to the literature by suggesting that structural factors that may not have directly influenced venture success – namely decentralization and organicity – are still important because they moderate the effect of inaccurate perceptions on competitive advantage and success.

We also believe the current paper complements the venture formation literature by integrating it with the venture performance literature. Specifically, the entrepreneurship literature has used two very important criteria for “success” – starting ventures and the economic success of ventures – yet rarely examined the relationship between the two criteria.
This may have been detrimental because some of the constructs leading to success in one criterion can potentially impede success in the other. Several articles have suggested displaying biases and misperceiving reality are often prerequisites to starting new ventures because these tendencies spur the entrepreneur to act by reducing the amount of risk perceived (Busenitz & Barney, 1997; Simon et al., 2000). Thus, if venture formation is the main goal, one could argue that biases and misperceptions are beneficial and often necessary (e.g., Simon et al., 2000). Actions based upon erroneous perceptions, however, may decrease the probability of a firm’s economic success (Barnes, 1984; Schwenk, 1984; Sutcliffe, 1994). It follows that sometimes biases may promote venture formation yet hurt performance, and more careful analysis might screen out some ventures that would have performed poorly, but can also prevent the formation of many ventures that could work but are difficult to analyze. These assertions are consistent with Busenitz and Barney’s (1997) concern that an entrepreneur’s biases may assist early in a venture’s history but, left unchecked, may actually hinder performance later.

The paper also provides insight into how to achieve unified diversity, a condition ventures need to succeed (Fiol, 1994). Fiol (1994) argues that entrepreneurs must accomplish two contradictory goals: generating unity to engender commitment to an action (which would be needed for starting a venture), and fostering diversity of interpretation to facilitate learning (which may be needed to overcome initial misinterpretations). Whereas Fiol’s (1994) findings suggest a way in which these two seemingly contradictory goals can be accomplished simultaneously, our model takes more of sequential approach. We suggest that early in the process some misperception is permissible to help achieve the first goal, whereas later, the entrepreneur may benefit by installing certain elements (e.g., a heterogeneous TMT and an organic structure) to facilitate double loop learning to accomplish the second.

It should be noted that we attempted to concentrate on those relationships that best exemplified the paper’s major arguments, namely the factors we believed were most likely to moderate the relationship between accuracy of perception and performance. Because the presence or absence of other organization factors may also contribute to more effective information processing and learning, however, scholars need to incorporate additional variables that are no doubt also relevant. For example, slack resources may either impede or enhance learning. On the one hand, some argue that too much slack may impede double loop learning because high levels of slack diminish the firm’s sensitivity to negative feedback, so it fails to seek out
better interpretations and is content with satisfying behavior (e.g., Bourgeois, 1981). On the other hand, insufficient financial resources are a major determinant of new venture failure. For example, one study indicated that early in a venture’s history, low organizational slack – as indicated by high indebtedness, low cash-flow to net sales, and low cash-flow to total debt – predicted venture failure (Laitenen, 1992). We believe that organizational slack may improve the competitive posture of new ventures in which entrepreneurs have based initial actions on misperceptions because organizational slack may allow firms time to iterate through a learning-oriented information processing system to improve their perceptions. But this is an empirical question and a potentially fruitful area of future research.

Another variable that might affect a firm’s ability to recover from a misperception crisis is its choice of strategy. For example, firms pursuing niche strategies might be able to learn faster than firms with broad strategies. A firm that is targeting a narrow market has fewer components of the market to attend to. Therefore, the firm’s noticing capabilities may be less vulnerable to distraction from non-relevant information and more tailored to niche-related information. Additionally, firms pursuing niche strategies may also have a longer window of opportunity to learn and adjust their initial misperceptions than firms entering broad markets because niche-strategy firms may be overlooked by major competitors, at least for a while (Sandberg & Hofer, 1987). Lumpkin and Dess (1995) found that firms using more narrowly focused strategy-making processes in their early stages of organizational development were relatively higher performers, suggesting that a niche strategy may enhance learning for new ventures.

Before accepting the assertions above, researchers need to test this paper’s propositions. Measuring the accuracy of initial perceptions may be especially challenging (Lyons, Lumpkin, & Dess, 2000). Some studies (e.g., Sutcliffe, 1994) have tackled this task by comparing managerial assessment of environmental factors to more objective measures. In the context of the proposed research, however, we believe more finely grained measures that directly tap into the beliefs of managers at the time of their decision may be beneficial. Specifically, we suggest researchers uncover the entrepreneur’s initial assumptions (e.g., the entrepreneur’s predictions regarding how markets and competitors might respond to an offering) that led him/her to decide that an opportunity existed. Next, researchers can monitor longitudinally the extent to which these assumptions were proven correct. The precise measurement details will depend upon the specific context of the proposed study and the resources the researcher has available. All the remaining variables in our model have been measured numerous
times in both the strategy (e.g., Miller, 1988) and entrepreneurship (e.g., Sandberg & Hofer, 1987) literature.

The reader should recognize the limitations of this paper. Entrepreneurs may have to make some tradeoffs in that the ideal configuration of TMT and organizational structure factors to enhance learning may not be the exact same configuration that is best for pursuing a given opportunity. Furthermore, for the sake of parsimony, the model omitted certain interactions among TMT and structure variables that may prove important to the interpretation process. Furthermore, this paper explicitly addresses ventures that are based upon innovative opportunities and does not address more routine ventures. In a similar vein, the paper’s focus on double loop learning to make adjustments to opportunities that are somewhat misperceived, may not solve the problem in cases where beliefs about the initial opportunity were completely off the mark.

The reader should also note that this paper explored only one general way entrepreneurs may succeed if they start with misperception, namely through learning. Other approaches are possible. For example, entrepreneurs may be able to enact their environment, thereby causing their initial “misperceptions” to become “accurate.” Also, the reader should be wary of overstating the arguments in this paper. We are not implying that entrepreneurs are better off starting out with misperceptions or that they should always act on the opportunities they perceive. It may be that no amount of learning can help ventures that are too out of touch with the reality of the situation. Future research needs to identify those times when entrepreneurs should not proceed.

REFERENCES


THE NEW VENTURE INNOVATION PROCESS: EXAMINING THE ROLE OF ABSORPTIVE CAPACITY

Alexander McKelvie, Johan Wiklund and Jeremy C. Short

ABSTRACT

The relationship between knowledge and innovation is well established in the strategy and entrepreneurship literatures. However, little is known about how absorptive capacity – the firm’s ability to acquire, assimilate, and use new knowledge – affects innovation in new firms. We build on extant conceptual arguments from scholars who assert that the concept of absorptive capacity can be delineated into a number of individual components, and we test the influences of each component on innovation using a sample of new firms in the Swedish telecom, IT, media, and entertainment sectors. We find that while all of the components of absorptive capacity influence innovation in new ventures, acquiring new technological knowledge and employing mechanisms for exploiting new knowledge have the greatest effects. Our results provide a direct empirical test of the linkage between absorptive capacity and innovation, and suggest that the effects of these components of absorptive capacity on

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performance are more complex than previously articulated in the literature. We conclude with implications for future research surrounding absorptive capacity.

Liabilities of newness in terms of limited routines, resources, and legitimacy may prevent new firms from competing with established ventures on the basis of price or product differentiation (Lee, Lee, & Pennings, 2001). Despite such challenges, the associated absence of core rigidities (Leonard-Barton, 1992) and sunk costs can facilitate new firms’ competitiveness when young firms implement innovative strategies (Li & Atuahene-Gima, 2001). Innovation can help new ventures overcome liabilities of newness (Schoonhoven, Eisenhardt, & Lyman, 1990) and increase chances of survival and growth (Brüderl & Preisendorfer, 2000). Thus, an understanding of the processes that foster new venture innovation can provide a critical catalyst to enhance the performance of fledgling organizations.

Research in economics has often viewed new venture innovation as a one-time event, coinciding with the establishment of the new firm (e.g., Baumol, 1968). However, empirical studies of new firm innovation based on strategic management and entrepreneurship traditions suggest that firms engage in extended innovative periods where they experiment with new products and processes (Nicholls-Nixon, Cooper, & Woo, 2000). Portfolios of new products that can serve as valuable, rare, and difficult to imitate bundles of resources are also developed over extended periods of time (Schoonhoven et al., 1990). Thus, research in strategic management and entrepreneurship views innovation as an ongoing process in the competitive behavior and dynamics of new firms.

Absorption of new knowledge is a critical component in the new venture innovation process. The idea that knowledge acquisition and exploitation form important antecedents of innovation is well established in the literature (Smith, Collins, & Clark, 2005). In relation to new ventures, market knowledge and technological knowledge play key roles for the types of innovations that entrepreneurs and new firms can develop (Danneels, 2002). While some of that knowledge resides in the previous experience of the business founders (Shane, 2000), absorption of new knowledge at the firm level of analysis is needed for continued innovation and competitiveness (Grant, 1996). This dimension is especially important in dynamic markets, where perceived opportunities may appear only briefly as technologies and customer demands frequently fluctuate (Rindova & Kotha, 2001).

At present, little is known about how new ventures navigate the process of acquiring, assimilating, transforming, and exploiting knowledge – elements
that constitute key dimensions in the absorptive capacity process (Zahra & George, 2002). This represents an important gap in the entrepreneurship literature because young firms constitute a major source of innovation in our society (Audretsch, 1995) and innovation is an important strategy for new firm survival and performance. Recent efforts have moved the field forward by theorizing about different elements that constitute absorptive capacity (Zahra & George, 2002), but these ideas have seen little validation through empirical work. Thus, a gap exists between what we know and what we should know about the influence of absorptive capacity on new venture outcomes such as strategic flexibility, innovation, and performance.

In order to provide a first step toward addressing this gap in the literature we investigated 318 new firms and examined the effects of absorptive capacity on level of product/service innovation. In doing so, we make three distinct contributions to the literature. First, we provide an empirical test of the absorptive capacity construct, estimating how each of the absorptive capacity dimensions (i.e., knowledge acquisition, knowledge assimilation, knowledge conversion, and knowledge exploitation) theorized by Zahra and George (2002) contribute to new firm innovation. Second, we build on previous conceptual work and delineate two additional aspects of knowledge that are germane to innovation processes for young firms: market knowledge and technological knowledge. Third, we evaluate the relative importance of different aspects of the firms’ absorptive capacity, providing prescriptive recommendations that may allow entrepreneurs and decision makers in new ventures to more effectively focus their attention.

Our study proceeds as follows. First, we present our theoretical frame of reference and present an overarching framework that relates elements of absorptive capacity to innovative output. We then conduct an exploratory analysis using a sample of new ventures in Sweden. We conclude with a discussion of the implications of our findings for theory and future research related to the innovation management and absorptive capacity of new ventures.

THEORETICAL BACKGROUND

Absorptive Capacity and Innovation

Innovation, defined as a new product or service that a firm creates for a market (e.g., Li & Atuahene-Gima, 2001), has long been connected to knowledge-based approaches to the firm (Smith et al., 2005). While studies
into the antecedents of innovation have focused on numerous factors, we focus on how the firm’s internal stock and flow of knowledge contribute to innovation outputs. We adopt a knowledge lens for three reasons. First, a knowledge lens provides an attractive vantage point for research in entrepreneurial processes. For example, because of idiosyncratic knowledge, some individuals discover opportunities for innovation that others do not see (Kirzner, 1997). Second, knowledge assists in the exploitation of opportunities via innovation (Shane, 2000). Third, knowledge is particularly important in dynamic markets because knowledge, as opposed to other resources, is often widely applicable despite environmental changes (e.g., McEvily & Chakravarthy, 2002).

Absorptive capacity, a concept first proposed by Cohen and Levinthal (1990), refers to the ability of the firm to recognize and acquire external knowledge, assimilate that knowledge, and apply knowledge in a commercially viable way. As such, the concept of absorptive capacity can explain why some firms are able to effectively leverage information while others falter in their ability to apply knowledge for commercial purposes.

In their review of the absorptive capacity literature, Zahra and George (2002) note that the interpretation and usage of the concept varied greatly across studies. In order to clarify the construct, Zahra and George (2002) suggested a re-conceptualization of absorptive capacity into four dimensions: knowledge acquisition, knowledge assimilation, knowledge transformation, and knowledge exploitation. In this study, we build on the definitions provided by Zahra and George (2002) and observe how these four dimensions of absorptive capacity are steps in a process related to innovation and the absorption of knowledge for young firms. Such empirical testing has not been conducted previously, and we examine the role of each dimension on innovation in a context that may be more associated with entrepreneurial innovation strategies for startups, namely, dynamic markets. In the following sections we expand on each of the dimensions of absorptive capacity, highlighting elements that relate to their possible roles in the context of new venture innovation. Fig. 1 provides an overview of the absorptive capacity process for new ventures.

**Market Knowledge and Technological Knowledge**

Two strands of knowledge are particularly important in recognizing and exploiting new opportunities and have a key role in the absorptive capacity of firms: market knowledge and technological knowledge (Cohen &
Levinthal, 1990). We explicitly focus on the ability of firms to absorb and exploit these types of knowledge for a number of reasons that make these types of knowledge especially salient for young firms. Market knowledge is important as new firms are often dependent on seizing new opportunities, satisfying customer needs, and steering away from existing competitors in order to prosper. New firms are generally seen as being more sensitive to their environments and market fluctuations compared to established firms (Grant, 1996; Zahra & Bogner, 1999). Technological knowledge is fundamental to new firms as this type of knowledge underlies the basis of competition and method of production. Technological knowledge is oftentimes more difficult to develop in new firms as it is costly and a lack of technological knowledge can cause the firm’s competitive stance/resource base to become obsolete (Brush, Greene, & Hart, 2001).

Market knowledge can potentially be useful in discovering and evaluating opportunities for innovation due to awareness of customer problems as sources of potential opportunities. Other benefits include the ease of determining the market value of new technological discoveries or other market changes, and increased communicability of tacit knowledge of new technology between user and end-customer. Because it is difficult to express needs for solutions to problems that are not yet explicitly formulated (Cohen & Levinthal, 1990; Shane, 2000), knowledge of the market provides a first step toward understanding ineffable, unexpressed, or tacit needs of current and potential customers.

Technological knowledge can serve as a catalyst in the discovery and exploitation of opportunities. Possessing technological knowledge can amplify the firm’s ability to evaluate an opportunity due to expertise in designing an optimal structure, improvements in manufacturing processes,
or reliability of a new technology (McEvily & Chakravarthy, 2002). This same knowledge can also be harnessed as an economic or cost-related advantage (Dixon & Duffey, 1990). Sometimes technological knowledge can also allow for enhanced understanding of competitors’ moves (Cohen & Levinthal, 1990). Finally, technological knowledge can lead to a radical or break-through technology that represents a new opportunity, despite the fact that market suitability is not yet established (Abernathy & Utterback, 1978). Thus, market and technological knowledge are of great significance in the innovation process.

Knowledge Acquisition

Discovering opportunities is a process that depends on possessing and generating new knowledge about the market and technology. This action is especially vital in dynamic markets, where customer demands change frequently, and where new knowledge of these shifting demands is imperative. While all firms possess static knowledge stocks based on their human capital (Nerkar & Roberts, 2004), new flows of knowledge must also be acquired to permit learning about new market characteristics and technological opportunities (Cohen & Levinthal, 1990; Grant, 1996).

In order to acquire market knowledge, especially in fast-changing markets, firms can scan their environments in search of potential new market openings (Gaglio & Katz, 2001). Firms also acquire knowledge through discussions with potential stakeholders such as customers and suppliers (Freel, 2005). Empirical work supports the idea that familiarity with and an in-depth understanding of the market and its needs enhances the ability to innovate (Shane, 2000; Von Hippel, 1986).

New technological knowledge must be continuously acquired. This is traditionally done via R&D, engineering (Bierly & Chakrabarti, 1996), and other scientific and related activities (Tsai, 2004). New technological knowledge may also be acquired by less formal activities such as the development of partnerships and interactions at professional conferences, or by scanning trends (Lee et al., 2001). Both Henderson (1994) and Katila and Ahuja (2002) find a relationship between indicators of technological knowledge and innovative output.

Firms who are able to acquire substantial levels of new knowledge concerning the market and new technology are able to reduce the uncertainty about future customer demands and the firm’s ability to satisfy such demands (Daft & Lengel, 1986). Knowledge flows to the firm can thus
be seen as an important determinant of innovation. In particular, the more knowledge that the firm is able to acquire, the greater the possibility for the firm to spot opportunities in the market and for its technology.

**Knowledge Assimilation**

After knowledge is acquired, it must be assimilated. This requires spreading acquired knowledge throughout the firm so that it can be integrated with existing knowledge. Thus, communication is important as the knowledge must be clearly disseminated and effectively understood (Brown & Eisenhardt, 1995). Market knowledge assimilation allows for others within the firm to become aware of and understand the main issues at play in the market. Assimilation helps to make sense of what acquired knowledge truly means for the organization, and allows firms to process this knowledge into a more formal understanding. Technological knowledge assimilation provides firms with the ability to make sense of potential solutions to customer problems and provides increased understanding of technological capabilities. Galbraith (1973) argues that knowledge assimilation will lessen the gap between knowledge that is necessary for decisions and knowledge that is available. Assimilation also provides higher levels of agreement between decision makers as more people understand the main issues and implication of newly acquired knowledge (Beinhocker, 1999).

Recent work addresses the role of knowledge assimilation in driving innovation (Verona & Ravasi, 2003). These authors argue that knowledge articulation, integration, and codification between organizational members lie at the heart of producing new resource usages and subsequent innovation. Thus, the more the assimilation that takes place within the firm, the increased is the ability of the firm to innovate.

**Knowledge Transformation**

While the knowledge assimilated by the firm provides one aspect of absorptive capacity, the actual usage and application of knowledge provides a further step in the absorptive capacity process. Knowledge transformation involves bringing together sets of knowledge that previously were unconnected (Zahra & George, 2002) or combining elements of knowledge in new ways (Nahapiet & Ghoshal, 1998). Intersecting different areas of knowledge, including accumulated and acquired knowledge, can “trigger”
new knowledge (Garud & Nayyar, 1994). Such triggers can provide new ideas for further application of knowledge, novel solutions to market problems (Ahuja & Lampert, 2001), or multiple uses for technological knowledge (Moorman & Miner, 1998). Thus, innovation can be accomplished by bringing separate entities together, such as allowing individuals possessing market knowledge to discuss opportunities with those possessing technological knowledge. Transformation can also be accomplished by brainstorming about the implications of the assimilated knowledge, or by recognizing opportunities that stem from assimilated knowledge.

Knowledge Exploitation

The final dimension of absorptive capacity, knowledge exploitation, involves the actual application of knowledge to commercial ends (Cohen & Levinthal, 1990). This encompasses harvesting transformed knowledge into tangible activities such as launching prototypes, service ideas, or patent applications. This also involves developing systems for further exploitation of knowledge to allow for the persistent creation of new value to the firm (Spender, 1996). March (1991, p. 85) writes, “The essence of exploitation is the refinement and extension of existing competencies, technologies and paradigms.” Thus, the ability of the firm to leverage its knowledge and put it to use in its operations is positively linked to innovation.

Expected Relationships

All of the dimensions of the absorptive capacity construct should facilitate innovation for new ventures. Thus, we would expect that each element would have a direct and positive effect on innovation and firms that score higher on each dimension should obtain greater innovative output. Given these straightforward relationships we begin our empirical tests with an exploratory analysis examining the role of each dimension of absorptive capacity to provide empirical validation for this global research question.

While the importance of absorptive capacity and its dimensions has been highlighted for organizations in general (Zahra & George, 2002), and particularly for startups (Hayton & Zahra, 2005), much less theorizing has been done to understand the relative importance of each dimension. Thus, little is known about how the dimensions of absorptive capacity may differentially relate to innovative output. In their reconceptualization of the
absorptive capacity construct, Zahra and George (2002) discriminate between potential and realized absorptive capacity. Firms that focus on acquiring and assimilating new knowledge create the potential for absorptive capacity, but they need to have the ability to transform and exploit this potential in order to really realize this potential. In other words, we could very well find positive effects of acquisition and assimilation of knowledge on innovation when these variables are studied separately, but in the presence of the two other dimensions of absorptive capacity (i.e., transformation and exploitation) these effects would disappear, or at least be much smaller than the impact of the transformation and exploitation of knowledge.

In order to provide an initial assessment of the relative importance of each dimension of absorptive capacity in the innovation process, we build on our initial exploratory efforts by including all the elements of absorptive capacity in the same analysis, letting all elements “compete” for explanatory power. This exploratory analysis provides some clues as to which elements of absorptive capacity have the largest unique effect, providing an initial empirical test of the model developed by Zahra and George (2002) while allowing for an assessment of the relative importance of each absorptive capacity dimension in the context of new ventures. Such an analysis helps to validate the assertions of previous conceptual work, and insights concerning the relative importance of each dimension may provide prescriptive suggestions to allow entrepreneurs and decision makers in new ventures to focus their attention more effectively when managing the innovation process.

METHOD

Sample

Data were collected via a mail survey in 2005. The sample consisted of all incorporated new firms in Sweden started in the Telecom, Information Technology, Media, and Entertainment sector during the period 1995–2003. These industries were selected because they are knowledge-intensive and innovation is frequent; thus, successful usage of innovation is of paramount importance for competitive advantage (Zahra & Bogner, 1999). The sector is also known for dynamic changes and a large number of start-ups. Studying absorptive capacity on a sample of new firms is particularly germane for a few reasons. From a methodological perspective, new firms are inherently
smaller and lack the complexity of large, established firms. It is therefore more straightforward to assess the carrying out of the components of absorptive capacity and their subsequent relationship with innovation (Sorensen & Stuart, 2000; Autio, Sapienza, & Almeida, 2000). From a theoretical perspective, new firms are frequently considered as competing on flexibility, innovation, and strategic change (Chen & Hambrick, 1995). New firms are often considered as being more responsive to customer needs and new opportunities relative to their more established counterparts. Therefore, if the theory of absorptive capacity as a precipitator of innovation holds true, then the components of absorptive capacity should be paramount in this context.

The survey was sent to 2,038 firms. Of these, 458 responded for a response rate of 22.5%. Out of these, we excluded a number of firms that had: gone bankrupt, engaged in some sort of corporation action (e.g., merger), did not fit into the sampling frame (e.g., based on age), or did not fully answer the survey. This screened process resulted in a sample of 318 firms, corresponding to 16% of the original sample. Out of the remaining firms, 283 were independent and 35 were subsidiaries of other firms. The potential of non-response bias was assessed by tests of differences between responding and non-responding firms for firm size, age, and sales levels. No statistically significant differences were found, suggesting that there was no response bias in our sample.

The mail survey was sent to the chief executive officers of the firms. These individuals typically have the most comprehensive understanding of the goings-on within the firm and its behavior (Zahra, Neubaum, & El-Hagrasy, 2002). This is especially true for a new and potentially small firm, where decision-making concerning corporate actions and product launches is left in the hands of the top executive (Forbes, 2005). In addition, using the top executive is the most common approach when surveying new and small firms (Covin & Slevin, 1989; McDougall, Covin, Robinson, & Herron, 1994).

**Variables and Measures**

**Scale Development**

All constructs made use of multi-item 5-point Likert scales. In total, there were close to 100 items. Prior to sending out the questionnaire, we carried out a pre-test on an expert panel of 10 practitioners and academics. In order to determine discriminant and convergent validity, we entered all items
pertaining to dependent and independent variables in an orthogonal principle component analysis, extracting factors with eigenvalues above 1.0. This analysis resulted in seven factors corresponding to our constructs. However, some items cross-loaded across the factors. After deleting these items, the analysis was repeated, resulting in seven distinct factors. When summed to indices, all scales had Cronbach’s alpha values above 0.7, suggesting that the measures were reliable (Nunnally, 1978). Taken together, these analyses suggest that our measures have discriminant and convergent validity. In order to assess common method variance, we used Harman’s one factor test (Podsakoff & Organ, 1986). A factor analysis of the independent and dependent variables produced numerous variables explaining 65% of the variance. Factor one accounted for 26% of this variance. A single factor did not emerge and one factor did not account for the majority of the variance, suggesting common method variance issues are not particularly evident in our data.

**Dependent Variable**

Innovative output can be measured in a number of different ways (e.g., Li & Atuahene-Gima, 2001). The present study relied upon self-evaluation of radical and incremental innovation, based on established measures (e.g., Cooper, 2000). Following Cooper (2000), we focused on the number of new products and services and constructed a scale consisting of four items. One item related to the modifications/extensions of existing products/services launched in the market during the past year, and one item tapped radical new products/services launched during the same time span. We also posed two questions pertaining to plans for developing new products or services to be released over the next 12 months. A similar approach has been used in other studies concerning knowledge and innovation (e.g., Smith et al., 2005). All items were measured on 5-point scale ranging from “no new products or services” to “many new products or services.” All four items loaded on one common factor. When summed to an index, the Cronbach’s alpha of this scale was 0.86. In order to validate this measure and further ensure that common method variance was not an issue, we approached the same firms again 12 months later repeating the innovative output questions, for a response rate of 68%. When summed to an index, the Cronbach’s alpha of this scale was 0.84, giving a correlation between the underlying constructs, corrected for measurement error of 0.54.

In sum, this leads us to conclude that our measure of the dependent variable is valid and that common method variance is not a major threat to our results. While it may be unusual to include both radical and incremental
innovation in the same scale, the high level of reliability and stability of the relationship between the four items over time suggests that some firms simply are more innovative than others, and that this innovation is persistent over time. Furthermore, the absorptive capacity literature does not distinguish between radical or incremental innovation as a potential outcome.

**Independent Variables**
The independent variables employed reflect the four dimensions of absorptive capacity proposed by Zahra and George (2002). However, one difference between our study and previous work within absorptive capacity was that we distinguished between market and technological knowledge. As our study spanned more than one industry, orientations (i.e., manufacturing, service, and R&D) and sizes of firms, we attempted to craft generalizable measures based on extant literature. *Market knowledge acquisition*, which examined the methods used to acquire information about the market, consists of nine items and was based on the market orientation literature (cf. Kohli, Jaworski, & Kumar 1993). The specific question posed related to the frequency with which the firm carried out a number of market knowledge generating practices, such as discussions with customers, explicit tracking of trends, internet searches, and more informal means. The Cronbach’s alpha for this construct was 0.76. *Technological knowledge acquisition* measured methods that the firm employed in order to acquire new knowledge about technology and builds upon Zahra, Ireland, and Hitt’s (2000) study of new venture learning. The items were posed in a similar way as the market knowledge acquisition items, but the specific methods more closely mirrored the practices mentioned in the Zahra et al. (2000) study. Examples of these types of practices included taking technology-related courses, formal R&D activities, and experimentation with existing technologies. In total, this construct is made up of 13 items with a Cronbach’s alpha of 0.89. The items used for *market knowledge assimilation* were based on the market orientation literature (e.g., Kohli et al., 1993) and consisted of 10 items (Cronbach’s alpha = 0.75). In particular, we asked whether the firm engaged in hall-talk concerning customer needs, dissemination of information to others within the firm, and whether documents are circulated concerning customer wants. We adapted the wording of the items to reflect the fact that we were dealing with new, and oftentimes small, firms. The *technological knowledge assimilation* measure was taken from the market orientation literature but was modified to reflect the assimilation of technological knowledge. The specific items are
the same as those for market knowledge assimilation except that we changed the focus from customer to technology. We also removed two items for clarity. In total, the scale consisted of eight items and had a Cronbach’s alpha of 0.86. We scoured the literature for appropriate items to be used for knowledge transformation, but did not find an appropriate measure based on extant empirical research. Consequently, we developed an original measure of knowledge transformation building upon the theoretical foundations laid out by Zahra and George (2002), Garud and Nayyar (1994), in addition to being influenced by the empirical work of Szulanski (1996). Examples of the items used within this construct are “We frequently brainstorm about technological opportunities”, “People with different backgrounds are encouraged to work together”, “We try to develop projects that can be synthesized with previous work”, and “We try to coordinate the business and technology parts of the firm via sharing information.” Fifteen items were used, with a Cronbach’s alpha of 0.90. The measure of knowledge exploitation (gauging the ability of the firm to incorporate knowledge into its operations) was developed following the guidelines set out in previous literature focusing on the use of knowledge, such as Cohen and Levinthal (1990) and Zahra and George (2002). “We think of new ways of using our existing skills and knowledge”, “Our firm develops a number of ideas for changes to existing products/services”, and “It is usual that we get new ideas for combining our existing technology with new customer discoveries” are examples of the items that we used. We used 11 items for this measure as a whole, which yielded a Cronbach’s alpha of 0.90.

**Control Variables**

We used four control variables for this study common to entrepreneurship research and relevant to the context of our sample and research question. First, we asked respondents which year the business was started and converted this into *firm age*. The mean age of the firms in the sample was approximately 5.5 with a standard deviation of 2 years. This suggests that the firms as a whole are still quite young. *Firm size* was measured by asking the respondents for the number of individuals employed and converting this number into full-time equivalents. The average size of the firms was almost 12 full-time equivalents with a standard deviation of 40 employees. However, 75% of all of the firms had 10 employees or fewer. Four outlier firms who had more than 100 employees each unnaturally raised the mean. In general, the firms involved in this study are both young and primarily small.
We also included a seven-item measure of perceived *technological dynamism* in the industry (Cronbach’s alpha = 0.83). This construct was measured by using items from Chandler and Hanks (1994) and Narver, Slater, and MacLaclan (2004). An example of these items is “The technology in our market is changing rapidly”. Finally, we computed a binary variable to account for whether the firm was independent or a subsidiary. This was calculated based on whether the firm had a parent company owning 50% or more of the firm. Firms that were independent were coded zero and subsidiaries were coded as one. Thirty-five (11%) of the firms were subsidiaries.

**ANALYSES AND RESULTS**

The correlations and descriptive statistics for the non-categorical variables are presented in Table 1. There are relatively strong positive correlations between the dependent product/service innovation variable and all variables pertaining to market and technological knowledge. This suggests that (to the extent that the results are not caused by common method bias) firms that innovate more are also involved in all dimensions of absorptive capacity, as the theory would suggest. There are also strong positive relationships between the control variable of technological dynamism and all of the components of absorptive capacity. This suggests that knowledge and related activities may be more prevalent in dynamic markets.

Tabachnik and Fidell (2000) recommend that bivariate correlations between independent variables be under 0.7 in order to avoid problems with multicollinearity. In this study, some of the bivariate correlations are close to 0.7 and one correlation (technological knowledge assimilation and knowledge transformation) is over this level. Thus, we examined variance inflation factors (VIFs). Individual figures ranged from 1.01 to 3.10, which is well below the critical value of 10 (cf. Hair, Anderson, Tatham, & Black, 1998). This suggests that multicollinearity is not a serious problem.

In order to test the effect of the independent variables on innovative output and to ascertain that multicollinearity does not lead to erroneous results, we have chosen to combine two analysis strategies. First, we separately entered each of the absorptive capacity variables (in addition to a base model containing the control variables), examining the effect of each separate variable. These results are presented in Table 2. Second, we entered all absorptive capacity variables jointly in order to test the relative importance of the variables. These results are presented in Table 3.
<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>S.D.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
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<td>1.</td>
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<td>2.21</td>
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<td></td>
<td></td>
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<td>Number of employees</td>
<td>12.72</td>
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<td>Technological dynamism</td>
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<td>-0.02</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4.</td>
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<td>n.a.</td>
<td>0.26**</td>
<td>-0.03</td>
<td></td>
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<td></td>
<td></td>
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</tr>
<tr>
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<td>Market acquisition</td>
<td>28.81</td>
<td>5.42</td>
<td>0.01</td>
<td>0.08</td>
<td>0.24**</td>
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<td>6.</td>
<td>Technology acquisition</td>
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<td>6.59</td>
<td>-0.18**</td>
<td>-0.02</td>
<td>0.12*</td>
<td>-0.05</td>
<td>0.54**</td>
<td>0.42**</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>8.</td>
<td>Technology assimilation</td>
<td>30.34</td>
<td>5.79</td>
<td>-0.14*</td>
<td>-0.03</td>
<td>0.29**</td>
<td>-0.02</td>
<td>0.47**</td>
<td>0.60**</td>
<td>0.54**</td>
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</tr>
<tr>
<td>9.</td>
<td>Transformation</td>
<td>54.22</td>
<td>9.91</td>
<td>-0.12*</td>
<td>0.02</td>
<td>0.25**</td>
<td>-0.05</td>
<td>0.62**</td>
<td>0.67**</td>
<td>0.65**</td>
<td>0.72**</td>
<td></td>
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<td>10.</td>
<td>Exploitation</td>
<td>36.12</td>
<td>8.29</td>
<td>-0.09</td>
<td>-0.03</td>
<td>0.28**</td>
<td>-0.04</td>
<td>0.43**</td>
<td>0.67**</td>
<td>0.36**</td>
<td>0.45**</td>
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<td>11.</td>
<td>Innovative output</td>
<td>12.06</td>
<td>4.41</td>
<td>-0.05</td>
<td>-0.02</td>
<td>0.28**</td>
<td>0.07</td>
<td>0.43**</td>
<td>0.58**</td>
<td>0.30**</td>
<td>0.33**</td>
<td>0.41**</td>
</tr>
</tbody>
</table>

n = 318.

* p < 0.05.

** p < 0.01.
Table 2. Hierarchical Regression Analysis with Separate Absorptive Capacity Dimensions.

<table>
<thead>
<tr>
<th></th>
<th>Base Model</th>
<th>Market Acquisition</th>
<th>Technology Acquisition</th>
<th>Market Assimilation</th>
<th>Technology Assimilation</th>
<th>Transformation</th>
<th>Exploitation</th>
</tr>
</thead>
<tbody>
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<td>-0.05</td>
<td>-0.02</td>
<td>-0.00</td>
<td>-0.01</td>
<td>-0.00</td>
<td>-0.00</td>
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<td>Number of employees</td>
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<td>-0.08</td>
<td>-0.09</td>
<td>-0.04</td>
<td>-0.04</td>
<td>-0.06</td>
<td>-0.03</td>
</tr>
<tr>
<td>Technological dynamism</td>
<td>0.28**</td>
<td>0.18**</td>
<td>0.12*</td>
<td>0.25**</td>
<td>0.20**</td>
<td>0.19**</td>
<td>0.12*</td>
</tr>
<tr>
<td>Subsidiary</td>
<td>0.09</td>
<td>0.10</td>
<td>0.07</td>
<td>0.11</td>
<td>0.09</td>
<td>0.11*</td>
<td>0.11*</td>
</tr>
<tr>
<td>Market acquisition</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market assimilation</td>
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<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Technology assimilation</td>
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<td></td>
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</tr>
<tr>
<td>Transformation</td>
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<td></td>
</tr>
<tr>
<td>Exploitation</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.09**</td>
<td>0.23**</td>
<td>0.36**</td>
<td>0.16**</td>
<td>0.16**</td>
<td>0.22**</td>
<td>0.40**</td>
</tr>
<tr>
<td>Adj. $R^2$</td>
<td>0.08**</td>
<td>0.22**</td>
<td>0.35**</td>
<td>0.15**</td>
<td>0.14**</td>
<td>0.20**</td>
<td>0.39**</td>
</tr>
<tr>
<td>Change $R^2$</td>
<td>0.09**</td>
<td>0.14**</td>
<td>0.28**</td>
<td>0.07**</td>
<td>0.07**</td>
<td>0.13**</td>
<td>0.31**</td>
</tr>
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</table>

Notes: Standardized regression coefficients are displayed in the table.

$n = 318$.

* $p < 0.05$.

** $p < 0.01$. 
Table 3. Hierarchical Regression Analysis Including all Absorptive Capacity Dimensions.

<table>
<thead>
<tr>
<th></th>
<th>Base Model</th>
<th>Market Acquisition</th>
<th>Technology Acquisition</th>
<th>Market Assimilation</th>
<th>Technology Assimilation</th>
<th>Transformation</th>
<th>Exploitation</th>
</tr>
</thead>
<tbody>
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<td>Age</td>
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<td>-0.05</td>
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<td>-0.02</td>
<td>-0.03</td>
<td>-0.03</td>
<td>-0.01</td>
</tr>
<tr>
<td>Number of employees</td>
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<td>-0.09</td>
<td>-0.09</td>
<td>-0.09</td>
<td>-0.09</td>
<td>-0.07</td>
</tr>
<tr>
<td>Technological dynamism</td>
<td>0.28**</td>
<td>0.18**</td>
<td>0.11*</td>
<td>0.11*</td>
<td>0.13*</td>
<td>0.13*</td>
<td>0.09</td>
</tr>
<tr>
<td>Subsidiary</td>
<td>0.09</td>
<td>0.09</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
<td>0.07</td>
<td>0.09</td>
</tr>
<tr>
<td>Market acquisition</td>
<td></td>
<td></td>
<td>0.39**</td>
<td>0.12*</td>
<td>0.10</td>
<td>0.10</td>
<td>0.12</td>
</tr>
<tr>
<td>Technology acquisition</td>
<td></td>
<td></td>
<td>0.48**</td>
<td>0.48**</td>
<td>0.53**</td>
<td>0.30**</td>
<td>0.30**</td>
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<tr>
<td>Market assimilation</td>
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<td></td>
<td>0.03</td>
<td>0.07</td>
<td></td>
<td>0.06</td>
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<tr>
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<tr>
<td>Transformation</td>
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<td></td>
<td></td>
<td></td>
<td>-0.09</td>
</tr>
<tr>
<td>Exploitation</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>0.40**</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.09**</td>
<td>0.23**</td>
<td>0.37**</td>
<td>0.37</td>
<td>0.38</td>
<td>0.38</td>
<td>0.46**</td>
</tr>
<tr>
<td>Adj. $R^2$</td>
<td>0.08**</td>
<td>0.22**</td>
<td>0.36**</td>
<td>0.36</td>
<td>0.36</td>
<td>0.36</td>
<td>0.44**</td>
</tr>
<tr>
<td>Change $R^2$</td>
<td>0.09**</td>
<td>0.14**</td>
<td>0.14**</td>
<td>0.01</td>
<td>0.01</td>
<td>0.00</td>
<td>0.08**</td>
</tr>
</tbody>
</table>

Notes: Standardized regression coefficients are displayed in the table. 

$n = 318$.

* $p < 0.05$.

** $p < 0.01$. 

The New Venture Innovation Process
Starting with the analyses of each variable separately, the control variables (i.e., business size, business age, and technological dynamism) were first entered in a base model reported in column 2 of Table 2. This model accounted for a significant share of the variance of the innovative output in the dependent variable, due to the significant effect of technological dynamism. In the next step, the independent variables were entered into different blocks of subsequent regressions, one at a time per regression. Explained variance increases substantially in all of the regressions, ranging from 15% in the case of the technological knowledge assimilation variable to 38.5% for the knowledge exploitation variable. The results also show that each of the absorptive capacity variables has a statistically significant positive regression coefficient. This suggests that each dimension of absorptive capacity individually contributes to overall innovative output, supporting the basic assumptions of absorptive capacity theory.

In order to validate these findings, all absorptive capacity variables were entered together, although in a hierarchical manner, as presented in Table 3. The variables are entered in the order suggested by Zahra and George (2002), starting with knowledge acquisition and ending with knowledge exploitation. Specifically, the market knowledge dimension is entered before the technological knowledge dimension. Moving from left to right in the table, the effect of the market knowledge acquisition variable disappears in the face of technological knowledge acquisition. As variables are subsequently included in the equation, the effect of technological knowledge acquisition prevails, and the only additional variable to have a positive and statistically significant effect is knowledge exploitation. Re-examining Table 2, the technological knowledge acquisition and knowledge exploitation variables were also the variables that had the largest effect size and contributed most to explained variance when each of the absorptive capacity variables were entered separately. These effects prevail when all variables are considered together.

Overall, our results suggest that all of the elements of absorptive capacity we presented in Fig. 1 have some influence on innovation, but technological knowledge acquisition and knowledge exploitation had the strongest direct effects in our sample of new ventures. In order to ascertain the validity of our results across the different industries, which make up the TIME sector, we divided the sample into four groups (i.e., Telecom vs. IT vs. Media vs. Entertainment). We re-ran all of the regressions for each respective group and compared the results to each other and to our overall findings. We found that, by and large, the results from the individual industry sectors reflected the overall findings. One notable exception was that, for the
entertainment industry, market knowledge acquisition was slightly more influential than technological knowledge acquisition. However, there was also the lowest number of member firms in this industry compared to the others. Nonetheless, this finding of few differences in the results between industries suggests that our results are robust across the four industries studied and, thus, likely to be applicable also to other industries and task environments.

**DISCUSSION**

Our goal in this initial empirical investigation was to examine the relationship between knowledge and innovation by exploring how the different components of absorptive capacity influence innovative output in the context of new ventures. As expected, each of the dimensions of absorptive capacity was linked to innovative output. Yet, when examined as a set, some dimensions clearly emerged as more critical for fostering innovation in young firms. For example, we find that there is a positive effect of market knowledge acquisition on innovative output. This supports considerable extant literature that asserts it is essential for firms to be aware of customer preferences in order to develop new products for the market. However, this positive effect was not significant when considered in conjunction with the acquisition of new technological knowledge. Therefore, it appears that the acquisition of market knowledge is subordinate to the acquisition of technological knowledge for the development of new products or services, at least in our sample of young firms. These results challenge the notion that merely acquiring new market knowledge will lead to greater innovative output. It appears that innovation among new firms in these dynamic industries is more closely related to being knowledgeable concerning technological advances. Our findings may partially be a function of the technology-driven sample used in our analysis, as evidenced by the large effect of industry technological dynamism. At the very least, our results suggest that overlooking the impact of technological knowledge in studies that involve market knowledge could lead to biased results. Overall, our results support previous efforts that confirm the importance of linkages among scanning, interpretation, action, and firm performance outcomes (Thomas, Clark, & Gioia, 1993).

The acquisition of technological knowledge has enjoyed a central role in innovation (e.g., Tsai, 2004). This may be due to the fact that technological knowledge is more difficult to duplicate for competing firms (Nerkar &
In part, such a statement is supported by our findings. As developing a resource base in new ventures requires time and money (Brush et al., 2001), strategic flexibility and responsiveness may be based on exploiting current technological bases. That is, while new firms engage in finding their niche in the market, success might stem from being better able to exploit opportunities or drive new unproven innovations to market. For example, Raff (2000) finds that firms that show increased levels of flexibility using their resource base are better able to take advantage of emerging opportunities.

The assimilation of technological knowledge and market knowledge had a positive effect on innovative output when all of the variables were studied separately. However, when all absorptive capacity variables were considered simultaneously, we did not find a unique contribution for either of the assimilation variables. While at odds with some of the absorptive capacity literature, this result is somewhat in line with the model presented by Zahra and George (2002). They suggest that these variables provide the potential for absorptive capacity but that in order to be realized, transformation and exploitation are needed. Interestingly, we did not find a unique contribution for the transformation of knowledge as predicted by the absorptive capacity literature. This non-finding could be due to the size and age of the firms in our sample. In his study of the innovation processes of small firms, Freel (2005) found that successful innovation involved integrating knowledge from different departments. Garud and Nayyar (1994) found that such appropriate knowledge is stored and accumulated in robust systems and structures. It is possible that small and new firms can assimilate new knowledge without having elaborate processes for doing so. The lack of history of the firms may mean little previous knowledge or organizational memory from which to combine acquired knowledge as well (cf. Moorman & Miner, 1998). A valuable extension of our research would therefore be to examine interaction effects between absorptive capacity elements (such as knowledge assimilation and transformation) and firm characteristics (such as firm size and age) and test the effects of those interactions on innovation and other measures of competitive advantage. It would appear likely that the larger and older the firm, the more likely is that explicit mechanisms for knowledge assimilation and transformation would produce positive innovation outcomes.

The lack of effects of knowledge assimilation and transformation may also be due to knowledge concentration contained within individuals in the firm. Individuals within the firm are frequently viewed as knowledge repositories (Argote, 1999), and especially in the case of new and small
firms, imperative knowledge about technology and the market may be concentrated within the founder who may pursue multiple tasks. While this potentially diverges from previous findings that internal activities (such as cross-functional teamwork) are important for innovation, new firms oftentimes do not have organizational structures that would facilitate such knowledge transformation.

Our finding that the strongest effect on innovative output was found for the knowledge exploitation variable provides empirical support for conceptual arguments that describe knowledge exploitation as the application, harvesting, and incorporation of knowledge, the outcomes of which can be seen as the persistent creation of goods or services (Spender, 1996). As the final step in absorptive capacity that is most closely linked to providing tangible innovations to the market, it is not surprising that this measure accounted for the greatest influence on innovative output.

It is noteworthy that the firms involved in this study were primarily small and young. As the vast majority of firms had fewer than 10 employees, there may be potential in attempting to further study the specific mechanisms of absorptive capacity of new firms of different sizes. A large number of firms had fewer than five employees; thus, certain individuals most likely carried out a number of activities. This is common for many entrepreneurial firms where the founding team or a single founder takes on a large number of tasks. This does not necessarily limit the absorptive capacity of the firm, but rather insinuates that the absorptive capacity might be better reflected in the behavior of key individuals rather than the firm as a whole. As the concept of knowledge plays an important role in the discussion of opportunity discovery and exploitation (concepts that can easily be connected to that of absorptive capacity), there may be some potential in further examining the specific role of individuals in this endeavor. For the firms with more than 10 employees, one might conclude that they have achieved some elements of critical mass and most likely have developed specified organizational routines and task division, at least compared to smaller firms. It is not a stretch to also assume that the ‘larger’ firms grew to their present size based on previously successful customer offerings and achieved legitimacy. Further study in the role of the development of the firm, including the potential conscious investment into the dimensions of absorptive capacity, might be a fruitful endeavor.

We found limited relationships between being a subsidiary and the dimensions of absorptive capacity. None of the dimensions has a significant correlation with being a subsidiary. However, the ownership of the firm appears to have only a minor role in explaining innovation. Being a
subsidiary provides little added effect in explaining innovation. This is perhaps a bit surprising as many subsidiaries are started for the purpose of focusing on innovation. Conventional wisdom suggests that a subsidiary might more easily acquire certain routines and have access to resources from the parent company that would allow them to engage in more innovative behavior; however, this does not appear to be the case in our sample of young firms. Future research should further investigate our findings in other contexts, and with more established firms.

We find significant positive relationships between the different dimensions of absorptive capacity. Our findings indicate that elements of absorptive capacity have differential impacts on innovation, suggesting that this relationship is more complex than has previously been discussed in the literature. Further unpacking of absorptive capacity and the specific structure of its dimensions is clearly needed. More in-depth research into understanding if and how absorptive capacity is a process (and not only a capability made up of several dimensions) might also provide valuable knowledge for both theory and practice. At the present time, the literature is still unclear concerning the temporal ordering and management of the different components of absorptive capacity. While it would seem natural and likely that there is a linearity to the absorptive capacity construct, where knowledge must be acquired before it can be assimilated, transformed, and exploited, so far there does not appear to be empirical evidence as to its functioning. Indeed, while Zahra and George (2002) suggest that realized absorptive capacity (e.g., transformation and exploitation) is dependent on the potential absorptive capacity components (e.g., acquisition and assimilation), additional knowledge concerning the process aspects of absorptive capacity is needed.

Our results in dynamic markets should be replicated with firms that operate in different competitive environments. Research in entrepreneurship has not always been careful to articulate differences that might be a function of levels of analysis (Davidsson & Wiklund, 2001), and levels of absorptive capacity needed to lead to firm success or failure are likely to vary across industry contexts. Understanding absorptive capacity at the level of the individual (such as the entrepreneur or founder) versus organizational or firm level would provide a valuable contribution to the literature. The strategic group level of analysis is another contextual effect that has often been overlooked in research examining the determinants of firm performance (Short, Ketchen, Palmer, & Hult, 2007; Short, Palmer, & Ketchen, 2003), and new ventures’ need for absorptive capacity are also likely to vary by differences in competitive strategy. Recent statistical advancements such
as hierarchical linear modeling (also known as random coefficients modeling) allow for complex tests involving interactions incorporating variables from multiple levels of analysis and temporal dynamics (Short, Ketchen, Bennett, & Du Toit, 2006). For example, industry-level characteristics such as munificence, dynamism, and concentration may moderate the degree to which absorptive capacity influences innovation and performance over time. Such tests would provide additional insights into the methods by which absorptive capacity influences new venture performance.

We focused on innovation as a key dependent variable linking absorptive capacity to organizational outcomes. Indeed, innovation is a salient organizational outcome for many new firms as it involves taking on considerable costs and risks. This is particularly relevant for new ventures that frequently are subject to limits in managerial time and resources (Eisenhardt & Schoonhoven, 1990). Although innovation has been connected to new venture growth (Brüderl & Preisendorfer, 2000), further examination of the relationship between innovation and performance is needed (Li & Atuahene-Gima, 2001). Thus, future research should examine strategic flexibility and performance as other aspects of competitive advantage that have been linked theoretically to absorptive capacity (Zahra & George, 2002). Efforts to link absorptive capacity to innovation and, ultimately, new venture performance would also provide a contribution in the literature because efforts to link innovation to performance constitute a key stream in strategy process research (Hutzschenreuter & Kleindienst, 2006).

The contributions of this study should be viewed in light of its limitations. Each of our limitations suggests possibilities for future research efforts. Although tests for common method bias were conducted with satisfactory results, we cannot rule out that the use of single respondents and data collection from a single questionnaire could potentially inflate results. Thus, future research would benefit from supplementing our survey-based data with archival and/or other secondary data sources. Consequently, our findings should be interpreted with caution and our tests should be seen as a first step toward empirically assessing some of the more important relationships between knowledge and innovation using the theoretical lens of absorptive capacity. When we analyzed the results between the different industries, we found comparable results, suggesting that our analyses are robust across the various industries in our sample. Nonetheless, sampling is a key issue not always addressed in research on firm activities that predict performance (Short, Ketchen, & Palmer, 2002), and our results should be interpreted within the context of new ventures in dynamic markets. Whether
these findings are applicable in other types of markets is a question for future research efforts. Finally, we did not examine the temporal ordering of the dimensions of absorptive capacity. Such a time wise analysis would provide a valuable contribution for future research efforts and may hold keys to further our understanding of absorptive capacity as a temporal process.

CONCLUSION

Innovation is central to new firms, and an understanding of how to integrate knowledge is essential for new firm innovation. In this paper we build on extant conceptual developments in absorptive capacity research to explore how knowledge activities contribute to innovation among new firms. Our results suggest that acquiring new technological knowledge and mechanisms for exploiting new knowledge are the most important aspects of absorptive capacity to promote the innovative capability for young firms. These findings provide a first empirical test of the recent re-conceptualization of the absorptive capacity concept (Zahra & George, 2002), suggest refinements to the theory of absorptive capacity, and provide suggestions for future research efforts related to aspects of the new venture innovation processes.

REFERENCES


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TIME AND CORPORATE ENTREPRENEURSHIP

Miri Lerner, Shaker A. Zahra and Yael Gal Kohavi

ABSTRACT

Time considerations are an important element of entrepreneurial processes in organizations. The current study analyzes the interface between time and entrepreneurship in the firm, examining the relationships between organizational time norms that are shaped by the firm and individual time structures that reflect individual personality differences and how individuals perceive and interpret the organizational time norms. The study seeks to determine if, how, which, and to what extent organizational time norms and individual time structures impact employees’ attitudes toward undertaking entrepreneurial activities and practices related to corporate entrepreneurship in the organization. The chapter develops a model and five hypotheses that are empirically tested in an Israeli manufacturing company that encouraged its employees to pursue entrepreneurial activities within the company. The findings show that, as hypothesized, individual time structures moderate the relationship between organizational time norms and undertaking corporate entrepreneurial activities. It was found that under loose (flexible) organizational time norms, employees with defined time structures generated entrepreneurial proposals. In contrast, employees with vague time structures did not produce entrepreneurial proposals. The results highlight the
importance of matching employee time structures with their firm’s time norms as a means of promoting corporate entrepreneurial activities.

INTRODUCTION

Time considerations are an important element of entrepreneurial processes in organizations. While anything that involves an organizational process includes the temporal dimension, it often implicitly, uniquely, and explicitly characterizes the entrepreneurial process (Bird & West, 1997, p. 5). However, entrepreneurship researchers have not examined this link in a systematic fashion.

Researchers disagree in their perspectives on whether time is an objective or subjective phenomenon. These two contrasting views of time also pervade studies on time in organizations, as the clock vs. social time concept (Lee & Liebenau, 1999; Fischer, Reuber, Hababou, Johnson, & Lee, 1997), with the two sides having opposing views of time as either existing independently of human action or as socially constructed through human action (Orlikowski & Yates, 2002). The clock time concept characterizes time as homogeneous and divisible in structure, linear and uniform in its flow, objective and absolute, that is existing independently of objects and events, measurable (or quantifiable), and singular, with one and only one “correct” time. It is often called the linear-quantitative tradition (Lee & Liebenau, 1999, p. 1038). In contrast, the social time concept posits the existence of a multiplicity of time at the cultural, organizational, and professional levels, with different cultures and groups having different notions of time (Lee & Liebenau, 1999, p. 1045). In this view, “time is a social construction that varies tremendously between and within societies” (Bluedorn & Denhardt, 1988, p. 300). At the level of the individual, according to Francis-Smythe and Robertson (1999, p. 274), “… people are required to be able to master fluid and flexible temporal regimes, flexibility being the key. Time now is fragmented and multiple, no longer linear, continuous, regular, and unidirectional.”

Recently, another perspective on time in organizations has emerged, bridging the subjective–objective dichotomy of the views of time. Orlikowski and Yates (2002) propose “to develop an alternative perspective on time in organizations that emphasizes human practices (as distinct from external force or subjective construction) as bridging the current opposition between objective and subjective conceptualizations of time, and thus as making possible a new understanding of the temporal conditions and consequences of organizational life.”
This chapter focuses on the interface between time and entrepreneurship at the organizational level. Following Orlikowski and Yates (2002), we apply an “interactionist perspective of time” to the area of corporate entrepreneurship (CE) that is centered on people’s recurrent practices that shape and are shaped by a set of temporal structures. CE refers to a company’s formal and informal activities, aiming to extend its ability to innovate and take calculated risks. Some of these activities are formally sanctioned and rewarded by companies. Other CE activities are informal and reflect employees’ initiatives (Pinchot, 1985; Zahra, 1991; Zahra, Jennings, & Kuratko, 1999; Sharma & Chrisman, 1999).

The issue of how employees really perceive time norms and how they react to them given their individual time structures has not yet been subjected to a systematic study within the context of the literature of CE. Empirical research is still needed to assess the issue of fit–misfit between organizational time norms and individual time structures in the area of CE. This fit can influence the pace and success of a company’s CE activities.

This study analyzes the interface between time and CE, examining the relationships between organizational time norms, which are shaped by the firm, and individual time structures, which are shaped by the individuals in combination with how they perceive and interpret the organizational time norms. The study seeks to determine if, how, which, and to what extent organizational time norms and individual time structures impact employees’ attitudes toward undertaking entrepreneurial activities and their practices related to CE in the organization. As both organizational time norms and individual time structures are multifaceted, we aim to capture those time-related facets that influence CE not only in theory but also in practice. Given that the literature has rarely referred systematically to the interface between time and CE, we suggest a conceptual model and develop hypotheses that are based on studies of time in the organization, management, and CE. These hypotheses are then tested empirically in the context of a rapidly growing Israeli firm.

Our findings reveal that employees’ time structures moderate the relationship between organization’s time norms and employees’ CE activities. These findings highlight the importance of developing an effective match between the norms prevailing in the organization and the individual time structures of its members for promoting CE.

The next section of the chapter presents a review of the literature and develops the hypotheses that are derived from it. This is followed by an empirical study that tests the hypotheses. After presenting the results, the
final section of the chapter discusses the study’s key findings and their implications for theory and for practitioners.

**THEORY AND HYPOTHESES**

Different Views on Time in Organizations

The literature offers different views of the concept of time (McGrath & Rotchford, 1983; Clark, 1985; Hassard, 1996; Das, 1993). According to the objective view, time is “independent of man,” abstract, absolute, unitary, invariant, linear, mechanical, and quantitative (Clark, 1990, p. 142). The clock has emerged as a primary metaphor in this conceptualization of time. Most quantitative social science studies of organizations adopt this perspective and treat time as “quantitative time – continuous, homogeneous, and therefore measurable because equal parts are equivalent” (Orlikowski & Yates, 2002). Another view conceptualizes time as subjective, a product of the norms, beliefs, and customs of individuals and groups. The subjective time (Das, 1993), or social time, implies a time concept that is accepted by the individual and shared by the group or organization (Lee & Liebenau, 1999, p. 1039). It is also called organizational time (Gherardi & Strati, 1988). This view reflects a socially constructed conceptualization of time, where time is defined by organizational members (Clark, 1985, p. 36) and is assumed to be neither fixed nor invariant. Time is relative, contextual, and organic (Adam, 1990).

The use of the dichotomy between clock and subjective time has been criticized. For instance, Orlikowski and Yates (2002, p. 684) argue that, “focusing on one side or the other misses seeing how temporal structures emerge from and are embedded in the varied and ongoing social practices of people in different communities, and at the same time how such temporal structures powerfully shape those practices in turn.” The authors also suggest focusing on what organizational members actually do, and how people construct and reconstruct the temporal conditions that shape their lives. This perspective allows a bridging of the subjective–objective dichotomy that underlies much of the existing literature.

As the above discussion makes clear, within an organization, there are multifaceted times (the plurality of time) (Gherardi & Strati, 1988) that can influence the firm’s various activities associated with undertaking CE. For example, the way employees are encouraged or discouraged by management to pursue new initiatives clearly relate to organizational time. The fostering
of new and innovative ideas requires that individuals have time to incubate these ideas (Hornsby, Naffziger, Kuratko, & Montagno, 1993). Processes of innovation of new products or services, resource allocation, decision making, and the implementation of the new CE initiatives often take time. Yet, empirical research indicates that individual variables such as previous experience also explain why certain CE initiatives come into existence (e.g., Greene, Brush, & Hart, 1999). Also, the role of individual characteristics that foster CE (Hornsby et al., 1993) has been mentioned. Thus, individuals display differential degrees of interest in and support of CE. These variations interact with time sense and the reading of social cues in the creation of a shared meaning regarding CE projects. For instance, some employees may view the organizational climate as encouraging CE, whereas others may have a different view. Therefore, our study adds the individual level to the organizational level, assessing individual employees’ time structures. Adopting an interactionist view, the study examines the interactive effect of organizational time norms and the individual time structures within the organization on the employees’ perceptions and entrepreneurial behavior. These issues are discussed next.

**Organizational Time Norms**

Time norms in organizations can be analyzed along different dimensions. Indeed, Schriber and Gutek (1987) have identified 13 separate aspects of organizational time norms. Examples include focus on punctuality; setting work vs. nonwork time boundaries; defining work pace, showing the speed required and density of assignments in given time periods; allocating time, referring to planning vs. implementation in exploiting time; and preference for routine vs. variety, which indicates the degree of the regularity and repetitiveness of the tasks a person performs within a given time frame. In some organizations, an awareness of time is central to employee’s acceptance among group members, whereas in others it is less relevant (e.g., Landy, Rastegary, Thayer, & Colvin, 1991; Gersick, 1989). Schriber and Gutek (1987) also proffer that individual satisfaction and productivity are related to the extent the employees’ time awareness matches organizational norms.

For example, companies’ emphasis on holding to schedules and deadlines and to being on time (punctuality) and their relationships with polychronicity was tested in two large hospitals (Bluedorn, Kallith, Strube, & Martin, 1999). Polychronicity, the set of values and beliefs people hold about organizing and sequencing activities, was presented as a continuum.
anchored by two temporal archetypes: monochromic time, in which people prefer to attend to and do only one thing at a time, and polychromic time, where people prefer to be involved in doing many things at once (Hall, 1983). The results supported a focused polychronicity concept, reinforcing the fact that both types of monochromic and polychromic time senses exist in the work population.

**Individual Time Structures**

There are several measures in the literature of individual differences relating to time. Francis-Smythe and Robertson (1999) summarized 24 studies measuring individual time-related attitudes or behaviors, some of which suggested that individuals have styles of time use that combine to form overall time personalities and govern responses to different time-related situations (Kaufman, Lane, & Lindquist, 1991).

In this study, we employ the most frequently used individual time measure to date, the Time Structure Questionnaire (TSQ) constructed by Bond and Feather (1988), which captures the degree to which individuals perceive their use of time as structured and purposeful (Francis-Smythe & Robertson, 1999). The TSQ measures the sense of purpose, structured routine, present orientation, and persistence.

**Organizational Time and Corporate Entrepreneurship**

Time norms are one of the most important factors determining the ability of an established organization to nurture entrepreneurship. Hisrich (1986) observes that the corporate environment must establish a long time horizon for evaluating the success of an entrepreneurial program and invest patient money in an entrepreneurial effort. When employees view a company’s time norms (as manifested in the organizational climate) as supporting CE, they may become motivated and energized to develop and propose entrepreneurial ideas.

Researchers also highlight different ways in which time norms can influence CE. Hornsby et al. (1993) notes that organizations must moderate the workload of people, avoid putting time constraints on all aspects of a person’s job, and allow people to work with others on long-term problem solving. Time is also viewed as a resource for developing new ideas. Slevin and Covin (1997) view time as a resource that can be leveraged for an entrepreneurial firm’s advantage. Time-related matters are implicit in their description of entrepreneurial challenges of firms aspiring to grow.
Promoting CE activities requires flexibility in the organizational structure and human resource (HR) practices to give employees autonomy in using their time to develop new products, make improvements, and engage in other innovative activities. Increased autonomy means increased personal control over time. (Kuratko, Montagno, & Hornsby, 1990; Lumpkin & Dess, 1996; Pinchot, 1985; Schuler, 1986). CE requires extensive communication, negotiating, creating the social network (Greene et al., 1999) for solving problems under tight time pressure, and allocating time to the new venture. Even though corporate entrepreneurs are prepared to dedicate all their time to their new venture, they also have to meet conflicting demands on their schedules (McKinney & McKinney, 1989).

Firms can encourage employees to develop innovative ideas by giving them time to conceive and refine their ideas (Greene et al., 1999). Thus, for example, 3M has an informal doctrine of letting employees bootleg 15 percent of their time schedule to work on their own projects to develop new ideas for new products (Collins & Porras, 1994). In most industries, it takes time for an entrepreneurial project to achieve success, demanding patient investments by the firm (e.g., Starr & MacMillan, 1990). The innovative work associated with cultivating CE activities – strategic planning and development, resource deployments, effective decision making – also takes time, as does building the social network that fosters entrepreneurship. Companies also need time to develop and obtain the knowledge and experience necessary to implement CE activities (Jaques, 1997; Greene et al., 1999). Given these challenges, Starr and MacMillan (1990) note that bringing corporate ventures to profitability takes twice the amount of time as independent ventures. A short-time orientation is often incompatible with the information flow and promotion of the exchanges needed for successful independent (Bird & West, 1997) and corporate entrepreneurs (Zahra & Covin, 1995).

**Model and Predictions**

Fig. 1 presents the study’s conceptual model, depicting the expected relationships of the organization’s time norms and the individual time structures, with employees’ perceptions of the firm’s climate and their entrepreneurial behavior in the context of a single organization. Consistent with Orlikowski and Yates (2002), we suggest that individual employees perceive the organizational time norms existing in the firm through their own individual lens, and that these perceptions interact with the
impact upon both their perception of organizational climate and their practical behavior. Employees may perceive the organizational climate as supporting or impeding CE. Thus, employees may choose to generate entrepreneurial proposals and ideas and undertake real entrepreneurial steps for implementing them, or avoid such behaviors. Thus, we examine employee behaviors related to CE emphasizing two facets: (a) generating entrepreneurial proposals and (b) undertaking those activities needed to institutionalize CE.

We conceive of organizational time norms and individual time structures as multidimensional constructs, relating respectively to the values and priorities a firm and an individual attach to their time and operations (Schriber & Gutek, 1987; Bond & Feather, 1988; Francis-Smythe & Robertson, 1999). Following Schriber and Gutek (1987), we study four time-related factors of the organization: scheduling and planning; lack of autonomy of time use; pressure in allocating time; and synchronization and coordination with the work of others through time. These time norms may range from being tight (i.e., stringent) when schedules are rigid, there is a lack of autonomy in time use, and pressure in time allocation exists, to loose (i.e., flexible) when employees have autonomy in the use of time, time allocations are flexible, and schedules are flexible. In examining employee time structures, we use Bond and Feather’s (1988) most frequently used measure of individual time, where they propose a continuum ranging from clear and organized, with well-defined priorities, to vague and undefined.
As organizational variables (e.g., length of employment in the organization, previous experience in the industry) have been previously related to entrepreneurial behavior (e.g., Cooper, Ramachandran, & Schoorman, 1997; Greene et al., 1999) and to the perception of a firm’s entrepreneurial climate, we controlled for these variables. Given the relatedness of gender and education to entrepreneurial activities (Parasuraman, Purohit, & Godshalk, 1996), we controlled for these demographic variables as well.

Fig. 1 indicates that organizational time norms can play an important role in the process by which employees conceive, refine, and develop their entrepreneurial ideas. This is reflected in the existence of an entrepreneurial climate, one that employees believe encourages innovation and risk taking (Lumpkin & Dess, 1996; Kuratko, Hornsby, Naffziger, & Montagno, 1993). Baer and Frese (2003) have argued that process innovations in organizations need to be accompanied by climates that complement the adoption and implementation of such innovations. Consistent with this proposition, we suggest that the tightness or looseness (flexibility) of organizational time norms is important for whether employees view the firm’s time norms as supportive of CE activities or not. Tight organizational time norms can reduce employees’ desire and willingness to assume the risks associated with proposing ideas for innovation. These norms are usually shown in employees’ perceptions of the rigidity, punctuality, specific time allocations, and the lack of autonomy in managing their personal schedule. Conversely, loose organizational time norms encourage entrepreneurship (Miller, 1983; Pinchot, 1985). When employees perceive these norms as relatively loose (flexible), they are likely to view the firm’s climate as conducive to CE. Thus, studies show that serendipity which is seen as a part of CE (Floyd & Wooldridge, 1999) takes time, as it often comes from exploration, goofing around, and similar “time wasting” activities (e.g., Martello, 1994). These observations suggest the following hypothesis:

**H1.** Tight (rigid) organizational time norms are negatively associated with employees’ perceptions of the organizational climate as being entrepreneurial, whereas loose (flexible) organizational time norms are positively associated with perceptions of the climate as entrepreneurial.

Constraints inherent in decreased flexibility are an outcome of externally imposed time schedules (Greene et al., 1999). While tight organizational time norms may inhibit creativity and reduce employees’ willingness to take risks, looseness of organizational time norms allows employees to explore and develop ideas. This gives employees the time and opportunity to share
and exchange information, informally test their ideas among colleagues, refine and connect them to other projects already in progress in the firm, and find a champion to communicate their ideas to higher ranking managers (Pinchot, 1985; Kuratko et al., 1993). Therefore:

**H2.** Tight (rigid) organizational time norms are negatively related to employees’ entrepreneurial behavior, whereas loose (flexible) time norms are positively related to their entrepreneurial behavior.

**Employee Time Structure and Entrepreneurship**

Fig. 1 also suggests that an employee’s own time structure is likely to influence his/her disposition toward CE. Time structure indicates the extent to which a person perceives the use of his/her time as being organized, well defined, and purposeful (Bond & Feather, 1988). A person whose time structure is well defined usually organizes his/her time and sets his/her goals. Conversely, a person with a vague time structure usually feels a lack of order and clear objectives. Some research indicates that time structure is positively related to a person’s behavior and effective adaptation on the job (Bond & Feather, 1988), effective learning habits (Macan & Shahani, 1990; Macan, 1994), overall fit with the organization (Jaques in Goodman, 1967; Francis-Smythe & Robertson, 1999), and achievement-oriented and competitive behavior (Mudrack, 1999). The recognition of time as a scarce resource compels individuals to choose among different and often competing activities. Employees divide their time into “work time” and “non-work time,” based on their life styles and the value and meaning they attach to time (Feldman & Hornik, 1981).

Time structure is also related to those personality variables that influence entrepreneurship such as the motivation to achieve and the willingness to take risks (Brockhaus and Horwits (1986); Das & Teng, 1997). For instance, one study shows that women entrepreneurs show more commitment to “family time,” whereas men of the same status are more committed to “work time” (Parasuraman et al., 1996). Another study finds that entrepreneurs differ significantly from venture capitalists in the time pressure they experience (Cable & Shane, 1997). Thus, an employee’s time structure will influence his/her perception of a firm’s organizational climate as being conducive to entrepreneurship and also the willingness and ability to pursue entrepreneurial activities. Thus, our following two hypotheses are contrary to another line of research that suggests that polychrons, who prefer subjective time models, (and low structure scores on the TSQ) are more likely to do well in
creative/adaptive situations (Kaufman-Scarborough & Lindquist, 1999). Specifically, our review of the literature suggests the following hypotheses:

**H3.** Employees with a well-defined time structure are more likely to perceive the organizational climate as being entrepreneurial.

**H4.** Employees with a well-defined time structure are more likely to exhibit CE behavior.

*Fit-Misfit between Individual Time Structures and Organization Time Norms*

The notion of fit between a person’s time structures and the time norms of the work environment has been documented in the literature (Francis-Smythe & Robertson, 1999). The interactionist perspective within organizational psychology acknowledges this interaction as a two-way process, accepting that jobs can modify people (socialization processes) and people can significantly modify their jobs. The emphasis is on attaining an effective fit between the person and the job (Edwards, 1991). Fit produces positive outcomes such as job satisfaction and job involvement, whereas misfit produces negative outcomes such as high absenteeism (O’Reilly, Chatman, & Caldwell, 1991).

Following the above arguments, we propose that when there is a fit between time norms at the organization level (these time norms are conducive to CE) and individual time-related structures, the employees’ tendencies toward CE behavior will be higher. Conversely, when there is misfit between the organizational time-related norms and individual time structures, employees will avoid CE activities or behave less entrepreneurially.

We expect employees’ time structures to moderate the relationship between perceived organizational time norms and employees’ undertaking of CE activities. Loose (flexible) organizational time norms can confuse those employees with vague time structures, making them feel a lack of a clear sense of direction, and creating a serious impediment to initiating and implementing CE activities. In contrast, employees with well-defined time structures may thrive in this environment, believing that they have an opportunity to innovate and initiate changes that will improve the organization’s operations. Therefore:

**H5.** Employees’ time structure moderates the relationship between the organization’s time norms and employees’ entrepreneurial activities.
When organizational time norms are loose (flexible), employees with more highly defined time structures will generate more entrepreneurial proposals and undertake more CE activities, whereas employees with vague time structures will not exhibit such CE behaviors.

**METHOD**

*Sample*

Ninety-nine employees in an Israeli plastic products’ manufacturing firm completed a comprehensive questionnaire. The 11-year-old firm achieved rapid growth and was acquired by a US-based corporation. This study was conducted before the acquisition and because it was at a time when the employees knew nothing of the forthcoming acquisition, it is not discussed here. The employees worked for two organizational units in two separate locations in Israel. The sample consisted of 75 staff employees (out of 80 staff employees, representing a 94 percent response rate) and 24 manufacturing workers (out of 50 manufacturing workers, a 48 percent response rate). The different response rate reflected the fact that among the manufacturing workers some had language problems, and therefore did not complete the questionnaire. Since the two organizational units could have differences in culture, social setting, work pace, and time use, the organizational unit variable was taken into account in all our analyses, as reported later.

We conducted a pilot study to ensure that the questions fit the firm’s climate and the work procedures. Initially, in-depth interviews that were conducted with the firm’s managers and several key employees regarding the organizational culture, were used for questionnaire development and later for the interpretation of the research results. Next, we distributed the questionnaire directly to the employees. Of the 110 distributed questionnaires, 99 were completed and returned (for a 90 percent response rate). Corporate data were also gathered from secondary sources to supplement the data obtained through the survey. Finally, one of the authors observed the study participants during various corporate functions (e.g., official meetings).

*Measures*

The instrument included items that covered perceptions of the organizational climate, entrepreneurial behavior in the organization, organizational
time norms, and employees’ structuring of time. To ensure reliability and validity, we used measures that have been validated in past research (Schriber & Gutek, 1987; Bond & Feather, 1988; Reynolds & Miller, 1992). All items used in our measures of the dependent and independent variables are presented in the Appendix.

**Dependent Variables**

In measuring entrepreneurial behavior, we assessed (a) two facets of the entrepreneurial behavior of employees (generating entrepreneurial proposals and ideas and the undertaking of CE in the company) and (b) employees’ perceptions of the entrepreneurial climate, as described next.

**Generating Entrepreneurial Proposals and Ideas**
The instrument included 15 items that covered the presentation of proposals or ideas for a new product, making improvements in product or process efficiency, and introducing other innovative ideas. Each of the 15 items related to the whole period the employee had been employed in the firm and required a “yes” or “no” answer. A varimax rotated factor analysis of the 15 items yielded two significant factors, on which 11 of the 15 loaded significantly. The remaining four items were dropped because they were not significant. The first factor captured employees’ entrepreneurial proposals for improvements of HR routines (6 items; \( \alpha = .80 \)). The second covered employees’ entrepreneurial proposals of a new product or a new market (5 items; \( \alpha = .80 \)). A scale was developed for each of these two factors by adding responses. A high score on each scale indicated greater entrepreneurial initiatives by the employees.

** Undertaking Entrepreneurial Activities**
This second measure of entrepreneurial behavior in the organization consisted of nine items. Following Reynolds and Miller (1992), we asked respondents to state the extent to which they actually undertook different activities to advance their entrepreneurial proposals in the organization. We used a 5-point Likert scale (1 = not at all to 5 = to a great extent). An overall index that captured employees’ undertaking of CE activities was constructed by averaging the six relevant items from the nine that were offered in the question (\( \alpha = .85 \)). The higher the score on the index, the higher the extent to which employees actively engaged in CE activities.
Perception of the Organizational Climate as Being Supportive of CE

Perception of a firm’s entrepreneurial climate was measured by 11 items based on Hisrich’s (1986) research. The items captured employees’ perceptions of their firm’s climate, using a 5-point Likert scale (1 = to a small extent to 5 = to a great extent). A varimax rotated factor analysis of the 11 items yielded two factors: (a) perception of management support of CE (5 items; $\alpha = .86$) and (b) perception of barriers to CE (6 items; $\alpha = .70$). These sub-indices gauged specific facets of the firm’s entrepreneurial climate. The first covered the important role of management in creating an entrepreneurial setting (e.g., Pinchot, 1985; Kuratko et al., 1990, 1993). The second captured the existence of restrictions, lack of tolerance of mistakes, lack of autonomy in work, and other barriers to CE (e.g., Hisrich, 1986; Kuratko et al., 1990, 1993).

Independent Variables

Consistent with Fig. 1, we developed the following measures for the study’s independent variables.

1. **Organizational Time Norms.** Organizational time norms are multidimensional constructs (Landy et al., 1991). We used 22 items that were taken from Schriber and Gutek’s (1987) work to gauge employees’ perceptions of organizational time norms. Responses followed a 5-point Likert scale (1 = not at all to 5 = to a very great extent). A varimax rotated factor analysis of the 22 items revealed seven factors where the following four factors with acceptable reliabilities were used: (a) scheduling and planning (6 items; $\alpha = .71$); (b) lack of autonomy of time use (3 items; $\alpha = .68$); (c) synchronization and coordination with the work of others through time (3 items; $\alpha = .62$); and (d) pressure in allocating time (4 items; $\alpha = .63$).

   An overall index of organizational time norms was developed by averaging the responses to 13 out of the 22 items that were included in the four factors ($\alpha = .69$). The remaining nine items were dropped as they related to the three other factors that were not used. The higher the score on the index, the tighter the employees viewed their firm’s time norms, regardless of the organizational unit.

2. **Employee’s Time Structure.** An employee’s time structure was measured by 13 items that were taken from the 26 items of the TSQ (Bond & Feather, 1988). The items were selected mainly from the structured routine subscale of the TSQ. Each item followed a 5-point Likert scale
(1 = never to 5 = always). An overall time structure index was created by averaging the responses of 10 items among them ($\alpha = .63$). The higher the average score, the more defined an employee’s structure of time and the higher his/her sense of purpose.

**Control Variables**

We controlled for gender and educational level (seven categories ranging from secondary incomplete up to second college degree), because research suggests that these demographic variables may influence employees’ undertaking of CE behavior. Previous research findings (Greene et al., 1999) also led us to control for industry-related experience (no = 0, yes = 1). The organizational unit of the two locations (1 = office employees; 2 = manufacturing personnel) was the fourth control variable that was entered for each of the examinations.

**ANALYSIS AND RESULTS**

**Sample Description**

Fifty-six percent of the respondents were males, 56 percent had college degrees, and 67 percent had been employed for up to 2 years with the company. Most respondents lacked experience in the industry (62 percent) but more than half of them had some previous entrepreneurial experience. On average, employees reported six proposals ($SD = 3.93$). They made 3.47 proposals in the HR area ($SD = 2.04$) and 1.95 proposals in the technological and marketing areas ($SD = 2.11$). When the employees in the two organizational sites were compared separately, it was found that those in the office unit suggested significantly more CE proposals than those in the manufacturing unit. Fifty-eight of the 99 respondents undertook CE initiatives in the organization to advance the implementation of their proposals. Manufacturing personnel were higher in undertaking CE activities, but the difference was not statistically significant.

**Correlates of CE Activities**

The hypotheses were examined using Pearson’s simple correlations and hierarchical regression analyses. Table 1 presents the Pearson correlations
Table 1. Pearson Correlations between the Entrepreneurial Variables and Demographic, Organizational, and Time Variables.

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<td>1. Entrepreneurial proposals</td>
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<td>2. Improvement of HR proposals</td>
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<td>3. Proposals of new product or market</td>
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<td>4. Undertaking entrepreneurial activities</td>
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<td>5. Perception of non-blockage of entrepreneurship</td>
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<td>6. Perceived encouragement of entrepreneurship</td>
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<td>.21</td>
<td>.21*</td>
<td>.37*</td>
<td>.46*</td>
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<tr>
<td>7. Norms of time in the organization</td>
<td>3.34</td>
<td>.48</td>
<td>.13</td>
<td>.04</td>
<td>.23*</td>
<td>.04</td>
<td>.09</td>
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<td>8. Pressure in allocation of time</td>
<td>3.80</td>
<td>.69</td>
<td>.34*</td>
<td>.19</td>
<td>.27</td>
<td>.21*</td>
<td>.01</td>
<td>.00</td>
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</tr>
<tr>
<td>9. Schedules and future orientation</td>
<td>3.33</td>
<td>.69</td>
<td>.07</td>
<td>.18</td>
<td>.02</td>
<td>.18</td>
<td>.42*</td>
<td>.78*</td>
<td>.14</td>
<td></td>
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</tr>
<tr>
<td>10. Synchronization and coordination</td>
<td>3.32</td>
<td>.84</td>
<td>.07</td>
<td>.19</td>
<td>.06</td>
<td>.21*</td>
<td>.52*</td>
<td>.21*</td>
<td>.34*</td>
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<td></td>
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</tr>
<tr>
<td>11. Lack of autonomy of time use</td>
<td>3.84</td>
<td>.90</td>
<td>.21*</td>
<td>.21*</td>
<td>.11</td>
<td>.29*</td>
<td>.34*</td>
<td>.34*</td>
<td>.21*</td>
<td>.21*</td>
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<td>.17</td>
<td>.29*</td>
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<td></td>
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<tr>
<td>12. Employee's structuring of time index</td>
<td>3.72</td>
<td>.46</td>
<td>.03</td>
<td>.13</td>
<td>.04</td>
<td>.16</td>
<td>.17</td>
<td>.25*</td>
<td>.13</td>
<td>.36*</td>
<td>.07</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>13. Length of employment in the organization</td>
<td>2.03</td>
<td>1.40</td>
<td>.34*</td>
<td>.30*</td>
<td>.24*</td>
<td>.21</td>
<td>.06</td>
<td>.01</td>
<td>.29*</td>
<td>.15</td>
<td>.17</td>
<td>.11</td>
<td>.26*</td>
<td>.12</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>14. Prior experience in entrepreneurship</td>
<td>.56</td>
<td>.50</td>
<td>.38*</td>
<td>.26*</td>
<td>.36*</td>
<td>.03</td>
<td>.12</td>
<td>.18</td>
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<td>.01</td>
<td>.02</td>
<td>.12</td>
<td>.22*</td>
<td>.11</td>
<td>.02</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>15. Previous experience in industry</td>
<td>.37</td>
<td>.49</td>
<td>.34*</td>
<td>.12</td>
<td>.38*</td>
<td>.06</td>
<td>.03</td>
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<td>.01</td>
<td>.13</td>
<td>.02</td>
<td>.29*</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>16. Gender</td>
<td>1.44</td>
<td>.50</td>
<td>.26*</td>
<td>.12</td>
<td>.25*</td>
<td>.00</td>
<td>.01</td>
<td>.24</td>
<td>.04</td>
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<td>.00</td>
<td>.21*</td>
<td>.17</td>
<td>.30*</td>
<td>.40*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Education</td>
<td>3.63</td>
<td>.86</td>
<td>.30*</td>
<td>.13</td>
<td>.37*</td>
<td>.20</td>
<td>.11</td>
<td>.01</td>
<td>.43*</td>
<td>.26*</td>
<td>.43*</td>
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<td>.10</td>
<td>.34*</td>
<td>.24*</td>
<td>.09</td>
<td>.04</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td>18. Unit</td>
<td>.75</td>
<td>.44</td>
<td>.08</td>
<td>.18a</td>
<td>.06</td>
<td>.16</td>
<td>.23*</td>
<td>.16</td>
<td>.43*</td>
<td>.17</td>
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<td>.16</td>
<td>.09</td>
<td>.24*</td>
<td>.12</td>
<td>.21</td>
<td>.26</td>
<td>.32*</td>
<td>.47**</td>
</tr>
</tbody>
</table>

*p < .05.

**p < .01.
matrix of the entrepreneurial variables and demographic, organizational, and time variables.

As Table 1 shows, employees’ propensity to suggest proposals for improvements in HR practices and actual undertaking of CE activities were both significantly associated with time norms. Specifically, pressure in time allocation was positively related to each of them and lack of autonomy was negatively related to them. Generating proposals for products or markets was positively and significantly associated with norms of time in the organization (index). In contrast, the employee’s time structures’ index was not significantly associated with any of the study’s dependent variables. The factor of “synchronization and coordination with the work of others through time” was not significantly correlated with any of the CE variables, and it was therefore dropped from further multivariate analyses. As several of the time variables (particularly schedules and lack of autonomy variables) were significantly correlated with the membership in a given unit, the organizational unit was examined as a control variable in all the multiple examinations.

Predictors of Perception of Entrepreneurial Climate

We ran two hierarchical regression analyses to determine whether the time variables added significantly to explaining employees’ perceptions of the organizational climate as entrepreneurial, beyond the variance already explained by demographic and organizational variables. Four time-related variables were included in each of the two regressions: the individual time structure index and three factors of the organizational time norms. The control variables included gender, education, organizational unit, and prior experience in industry. (Prior entrepreneurial experience and the length of employment in the organization were not included in the regressions because of the limited sample size.) The results of the two regressions appear in Table 2.

In the first hierarchical regression, in which perception of management’s encouragement of CE was the dependent variable (reported in the left columns of Table 2), the results show that among the demographic and organizational variables only industry experience was statistically significant, explaining 11 percent of the variance ($p < .05$). When the four time variables were introduced, the $R^2$ rose to 34 percent, and the change with respect to the prior equation was significant ($p < .001$). Schedules and planning had a positive and significant coefficient, whereas lack of autonomy was negative and significant.
The results for the second regression analysis, in which the perception of barriers in the organizational climate to CE was the dependent variable item (right columns of Table 2), show that the control variables explained 6 percent of the variance and only organizational unit was significant, with a negative sign. When we entered the four time variables, the regression equation was significant ($p < .01$) and the $R^2$ improved to 27 percent, and the change with respect to the prior equation was significant ($p < .01$). Three of the four time variables were significant: pressure in allocation of time and lack of autonomy had positive coefficients, and schedules and planning had negative coefficients.

The results of the two regressions partially supported H1. They indicated the multifaceted nature of the relationships between organizational time norms and perception of the organizational climate. Individual time structure failed to significantly contribute to explaining employees’ perceptions of the organizational climate in any of the equations, contradicting H3.

**Proposing Entrepreneurial Ideas**

The analyses also sought to determine if organizational time norms significantly explained the variance in CE behavior variables. We first explored the
contribution of the demographic and organizational variables, then the contributions of the perception of entrepreneurial climate variables, controlling for demographic and organizational variables. Finally, we determined the contribution of the time variables, after controlling for all the above variables. These analyses used two measures of entrepreneurial proposals: (a) proposals for improvement of HR practices and (b) proposals of a product or a market. The results, which appear in Table 3, are summarized below.

When the number of entrepreneurial proposals of improvement of HR practices was considered as the dependent variable (left columns of Table 3), the regression equation for organizational unit was significantly negative and explained 9 percent of the variance. This indicated that employees at the office location suggested more proposals of this type compared to their colleagues at the manufacturing unit. When perception of the organizational climate was entered into the analysis, the $R^2$ increased to 12 percent but the two equations were not significant ($p > .05$). The four time variables entered in the final step of the analysis added significantly to the model’s $R^2$ and the explained variance increased from 9 to 33 percent ($p < .01$). Time pressure

Table 3. Hierarchical Regression of Entrepreneurial Proposals.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Entrepreneurial Proposals for HR Improvement</th>
<th>Entrepreneurial Proposals of New Product or Market</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$R^2$</td>
</tr>
<tr>
<td>A. Demographic organizational variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Gender</td>
<td>-.07</td>
<td>-.16</td>
</tr>
<tr>
<td>2. Education</td>
<td>.14</td>
<td>.30</td>
</tr>
<tr>
<td>3. Unit</td>
<td>-.31*</td>
<td>-.03</td>
</tr>
<tr>
<td>4. Experience in industry</td>
<td>.04</td>
<td>.09</td>
</tr>
<tr>
<td>B. Perception of entrepreneurial climate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Management encouragement</td>
<td>.03</td>
<td>.09</td>
</tr>
<tr>
<td>2. Barriers</td>
<td>-.02</td>
<td>.12</td>
</tr>
<tr>
<td>C. Time variables</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Pressure in allocation of time</td>
<td>.45***</td>
<td>.18</td>
</tr>
<tr>
<td>2. Schedules and planning</td>
<td>-.09</td>
<td>-.20</td>
</tr>
<tr>
<td>3. Lack of autonomy of time use</td>
<td>-.29*</td>
<td>-.10</td>
</tr>
<tr>
<td>4. Synchronization</td>
<td>.07</td>
<td>.06</td>
</tr>
<tr>
<td>5. Time structure</td>
<td>.12</td>
<td>.33</td>
</tr>
<tr>
<td>Adj. $R^2$</td>
<td>.23</td>
<td>.28</td>
</tr>
</tbody>
</table>

* $p < .05$.
** $p < .01$.
*** $p < .001$. 

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had a positive and significant coefficient, and the lack of autonomy in time use had a negative and significant coefficient.

Table 3 also displays the results for CE proposals of new product or market (right columns of Table 3). These results differ considerably from those of the HR improvement proposals. Initially, demographic variables were entered into the analysis, explaining 32 percent of the variance ($p < .001$). Education and industry experience were both positive and significant. When perception of the entrepreneurial climate was entered into the analysis, neither the equation and the change in the $R^2$ nor the dimension of climate was significant. In the final step, the four time norms were entered into the analysis but none of them was significant. Thus, whereas perceived organizational time norms did not contribute significantly to explaining CE proposals of new product or market, they significantly contributed to proposing entrepreneurial HR improvements, partially supporting H2. Individual time structure did not significantly influence the generation of entrepreneurial proposals in any of the two regressions, failing to support H4.

The results thus far have shown the impact of organizational time norms on the dependent entrepreneurial variables. However, the direction of this impact seems to be more complicated than hypothesized, reflecting the multifaceted nature of organizational time norms. Whereas the results show consistently that the factor of lack of autonomy in time use had a negative association with the dependent variables (except for not having any significant association with the CE proposals of new product or market), pressure in time allocation consistently exerted a positive impact (both on proposing HR improvements and on the perception of barriers to entrepreneurial organizational climate). The third time factor, schedules and planning, had a positive association with the perception of entrepreneurial climate variables, but had no effect on the generation of entrepreneurial proposals.

Undertaking Corporate Entrepreneurial Activities

The results of the hierarchical regression analysis, where the employees’ undertaking of CE activities was the dependent variable (Table 4), show that organizational time norms contributed significantly to explaining its variance. Time pressure and lack of autonomy in time use significantly influenced the undertaking of CE activities (the first with a positive association and the second had a negative sign), supporting H2. Given the small number of respondents who undertook CE activities in the organization ($n = 58$), we could not distinguish those employees who suggested improvements of HR practices from those who suggested new
product or market ideas. Finally, the results did not support H4. Specifically, employees’ personal time structure did not significantly contribute to any of the study’s dependent variables, perceptions of entrepreneurial climate in the company, or CE behavior variables.

Time Norms, Employee Time Structure, and Corporate Entrepreneurship

H5 posits that under loose (flexible) time norms employees with a more defined time structure will generate entrepreneurial proposals, and vice versa. We expected employees’ time structure to moderate the relationship between the organization’s time norms and employees’ CE activities. To examine H5, regression analysis was performed using the number of entrepreneurial proposals as the dependent variable. The regression analysis included the employees’ time structure, the index of organizational time norms, and an interaction of the two variables. The analyses controlled for organizational unit.

The results presented in Table 5 supported H5. Further, we examined the correlations between these organizational time norms and the entrepreneurial proposals of respondents with vague time structures and separately for employees with well-defined time structure (the separation

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**Table 4.** Hierarchical Regression of Undertaking Entrepreneurial Activities.

<table>
<thead>
<tr>
<th>Variable</th>
<th>$\beta$</th>
<th>$R^2$</th>
<th>$R^2$ Change</th>
<th>$F$ Change</th>
<th>Adj. $R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Demographic organizational variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Gender</td>
<td>.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Education</td>
<td>.08</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Unit</td>
<td>.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Experience in industry</td>
<td>.13</td>
<td>.09</td>
<td>.09</td>
<td>1.23</td>
<td>.02</td>
</tr>
<tr>
<td>B. Perception of entrepreneurial climate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Management encouragement of entrepreneurship</td>
<td>.44**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Barriers</td>
<td>.16</td>
<td>.24</td>
<td>.15</td>
<td>5.12**</td>
<td>.15</td>
</tr>
<tr>
<td>C. Time variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Pressure in allocation of time</td>
<td>.29**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Planning</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Lack of autonomy in time usage</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>4. Synchronization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Time structure</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Note: Number of respondents = 58.

* $p < .05$.

** $p < .01$. 

---
The results revealed that while among the employees with a well-defined structure the correlation was negative ($r = -0.28, p = 0.068$), for those with a vague time structure it was positive ($r = 0.20, p = 0.160$). A Fisher $Z$ test ($Z = 2.21, p = 0.013$) indicated that there was a significant difference between the two correlations.

Fig. 2 shows the different slopes for the equations correlating the two relationships. For employees with vague time structures, the slope is

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**Table 5.** Multiple Regression Model Explaining the Number of Entrepreneurial Proposals by Norms of Time in the Organization, Employees’ Structure of Time, and Their Interaction.

<table>
<thead>
<tr>
<th>Explaining Variables</th>
<th>$B$ (Standard Error)</th>
<th>$\beta$</th>
<th>$T$(89)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>$-1.44$ (.96)</td>
<td>$-0.17$</td>
<td>$-1.50$</td>
</tr>
<tr>
<td>Organizations’ norms of time</td>
<td>$-0.41$ (1.23)</td>
<td>$0.04$</td>
<td>$-0.34$</td>
</tr>
<tr>
<td>Employees’ structure of time</td>
<td>$-0.98$ (.33)</td>
<td>$-0.29^{**}$</td>
<td>$-2.87^{**}$</td>
</tr>
<tr>
<td>Interaction: norms of time × structure of time</td>
<td>$-5.68$ (2.50)</td>
<td>$-0.24^{**}$</td>
<td>$-2.27^*$</td>
</tr>
<tr>
<td>Intercept</td>
<td>$11.59^*$ (4.45)</td>
<td>$-$</td>
<td>$2.60^*$</td>
</tr>
</tbody>
</table>

* $p < .05$.
** $p < .01$.

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Fig. 2. Two Regression Equations for Explaining the Number of Entrepreneurial Proposals by Organizational Time Norms for Employees with Vague and Defined Time Structure.
positive. The opposite is true for those with defined time structures (slope is negative). This suggests that under loose (flexible) organizational time norms, employees with defined time structures generated CE proposals, while employees with vague time structures did not. These results also supported H5.

**DISCUSSION**

This study sought to determine if and to what extent organizational time norms and individual time structures influence employees’ CE behavior and their perceptions of the organizational culture as being entrepreneurial. This chapter adopted an interactionist view of the relationship between the external organizational time norms and the individual time structures to determine if and how they influenced actual CE behavior of individuals. Our examination was guided by the practice-based theoretical perspective of Orlikowski and Yates (2002).

Time norms are an important part of the culture of organizations and, as such, represent normative expectations. These norms are shaped by the organization; individual time structures are shaped by the individuals in combination with how they perceive and interpret the organizational time norms. As organizational time norms are multifaceted, we have empirically attempted to capture those norms that influence CE activities. Four factors of organizational time norms derived from factor analysis were examined in this study: pressures in allocation of time, schedules and planning, lack of autonomy in use of time, and synchronization and coordination with others over time. Given that different people attach different values and meanings to time (Francis-Smythe & Robertson, 1999), we also examined employees’ personal time structures defined as the extent to which they perceived the use of their time as being structured and purposeful (Bond & Feather, 1988). The findings relating to the study’s five hypotheses that were examined within an Israeli organization are discussed next.

**Hypothesis 1.** H1 posited that tight (rigid) organizational time norms are negatively associated with employees’ perceptions of the organizational climate as entrepreneurial, whereas loose (flexible) organizational time norms are positively associated with perceptions of the climate as entrepreneurial. The results of two hierarchical regressions, in which demographic (gender, education) and organizational variables (organizational unit, experience in industry) were controlled for, partially supported
this hypothesis. They indicated that organizational time norms explained a statistically significant amount of variance in employees’ perceptions of management’s encouragement of the entrepreneurial climate, and their perceptions of organizational climate as a barrier to CE. Two of the four time variables were significant: schedules and planning had a positive and significant coefficient, whereas lack of autonomy was negative and significant. When we examine the barriers in the organizational climate to CE as the dependent variable item, three of the four time variables were also significant: schedules and planning had negative coefficients, while pressure in allocation of time and lack of autonomy had positive coefficients.

These results also indicated that among the organizational time norms, schedules and planning were found as having the strongest effect on perceptions regarding the entrepreneurial climate. Lack of autonomy in time allocation had a negative effect on employees’ perceptions of the entrepreneurial climate. Pressure in allocation of time was also perceived as contributing to perception of barriers to CE. In contrast, synchronization of time did not contribute to the explained variance in employees’ perceptions of management’s encouragement of the entrepreneurial climate, and their perceptions of organizational climate or a barrier to CE.

Hypothesis 2. Here we argue that tight (rigid) organizational time norms are negatively related to employees’ CE behavior, whereas loose (flexible) time norms are positively related to their CE behavior. The results revealed two separate areas in which employees have centered their CE activities and further distinguished between these two areas in terms of their relatedness to time variables. The first area was improvements in HR practices. The second area was proposing a new product or a new market niche.

HRM practices in any organization articulate its true culture (Schuler, 1986) and time-related aspects are an important part in organizational culture that strives to foster entrepreneurship. Organization time norms were found as significantly increasing the explained variance in proposing entrepreneurial ideas for improvements of HRM practices. Time pressure had a positive and significant coefficient but the lack of autonomy in time use had a negative and significant coefficient. The contribution of these organizational time norms was important, even after controlling for both demographic and organizational variables as well as perceptions of the organizational climate. However, schedules and planning were not found to be significant in the hierarchical regressions nor were synchronization and coordination.

Time norms did not contribute significantly to explaining variations in proposing of entrepreneurial ideas for new products or market niches. One
possible reason was that these ideas are not usually constrained by the organizational time norms. They are more related to individual human capital variables such as level of education and experience in industry. Innovations in these areas also take time to be conceived, refined, and introduced. These heavy time requirements may discourage employees from considering marketing and technological innovation, particularly if they lack first-hand knowledge of the area. Further, employees usually appreciate the changes needed to foster productivity and performance improvements in their work environment and therefore quickly develop ideas for innovations that improve HR matters. There is also the possibility that because the second factor of CE proposing combined either new product or a new market niche the effect of this measure was diluted. Innovation of a product might be a manufacturing function, while a marketing idea is an office function. People in one function usually do not do what the other groups do, possibly diluting the effect. Overall, the results only partially supported H2.

Applying the conceptual framework of Orlikowski and Yates (2002) to our empirical findings provides an enriched view of the importance of these three organizational time norm factors that impact the CE variables: autonomy in use of time, pressure in time allocation, and schedules and planning. According to their conceptual view, when taking action such as undertaking entrepreneurial initiatives in the organization, employees routinely draw on common temporal structures that they (and others) had previously enacted to organize their ongoing practices, such as using project schedules to pace work activities for their entrepreneurial projects.

Hypotheses 3 and 4. We proposed that employees with a well-defined time structure are more likely to perceive the organizational climate as being entrepreneurial (H3) and behave more entrepreneurially (H4). When we examined these two hypotheses in the same hierarchical regressions with the organizational time norms, controlling for demographic and organizational variables, no significant contribution of the employees’ personal time structures was tied to any of the CE behavior variables. These results failed to support H3 and H4. One cannot rule out the possibility that our measure of time structure was oversimplified as it mainly included the time structure. Other research suggests that some people tend to be linear–objective–monochronic, having long been thought of as the “clock watchers,” and not generally thought of as the more creative sorts. The others are nonlinear–subjective–polychronic and are seen as more free flowing in work and thinking, and hence more creative. Our hypotheses predicted contrary link
between individual time structure and CE and the refutation of our results may perhaps suggest that employees’ time structures do not “stand alone” in their influence upon entrepreneurial perceptions or actual CE behavior. Rather, CE activities and perceptions of the organizational climate are shaped more by employees’ perceptions of the company’s time norms as well as by other structural conditions.

**Hypothesis 5.** We proposed that employees’ time structure moderates the relationship between the organization’s time norms and employees’ CE-related activities. The results supported this hypothesis (H5). When organizational time norms were loose (flexible), employees with more highly defined time structures generated more CE-related proposals, whereas employees with vague time structures did not exhibit such behaviors. Employees with vague time structures generated more entrepreneurial proposals under tight organizational time norms. These findings suggested that matching employees’ time structures with their perceptions of the company’s time norms was essential for enhancing employees’ willingness to pursue entrepreneurial activities.

These results also indicate that different employees may hold different views regarding the existing external organizational time norms and their individual interpretations may interact with their own personal time structures, to lead them to enact CE activities or avoid them. These findings show how external organizational time norms and individual time structures may interact together to influence actual behavior of individuals in the area of CE.

The results may also be related to the person–organization fit (O’Reilly, Chatman, & Caldwell, 1991; Edwards, 1991; Bluedorn, 2000). Research suggests that fit or congruence increases job satisfaction and organizational commitment. The notion of initial fit between a person’s time structures and the time norms of the work environment has been documented in the literature (Francis-Smythe & Robertson, 1999). Our results contribute to this stream of research, suggesting that the fit between organizational time norms and individual time structures significantly increases CE activities while misfit decreases them.

Our results may be related to what Nowotny (1992, p. 424) termed *pluritemporalism* – “the existence of plurality of different modes of social time(s) which may exist side by side.” This goes back to the subjective–objective time differentiation mentioned above, and to other studies showing that both types exist in the work population. Bluedorn et al. (1999) examined polychronicity at the dimension of individual–organizational value congruence as a specific case of the more general question of the consequences
obtained from individual–organizational value congruence (Bluedorn, 2000, p. 122). Bluedorn also related to the attraction–selection–attrition theory that states that individuals search for and are attracted to organizations whose cultures contain values and beliefs similar to their own (Schneider, Goldstein, & Smith, 1995). Investigating the value-congruence question as it applies to polychronicity values, Bluedorn (2000) found support for this congruence (Slocombe & Bluedorn, 1999). Our results may suggest that engagement in such temporal multiplicity and especially that the congruence of fit between organizational time norms and individual time structure has important consequences for people’s experiences of time and for their undertaking of CE-related behaviors. Thus, our results suggest that the congruence between organizational time norms and individual time structures significantly increases CE activities while misfit decreases them.

Limitations

Though the research design has enabled us to canvass a wide range of opinions and experiences by employees regarding CE, source bias cannot be eliminated. Fortunately, when we performed factor analysis (employing different measures), we found multiple dimensions, which indicated that source bias was not a serious issue in the study. Still, the fact that data were collected from a single firm in one country at one point in time suggests a need for caution in generalizing the results. Another limitation of this study is embedded in its partial usage of the TSQ scale, which might have weakened the results. Also the TSQ favors the objectivist linear-time approaches over subjectivist view of time.

Implications for Management

Organizations recognize that effective planning of time and the synchronization of people and assignments are important time norms for future survival, growth, and profitability (Barkema, Baum, & Mannix, 2002). Companies structure their operations around time, as reflected in work hours, the level of output per unit of time, work shifts, and time-based compensation (Cunningham, 1989; Doob, 1971; Krausz & Freibach, 1983). Given the pervasiveness of these activities, employees recognize that the appropriate allocation of their time and its effective use profoundly influence their behaviors and performance on the job.
Our results show that organizations and employees may hold different perceptions of time norms. Employees analyze the organizational norms and behave in ways that reflect their understanding of their organization’s commitment to them, especially when developing CE projects. Firms hoping to foster CE need to be aware of the relevance of their time norms in this process and ensure that they are clearly communicated to employees, and that managers’ behavior reflects the priorities attached to the different norms. Giving employees autonomy in managing their own work as well as scheduling and planning their work can be viewed as an important investment by the company in promoting CE-related activities.

The results also highlight the importance of synchronizing employee and firm time norms to boost CE activities in the organization. Employees with defined time norms appeared to be capable of taking control of their situations, seeing the importance of the loose (flexible) time structure prevailing in the firm. In doing so, these employees closely resembled Pinchot’s (1985) depiction of entrepreneurs – self-motivated and capable of defining their own goals and pursuing them with vigor. Employees with vague time structures may become frustrated with the loose time norms prevailing in their companies. These employees would benefit from having a more directive leadership from managers working closely with them in defining organizational priorities and the best way to achieve them.

Implications for Theory and Research

Time plays an important role in the life of organizations (George & Jones, 2000; Fischer et al., 1997), and time orientations influence a firm’s performance (e.g., Hay & Usunier, 1993). However, researchers have not systematically examined how time influences CE. This study offers an initial effort to document the effect of employees’ perceptions of organizational time norms and their own individual time structures on their CE activities. The results indicate a further need to study this issue in depth, examining the process aspects of time in CE and also the need of using different groups of employees from different organizations in different industries and countries. This should provide a basis for understanding when organizational and employee time norms influence the CE process. To do so, future studies may improve upon the design used in this chapter. For instance, it might be possible to obtain supervisors’ evaluations of employees who undertake different CE activities within the firm’s various functions (production vs.
marketing). Using multiple sources of data in this fashion can reduce response bias and enhance confidence in the findings.

Given the interplay between employees’ perceptions and CE activities, it is also important to conduct longitudinal research on the relationships among the variables explored in this chapter. This should allow researchers to better document the relative contributions of prior experience and perceptions of time norms in explaining employees’ future CE activities. Experience might color employees’ perceptions of the value added to their firms as they undertake CE activities.

This study also adds to the literature by making a distinction between different areas of CE activities. Future research should validate this distinction between HR improvements and new product and market proposals, linking employees’ perceptions of time norms to different dimensions of CE initiatives and investigating the effect of their different initiatives on organizational performance.

CONCLUSION

The consequences of time for CE have not been well documented in the literature. In this chapter, we have argued that organizations and employees might have different time clocks, influencing employees’ sense of urgency and support for entrepreneurial activities. The results show that employees’ time structures significantly moderate the interaction between their perceptions of their organization’s time norms (schedules and planning, autonomy in use of time, pressure in allocation of time) and their willingness to propose ideas for innovation and undertaking the risks associated with entrepreneurial ventures. The results invite entrepreneurship scholars to give more attention to the meaning of time and how it influences employees’ attention and commitment to CE activities. Incorporating time in future research can enrich our understanding of the temporal relationships between employees’ perceptions and entrepreneurial activities in existing organizations.

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REFERENCES


**APPENDIX**

This Appendix presents the items used to construct the study’s various measures. Response formats, along with procedures used to construct the measures, are presented in the text.

(a) Entrepreneurial proposals for improvements of human resources (6 items; α = .80)

1. A proposal for an innovation/improvement in the organizational unit
2. A proposal for an improvement in manpower in the organizational unit
3. A proposal for an improvement of data transmission in the organization
4. A proposal for improvement of the employment routines in the organization
5. A proposal for improvement and improved savings in the organization
6. A proposal for change or improvement of administrative processes

(b) Entrepreneurial proposals of new products and markets (5 items; α = .80)

1. A proposal for a new line of products or a new product in existing line
2. Discovery of new market or new niche
3. A proposal for new project
4. A proposal for new design for existing product
5. An improvement or additional usage to existing product

**Undertaking Entrepreneurial Activities in the Organization**

(9 Items; α = .85)

This included nine items describing activities undertaken by the employees to promote their proposals or ideas in the organization. Response format
followed a 5-point Likert scale (0 = not relevant, 1 = not at all, 5 = to a great extent). Items asked employees to report the extent to which they performed the following activities:

1. Collection of data and examination of proposal/idea
2. Mobilizing resources: budgets
3. Mobilizing resources: equipment and laboratories to advance the project
4. Mobilizing resources: manpower
5. Mobilizing resources: work hours
6. Preparation of an initial business plan
7. Obtaining management support to advance the proposal/idea
8. Forming an intra-organizational coalition
9. Obtaining support from outside the organization

(a) Organizational support of corporate entrepreneurship (5 items; α = .86)
   1. Management enables anyone at the organization to propose ideas
   2. Management enables anyone to implement new ideas
   3. Management provides resources for implementing new ideas
   4. Management encourages inter-disciplinary work teams
   5. Management encourages proposing new ideas

(b) Perception of barriers to corporate entrepreneurship (6 items; α = .70)
   1. Performing in non-regular ways encounters many restrictions
   2. Implementing new ideas in the organization is a frustrating process
   3. Efforts at independent decisions meet objections
   4. Any decision necessitates obtaining management’s approval
   5. When I do something wrong, my mistakes are remembered
   6. In my department it is expected that everyone will solve problems in the same way

Organizational Norms of Time (4 Factors)

(a) Schedules and planning (6 items; α = .71)
   1. Staying on schedule is important here
   2. We do not pay much attention to schedules
   3. Doing things right is better than doing things fast
   4. Tasks usually take longer than planned
   5. Planning for the future is important here more than the present
   6. It is important to stick to milestones
(b) Lack of autonomy of time use (3 items; $\alpha = .68$)
1. All of our work is tightly scheduled
2. People can work at their own pace
3. People here can set their own work schedules

(c) Synchronization and coordination of work with others (3 items; $\alpha = .62$)
1. To get the job done, it is important for each person to coordinate his/her work with others
2. To get the job done, it is important to do tasks in a specific order
3. It is easy to find time to plan something new

(d) Pressure in allocation of time (4 items; $\alpha = .63$)
1. Schedules usually seem too tight for most big jobs
2. We never seem to get enough time to get everything done
3. Most people do not have time to take breaks during the day
4. People here work many hours during the day

Employee Time Structure (10 Items; $\alpha = .63$)

1. Difficulty to arrange required activities
2. Having a daily routine
3. Feeling your life has defined purpose
4. Planning activities from day to day
5. Leaving things to be done for the last moment
6. It happens that you are not sure what to do next during the day
7. It takes a lot of time to start doing things
8. Feeling you spend your time well
9. Your main activities in life are relatively stable
10. Devoting time for thinking about own future
WHERE DO ENTREPRENEURIAL ORIEN TATIONS COME FROM? AN INVESTIGATION ON THEIR SOCIAL ORIGIN

Haibin Yang and Gregory G. Dess

ABSTRACT

This paper explores the origin of entrepreneurial orientations (EO) from an organizational embeddedness perspective. It examines the impacts of firms’ network embeddedness such as structural, positional and relational on three dimensions of EO, namely, risk-taking, proactiveness and innovativeness. After a brief review of the EO construct and social network theory, we derive a set of testable propositions that relate embeddedness properties such as centrality, structural holes, direct/indirect ties, and network density, to the magnitude of three key EO dimensions. We argue that each dimension may vary independently with each other and has its own formation mechanism, which entails rich implications for entrepreneurial network research.

Depicted as the engine of growth in the economy (Birch, 1979, 1987), entrepreneurship has generated enormous research interest since its emergence as a field of study in the 1970s. In this line of research, identification of
the forces that shape entrepreneurial posture is important due to its high social relevance (Covin & Slevin, 1990; Khandwalla, 1987). However, a fundamental question concerning the origin of entrepreneurial behavior still remains intriguing. Early researchers attribute entrepreneurial behaviors to personality factors, psychodynamic characteristics, and social-cultural background (Begley & Boyd, 1987; Bird, 1989; Brockhaus & Horwitz, 1986). It was argued that leader personality is critical to entrepreneurship. Later, researchers came to recognize the importance of environmental and structural aspects of the firm as well as decision making and strategic factors in shaping entrepreneurial behaviors (Bloodgood, Sapienza, & Carsrud, 1995; Gartner, 1985; Miller, 1983; Peterson & Berger, 1972). Although these studies prescribe different and often contrasting sources of entrepreneurship, there is one commonality among these perspectives: entrepreneurial behavior emanating from individual actors. Most of the studies approach this issue from an atomistic perspective, which presents either a picture of an entrepreneur spearheading a business as an individual behavior or a picture of an entrepreneurial firm managing uncertainties in the environment (Rauch, Wiklund, Lumpkin, & Frese, 2005). The overall picture of interconnected firms and the mechanisms involved in regulating entrepreneurial behavior has, unfortunately, not been given its due attention.

To address this problem, this article draws on organizational embeddedness theory (Burt, 1992; Dacin, Ventresca, & Beal, 1999; Granovetter, 1985) to examine the relationships between firms’ social networks and their entrepreneurial behavior. Entrepreneurial firms’ networks are critical in defining the competitive context, the information and resource flows, and even the mortality of these firms (Baum & Oliver, 1991; Hansen, 1995; Shane & Cable, 2002). We extend this line of research by arguing that firms’ entrepreneurial behavior, referred as “entrepreneurial orientation” (EO) by Lumpkin and Dess (1996), is also embedded in their entrepreneurial networks (Hite & Hesterly, 2001). Following the traditional approach, we conceptualize EO with three dimensions: innovation, risk-taking and proactiveness (Covin & Slevin, 1989; Miller, 1983; Miller & Friesen, 1982). We ask how network embeddedness, in terms of positional, structural and relational embeddedness, will affect the magnitude of each EO dimension. For example, from a structuralist perspective, a firm’s risk-taking orientation may be contingent upon the nature of its network structure. Different network structures breed and encourage various levels of firms’ risk-taking behavior (Perry-Smith & Shalley, 2003).

This paper departs from prior research in several ways. First, it complements the atomistic perspective in entrepreneurship research by
introducing a broad picture of EO formation: the social forces in network relations. We argue that firms’ entrepreneurial behavior can be more fully understood by examining the network relationships in which they are embedded. Second, this paper extends network research by explicitly focusing on the relationships between network forces and EO dimensions, an area that has not been thoroughly examined. It suggests a critical linkage between network forces and ultimate organizational outcomes. Third, our research shows that EO dimensions may not co-vary as suggested by some researchers (e.g., Miller, 1983; Wiklund & Shepherd, 2003). Rather, each dimension can vary independently from each other.

The remainder of the paper proceeds as follows. We begin with a brief review of the EO construct, and then link it to organizational embeddedness theory. Next, we analyze several network properties such as centrality, density, and structural holes. We explore the impact of these network features on the development of three EO dimensions and develop propositions related to these arguments. Lastly, the paper concludes with a discussion and directions for future research and theory building.

CONCEPTUAL DEVELOPMENT AND PROPOSITIONS

The construct of EO has intrigued academia for decades. An EO, sometimes termed an entrepreneurial posture (Covin & Slevin, 1991) or strategic posture (Covin & Slevin, 1988, 1990), refers to the processes, practices, and decision-making activities that lead to new entry (Dess & Lumpkin, 2001, p. 8). Mintzberg (1973) is among the first to address strategy-making in terms of modes. He suggested an entrepreneurial strategy-making mode, which consists of opportunity seeking, centralized control, risk-taking, and growth orientation. He also introduced adaptive and planning modes. An adaptive mode is characterized by a division of power, reactive solutions, and incremental decisions; whereas, a planning mode is characterized by formal analysis. Later, he added the bargaining mode, which addresses the political process involved with conflicting goals among decision makers (Mintzberg, 1983; Mintzberg, Raisinghani, & Theoret, 1976).

Miller and Friesen (1978) identified 11 different dimensions of strategy-making process such as innovation, proactiveness, risk-taking, and futurity. In integrating prior literature, Hart (1992) simplified previous work into five modes of strategy-making process: command, symbolic, rational, transactive
and generative, of which the command and the generative mode suggest the dimensions of entrepreneurial strategy-making (Dess & Lumpkin, 2001). The command mode refers to a strong leadership and centralized control, which is similar to Mintzberg’s (1973) entrepreneurial mode, and the generative mode implies initiatives, risk-taking and experimentation.

Entrepreneurial orientation is further conceptualized as having anywhere from three to five dimensions (Lumpkin & Dess, 1996). The three most commonly cited dimensions are innovativeness, risk-taking and proactiveness (Covin & Slevin, 1989; Miller, 1983; Miller & Friesen, 1982). Innovation is characterized by an organization’s strong commitment to creating and introducing new products, services, or technological processes to the market (Lumpkin & Dess, 1996; Zahra, 1993). Risk-taking refers to “a tendency to take bold actions such as venturing into unknown new markets, committing a large portion of resources to ventures with uncertain outcomes, and/or borrowing heavily” (Lumpkin & Dess, 2001, p. 431). Proactiveness refers to “an opportunity-seeking, forward-looking perspective involving introducing new products or services ahead of the competition and acting in anticipation of future demand to create change and shape the environment” (Lumpkin & Dess, 2001, p. 167).

Some researchers view these three dimensions as co-varying (e.g., Miller, 1983; Wiklund & Shepherd, 2003). However, others advocate that each dimension may vary independently of one another in a given context (Kreiser, Marino, & Weaver, 2002; Lumpkin & Dess, 1996; Lyon, Lumpkin, & Dess, 2000; Richard, Barnett, Dwyer, & Chadwick, 2004). Firms may have different combinations of these dimensions and, “the creation of a new venture is a multidimensional phenomenon; each variable describes only a single dimension of the phenomenon…” (Gartner, 1985, p. 697). For example, Lumpkin and Dess (2001) found that the EO dimensions of proactiveness and competitive aggressiveness are conceptually distinct, and that they do not co-vary with each other. Thus, this paper examines the effects of social networks on each dimension of EO: innovativeness, risk-taking and proactiveness. We posit that these dimensions may vary independently, depending on the different network characteristics.

Entrepreneurial orientation may be viewed as a firm-level strategy-making process that firms use to pursue venture creation, sustain their vision, and create competitive advantages (Rauch et al., 2005). A firm-level perspective of entrepreneurship is appropriate to capture the actual behaviors by the firm since an entrepreneurial posture is significantly affected by multiple organizational system elements (Covin & Slevin, 1991). In many situations, entrepreneurship is shown to be a firm-level phenomenon (Barringer &
Bluedorn, 1999; Burgelman, 1983; Covin & Slevin, 1991; Miller, 1983; Stevenson & Jarillo, 1986; Zahra, 1991, 1993). We adopt this firm-level perspective of entrepreneurship, and argue that the dimensions of EO are constrained by firms’ network positions and their network structure as a whole.

The Embeddedness Perspective of EO Dimensions

A broad consensus has been reached regarding the role of networks in fostering the emergence and growth of entrepreneurial firms (Larson & Starr, 1993; Stuart, Hoang, & Hybel, 1999). Economic action is embedded in networks of relations (Granovetter, 1985). A firm’s behavior is affected by its relations with customers, partners, suppliers, competitors, etc. Starting from their birth, entrepreneurial firms face a high liability of newness and smallness (Baum & Oliver, 1991; Stinchcombe, 1965). Further, they must rely heavily on their networks to obtain all kinds of resources, including physical resources, information, and status. Aldrich, Rosen, and Woodward (1987) argued that network accessibility was significant in predicting firm founding. Also, Baum and Oliver (1991) examined the impact of institutional linkages on the failure of child care service organizations and found that institutional relations played a very significant role in reducing the likelihood of organizational mortality. Building contacts and networks is the primary factor in determining the success of any organization (MacMillan, 1983). It is also widely acknowledged that an actor’s network positioning constrains its access to resources, and ultimately affects entrepreneurial outcomes (Hoang & Antoncic, 2003).

The social context in which firms are embedded has important connotations in explaining the attitudes and perceptions of firms (Ibarra & Andrews, 1993; Salancik & Pfeffer, 1978), and it is an indicator of entrepreneurial opportunity and motivation (Burt, 1992). Aldrich and Zimmer (1986) argued that the entrepreneurial process takes on meaning only in the context of broader social processes. Entrepreneurial behavior is embedded in the structure of a firm’s ongoing relations (Simsek, Lubatkin, & Floyd, 2003). The levels of risk-taking, innovativeness and proactivity are arguably determined by the interaction between entrepreneurial firms and their network relations since a firm must act and react within the constraints of its social networks (Smith, Ferrier, & Ndofor, 2001). Firms’ embeddedness in their networks brings about distinctive competitive advantages. Uzzi (1997) identified three components of an embedded
relationship: trust, fine-grained information, and joint problem-solving arrangements. Such relationships facilitate the inflow and outflow of resources, information, and status among connected firms. The information advantage of entrepreneurial networks can lead to the creation of new opportunities through access, timing and referrals (Burt, 1992). Access refers to information about current or potential partners as to their capabilities and trustworthiness (Gulati, 1998). Search procedures are a primary building block of economic effectiveness and are needed to identify a set of alternatives (Uzzi, 1997). Information access reduces search costs incurred in finding the right partners and avoids the potential opportunism from partners to a large extent. Timing enables firms to obtain useful information at the right time, which is often crucial in responding quickly to changing situations. Referrals are those processes that network actors use when referring valuable information on opportunities to other actors. For example, a firm may find a new alliance partner through its existing network partners (Gulati, 1998). Thus, access, timing and referrals are used to highlight an actor’s interests in a positive light, at the right time, and at the right place (Burt, 1992).

The influence of social networks is a critical point of contention between otherwise complementary views of network structure (Walker, Kogut, & Shan, 1997). “Network closure” or cohesion perspectives emphasize the role of cohesive ties in gaining fine-grained information, promoting trust and reducing uncertainty (Coleman, 1988; Gulati, 1998). In a closed network, firms have access to social capital, a resource that enhances the development of norms for acceptable behavior and the diffusion of complex information. Members in this kind of network can trust each other to honor obligations and enhance their ability to cooperate. However, structural hole theory (Burt, 1992) proposes an alternative view of social capital, which resides in the brokerage opportunities created by the lack of connection between separate clusters in a social network. Players who are in brokerage positions have access to diverse information and also create control benefits by arbitraging resources and information among unconnected actors. Both perspectives entail rich implications for interpreting network effects, and some researchers come to view them as complementary rather than contradictory (e.g., Reagans & Zuckerman, 2001; Walker et al., 1997). For example, while the closure perspective focuses on network ties in local interactions, structural holes can be used for information benefits that divide a social system globally (Reagans & Zuckerman, 2001, p. 504).

The concept of embeddedness describes the contextualization of economic activity in on-going patterns of social relations (Granovetter, 1985) and was
extended to cover relational embeddedness, structural embeddedness, and positional embeddedness (Gulati & Gargiulo, 1999). Relational embeddedness (or cohesive perspectives) on networks stresses the role of cohesive ties as a mechanism for gaining fine-grained information (Gulati, 1998). It suggests that firms closely tied to each other are likely to carry complex information and promote trust (Hansen, 1999). Structural embeddedness focuses on the impact of the structure of relations on the tendency of actors’ behavior. Further, positional embeddedness captures firms’ position in the overall structure of a network and its effects on firms’ access to information (Gulati & Gargiulo, 1999), and it enables firms to search for useful information and potential targets.

We investigate the effects of embeddedness on dimensions of EO by examining structural density, structural holes, firm centrality, direct ties, and indirect ties. Structural density describes the overall level of interaction reported by network members (Sparrowe, Linden, Wayne, & Kraimer, 2001). The more ties each group member enjoys with other group members, the greater the density of the network. Firms in a dense network are more likely to share common norms and develop cohesive relationships with other actors, and this interconnectedness reflects the relational embeddedness. Structural hole positions give firms opportunities to arbitrage the flow of information and resources among unconnected players in a network, while firm centrality captures the optimal amount of information available to firms (Haunschild & Beckman, 1998). The main effects of centrality primarily come from the volume and speed of resource flow; whereas, the main effects of structural hole positions originate from network efficiency and effectiveness which stems from nonredundancy (Gnyawali & Madhavan, 2001, p. 439). The information quantity and quality arising from these two structural positions may differentially affect firms’ tendency towards risk-taking, innovativeness and proactiveness, and thus demonstrate the role of positional embeddedness in EO formation. The focus of analysis for structural embeddedness “shifts from direct communication between actors to indirect channels for information and reputation effects” (Gulati & Gargiulo, 1999, pp. 1446–1447). Thus, direct ties and indirect ties reveal structural embeddedness and pose substantially different impacts on firm behavior (Ahuja, 2000; Powell, Koput, & Smith-Doerr, 1996).

Fig. 1 identifies these network dimensions in two networks connected by firms H and E. Both firms C and H have the highest degree of centrality (four) among firms in the two networks. However, firm C has no structural hole positions, whereas firm H occupies two structural hole positions (the gap between firms A and E as well as that between D and E). Similarly,
firm E occupies three structural hole positions (the gaps between firms F, G and H). Firm H has four direct ties, to firms A, C, D, and E. Firm H also has three indirect ties to firms B, F and G. In terms of network density, the network among A, B, C, D and H is denser than the network among E, F and G.

In the following sections, we explore the network effects on EO dimensions in terms of positional embeddedness, structural embeddedness and relational embeddedness. First, we address the differential impacts of firms’ centrality positions and brokerage positions. Second, we examine the role of direct ties and indirect ties in stimulating EOs. Last, the role of network density is highlighted.

**Positional Embeddedness: Effects of Firms’ Centrality**

Centrality is defined as the extent to which a firm occupies a key position with strong ties to other network members (Wasserman & Faust, 1994). Firms that are central in interorganizational networks are exposed to more sources of information than firms that are not (Davis, 1991; Haunschild & Beckman, 1998). Central firms are in a favorable position to get a more complete picture of all the alternatives available in the network than peripheral firms. Further, they enjoy a broad array of benefits and opportunities unavailable to those in the periphery of the network (Brass, 1992; Ibarra, 1993). Such
distinct opportunities enjoyed by the central position are argued to affect firms’ EOs in risk-taking, proactiveness, and innovativeness as follows.

**Centrality and Risk-Taking**

Actors in a central position are likely to feel comfortable in taking informed risks (Perry-Smith & Shalley, 2003). Dess and Lumpkin (2005) pointed out that though risk-taking involves taking chances, it is not gambling. The best run firms investigate the consequences of various opportunities and create scenarios of possible outcomes. We argue that entrepreneurs need to evaluate their chances for success before they undertake risky actions. The more informed the actors are, the more confidence and personal discretion can be gathered for calculated risk-taking. Gnyawali and Madhavan (2001) argued that central actors would find it easier to interpret the causes and consequences of competitive actions correctly because of their rich information set. This informational advantage thus facilitates firms’ risky decision making.

In addition, a central position may lower the perception of risk in potential entrepreneurial ventures as well as increase the likelihood that the firm will undertake the ‘risky’ venture. Yates and Stone (1992) pointed out three elements of the risk construct: potential losses, the significance of losses, and the uncertainty of losses. Though losses are inevitable in many entrepreneurial settings, the significance of any possible losses and the uncertainty or variability associated with these losses are likely to be more salient in driving firms’ risk perception and risky decision making (Forlani & Mullins, 2000). However, the uncertainty is caused, to a large extent, by the lack of related information to make a better judgment. Compared to peripheral firms, central firms are in an advantageous position to garner useful information in order to reduce the variability of potential risks.

Network relations also provide resources and emotional support for entrepreneurial risk-taking (Bruderl & Preisendorfer, 1998). Ibarra (1993) argued that network centrality implied a high position in a status hierarchy. Central firms have a high level of control over relevant resources and can command a great potential for influence by creating asymmetric resource dependencies (Pfeffer & Salancik, 1978). Thus, the risk-taking behaviors of central firms will be awarded legitimacy more easily in the network, inviting emotional support from other network members (Haunschild & Miner, 1997; Lee & Pennings, 2002). In this sense, centrality facilitates the risk-taking dimension of entrepreneurial behavior (Barringer & Bluedorn, 1999).
Central connectedness generates visibility, providing access to resources via benefit-rich networks (Powell et al., 1996). Taking advantage of the intersection position in the network, central firms are well informed to foresee the opportunities and to avoid the pitfalls in the network. Rogers (1995) argued that central firms, being at the confluence of a large number of information flows, are likely to receive new information sooner than less central firms. Such farsightedness enables central firms to be aware of the unexplored market and to comprehend the emerging products in a more meaningful and timely way than can peripheral firms.

Multiple ties through central positions also enable firms to effectively scan their environments. Proactive firms are those that are more likely to seek opportunities in the external environment (Lumpkin & Dess, 2001; Stevenson & Jarillo, 1986). The integrated information set held by the central firm will be more valuable for environmental scanning than the disjointed information elements held by other actors in the network (Gnyawali & Madhavan, 2001).

Innovation is often an information-intensive activity in terms of information collection and information processing (Ahuja, 2000). Central firms are positioned at the flux of rich information, which is beneficial for a firm’s innovative activities. Researchers have found that central network locations lead to information exchanges that are beneficial to learning and innovation (Gulati, 1999; Lane & Lubatkin, 1998). Powell et al. (1996) found that a central position in a network of relationships facilitates common understandings and shared principles of cooperation, thus encouraging subsequent research and development (R&D) collaborations. In addition, central firms can better overcome information constraints and capitalize on opportunities more effectively than others (Soh, Mahmood, & Mitchell, 2004).

However, maintaining a network of partners is time consuming (Beckman & Haunschild, 2002). As firm centrality increases, firms must spend lots of energy in order to maintain the various relations and commit enormous resources that will, in turn, constrain firms’ investment in R&D. Perry-Smith and Shalley (2003) argued that extreme centrality would pull firms in too many directions and expose them to conflicting viewpoints, which will result in extensive stress and conflict, and ultimately stifle innovation. Also, extreme centrality leads to too much domain-relevant knowledge and experience, which are not helpful for broadening the vision and bringing in new ideas.
and information. Entrenched in their networks, central firms will have less incentive to break their organizational inertia and seek external linkages beyond their familiar networks. Such reduced ability to explore divergent ideas further constrains creativity (Mumford & Gustafson, 1998). Therefore, we argue that a moderate level of centrality will help firms enjoy information benefits, while alleviating excessive stress and overcoming core rigidity (Leonard-Barton, 1992). Thus,

Proposition 1. A firm’s centrality in a network will be (a) positively associated with risk-taking and (b) proactiveness, and (c) will have an inverted U-shaped relationship with innovativeness, such that a moderate level of centrality will be associated with higher levels of innovativeness.

Positional Embeddedness: Effects of Structural Hole Position

Structural holes are the gaps between unconnected contacts (Burt, 1992). They represent unexplored opportunities in a network. Firms in these holes not only gain nonredundant information from the contacts, but also occupy a position to control the information flow between the two and play the two off against each other (Brass, Galaskiewicz, Greve, & Tsai, 2004). Information benefits are maximized in a large and diverse network by bridging isolated islands of social capital in which relationships are embedded (Burt, 1992; Walker et al., 1997). Firms can reap control benefits by being the tertius gaudens, i.e., a person who derives benefit from brokering relationships between other players (Burt, 1992). It can occur when two or more actors compete for the same relationship with a focal firm or when the focal firm manages the conflicting demands from separate relationships. Much of the control benefits result from the manipulation of information (Burt, 1992). We will now address how brokerage positions offer distinctive explanations for firms’ risk-taking, proactiveness and innovativeness.

Structural Holes and Risk-Taking

Structural hole positions enable focal firms to envision unique opportunities inherent in the holes, which are not accessible to other players due to their disadvantageous positions. On the one hand, firms in these positions are faced with many boundary-spanning opportunities, which may be considered risky by other network players. On the other hand, structural hole positions alleviate firms’ perceptions of risks in some activities. By controlling the flow
of information and resources, these firms are able to undertake activities with calculated risks. In addition, Burt (1992) argued that a player in a structural hole position could identify suitably endowed contacts and obtain a high rate of return on investment. Rich opportunities and confidence in the returns will greatly spur the risk-taking orientation of those firms in the structural hole positions. For example, in a study of corporate ownership patterns and restructuring events in Germany in the 1990s, Kogut and Walker (2003) found that firms whose owners were acting as brokers in the ownership network engaged in more risky organizational behaviors such as merger and acquisition events.

Further, firms in brokerage positions, based on superior information flows, are able to determine if options/risks should be taken. Real options refer to any decision that creates the right, but not the obligation to act (McGrath, 1997). They arise when existing resources and capabilities allow preferential access to future opportunities (Bowman & Hurry, 1993). Firms, by arbitraging information flow through holes (Burt, 2001), have better knowledge in deciding when and how to establish options, thereby reducing uncertainties in decision making.

Structural Holes and Proactiveness
Compared to other positions in a network, brokerage positions broaden firms’ visibility and present potentially profitable opportunities for entrepreneurial actions (Burt, 1992; Gnyawali & Madhavan, 2001; Walker et al., 1997). Thus, brokers are able to anticipate changes beyond the constraints of separate networks in order to develop new products and bring them to market.

The exposure to unique opportunities through brokerage positions will also motivate firms to outperform their rivals by taking first-mover advantages. Firms bridging structural holes will be more likely to exploit successful initiatives in the first place since such initiatives are not taken by isolated actors. If quick responses are taken, these brokers can enter into a market with fewer rivals and more easily establish their brand identity. In addition, structural hole positions encourage farsightedness and forward-looking as firms’ vision is not constrained by certain organizational boundaries.

Structural Holes and Innovativeness
One of the primary benefits a firm attains from having structural hole positions is manifested in diverse and nonredundant information flows which foster innovative behavior. Baum, Calabrese, and Silverman (2000) found that diverse information arising from alliance networks in biotechnology
firms contributes to patenting rates. Firms in structural hole positions are able to broker the technology among different sectors and industries. Such brokers not only act as conduits of unchanged ideas and resources, but also transform and combine those ideas and resources into new solutions for other actors and subgroups (Hargadon & Sutton, 1997). Some technologies may be potentially valuable in certain industries, but are rarely known in others. By brokering this kind of technology, firms are in a good position to exploit the existing technology and apply it into a new area. Organizational linkages to other firms span the boundary of the firm and introduce a chance to produce original combinations of existing knowledge from different areas. Therefore,

**Proposition 2.** The number of structural hole positions occupied by a firm will be positively associated with its (a) risk-taking, (b) proactiveness and (c) innovativeness.

**Structural Embeddedness: Effects of Direct Ties versus Indirect Ties**

The direct contacts between two or more actors serve as important sources of external resources and information, and potentially provide both resource-sharing and knowledge-spillover benefits (Ahuja, 2000). Resource-sharing enables firms to combine knowledge, skills and physical assets. Further, knowledge-spillover benefits act as information conduits through which news of technical breakthrough and solutions to problems travels from one actor to another.

Indirect ties primarily act as sources of information and exist when the connections between two actors rely on the existence of a common third actor. Indirect ties often result in weak relationships between actors. Granovetter’s (1973) oft-cited article explicitly emphasized the importance of weak ties for bringing in novel information. Galaskiewicz and Wasserman (1993) even argued that the weaker the ties are, the more information an actor has. However, firms have to strike a balance between the amount of direct ties and indirect ties in order to reap the maximum benefits (Ahuja, 2000). Indeed, research indicates there could be a negative impact of the interaction between direct ties and indirect ties on the innovation output of a firm.

**Direct Ties and Risk-Taking**

The number of direct ties a firm maintains can encourage its risk-taking orientation by providing two substantive benefits: socio-emotional support
and resource-sharing. First, firms’ risk-taking behavior is constrained by their external tie qualities. Strong ties through direct relationships, though costly to maintain, provide necessary socio-emotional support once firms venture into unknown areas (Bruderl & Preisendorfer, 1998). For example, the direct relations with friends, family members, and bank officials generate enormous support for young entrepreneurs. Direct ties also help key stakeholders understand the vision and motivations for firms’ risky activities, thus winning wide support from network members. Conversely, indirect ties mainly transmit information, but not support, through an intermediary.

Second, direct ties have the advantage of bringing together resources from different firms as well as enabling resource-sharing (Ahuja, 2000; Arora & Gambardella, 1990). Thus, direct ties provide resource support for risky activities. The presence of interfirm resources may compensate for internal resource insufficiency, buffer firms from downside risk, and ensure the implementation of risky activities for new opportunities.

**Indirect Ties and Proactiveness**
Indirect ties bring knowledge and information from diversified sources. Each node within an indirect ties network acts as a continuous pipeline for transmitting information to the focal firm in a manner that goes well beyond the limited information through direct ties. Firms with many indirect ties are able to initiate novel activities inspired from nonredundant information flows. Although firms can also be directly linked to nonredundant contacts, indirect ties are more likely to provide nonredundancy as direct ties that start as nonredundant contacts are likely to become redundant over time (Burt, 1992). The more indirect ties a firm has, the more opportunities will be presented to the firm. By taking advantage of these indirect resources, firms may be well positioned to anticipate environment changes.

**Direct/Indirect Ties and Innovativeness**
Indirect ties are better than direct ties for bringing creative insights and potentially groundbreaking advancements (Perry-Smith & Shalley, 2003). Heterogeneity enables innovation because firms are more likely to come up with products and services that can be exploited in different markets (Chandler, 1962). March (1991) offered a useful typology of organizational learning: exploration and exploitation. Exploration occurs when firms are engaged in search, discovery and experimentation, while exploitation refers to the process of refinement, choice, production, implementation and execution (March, 1991). Levinthal and March (1993) also defined exploration as the pursuit of knowledge that might come to be known, while
exploitation is the use and development of things already known. This distinction allows us to differentiate the roles of direct ties and indirect ties in the innovation process. Direct ties are more likely to facilitate the exchange of existing knowledge among partners, and such collaboration makes it possible to exploit the shared information and knowledge (Hansen, 2002; Benner & Tushman, 2003). However, indirect ties are more likely to introduce novel information beyond the daily contacts of the focal firms (Ahuja, 2000). It is a process of searching for new ideas and products. Thus, we argue that direct ties lead to exploitative innovation, and indirect ties result in explorative innovation.

**Proposition 3.** Direct ties will be positively associated with (a) risk-taking and (b) exploitative innovation. Indirect ties will be positively associated with (c) proactiveness and (d) explorative innovation.

*Relational Embeddedness: Effects of Density*

Density is a network-level construct characterized by the ratio of existing ties to the maximum possible ties in a network. It reflects the extent of connectedness among network players (Coleman, 1990). For example, a network will have a maximum level of density if everyone in the network knows each other. Firms in the dense network interact frequently with other members and efficiently transmit information (Smith et al., 2001). In addition, a dense network helps to develop a common understanding and norms of the network, which enhance trust and cooperation.

*Density and Risk-Taking*

Social networks function as both information conduits and channels that embody conformity pressure (Coleman, Katz, & Menzel, 1966; Mizruchi, 1993). Dense networks promote stability because any violations will be punished through collective sanctions (Coleman, 1988). Risk-taking behavior is discouraged due to pressure for conformity. In addition, strong relationships de-emphasize the perceived importance of economic incentives while placing a higher priority on social legitimacy in order to preserve the order within the network (Simsek et al., 2003). Brass et al. (2004) argued that actors could become risk averse when overly embedded in their networks. Thus, firms in a dense network tend to avoid dramatic behaviors that are inconsistent with accepted norms and to pay more attention to social concerns.
Density and Proactiveness

Information overlap among network members inhibits the burgeoning of new ideas. Firms are constrained to a conventional way of thinking inherent in dense networks and may be unable to foresee new trends in products and markets. Over-embeddedness locks firms into their own networks and they may not be able to effectively monitor the changes outside their networks. Further, firms often imitate other firms’ decision making (DiMaggio & Powell, 1983) and cohesively tied actors are likely to emulate each other’s behavior (Gulati, 1998). Such behavior will diminish the exploration of new products and markets.

Density and Innovativeness

Dense networks promote in-depth communication, curb opportunism, and facilitate valuable and accurate information exchange (Coleman, 1988; Krackhardt, 1992; Rowley, Behrens, & Krackhardt, 2000; Uzzi, 1997; Walker et al., 1997). First, large-scale interfirm cooperation in areas such as R&D is made possible because network density breeds trust and reduces opportunism. Walker et al. (1997) argued that the social constraints associated with dense, embedded networks could facilitate large relationship-specific investments that help maximize the benefits from collaboration. Members of a densely connected network can trust each other to honor obligations, lowering the risk of opportunistic behavior and creating a better environment for their exchanges (Uzzi, 1996). Additionally, network members are able to exchange fine-grained information, which is crucial for complex innovations. The transfer of knowledge, especially explicit knowledge, is easier and more efficient in a closely linked network. Similarly, Granovetter (1985) argued that embeddedness in dense networks leads to effective interfirm cooperation.

Density, however, may be a mixed blessing. First, conformity in the dense network typically hinders creativity (Amabile, 1996; Cashdan & Welsh, 1966). Dense networks are more advantageous for conveying normative expectations, identity, and affect (Krackhardt, 1992; Podolny & Baron, 1997). Such conformity decreases the chance for useful information to emerge from other cliques (Hansen, 1999). Further, too much density is likely to produce redundant information (Granovetter, 1973). The ease and comfort level of getting information from closely linked actors will encourage repeated contact within the same network (Perry-Smith & Shalley, 2003). Thus, a high-density network will inhibit innovativeness because of a high level of conformity and a lack of openness (Table 1).
Proposition 4. The degree of network density will be negatively associated with (a) risk-taking and (b) proactiveness, and (c) will exhibit an inverted U-shaped relationship with innovativeness such that a moderated degree of density will be associated with more innovative activities than a low or high degree of density does.

**DISCUSSION**

We have discussed the distinct effects of a set of network variables including structural density, structural holes, firm centrality, direct ties, and indirect ties on the three dimensions of the EO construct from an organizational embeddedness perspective. Our aim has been to go beyond a traditional way of thinking about EO by considering interconnected ties among firms. Network forces offer an effective angle through which to analyze the antecedents of EO dimensions compared to a personality approach and/or environment research on EO. As articulated by Shane and Venkataraman (2000, p. 218), the field of entrepreneurship is about “the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited … the field involves the study of sources of opportunities; the processes of discovery, evaluation, and exploitation of opportunities.” Because identifying and exploiting opportunities is explicitly linked to particular positions in a network, such a structurally based theory has intriguing possibilities for entrepreneurial research (Burt, 2000).

In addition to opportunity identification and exploitation, our paper also suggests that network embeddedness has profound impacts on firm behaviors. Central firms in a network, compared with peripheral firms, are
more likely to take informed risks and act proactively. In the meantime, too much centrality can backfire in firms’ innovative activities. Similarly, direct ties promote risk-taking behavior through socio-emotional and resource support; whereas, indirect ties bring about nonredundant information flows and encourage proactiveness. Structural hole positions enable broker firms to manipulate the flow of information and resources among otherwise unconnected actors and spur the orientations of risk-taking and proactiveness for broker firms. A high network density tends to emphasize social conformity and dampen firms’ risk-taking and proactiveness. Too much density will also suffocate the innovative activities in a network. The different network settings thus pose great challenges for firms to develop certain types of EO dimensions.

This paper makes several important contributions to EO research. First, it is one of the first attempts to examine the relationships between firms’ embeddedness and their EO. It explains the complex causal effects on each particular dimension and presents a broad picture for doing EO research. Our paper suggests that risk-taking, proactiveness and innovativeness can be traced to the network environment in which every firm is embedded. Network forces can enhance or dampen certain types of EO dimensions. Second, it suggests that the dimensions of EO may vary independently as proposed by some early researchers. Risk-taking, proactiveness, and innovativeness have different formation mechanisms, and firms may have various combinations under certain network situations. For example, firms may have a high level of innovativeness, but a low level of proactiveness and risk-taking in a dense network.

Third, from a normative perspective, it provides directions for entrepreneurial firms to design their networks. Since networks have varying connotations for EO, how network structure affects EO and, correspondingly, how entrepreneurs deploy resources to set up their network configuration pose a major challenge. Managerial design choices can be made that influence the role and function of networks (Madhavan, Koka, & Prescott, 1998; Nohria & Eccles, 1992). For example, it is important for entrepreneurial firms to consider contingent relationships among EO dimensions and stages of development. Entrepreneurial firms in early stages of development would be more likely to rely on strong ties for obtaining resources, but in the later stages they would be more likely to grow and prosper through weak ties (Hite & Hesterly, 2001).

There are several directions for future research. First, we have only investigated the relationships between network structure and EO in this paper. The next logical step would be to study the structure-EO-performance
link. Consider, for example: What kind of network structure is better for fostering some EO dimensions and ultimately leads to high performance? What are the contingencies involved in this process? The meta-analysis study on the link between EO and performance by Rauch et al. (2005) suggested that a network approach promises great potential for future research in this area. Consistent with this line of research, it would be useful to examine contingent and/or configurational models among the relations of EO, network, and environment. For example, risk-taking behavior may not be rewarded in a network with closure because of the pressure of conformity. Strong and close social ties decrease the perceived importance of economic incentives while placing a higher priority on gaining social legitimacy and preserving order within the network (Simsek et al., 2003). However, a dynamic environment may reduce conformity pressures and promote risk-taking behavior.

Second, an organization’s formal structure, its control and reward systems, and established behavioral norms act as forces solidifying communication patterns and network flows. As organizations become larger, more complex and older, these forces grow so that over time well-developed social networks are established and organizational inertia is developed (Hannan & Freeman, 1984, 1989). Since social networks are channels for the flow of organizational information, network rigidities will impede organizational learning for large firms (Floyd & Wooldridge, 1999). Thus, it would be interesting to compare the network effects for both small and established firms in terms of their EOs.

Third, to maintain focus and clarity, we only investigate the network effects on three widely used dimensions of EO; namely, risk-taking, proactiveness, and innovativeness. However, other dimensions of EO, such as autonomy and competitive aggressiveness (Lumpkin & Dess, 1996), may also be affected by network forces. For example, the degree of autonomy in decision making and goal attainment is a function of firms’ structural positions (Burt, 1983; Floyd & Wooldridge, 1999). In terms of competitive aggressiveness, Gnyawali and Madhaven (2001, p. 437) argued that “given that the structurally autonomous firm enjoys a stronger asset base, early information access, greater status, and control over resource flows, it is more likely to undertake competitive actions than less autonomous firms.”

Last, exploring the internal forces underlying the evolution of networks may provide new insight on the evolving speed of networks. Fast-growing networks are more likely to stimulate an EO than stable networks since entrepreneurs are under constant pressure to change in response to opportunities. Firms in a changing network are expected to be more active
and have fewer constraints on conformity in a dynamic context. And, a firm’s innovativeness will also be spurred since they would be pressured to catch up with the evolving demands from both markets and technologies.

**CONCLUSION**

Taken together, we demonstrate that the organizational embeddedness perspective reveals an important social origin of EO. Risk-taking, proactiveness and innovativeness are not developed in a social vacuum. Rather, they can be either strengthened or weakened by the social networks in which firms are embedded. The differential impacts of network embeddedness on EO dimensions depict a complicated mechanism for EO formation. This research thus has important implications for entrepreneurial firms and policy makers in that they can consciously regulate network relations to promote certain types of EO-related outcomes. It also suggests a useful avenue for studying innovation and competitive behaviors among firms.

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THE CONTEXT OF ENTREPRENEURIAL PROCESSES: ONE SIZE DOES NOT FIT ALL

Frances Fabian and Hermann Achidi Ndofor

ABSTRACT

Past entrepreneurship research has emphasized the importance of the context of the entrepreneur (e.g., personality) along with environmental characteristics as predictors of the success of new ventures. Additional literature has expanded our understanding of how implementation processes such as business planning, social networking, and external financing may be key to new venture performance. This paper offers 12 propositions that link these two literatures. Specifically, we argue that the personality and goals of the entrepreneur, as well as the dynamism and munificence of the environment, may affect how well implementation processes enhance new venture performance.

The progress of theory development reflects certain patterns; for instance, the initial identification of meaningful constructs, followed by an understanding of the underlying processes, and finally, the recognition of boundary conditions through the testing of contingencies and configurations (Pfeffer & Fong, 2005). Entrepreneurship research is no exception. The progress made in understanding the characteristics of individual
entrepreneurs (Aldrich, 1999), firm-level constructs such as entrepreneurial orientations (Lumpkin & Dess, 1996), contingencies (Baum, Locke, & Smith, 2001), strategies (Romanelli, 1989), and configurations (Ndofor & Priem, 2005) have considerably increased our understanding of venture performance.

Similarly, there has been a renewed interest in venture creation processes (Shook, Priem, & McGee, 2003), such as the performance implications of formulating business plans (Shane & Delmar, 2004), networking for social capital (Kalnins & Chung, 2006), and seeking venture financing (Florin, 2005). They have become increasingly prominent as prescriptive “one size fits all” steps in new venture creation processes. While research has examined how these implementation processes contribute to performance, it has not begun to address the boundary conditions of their effectiveness.

Indeed, the study of entrepreneurship entails a varied mix of individuals, organizations, environmental characteristics, and entrepreneurial process actions (Gartner, 1985). The entrepreneurial process exists – among other things – within the contexts of the entrepreneur, the business concept, the resource environment, and the dynamics of the market segment. Singular use of the term “entrepreneurial process,” however, implies a single process that entrepreneurs follow to establish successful ventures. Yet the varied mix of individuals who become entrepreneurs, the resources they possess, the ventures they create, and actions they take – all in environments having different characteristics – suggest a plurality of processes for successful ventures with the potential for equifinality across different scenarios. Gimeno, Folta, Cooper, and Woo (1997) for example, argued that the exit decision-making process for entrepreneurs differed and was based more on individual situational factors than on economic performance.

The implications of a plurality of entrepreneurial processes, however, do not seem to have contributed substantially to our theorizing and empirics on new venture performance. In this chapter, therefore, we argue that the effectiveness of entrepreneurial processes is context-driven. To illustrate the potential for expanding this area, we consider the role of the entrepreneur and the environmental context in determining both the appropriateness and effectiveness of three specific implementation processes: formulating business plans, relying on social networks, and seeking venture capital.

While we cannot avoid mixing entrepreneurs under different constraints (Gartner, 1985), it is incumbent on entrepreneurship research to go beyond identifying the different contexts for entrepreneurship. In particular, there has been little elaboration, with few exceptions (e.g., Liao & Gartner, 2006), on the implications of these contexts for the successful implementation and
subsequent performance of different entrepreneurial processes. More important, such an implication suggests that the best process for building a new venture might differ between two firms because of differences in either the entrepreneur or their environment.

One way to advance this endeavor is to examine different configurations of entrepreneurial and environmental characteristics, implementation processes, and performance. We divide the literature into two substantial bodies of literature that we call, the “context of the entrepreneur,” and the “context of the environment.” Thus, the entrepreneur is viewed as a sort of contextual element for a new venture, who affects implementation performance. The ability of new ventures to successfully implement a process depends in part on the skills and abilities of the entrepreneur. Therefore, this chapter examines how the personality characteristics and goals of the entrepreneur are likely to influence the effectiveness of implementation processes for new ventures. Similarly, in relation to the environmental context, this chapter examines how munificence and dynamism in the immediate market environment are also likely to affect the performance potential of implementation processes. This chapter as such expands on the previous literature by considering how different contexts affect the effectiveness of implementation processes. This offers a fruitful avenue for building some boundary conditions for the effectiveness of implementation processes in enhancing business performance. Fig. 1 illustrates the focus of our theoretical framework.

THEORETICAL BACKGROUND

Entrepreneurship research has heavily emphasized the two sets of variables that predict the choice to become an entrepreneur and subsequently venture performance. The first set, that seeks to predict why some people become entrepreneurs rather than managers, i.e., attain “entrepreneurial status” (Zhao & Seibert, 2006), helps identify the factors that lead to entrepreneurial behavior, and encapsulates research such as how personality characteristics differ between managers and entrepreneurs (Stewart & Roth, 2001; Zhao & Seibert, 2006). It also spans how motivational, demographic, and cognitive variables like self-efficacy, experience, and risk perception can predict entrepreneurial intentions (Simon, Houghton, & Aquino, 1999; Baron & Markman, 2005). This research is particularly important from a macro political dimension, as entrepreneurial discovery and exploitation are central to innovative and competitive economies.
The second set of variables emphasize predictors of new venture success and, as illustrated in the work of Baum et al. (2001), can cross a wide range of variables including motivational, demographic, environmental, strategic, trait, and competency variables. This work is also essential from a normative perspective in promoting the eventual success of entrepreneurial energy within an economy.

Separately, recent research has renewed interest in extending the horizon of entrepreneurship toward how different entrepreneurial processes perform in building successful entrepreneurial organizations (Covin, Green, & Slevin, 2006; Shane & Delmar, 2004). We draw on a definition of entrepreneurial processes as “the methods, practices, and decision-making styles managers use to act entrepreneurially” (Lumpkin & Dess, 1996, p. 36). Our emphasis on implementation reflects what Shane and Venkataraman (2000, p. 218) referred to as examining the idea of “why, when, and how different modes of
action are used to exploit entrepreneurial opportunities.” Indeed, Stevenson and Jarillo (1990) also argued for even more focus in the study of entrepreneurship on process, stating “what” and “why” were not as important as the “how” question for management research. As Shook et al. (2003) emphasized, it is entrepreneurial action, rather than individual characteristics, that is important for venture success. How individual characteristics and other factors may interact with entrepreneurial action, i.e., the effective leveraging of implementation processes in new ventures, is relatively less addressed. Covin et al. (2006, p. 58), for example, argue “that the effect of internal organizational processes on the relationship between a firm’s EO [entrepreneurial orientation] and its performance is an under-explored topic within the EO realm.”

One reason for this lack of a coherent exploration may be due to an evolving description of what constitutes new venture creation processes. Perhaps best known is Katz and Gartner’s (1988) depiction of intention, assembling resources, creating an organizational boundary, and exchanging resources outside the organization. Empirically though, the effort to identify a descriptive process consistent with this framework has been fairly unrewarding, with no one pattern common to new organizations (Reynolds & Miller 1992). Another more recent theoretical depiction of the implementation process considers as central “new resource skill”, which refers to the ability to find both capital and human resources, as well as set up new operations and new systems (Baum & Locke 2004).

Citing recent interest in identifying and differentiating the stages of entrepreneurial processes, Baron and Markman (2005) argued for the literature to begin examining how different variables are likely to perform at different stages of the entrepreneurial process, which they characterized as the early, middle, and later phases. According to their model, the early phase centers on the identification of opportunities and is commonly associated with the outcome of entrepreneurial intentions; the middle phase emphasizes the gathering of resources and may be measured by items such as raising capital or gaining patents; and the later phase centers on managing the enterprise and examines outputs such as revenue and growth. This depiction is compelling in its emphasis on the potential for variables to impact different stages of venture creation.

Still, entrepreneurship researchers have hardly “settled” on what constitute the core “processes” for new venture implementation. Recognizing that we could not hope to be comprehensive in identifying all of the potential processes, we sought to identify concrete action behaviors that both generally align with normative prescriptions found in entrepreneurial
texts (e.g., Katz & Green, 2005) and which have been the subject of recent research interest (e.g., Maurer & Ebers, 2006). Consequently, we developed propositions for three implementation processes that allow us to theorize about the role of contextual constraints on their effectiveness. These three implementation processes, as described below, include formulating formal business plans (Shane & Delmar, 2004), building social networks (Maurer & Ebers, 2006), and seeking external capital financing (Florin, 2005).

In relation to Baron and Markman’s (2005) stages of entrepreneurial processes, formal business plans occupy the first stage, while seeking external capital occupies the second stage, and building social networks would span across the second and third stages.

The importance of context to the prescriptive effectiveness of entrepreneurial process models is not novel. A consensus has developed that new venture performance cannot be examined via any one dimension in isolation (Baum et al., 2001; Chrisman, Bauerschmidt, & Hofer, 1998). Instead, performance is based on multiple contingencies, including firm resources, top management team or founder characteristics, strategy, and environmental characteristics (Eisenhardt & Schoonhoven, 1990). As Lenz (1980) observed, neither the entrepreneur, the environment, nor the implementation of business processes is sufficient to explain performance, but rather, a coalignment of these factors most likely provides the most explanatory power.

Further, venture performance is influenced less by the presence of these variables and more by how well they “fit” together. Fit is defined in terms of consistency across multiple dimensions of organizational design and context (Doty, Glick, & Huber, 1993). This is consistent with a “configurational” approach which, at its basic level, proposes higher effectiveness or better performance for organizations that resemble one of the ideal types proposed by theory (Doty, Glick, & Huber, 1993). Clearly the literature has shown some support for this idea (e.g., Wiklund & Shepherd, 2003), but again, prescriptive advice on implementation processes does not appear to be integrated with these ideas, nor laid out in a programmatic manner as to why and when these processes would be effective. In the next sections, we define the implementation process variables in our theoretical framework.

**Formulating Business Plans**

Formulating business plans, especially due to the ability of formal plans to aid in capital financing, plays a continuing role (Mason & Stark, 2004) in the prescriptions of entrepreneurship (Timmons, 1995). The importance of
formulating and documenting plans in order to follow through with implementing intentions is also supported by research in psychology (Gollwitzer, 1999). Recent research has further confirmed that business planning can have positive performance implications (Liao & Gartner, 2006; Honig & Karlsson, 2004; Shane & Delmar, 2004).

Yet, the formal, rationalistic processes that have composed a substantial portion of management prescription are not universally accepted (Mintzberg, 1994). The main complaint has been potential unrealistic assumptions about the usefulness and plausibility of such time investments (Gumpert, 2003). Similarly, the dynamics of entrepreneurship have led others to reject heavy planning in favor of more adaptability to unfolding information (e.g., Bhide, 1994). Thus, it seems imperative that entrepreneurship theory pursues a better understanding of the contexts, which are likely to enhance or diminish the effectiveness of formulating business plans.

Networking for Social Capital

Obtaining and exploiting social capital has become a visible feature of strategic management research (Adler & Kwon, 2002), and entrepreneurship research in particular (Larson & Starr, 1993; Walker, Kogut, & Shan, 1997). Networking is thus a central activity aimed at obtaining critical social capital. Social capital refers to “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit” (Nahapiet & Ghoshal, 1998, p. 243). Extending the original insights on the importance of external resources (Jarillo, 1989), recent entrepreneurship research has continued to emphasize the ability to generate and tap these supportive social networks as a critical part of new venture creation (DeCarolis & Saparito, 2006; Kalnins & Chung, 2006; Steier & Greenwood, 2000; Westlund & Bolton, 2003).

How networking contributes to performance, however, is more complex; for instance, there is a need to more critically examine the role of trust (Welter & Smallbone, 2006), and how the dynamic nature of such networking may actually later constrain performance (Maurer & Ebers, 2006). The implementation of networking for social capital as a prescriptive recommendation is wrought with difficulty. Prusak and Cohen (2001, p. 87) argue “...social capital is under assault because few managers know how to invest in it. Knowing that healthy relationships help an organization thrive is one thing; making those relationships happen is another.” In general,
there has been sparse treatment of whether networking is always a boon to performance across wide conditions of firm context.

**Seeking External Financing**

Seeking external capital financing has become a central feature associated with entrepreneurial startups. This reflects financial theory that emphasizes maximizing wealth creation through minimizing the firm’s overall cost of capital via optimal equity and debt (Myers, 1984). New venture financing relationships may take many forms such as loans with banks, private equity placements, angel investors, or the more high-profile venture capital. Not all sources of financing are equally appropriate for all ventures or entrepreneurs. Though it clearly can be applied to other types of external financing, a key focus of this chapter is on how the entrepreneurial and environmental context may be connected to the appropriateness of seeking, and the success in acquiring, venture capital (Carter & Van Auken, 2005).

Many new ventures do not use venture capital (Baker & Nelson, 2005). Furthermore, many new ventures that do still fail (Hendershott, 2004). The factors that improve the success of venture capital investments are extensively captured by the finance literature, but this perspective differs markedly from entrepreneurial research in approach. Specifically, entrepreneurship research has not emphasized when venture capital is likely to be a useful direction for a particular venture given entrepreneurial proclivities and the unique constraints of its market environment.

**Interdependence among the Three Processes**

Although we discuss each of these three implementation processes independently, in practice, they are highly interdependent. For example, an entrepreneur could write a business plan to get external financing. In determining the source of the external financing, they can choose an angel investor or a venture capitalist that is well connected with a potential customer (thus acquiring valuable social capital). These processes are examined independently to theorize on two prescriptive questions: are the uses of these implementation processes more important in some contexts than in others? And, concomitantly, under what contexts might the effectiveness of these implementation processes be negated?

To illustrate these ideas, we develop 12 propositions that link the potential effectiveness of the above implementation processes to factors
Table 1. Propositional Relationships Implicated in the Literature.

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<th>Contextual Characteristics</th>
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from the entrepreneurial and environmental context of the firm. By no means is this list meant to be exhaustive, rather it indicates some of the more immediately fruitful possibilities for this area of research given our informal review of the literature. Our propositions are shown in Table 1.

Connecting Implementation with the Context of the Entrepreneur

The literature detailing the role of the entrepreneur in building new enterprises has, by definition, always led to an interest in the personalities and goals of entrepreneurs (Bolton & Thompson, 2000; Kuratko, Homsby, & Naflziger, 1997). Both traits (Baum & Locke, 2004; Zhao, Seibert, & Lumpkin, 2006) and goal-associated variables such as the need for achievement (Locke & Latham, 2002) have been linked to entrepreneurial performance measures (Collins, Hanges, & Locke, 2004). Less examined has been how these traits interact with implementation of new venture processes, thus moderating their effectiveness. The ability to effectively implement important entrepreneurial processes such as the three examined above, i.e., formulating business plans, building social networks, and gaining external financing, is likely to be related to the traits and motivations of the entrepreneur. These processes in turn are then related to venture performance. Thus, we examine how two aspects of the entrepreneurial context – “the Big 5” personality characteristics and entrepreneur’s goals – moderate the effectiveness of implementation processes in new venture creation.
Personality Characteristics

For some time, research has attempted to identify unique characteristics of entrepreneurs vis-a-vis other managers, shown in Fig. 1 as the arrow between entrepreneur context and status. A general consensus developed that there tended to be as much variance within the entrepreneur population as between entrepreneurs and other business people (Brockhaus, 1980; Gartner, 1985). Recent work, though, based on the greater reliability associated with the five-factor model of personality (Costa & McCrae, 1992), indicates that such a conclusion may be premature (Zhao & Seibert, 2006). Along with personality, entrepreneurship status may also be linked to other characteristics such as risk attitudes (Stewart & Roth, 2001; Xu & Ruef, 2004) achievement motivation (Collins, Hanges, & Locke, 2004), self-efficacy, and perseverance (Markman, Baron, & Balkin, 2005).

Research has also suggested identifiable links between new venture performance and attributes such as personality (Begley & Boyd, 1987; Zhao, Seibert, & Lumpkin, 2006), cognitive style (Buttner & Gryskiewicz, 1993), risk profile (Brockhaus, 1980), and individual-level entrepreneurial orientation (Krauss, Fresee, Friedrich, & Unger, 2005). These findings are reflected in Fig. 1 as the link between entrepreneur context and new venture performance.

Little research, though, has successfully investigated how leader characteristics such as personality translate to an ability to effectively leverage firm processes that can, in turn, affect firm performance (Shook et al., 2003). As a suggestive illustration, Peterson, Smith, Martorana, and Owens (2003) found significant relationships between CEO personalities along the five-factor personality dimensions and top management team dynamics; along with ensuing relationships with firm performance. For instance, CEO neuroticism was related to less TMT cohesiveness, which in turn was associated with lower income growth for the firm. Currently, research in entrepreneurship links personality with entrepreneurial status and intentions (Zhao & Seibert, 2006; Zhao et al., 2006), and personality with performance (Baum & Locke, 2004; Zhao et al., 2006) but the process for these effects is less clear (e.g., its effect on critical implementation processes).

The reason this process is so vague may be because the effects of characteristics on performance tend to be more indirect (Baum & Locke, 2004; Ndofor & Priem, 2005). As suggested above, one area that is particularly promising for investigating such processes is personality. Recent meta-analyses built on the five-factor model have initiated a resurgence in personality research. This model refers to the rising consensus that
personality can be validly measured along the five dimensions of neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (McCrae & Costa, 1990) and is also referred to as “the Big 5” (Goldberg, 1990). Drawing heavily from the five-factor dimensions to illustrate our model, we introduce how entrepreneur personality might be linked to the way a new firm is able to implement various new venture processes.

Formulating Business Plans
The act of producing a business plan is thought to improve venture performance in a variety of ways, for instance, by clarifying goals so that they can be more specifically pursued, by unearthing new useful information needed for the plan, and by focusing attention on the most appropriate tasks (Shane & Delmar, 2004). In fact, the essence of business plan formulation is less in the output (finished plan) and more in the new information unearthed in the process. These benefits seem likely to require that the entrepreneur be open to new, or discrepant, information to their existing worldviews. The big five dimension of openness to experience captures the personality traits of intellectual curiosity, seeking new experiences, and considering novel ideas. If indeed formulating business plans is effective to the extent that the entrepreneur is amenable to accepting and considering new information and techniques, then it is likely to improve the strategies of entrepreneurs who are more open. Conversely, the more conventional and not-so-dynamic nature of entrepreneurs who score low on this dimension may lead them to formulate poorer plans, and even be more constrained to these same poor plans than their more open counterparts. Thus we expect:

**Proposition 1.** The characteristics of the entrepreneur will moderate the relationship between formulating a formal written business plan and venture performance. The relationship between formulating business plans and performance will be stronger for new ventures in which the entrepreneur is high on the openness to experience personality characteristic.

Other characteristics such as cognitive style may be important as well. For instance, differences in cognitive style may make an entrepreneur unwilling to draw up a business plan. Indeed, as one advisor put it, “First time entrepreneurs often cringe when sitting down to write their business plan. Some spend six months agonizing over each period and comma, and even worse, others spend six months procrastinating and do nothing” (Ventures, 2005). This may reflect a more intuitive bent; as noted by Bird (1988), the analytic or rational approach tends to underlie processes such as the
composition of formal business plans that can be in opposition to the intuitive, contextual thinking of the visionary entrepreneur. Other researchers also emphasize the prevalence of an intuitive type of cognitive style in many entrepreneurs (Allinson, Chell, & Hayes, 2000; Buttner & Gryskiewicz, 1993) that may counteract the usefulness of time investments in formal business plans.

Building Social Networks

DeCarolis and Saparito (2006) argued the importance of understanding the interplay between personality factors and the use of social networks in entrepreneurial behaviors. Extraversion may be an important personality dimension in effective networking behavior, and it refers to social interactive style, such as being outgoing and seeking and liking to work with groups of people (Costa & McCrae, 1992). Extraversion has been found to be a key stable correlate with the existence of supportive social networks from college to midlife (Von Dras & Siegler, 1997). Further, within the business domain, Forret and Dougherty (2001) found a significant relationship between extraversion and the level of networking behaviors made by 418 managers/professionals. Recent research has also indicated that creating social networks may be related to self-monitoring (Mehra, Kilduff, & Brass, 2001), which is also related to extraversion (Morrison, 1997). Thus, we argue:

**Proposition 2.** The characteristics of the entrepreneur will moderate the relationship between building social networks and venture performance. The relationship between building social networks and performance will be stronger for new ventures in which the entrepreneur is high on the extraversion personality characteristic.

Other entrepreneurial characteristics may also be implicated in the effectiveness of building social networks, such as high emotional intelligence (Weiand, 2002). While this area of research is still in infancy, a sizable number of researchers investigate similar constructs under the rubric of emotional knowledge, intelligence, or emotional quotient. Among Goleman’s (1995) five elements of emotional intelligence is the ability to enter and sustain relationships with others. Thus, one might differentiate extraversion as the propensity to interact with others, while emotional intelligence stresses the ability to develop these interactions. In both cases, it is likely that the potential effectiveness of forming and tapping social networks for a young firm may be confounded with entrepreneurial characteristics. Wholesale prescriptions for building social networks may be
unwarranted for certain types of entrepreneurs, who may possibly be distracted from other important entrepreneurial tasks.

Seeking Venture Capital
A key issue of obtaining external financing is the stressful difficulties of meeting outsiders’ demands for performance deadlines, which can lead to firm failure due to conflict between the entrepreneur and venture financiers (Van de Ven, Venkatraman, Polley, & Carud, 1988). The personality dimension of neuroticism includes tendencies toward anxiety, hostility, self-consciousness, and impulsiveness (Costa & McCrae, 1992) and reflects a person who responds emotionally to situations. Yet clearly, the successful venture financing relationship requires that the entrepreneur handle pressure and outside demands on a continuing basis. Neuroticism has also been linked to low self-efficacy and locus of control (Zhao et al., 2006), and thus it is unlikely to provide the entrepreneur with the ability to persuade investors to have confidence in the new venture.

Proposition 3. The characteristics of the entrepreneur will moderate the relationship between gaining and leveraging venture capital financing and performance. The relationship between gaining external capital and performance will be weaker for new ventures in which the entrepreneur is high on the neuroticism personality characteristic.

Other characteristics that are likely to be important to the success of seeking external financing include the entrepreneur’s approach to risk (Forlani & Mullins, 2000). Researchers have found that entrepreneurial performance may be affected by undue attitudes toward risk such as related to overconfidence, positive illusions, or hubris (Forbes, 2005; Hayward, Shepherd, & Griffin, 2006; Ottesen & Grenhaug, 2005). Some theorists have even found that the tendency toward new venture creation may reflect higher testosterone levels that increase risk propensity (White, Thornhill, & Hampson, 2006)! Barton & Mathews (1989) urged research to explore the connection between entrepreneurial characteristics like risk aversion and an interest in pursuing capital finance. Recent research has indeed shown correlations between financing and the perceptions entrepreneurs hold about the riskiness of different capital structures (Carter & Van Auken, 2005). Thus, whether due to the compatibility between the ability to handle risk as found in neuroticism, or due to characteristics such as propensity toward risk (either due to personality or biased perceptions), it is likely that the entrepreneur can interact with the firm’s ability to manage external capital financing affecting the success of this process.
Goals

The importance of examining the goals and related motivations of entrepreneurs in understanding performance was noted by Baum and Locke (2004, p. 591). “Goal theory proposes that specific, challenging goals lead to higher performance than other types of goals. No other theory of motivation has deeper or broader empirical support at the individual, group, and unit level.” Indeed, research has repeatedly identified significant findings for the effect of goals on performance thresholds (Gimeno et al., 1997), meeting financial goals (Covin & Slevin, 1991), growth (Baum & Locke, 2004), and survival (Carsrud & Krueger, 1995). Similarly, some related motivational goals, such as autonomy (independence) (Kolvereid, 1992) or personal motivations (Birley & Westhead, 1994) and intentions (i.e., the state of mind that focuses behavior toward a specific goal, Bird, 1988), are likely to influence new venture performance. Research repeatedly indicates that these goal-related dimensions have important performance implications (Carland, Hoy, Boulton, & Carland, 1984; Vesper, 1980; Shane, Locke, & Collins, 2003). Goals and objectives are latent, however, and thus can only influence performance indirectly through their effect on behavior. Yet, how these goals and objectives influence venture performance through their effect on new venture implementation processes has not been directly addressed.

Formulating Business Plans

Shane and Delmar (2004) empirically connect goal setting to the effectiveness of business plans. They argued business plans are especially helpful in that planning can integrate goals into behavior, identify needed skills and resources, and create a framework for action. This is consistent with Castrogiovanni’s (1996) asserted role for learning in the planning process. From another standpoint, Carter, Gartner, and Reynolds (1996) examined differences between entrepreneurs who were still trying to build a business, and other entrepreneurs who were further along. They found that the less successful entrepreneurs had performed fewer activities, and in particular, had focused on less “active” types of activities, in particular, such as formulating a business plan. Yet, one way of reconciling these two findings is that the existing level of clear goals and motivation of the entrepreneur may be interacting with the effectiveness of the process of formulating business plans. In particular, an entrepreneur who begins a business with a clear goal regarding the market, product, and process may be more aided by testing the model along the lines found in Carter et al.’s study, rather than
delaying their venture with formal planning. Other entrepreneurs, though, perhaps even most, will improve their performance if they formalize their goals through the process of formulating a business plan.

Proposition 4. The goals of the entrepreneur will moderate the relationship between formulating formal business plans and venture performance; the relationship will be lower the greater the entrepreneur’s pre-existing clarity on goals.

Building Social Networks
The importance of social networks to much of new venture creation has had a longstanding role in the literature (e.g., Aldrich & Zimmer, 1986). Yet little has been done in regard to how key networking assets may actually be a deciding factor in the entrepreneur’s choice to continue in venture creation. Specifically, social networks may contribute to entrepreneurial performance in different ways than reflected in economic measures, and thus contribute to non-financial reasons for exit (Ronstadt, 1986). For instance, social capital accumulated via networking may act as a substitute for financial capital for entrepreneurs with social disadvantages, such as minority or ethnic immigrant communities (Aldrich & Waldinger, 1990; Kalnins & Chung, 2006). A large network size for example, may allow immigrant entrepreneurs to take on markets beyond their ethnic enclave, while other dimensions of social networking, such as co-ethnic contact, might act to reinforce more of an enclave strategy (Ndofor & Priem, 2005). Thus, networking may serve as either a constraint or enablement depending on the goals an entrepreneur has for forming and tapping social networks.

Proposition 5. The goals of the entrepreneur will moderate the relationship between building social networks and venture performance; the relationship will be weaker when the entrepreneur’s venture goal in networking is less financial, and/or aimed at meeting unique community needs.

Seeking Venture Capital
The importance of gaining venture capital financing is clearly affected by the goals of entrepreneurs. For example, an interest in growth is likely essential in driving entrepreneurial growth behaviors (Baum & Locke, 2004) like seeking debt or venture backing. In contrast, entrepreneurs who seek autonomy may be negatively affected by the successful adoption of venture
capital partners. In particular, venture capital brings in a set of partners with
stakes in the decision making of the firm, and thus is likely, as shown in
recent research, to attenuate the power of the founder (Williams, Duncan, &
Ginter, 2006). Indeed, the ability to monitor and control the efficient
founding of a firm is a critical aim for venture capitalists (Dessi, 2005), and
is likely to create considerable tension for entrepreneurs that value
autonomy (Boot, Gopalan, & Thakor, 2006). Finally, other research has
examined in greater detail links between the motivations of entrepreneurs
and their choices with regard to gaining private equity financing (Morandin,
Bergami, & Bagozzi, 2006). Many entrepreneurs, for instance, have been
successful in the face of extremely scarce resources by employing a type of
enacted brokerage, possibly enhancing possibilities for using their “creati-

vity, improvisation, and social skills” (Baker & Nelson, 2005).

Proposition 6. The goals of the entrepreneur will moderate the relationship
between seeking venture capital and venture performance; the relationship
will be weaker the more the entrepreneur’s goals stress autonomy or
creativity, and greater when the goal is toward venture growth.

Connecting Implementation with the Context of the Market Environment

The importance of environmental characteristics in predicting new ven-
ture success has an extensive legacy (Korunka, Frank, Lueger, & Mugier,
2003; Sandberg & Hofer, 1987; Romanelli, 1989). The environment
contains the resources and customers needed by a venture to survive, and
all organizations need to be able to acquire these critical resources from
stakeholders within their environment (DiMaggio & Powell, 1991) to
endure and prosper. In deciding whether or not to provide resources to a
venture, institutional theory argues that stakeholders rely on the legitimacy
of the organization (DiMaggio & Powell, 1991). Unfortunately for new
ventures, they do not have the track record of past actions and performance
needed to gain legitimacy and the corresponding access to environmental
resources. This lack of history presents a “justifiable lack of confidence
on the part of customers, distributors, and suppliers that the venture
will survive and therefore little reason to provide patronage” (Starr &
MacMillan, 1990, p. 83). Conditions in the environment, such as the relative
level of resources available, or the predictability of success for different
strategies, may exacerbate this problem of gaining external resources for
new ventures.
Munificence, which captures the level of resources in the environment, (Castrogiovanni, 1991) and dynamism, which refers to the unpredictability of market change (McNamara, Vaaler, & Devers, 2003) are both heavily studied constructs in both management research in general and entrepreneurship in particular (Castrogiovanni, 1996). Moreover, using environmental constructs as potential moderators between firm processes and firm performance has a fairly extensive legacy in management research (Hart & Banbury, 1994; Tegarden, Sarason, & Banbury, 2003).

Indeed, a recent study by Liao and Gartner (2006) provides a template for thinking about modeling relationships between environmental dimensions, processes and performance. Their work found that perceived uncertainty moderated the relationship between the timing of venture plans and their performance. In particular, early plans were more important in uncertain environments while later plans were more important in stable environments. This implies that the environment provides boundary conditions on the effectiveness of different new venture processes.

Munificence

Munificence refers to the “magnitude of the opportunity” in the environment (Castrogiovanni, 1996) and in particular deals with variables such as the level of demand or availability of funding that can help new ventures succeed. When gaining resources from the environment is relatively easy, firms need to emphasize new venture implementation processes that stress other imperatives than external resource acquisition to gain competitive advantage. This is because all competitors in munificent environments may be able to access these resources easily as well, resulting only in attaining competitive parity.

Formulating Business Plans

One way of gaining legitimacy from outsiders may be through communicating a compelling vision through a formal, written business plan. Indeed, citing recent work, Liao and Gartner (2006) noted that startup entrepreneurs might “create a plan as a way to legitimate the viability of the prospective new business with those stakeholders with the resources required to develop the venture.” Yet, even in their own study, they found over 75% of their respondents who claimed to use planning did not draft formal written plans, but rather relied on plans “in their head” or “informal plans.” Still, business plans are considered an important symbolic step toward gaining resources from external parties (Castrogiovanni, 1996).
In contrast, in very munificent environments, entrepreneurs may find less need to invest time in this process. Another aspect of munificent environments may be that they are capable of generating the necessary cash flow as a substitute for efforts to tap external parties. Castrogiovanni (1996) argued that other important rationales for business planning—learning, symbolism and efficiency—are unlikely to be as necessary in munificent environments. Moreover, entrepreneurs may feel pressured to take action, rather than invest in formal planning, to respond to the immediate munificent opportunity. His proposition in this regard, then, argued that a munificent environment would cause less planning by entrepreneurs.

A slightly different question, then, is whether planning in munificent environments is positively or negatively related to performance—in other words, is planning in a munificent environment likely to be less successful, or even detrimental, to performance as compared to not planning? A re-evaluation of data in three recent studies which had combined formal and informal business planning processes (Delmar & Shane, 2003; Liao & Gartner, 2006) might allow for some insight as to whether formal written plans are necessary to gain the positive planning effect. Honig and Karlsson (2004) found that indeed such written plans were products of external institutional pressures, and did not evidence any positive survival or profitability performance effect. We propose:

**Proposition 7.** The munificence of the environment will negatively moderate the relationship between formulating a business plan and new venture performance.

**Building Social Networks**

Shane and Stuart (2002) argue that when stakeholders are unable to evaluate a venture due to its newness, they can still provide resources to the venture based on their relationship with the entrepreneur. These relationships can provide a conduit through which a venture can acquire environmental resources until it is able to establish its reputation and legitimacy. The relevance of social networking in accessing environmental resources will, however, depend on the level of other resources (or lack thereof) possessed by the entrepreneur.

The “compensation hypothesis” (Bruderl & Preisendorfer, 1998) argues that entrepreneurs use an extended network to make up for a lack of other human and financial capital assets. Thus, the value of (and proclivity toward) utilizing social networking to access external resources will be less to entrepreneurs who already possess the requisite resources due
to a munificent environment. Conversely, hostile environments require that the entrepreneur spend more effort in the area of building social networks to create relationships that are their own form of resource, or social capital, to launch the firm (Ahlstrom & Bruton, 2006). We propose:

**Proposition 8.** The munificence of the environment will negatively moderate the relationship between building a social network and new venture performance.

*Seeking Venture Capital*

The potential link between environmental context and success of an implementation process is especially salient in the area of seeking venture capital. For instance, local geographical munificence is strongly related to the success of gaining venture financing (Green, 2004). One explanation of why geographical munificence in venture assets occurs is based on the idea of “agglomeration economies of scope” and has become one of the more common terms for explaining why venture capital is likely to be concentrated in its disbursal. Thus, the venture capital literature suggests that regional disparities exist in the success of seeking venture capital, and that these disparities are related to munificence. In particular, it appears that seeking venture capital is more likely to be successful in geographically munificent environments, and thus more likely to contribute to performance in this arena. We propose:

**Proposition 9.** Munificence will positively moderate the relationship between seeking venture capital and performance.

This fairly straightforward assertion recommends further related research that may engage the issue of whether all munificence is “created equal” across firms. For instance, recent work linked startup financing and success to the “spawning” practices of existing corporations. In a comparison of the relatively successful Fairchild against Xerox, it was found that undiversified, originally venture-backed firms are more likely to spawn new entrepreneurs than other technology firms (Gompers, Lerner, & Scharfstein, 2005). Thus, more theorizing about why munificence improves venture performance may offer some surprising insights. In the case of Fairchild and Xerox, the proliferation of a firm strategic logic to its spinoffs may be more successful at explaining how environments become munificent and attract venture capital than a perspective on the relative abundance of financial resources on a geographical scale.
New industries are likely to have unique dynamics, which will determine the number and type of entrepreneurs that will succeed in the environment (Miles, Heeley, & Covin, 2000; Vanderwerf, 1993). Yet how dynamism moderates the effectiveness of firm processes provides mixed results (Miller & Cardinal, 1994). One explanation may be that different kinds of performance metrics, like quality versus innovation, will perform differently in dynamic environments under the same type of process (Tegarden et al., 2003). Similarly, because the type of performance entrepreneurial firms pursue (e.g., the creation of new markets) may differ from that of large firms, dynamic environments may hold unique implications for the performance of entrepreneurial implementation processes. Below we offer some considerations about how dynamism may affect the performance of new venture processes.

**Formulating Business Plans**

The effectiveness of planning in dynamic environments is contentious, though the research for a relationship between large firm planning and dynamism suggests that planning is more positive in dynamic environments (Tegarden et al., 2003). Bhide (1994) argued that the premise for formulating business plans for smaller entrepreneurial firms is at least twofold: first, it focuses strategy for the startup in a coherent form; and second, it serves as necessary documentation for external capital applications. In regard to the second premise, many entrepreneurial studies acknowledge that a considerable number of entrepreneurs do not use external capital to fund their startups (Baker & Nelson, 2005; Carter & Van Auken, 2005). Thus, for this sizable population the question becomes, does pursuing a formal business plan improve effectiveness by focusing on the creation of a coherent strategy? Schwenk and Schrader (1993) assessed 14 studies and concluded that they indicated a small, but positive relationship between planning and performance in small businesses. The role of environmental conditions in affecting business plan performance has been mixed, with evidence falling both ways for planning in turbulent environments (Brews & Hunt, 1999). Brews and Hunt’s (1999) positive effect for planning in turbulent environments was associated with a 4-year lag, leading them to conclude that there may be a considerable period of learning how to plan required. Even recent studies that have suggested that business planning per se improves performance under increased perceived uncertainty is not ironclad. For instance, Liao & Gartner (2006) found that only one-third
of their entrepreneurs that were identified as having business plans actually made formal plans and the remaining two-thirds referred to their plans as either informally written or in their head.

Mintzberg (1994), for example, argues against the use of formal strategic planning and contends that it can actually be counterproductive, potentially forestalling necessary adaptation. Others have argued that it is critical to encourage entrepreneurial actions that can uncover important information (Baker & Nelson, 2005; ogilvie & Hauge, 1998), and which may even be more impressive to external actors (Gumpert, 2003). Castrogiovanni (1996) similarly proposed that while environmental dynamism may prompt greater planning, it also potentially impedes the advantages of planning by making the collected information more costly and difficult to interpret. Yet, 10 years later, we believe the moderating effect of the usefulness of formal planning when objective environmental conditions are changing is relatively untested. Thus, we propose:

**Proposition 10.** Environmental dynamism will negatively moderate the relationship between formulating written business plans and venture performance.

**Building Social Networks**

Social networks are thought to offer some of their greatest advantages in their ability to enable information transfer (Maurer & Ebers, 2006). Thus, the usefulness of exploiting social networks may be related to the ability for this process to inform an entrepreneur on the key strategic choices facing the organization. Black and Fabian (2000) posited that new entrepreneurs select different subsets of entrepreneurial orientations, and these differences may be theoretically linked to differential value in tapping social networks. For instance “homing” is defined as refining “practices within a market structure by emphasizing the acquisition and use of information available from the relevant economic agents in the marketplace” while “enterprising” orientations are more aimed at imposing new definitions into the marketplace. Thus, depending on the type of dynamism in the marketplace – either high uncertainty which can be resolved through greater information or high ambiguity which is resolved by firm strategies – may determine whether social networks are of greater importance in the former situation.

The implication of this perspective is that social networks will be differentially effective based on the type of dynamism in the environment and the ability for the network to provide venture-enhancing information. For instance, Eckhardt and Shane (2003) argue strongly for examining the
context of opportunity and stress the issue of asymmetries of information in a substantial set of theories about entrepreneurial opportunities. In particular, asymmetries of information may significantly alert entrepreneurs to new opportunities by early access to new information. Their arguments also suggest that some kinds of dynamism are likely to have information dispersed unequally across various market participants, while other types of dynamism may not make social networks as useful in informing the entrepreneur, because of the novelty of the dynamic opportunities. Thus, we propose:

**Proposition 11.** Dynamism moderates the relationship between building social networks and new venture performance. Dynamism characterized by uncertainty resolution will positively moderate the performance implications of social networks, while disruptive dynamism will be more amenable to unique firm strategies.

*Seeking Venture Capital*

We found little theory in the management literature that linked the success of seeking venture financing to the dynamism of the environment, with one anecdotal exception. Writing from the perspective of an “ex” venture capitalist, MIT Lecturer Howard Anderson (2005, p. 43) stated, in reference to the current stagnate funding climate, that “… these changes in venture funding are structural, not cyclical. VCs are actually like cyclical markets; we can buy in cheaply and wait for exuberance to bail us out.”. Dynamic environments, due to greater inherent uncertainty in the value of ventures, may increase the span of ventures deemed acceptable for funding, and thus increase the value for an entrepreneur of seeking such investments.

Baum and Silverman (2004) noted that while venture capital funds in general do not succeed, research does indicate an advantage to new ventures that receive these funds. In their own study, they found that alliance and technological resources were of greater value than top management resources in both attracting venture capital funds and startup performance. In dynamic environments, it may be that these same technological and alliance resources become more difficult to formulaically evaluate, thus increasing the “hit rate” for entrepreneurs seeking to gain venture capital. While our theorizing is only formative at this juncture, the potential for understanding what environments have the greatest potential for entrepreneurs to gain funding “at the edge” is of great interest to entrepreneurs. Thus, we tentatively offer:

**Proposition 12.** Dynamism positively moderates the relationship between seeking venture capital and venture performance.
DISCUSSION AND IMPLICATIONS

Entrepreneurship is central to the vitality of economies through the creation of new jobs, businesses, and opportunities (Shane & Venkataraman, 2000). Entrepreneurial success, therefore, is important for the continuous growth and rejuvenation of economies. Yet despite this centrality, there is a preponderance of new venture exits, with 34 percent of US startups closing within their first 2 years (Headd, 2004). Similarly, research findings on what leads to entrepreneurial success have been inconsistent at best, and more often contradictory (Shook et al., 2003). For example, while business researchers, economists, entrepreneurs, and venture capitalists all agree that the entrepreneur is central to the performance of a venture, research linking the entrepreneur to venture performance has been equivocal. More recently, consensus has developed that research focusing on both processes (e.g., Shane & Delmar, 2004) and a combination of factors (Baum et al., 2001) provide better insights into new venture performance.

We build on these recent advancements to propose the existence of a plurality of entrepreneurial processes, which recognizes different approaches to implementation in entrepreneurial ventures. There is equifinality in the performance implications of these different processes because their success depends (among other things) on the entrepreneur and the environment. Thus, we argue that the effectiveness of entrepreneurial processes is context-driven by examining the role of the entrepreneur and environmental context in determining the appropriateness and effectiveness of a selected set of new venture processes. Incorporating the contingency of context in entrepreneurial processes will not only improve the consistency of research findings, but will also improve the quality of normative prescriptions and thus (hopefully) reduce the exorbitant rate of new venture failures.

Successful empirical examination of the propositions in this chapter will entail adhering to recent calls by entrepreneurship researchers for the utilization of multi-level (e.g., Baum et al., 2001) and integrated (e.g., Eisenhardt & Schoonhoven, 1990) models to gain a better understanding of the determinants of new venture performance. Individual-level factors (e.g., entrepreneur’s characteristics), firm-level factors (e.g., venture business plan, resources) and environmental-level factors (e.g., industry characteristics such as dynamism) will all have to be integrated in any meaningful empirical test of the propositions. A compelling research effort would entail a longitudinal multi-industry study of nascent ventures beginning at the formative stages to a target event (such as first sale or IPO). Such a longitudinal approach addresses the damaging potential for
survival bias (because the unsuccessful ventures will drop out) in relying on cross-sectional efforts.

In developing the propositions, we assumed that the various entrepreneurial processes were independent. Future research will benefit from examining how the various entrepreneurial processes interact with each other in addition to interacting with the entrepreneurial and environmental contexts. It could be, for example, that superior social capital from the successful networking of an entrepreneur may reduce the need for a formal business plan in seeking external financing. A close relationship between an entrepreneur and key individuals who possess resources needed by the new venture (such as angel investors, venture capitalists and potential suppliers) provides an informal conduit through which the venture can access these resources. This conduit may reduce or eliminate the necessity of a very formal business plan.

Furthermore, while we develop propositions on how the entrepreneurial and environment context would influence the effectiveness of various new venture processes, these relationships could be recursive. Is it possible for new venture processes to shape or affect their contexts? If new venture processes are examined as iterative processes with feedback loops, then the possibility exists for these processes to shape their contexts. For instance, it was noted that the process of undergoing the composition of formal business plans might improve the entrepreneur’s performance and ability (Shane & Delmar, 2004). Also, the notion of micro-level actions shaping macro-structure is also not new. Within the sociology literature for example, Gidden’s (1984) structuration theory examines the process through which individual-level actions shape and change the structure of the institutional environment. This is more likely to be the case in nascent industries (usually populated by new ventures) where the norms of competition, industry structure, etc. have not become rigidly institutionalized. Extending research by Hendershott (2004), perhaps periods of an inordinate reliance on venture capital could increase the dynamism of market shakeouts, for instance. Thus, future research could benefit from taking our propositions one step further and examining the iterative relationship between context and process.

Finally, this chapter offers the opportunity to step back from the entrepreneurship literature and identify some of the pressing demands in our understanding of entrepreneurial processes. As entrepreneurship educators as well as researchers, we realized that the variance in the contexts of our audience (entrepreneurs and soon-to-be entrepreneurs) necessitates a customized approach to prescribing entrepreneurial processes. Entrepreneurial
processes are more or less likely to lead to success based on the characteristics of the founding entrepreneur and the dynamics of the environment. To the extent that the effectiveness of entrepreneurial processes is context-driven, then our prescriptions have to be adjusted accordingly. While our science may tell us that in a sample of ventures the formulation of business plans may be related to improved new venture performance, we would be wise to recognize that perhaps some entrepreneurs and ventures may not be best suited to following the crowd. One “size” certainly could not fit all!

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