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Tim Blumentritt

Kennesaw State University, tblument@kennesaw.edu

Wade M. Danis

Georgia State University

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Business Strategy Types and Innovative Practices

Tim Blumentritt
Assistant Professor of Management
Kennesaw State University

Wade M. Danis
Assistant Professor of International Business
Georgia State University

This study explores how firms with different strategic orientations manage innovative practices. Specifically, we examine differences in how firms with contrasting strategic orientations view the environmental and organizational factors that influence their management of innovation. Although there are many dimensions of strategic behavior, our focus on innovation is driven by a substantial body of empirical and theoretical work that highlights its increasingly critical role as a source of sustainable competitive advantage (Eisenhardt and Martin, 2000; Fiol, 1996; Storey, 2000; Teece *et al.*, 1997).

This article contributes to the integration of the strategic management and innovation perspectives by empirically examining how innovative practices vary among firms with different strategic orientations, thereby achieving tighter integration between these two important theoretical perspectives. In doing this, we begin to address some important ques-

tions which are likely to be of crucial interest to both scholars and practicing managers. For example, how do innovative behaviors in strategically conservative firms differ from those in firms that are less conservative? Are the former less innovative than the latter, or do they simply target their innovative activities to different areas of the value chain? Likewise, what are the most important sources of knowledge and innovation for such firms and how do they differ? By exploring these and related questions we provide new insights into organizational strategies and related innovative behaviors.

The article proceeds as follows. We first establish a foundation for our study by examining the literatures on strategy and innovation, especially concentrating on the Miles and Snow (1978) strategy typology. We then develop hypotheses on relationships between a firm's strategy type and its management of innovation. We then test the hypotheses using data from

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244 firms. A discussion of the empirical results and conclusions drawn from them close the article.

LITERATURE REVIEW

Strategy and Innovation

One key to successful strategic management is the ability to achieve fit or coherence among a set of competitive factors, both internal and external to the organization, in a manner that facilitates high performance. The strategic choice perspective (Child, 1972) argues that organizations do not simply react to their environments but dynamically interact with them via the strategic actions of top managers. Achieving strategic fit thus requires alignment of organizational resources, capabilities and competencies with environmental opportunities and threats (Bourgeois, 1980; Schendel and Hofer, 1979). Beyond this, proper fit requires internal consistency with regard to the firm's overall activities and operations. In this sense, strategic management constitutes a "pattern in a stream of decisions" (Mintzberg, 1978) intended to dynamically regulate the relation between an organization and its environment while at the same time ensuring that internal interdependencies are efficiently managed and that strategic actions are inherently consistent. While strategic managers strive to formulate cohesive strategies to guide managerial decision making, the results of these decisions may be unanticipated. Mintzberg (1978) distinguished between deliberate strategies, whereby an intended strategy is actually realized, and emergent strategies, whereby a realized strategy may have never been intended. This notion has

subsequently been extended (Brown and Eisenhardt, 1998; Jennings *et al.*, 2003; Mintzberg *et al.*, 1998; Tegarden *et al.*, 2003) to further highlight the dynamic interplay between the organization and its environment and the distinctions between rational and extemporaneous aspects of strategic management.

Through the ideas of dynamic fit and interdependencies, the strategic choice perspective introduces the notion of equifinality into examinations of firm performance—that is, within similar environments there may be multiple equally effective organizational strategies (Doty *et al.*, 1993). Firms may thus establish competitive advantage on the basis of different sets of distinctive competencies, which are aggregates of specific activities that organizations perform especially well relative to other organizations within a similar environment (Selznick, 1957; Snow and Hrebiniak, 1980). For example, some firms are particularly adept at developing new products and markets, whereas others excel at delivering existing products and services in more efficient and cost-effective ways. Equifinality, therefore, suggests that different strategic approaches may represent equally viable means of establishing competitive advantage in a given industry, whereby high performance is contingent upon achieving consistency across multiple dimensions of organizational design and context (Doty *et al.*, 1993).

The influential resource-based view (RBV) of strategic management (Barney, 1991) has focused on how firms develop distinctive sets of capabilities that provide sources of sustained competitive advantage. Consistent with the notion of equifinality, firms are assumed to be heterogeneous

with respect to resources, capabilities and endowments, which are acquired and developed through idiosyncratic and path-dependent processes that cannot be easily duplicated by competing firms. Scholars have linked the RBV to the concept of market dynamism (Brown and Eisenhardt, 1998; Eisenhardt and Martin, 2000; Teece *et al.*, 1997) using the term "dynamic capabilities," which describes the strategic and organizational processes by which managers alter their resource configurations to achieve strategic fit with the environment and/or to create market change. In their view, effective patterns of dynamic capabilities vary with market dynamism. While some facets of strategic management suggest patterned activity oriented to relatively specific objectives, creative and improvisational behavior provides sources of strategic flexibility and sustained competitiveness. The managerial challenge is to reconcile improvised and innovative aspects of strategy, which are potentially disruptive, with existing resource endowments, capabilities and organizational routines, which reflect prior strategic choices. As such, the role of innovation and the targeting of innovative efforts should be somehow linked to the distinctive competencies and strategic orientations of a particular firm.

While scholars have recognized that innovation and strategy are intertwined in efforts to create sustainable competitive advantage (Cahill, 1998; Ettlie *et al.*, 1984; Ireland *et al.*, 2001; Knott, 2003; Mone *et al.*, 1998; O'Brien, 2003), there is surprisingly little work that explores how firms with different strategic orientations differ with regard to specific innovation practices (see Ettlie *et al.* (1984) for a notable exception), and an un-

derstanding of innovative behavior in organizations remains relatively undeveloped (Wolfe, 1994). Although it is beyond the scope of this article to provide a detailed review of the expansive literature on innovation, we discuss here a representative sampling of the work that is most germane to the strategy-innovation link, and describe how this study will extend such work in the context of strategic management.

A large amount of research has focused on organizational attributes that differentiate more from less innovative firms. A number of attributes have been examined including structure, managerial characteristics, available resources, administrative intensity, and internal/external communication (see Damanpour (1991) for a review), although no set of explanatory variables has emerged (Wolfe, 1994). This may be because research in this tradition typically centers on whether or not organizations innovate (e.g., adoption decisions), rather than on how they innovate. Although our work fits within this broad research stream, we adopt a more process-oriented approach by examining the nature of innovative activities rather than adoption decisions. We focus on strategic orientation as an attribute because it encompasses a number of previously investigated organizational features in a holistic manner.

Researchers have also distinguished among several types of innovation based on certain characteristics or attributes. Examples include radical versus incremental (Dewar and Dutton, 1986), sustaining versus disruptive (Christensen, 1997), competence enhancing versus competence destroying (Tushman and Anderson, 1986), product versus process

(Utterback and Abernathy, 1975), and technical versus administrative (Damanpour and Evan, 1984). Much of the research on innovation type is concerned with industry-level phenomena, such as environmental change (Tushman and Anderson, 1986) and innovation diffusion (Rogers, 2003; Teece, 1980), rather than its firm-level determinants, which are our concern, although some has also focused on innovation-performance links (Damanpour *et al.*, 1989) and innovation adoption at the firm level (Ettlie *et al.*, 1984). This article adds to the literature on innovation types by examining whether there are propensities among firms to focus on certain innovative activities as a function of their strategic orientation.

We have argued thus far that effective strategic management requires a coherent yet flexible fit between organizational capabilities and environmental context and that innovative efforts should be linked to the strategic orientations of a particular firm. We next discuss the strategy typology we used to frame our research and develop our hypotheses.

Miles and Snow Typology

We apply the Miles and Snow (1978) business-level strategy typology to investigate the different strategic orientations that firms may adopt (Ghoshal, 2003; Hambrick, 2003). We chose the Miles and Snow framework because it encapsulates central elements of the strategic choice, RBV and dynamic capabilities perspectives, and has been validated through extensive theoretical and empirical examination (Shortell and Zajac, 1990). The typology postulates three stable archetypal organizations—termed defenders, analyzers,

and prospectors—each with its own distinctive strategy. Defenders pursue narrow product market domains, rarely make adjustments in their technology, structure, or methods of operation, and devote primary attention to improving efficiency. In contrast, prospectors almost continuously search for market opportunities, possess flexible technologies, and are creators of change and uncertainty to which their competitors must respond. Analyzers operate in two types of product/market domains, one stable and the other changing, and behave like defenders in the more stable areas and like prospectors in the more turbulent areas. Their organizational structures and processes are a combination of those found among prospectors and defenders. Hence, prospectors and defenders reside at opposite ends of a continuum of adjustment strategies, with analyzers being located in between.

Consistent with the strategic choice, RBV and dynamic capabilities perspectives, the Miles and Snow (1978) typology views the organization as a cohesive and integrated system in dynamic interaction with its environment, whereby organizational effectiveness hinges largely on top management's perceptions of environmental conditions and their decisions about how to cope with these conditions. This dynamic process, which Miles and Snow (1978) refer to as the adaptive cycle, involves making decisions in three major domains or problem areas. Briefly, the entrepreneurial problem concerns the firm's definition of its product or market domain, the engineering problem comprises its choice of technologies for production and distribution, and the administrative problem involves formulating and implementing struc-

tures and processes that rationalize and stabilize organizational activities while at the same time allowing the organization to evolve. Miles and Snow contend that each of these strategies can be found in a given industry, and that each can lead to high performance if properly implemented. The theory posits that performance will be highest in firms that simultaneously address entrepreneurial, engineering and administrative problems in a manner that is internally consistent.

Firms that fail to achieve a consistent environment-strategy-structure alignment are termed reactors, and comprise a fourth strategic type. This failure may result from management's inability to articulate a clear strategy, difficulty in shaping the organization's structures and processes to fit a chosen strategy, or maintaining the organization's strategy-structure relationship despite overwhelming changes in environmental conditions. In any case, because the reactor type is inherently unstable, it is generally not considered a viable strategy (and thus not considered further in this article).

HYPOTHESIS DEVELOPMENT

Innovation requires perspectives gained from observation and activity in many business domains. Ideas for and pressures on innovation may arise from environmental sources, such as new technologies, competitive pressures, or customer requests. Innovation also may be influenced by internal sources, through the work of a firm's research and development personnel or advances in throughput and efficiency methodologies. Innovation may further be influenced by factors that arise from the intersec-

tion of internal and external forces. For example, firms may access information from external sources then utilize it to alter their internal characteristics and activities. From a strategic perspective, we should expect that firms with contrasting strategic orientations will address innovation, based on these factors, in different ways. The hypotheses presented below develop these ideas further.

Barriers to Innovation

Despite the significant amount of work directed at understanding and managing innovation, organizations continue to have problems innovating effectively (Dougherty, 1992; Storey, 2000). One view is that firms, particularly established ones, develop tendencies toward rigidity and bureaucratic inertia that limit learning and creativity and keep them from adopting unfamiliar technologies (Dougherty, 1994; Tushman and Anderson, 1986). Because established organizations operate through legitimized routines and standard operating procedures, innovative behavior risks challenging established order within a firm (Storey, 2000). An alternative view is that rigidity and inertia are not necessarily inherent within firms and that managers can adopt strategies which generate and sustain innovation over time (Christensen and Raynor, 2003; Hamel, 2000).

Barriers to innovation are likely to reflect strategic choices and orientations. Because defenders value efficiency and stability in their technology, structure, and organizational routines, they are sensitized to problems associated with innovation (e.g., high cost, risk of failure, threat to the established order) and may perceive barriers to innovation as more signif-

icant than prospectors, who thrive on the change and uncertainty that innovation creates. Firms with dissimilar strategies are also likely to differ in terms of the types of innovation barriers they perceive. Because prospectors must ration their innovative activities across a broader range of market domains than defenders, the barriers they face may be related to resource constraints (e.g., sufficient financial and human capital) or the complexities associated with their wide range of activities. Defenders, with their focus on maintaining established routines and procedures, may instead confront some of inertial barriers described above. This line of reasoning suggests that defenders, prospectors, and analyzers exhibit significant differences with regard to the overall salience they attach to innovation barriers in general, as well as the relative importance they assign to specific barriers to innovation.

Hypothesis 1a: Managers of defender firms will assign the most overall significance to innovation barriers, irrespective of type, and managers of prospector firms the least significance, with managers of analyzer firms falling somewhere in between.

Hypothesis 1b: Defenders, analyzers, and prospectors will differ with regard to the relative importance they assign to specific barriers to innovation (i.e., they will rank them differently).

Sourcing Ideas and Targets of Innovation

Managerial perceptions and beliefs have been shown to influence strategic choices related to innovation (e.g., Lyon and Ferrier, 2002; Thomas *et al.*, 1993). In essence, different interpretations of environmental information and beliefs about appropriate strategic decisions, given such information, can influence the organization of innovative activity. Although

defenders, analyzers and prospectors may coexist within the same industry, and be equally successful, their managers possess different interpretive schemes that shape and frame how innovation is viewed. These schemes influence the meaning, legitimacy and scope of innovative activity within organizations (Dougherty, 1992, 1994; Storey, 2000).

Miles and Snow (1978) argue that defenders concentrate on establishing and propagating a relatively stable market domain and tend to ignore developments outside of their primary area of interest, whereas prospectors monitor a much wider range of environmental conditions and events in their continual search for new market opportunities. In their test of the administrative aspects of the Miles and Snow typology, Thomas, Litschert, and Ramaswamy (1991) provided empirical support for this when they found that high-performing prospectors had CEOs with output-oriented backgrounds whereas the high-performing defenders had CEOs with throughput-oriented backgrounds, a finding that was echoed in related work by Chaganti and Sambharya (1987). Output functions (e.g., marketing, sales, product R&D) emphasize growth and new opportunities, and focus on monitoring and adjusting products and services based on external competitive forces and customer requirements, whereas throughput functions (e.g., process improvements, accounting) center on improving the internal efficiency of the transformation process (Hambrick and Mason, 1984).

These contrasting approaches suggest that defenders, analyzers, and prospectors may also utilize different sources of knowledge and employ it

in different types of innovative activities. Specifically, we expect prospectors to place greater value on sources of knowledge that lead to new and interesting products and services (e.g., from partners, suppliers, sales and marketing managers, engineers) relative to analyzers or defenders, whereas defenders should place more value on sources that aid in their defense of their current market positions (e.g., customers, current competitors, other employees) relative to analyzers and prospectors. Likewise, we expect the locus of innovative activities in prospector firms to be centered around creation of products and services as well as customer relationships, whereas defenders should focus their innovative efforts on internal process efficiencies, with analyzers placing emphasis on both. Consistent with the equifinality approach outlined previously, we do not assume prospectors to be *better* innovators than defenders, as might be implied by their ongoing emphasis on new markets, but rather expect innovative activities to be centered in different areas of the value chain. This perspective is also echoed in the innovation literature, which finds that innovative activities are conditioned by a firm's competitive environment, technology, organization, and conscious strategic choices (c.f., Utterback, 1996).

Hypothesis 2: Firms with different strategic types will use different sources for ideas on innovative activities. Specifically, prospectors will focus on generating ideas from sources that will lead to improved output functions, defenders will focus on generating ideas that will lead to improved throughput functions, and analyzers will place relatively equal emphasis on both.

Hypothesis 3: Firms with different strategic types will focus their innovative activities on different targets. Specifically, prospectors will focus their innovation efforts on new products, services, and

customer relationships, while defenders will focus on internal process efficiencies, whereas analyzers will place relatively equal emphasis on both.

In sum, we expect alternative strategic orientations to be reflected in different types of innovative activities that parallel the distinctive foci of defenders, analyzers, and prospectors, and we anticipate that barriers to innovation will be idiosyncratic to a firm's chosen strategy.

METHODOLOGY

Sample

The members of a large state-based non-profit business association were used to gather data. This business association represents its members in public policy and business environment discussions. The membership is comprised of a variety of businesses with member firms varying in industry representation, size, and age.

We were able to gain access to the association's membership list indirectly through a relationship with one of the association's executives. The association agreed to a single mailing of a questionnaire developed by one of the article's authors and a cover letter encouraging participation signed by the association's president. The mailing resulted in 244 usable responses from a mailing of 2,200 surveys (a response rate of 11.1%). About 70% of the individuals completing the survey classified themselves as CEO, president, owner or other similar titles, and another 17% classified themselves in positions such as vice president or general manager. Other titles of respondents included controller, corporate secretary and general counsel.

The data set represents a broad array of firms. Many of the responding firms can be classified as small and

TABLE 1
Description of Respondents

Industry Representation

Industry	Respondents	Percent	Defenders	Analyzers	Prospectors
Manufacturing/Materials/Plastics	97	40%	18	70	9
Machinery Manufacturing/Automation	24	10%	1	15	8
Finance/Insurance/Info. Tech./Bus. Services	22	9%	3	15	4
Wholesale/Distribution	13	5%	5	7	1
Printing	12	5%	1	10	1
Agriculture, Paper/Forestry	8	3%	1	5	2
Health Care	6	2%	1	5	0
Retail	6	2%	2	2	2
Food Processing	6	2%	0	5	1
Other*	48	20%	5	35	8

* Industries grouped in the "Other" category were represented by one or two firms in the survey's results.

Note: two respondents did not report their industry affiliation.

Number of Employees

Employees	Respondents	Percent	Defenders	Analyzers	Prospectors
1-25	55	23%	11	32	12
26-50	32	13%	4	23	5
51-100	43	18%	6	35	2
101-250	46	19%	7	30	9
251-500	24	10%	3	19	2
501-1000	14	6%	2	7	5
1001-5000	23	9%	3	18	2
5001 +	7	3%	1	6	0

medium-sized enterprises. Table 1 provides descriptions of industry affiliation and size and a breakdown of the number of prospectors, defenders and analyzers in each industry and size grouping. About half of the responding firms are in basic industries such as manufacturing and machining, while other industries such as business services, financial services and printing are also represented in the data set. Seventy percent of responding firms have 200 employees or fewer, and 82% of responding firms have 500 employees or fewer. Given that the Miles and Snow typology has been identified as particularly relevant for the analysis of strategic

behavior in small and medium-sized firms (Daily and Dollinger, 1993; Davig, 1986; Olson and Currie, 1992), our sample allows for an appropriate test of the theory that underlies the hypotheses.

Three potential methodological shortcomings deserve mention here. First, our limited access to the membership list precluded us from examining non-response bias. However, given the constraints on the data gathering procedure, we were satisfied with the response rate, and the number of responses provides a degree of confidence in the statistical findings. Second, our analysis is performed at the firm level, and our data

are based on single respondents. This raises the question of whether a single person can speak for an entire firm. However, we received most of our completed surveys from firms with 200 or fewer employees, and all of our respondents were top executives of these firms. Therefore, these senior managers should be directly involved with the strategic and innovative activities of their firms, and hence able to speak to these issues knowledgeably. Third, our data were drawn from a single source. While we acknowledge the benefits of obtaining data from multiple sources, our site access and the nature of the responding firms (largely small, non-publicly traded) precluded our access to secondary data.

Measures

Measures for each of the constructs were taken from published sources whenever possible. The items used in measurement are provided in the Appendix.

Miles and Snow Typology. Following Segev (1989), we used Likert-scale items to measure the strategic orientation of each firm based on the Miles and Snow (1978) typology. The items were sourced from Barringer and Bluedorn (1999), Chandler, Keller and Lyon (2000), Covin and Slevin (1988) and Hornsby, Kuratko and Zahra (2002), and reflect the central distinctions between defenders, analyzers, and prospectors while also focusing on the innovative activities that were of interest in this study.

Research on the Miles and Snow (1978) typology has employed four broad and generally well-accepted approaches for identifying strategic groups: 1) self-typing, 2) typing by the investigator, 3) independent assess-

ment by experts, and 4) objective indicators (Zahra and Pearce, 1990). We used a self-typing method whereby top executives responded to survey items designed to tap the fundamental distinctions between strategic types. Conceptually, the prospector and defender strategies reside at opposite ends of a continuum, with the analyzer being located in between. Our survey was designed such that high scores on the survey items indicated prospector attributes and low scores analyzer attributes. Statistically, then, we would expect prospector firms to have mean scores on the survey items that were substantially higher than the scale midpoint and defender firms to have scores substantially lower than the scale midpoint, with analyzer scores centering around the midpoint. In other words, the statistical continuum we used to measure strategic posture maps directly onto the theoretical conceptualization provided by Miles and Snow (1978).

We grouped respondents into the three groups by finding the mean score for the items used to measure the Miles and Snow (1978) typology, and classifying those respondents that scored within one standard deviation of that score as analyzers, those that scored more than one standard deviation over the mean as prospectors, and those that scored more than one standard deviation below the mean as defenders. This procedure resulted in groups of 37 for the prospectors and defenders, and 170 for the analyzers. We believe that this methodology acknowledges that companies with pure strategic orientations are rare, a conclusion that fits with most anecdotal reviews of business practice. Moreover, the results of our classification were generally con-

sistent with those from 20 other studies we reviewed, which found analyzers to be disproportionately represented (51%), with defenders and prospectors being about equally represented (27% and 22%, respectively). This lends confidence that our approach to identifying strategic types was sound.

Dependent Variables. There were three groups of dependent variables in this study: barriers to innovation, sources of ideas for innovation, and the targets of innovative activities. The items used to measure these constructs were largely developed specifically for this survey, and were based on reviews of the popular press and the academic literature on innovation, as well as interviews with 12 CEOs of representative firms prior to the administration of the survey. Karakaya and Kobu (1994) provided a guide for the items to measure the sources of ideas for innovation.

Hypothesis Testing

We employed ANOVA (following Shortell and Zajac, 1990) which allowed us to test the predicted ordering of prospectors, defenders, and analyzers with regard to perceived barriers to innovation, sources of knowledge and focus of innovation efforts. Following others that have worked with the Miles and Snow typology (e.g., Conant *et al.*, 1990), we tested for differences among the three strategic types by examining mean differences across several items for each dependent variable.

RESULTS

The results of our analysis are summarized in Table 2. The data provide partial support for all hypotheses. Hypothesis 1a argued for differences in

the perceived overall significance of innovation barriers between firms with different strategy orientations. The data provide strong but not full support for this hypothesis. For most of the items, defenders assigned the highest overall significance scores and prospectors the lowest, with analyzers falling in the middle, as predicted. Moreover, statistically significant differences were found between defenders and prospectors for four of the items. Although differences between analyzers and defenders/prospectors were not as pronounced, significant differences were found for three of the items.

Hypothesis 1b predicted that defenders, prospectors, and analyzers would differ with regard to the rankings they assigned to specific innovation barriers. We found little support for this hypothesis. Interestingly, all strategic types ranked slow market growth (B1) and lack of human capital (B2) as the number one and two barriers, respectively, and, contrary to much of the prevailing wisdom on obstacles to innovation, ranked corporate culture as least important. Irrespective of strategic orientation, it seems that human resource constraints, perhaps brought about by slow market growth, are perceived as most problematic and that internal issues (e.g., culture, management difficulties, lack of ideas) are not viewed as serious obstacles to innovative activity among the firms in our sample.

In our test of Hypothesis 2, we found that defenders, analyzers and prospectors use different sources for innovative ideas, lending partial support to our hypothesis. However, the expected distinction between prospectors and defenders regarding external versus internal sourcing of ideas was apparent on only three of

TABLE 2
Results of Analysis of Variance

Item	Descriptive Statistics		Strategic Type			Uivariate F-value	Scheffe Paired Comparison
	Mean	S.D.	Defender	Analyzer	Prospector		
B1 Lack of ideas	3.3	1.5	4.30	3.21	3.05	8.99***	D>A***, D>P***
B2 Management difficulties	3.5	1.6	3.54	3.60	3.03	2.05	D>P**
B3 Corporate culture	3.0	1.7	3.49	3.12	2.27	5.43**	
B4 Lack of financial capital	3.7	1.9	4.11	3.73	3.51	1.01	
B5 Lack of human capital	4.1	1.6	4.46	4.16	3.68	2.35 [†]	D>P [†]
B6 Competitive environment	3.8	1.8	3.86	3.93	3.14	3.11*	A>P*
B7 Slow market growth	4.4	1.7	5.14	4.36	4.05	4.34*	D>A, P*
S1 Customers	5.5	1.5	5.19	5.47	5.73	1.25	
S2 Partners	4.3	1.7	4.30	4.26	4.30	0.01	
S3 Competitors	3.8	1.5	4.03	3.95	2.97	6.85***	D ₁ A>P*
S4 Engineers	4.1	1.9	3.39	4.04	4.81	5.35**	P>D*
S5 Marketing	4.9	1.6	4.51	4.92	5.16	1.62	
S6 Other managers	4.5	1.6	4.30	4.42	5.32	5.73**	P>A***, P>D**
T1 Products	4.4	1.8	3.78	4.46	5.05	4.94**	P>D**
T2 Services	4.4	1.6	4.00	4.48	4.73	2.12	
T3 Product delivery	3.7	1.6	3.41	3.76	3.76	0.77	
T4 Internal processes	4.8	1.5	4.38	4.89	4.97	2.08	
T5 Customer relationships	4.4	1.5	3.89	4.49	4.43	2.49 [†]	P>D [†]

[†]p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001

the items. Our data suggest that prospectors rely on engineers to a greater extent for innovative ideas than do defenders, while defenders find ideas in their examination of competitors. This result follows along with our reasoning that prospectors are more aggressive in proactively developing market opportunities while defend-

ers are most concerned about maintaining current positions, which would be most impacted by competitors' moves. Additionally, our data suggest that prospectors are more likely to find innovative ideas in managers other than those traditionally recognized as being part of the innovation process (engineers and mar-

keting). This may imply that these firms are better at capturing the input of a broad range of employees (Hamel, 1999).

Hypothesis 3 argued that defenders, analyzers, and prospectors would target their innovative efforts to different areas of the value chain. The data partially supported this hypothesis. We observed significant differences among the strategic types on two of the five items on innovation targets. Prospectors were far more likely to pursue product innovation and innovative means for interacting with their customers.

For the sake of completeness, we also ran the data using a balanced categorization scheme, in which we simply divided the respondents into three equally-sized groups: the lowest third were labeled defenders, the middle third were labeled analyzers, and the upper third were labeled prospectors. While the level of significance in the differences between the groups was muted, the general trends in the differences among the groups were highly consistent.

SUMMARY AND DISCUSSION

The results of this study provide evidence that approaches to innovation vary across firms with different strategic orientations. Generally, the data suggest that prospectors dedicate more attention to innovation than do defenders (and analyzers). While this makes intuitive sense, it suggests that the equifinality position proposed by the strategic choice perspective, and by Miles and Snow (1978), may not apply to innovation as it does to performance. A possible explanation could be that while prospectors must be innovative in many ways to sustain their strategic position, defenders

find other ways to maintain their performance, such as price and cost cutting and exceptional relationships with their customers. We acknowledge, however, that the nature of this study is exploratory and there are inherent limitations of the data (discussed previously). As such, our conclusions are tentative. Nonetheless, the ideas we present here suggest some potentially fruitful areas for future research and comprise a starting point for more definitive empirical exploration.

A key theoretical contribution implied by these results, which merits further investigation, is that strategic orientation may be a powerful explanatory variable that accounts for important differences in how innovation is managed among firms. From this perspective, many aspects of innovation management—including the types of projects pursued, the targets of innovative activities, and the gathering of information for innovation, among others—should be impacted by the firm's strategies. Importantly, this suggests that the firm's strategies operate as a constraint on the innovative opportunities that a firm might chose to pursue. Given that most firms are likely to perceive more ways to innovate than they have capacity to manage, their strategies will play a significant role in deciding which to pursue and which to disregard.

The position that a firm's strategic type and innovation management are theoretically linked has many interesting implications, which are fodder for additional research efforts. For example, does a firm's strategic orientation influence the amount of resources (relative to total assets) dedicated to innovation? If so, what other factors are important in determining

the relationship between a firm's strategy type and its management of innovation? What impact does the relationship between innovation and strategy have on personnel decisions? How does a firm manage transitions in its innovation efforts if the market forces it to change its strategic activities? Given that defenders and prospectors are likely to be led by different types of individuals and top management teams, how do leadership factors influence the relationship between innovation and strategic management?

This study has implications for practitioners and scholars alike. For example, our findings suggest that a firm's innovation efforts must fit with its strategic efforts. Our data suggest that defenders are unlikely to stay true to their strategic orientation by pursuing a wide range of innovation opportunities. While prospectors may be able to benefit from a variety of projects, even those that are outside of their current competitive activities, defenders are likely best served through concentrated innovation efforts that improve their standing against their competitors and strengthen the bonds with their current customers. Further, our findings indicate that defenders are apparently less inclined to pursue new

product innovations. However, that does not preclude them from the necessity of keeping their product lines relevant in their marketplaces. Acknowledging their strategic orientation, it may be prudent for these firms to partner with other firms that are more capable of providing the new products that will lead to success.

In summary, this study contributes to the integration of the strategic management and innovation perspectives by examining how firms with different strategic orientations differ in their innovative activities. Our findings highlight a number of important differences in innovative behavior between defenders, analyzers, and prospectors, thereby extending research on the Miles and Snow (1978) typology to a relatively unexplored theoretical domain. Given that strategic management and innovation often require different managerial orientations, our study provides new insights into how countervailing pressures for each may be reconciled, with implications for theory and practice. Although many questions remain unanswered, it is our hope that this study will spur additional research on the crucial links between strategic orientation and innovation.

APPENDIX

Measures for the Miles and Snow (1978) typology.

For the following questions, please assign a score which positions your firm between the paired statements.

In general, my firm favors:

- | | | | | | | | | |
|--|---|---|---|---|---|---|---|--|
| a. A strong emphasis on the marketing of tried-and-true products and services. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | A strong emphasis on R & D, technological leadership, and innovation. |
| b. Low-risk projects with normal and certain rates of return. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | High-risk projects with changes. |
| c. A cautious, "wait and see" posture in order to minimize the probability of making costly decisions. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | A bold, aggressive posture in order to maximize the probability of exploiting potential. |

How many new lines of products or services has your firm marketed in the past 3 years?

- | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| a. No new lines of products or services. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Many new lines of products/services. |
| b. Changes in current product or service lines have been minor. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Changes in current product or service lines have been quite dramatic. |

In dealing with its competitors, my firm:

- | | | | | | | | | |
|---|---|---|---|---|---|---|---|--|
| a. Typically responds to actions which competitors initiate. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Typically initiates actions to which competitors then respond. |
| b. Is very seldom the first firm to introduce new products/services, operating technologies, etc. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Is very often the first firm to introduce new products/services operating technologies, etc. |
| c. Seeks to avoid competitive clashes, preferring a "live-and-let-live" posture. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | Typically adopts a competitive, "undo-the-competitor" posture. |

In managing the activities of the firm:

- | | | | | | | | | |
|--|---|---|---|---|---|---|---|--|
| a. We mostly follow procedures and maintain established standards. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | We often disregard procedures if the task at hand seems to require it. |
| b. We try to ensure that employees take a consistent approach to their jobs. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | We encourage people to develop their own approaches to their work. |
| c. Most people's activities are well-defined by their formal job descriptions. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | The work most people do varies greatly, depending on the situation. |
| d. We believe in developing thorough plans and executing them well. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | We believe in setting general directions and adapting as we go. |

Measures for the dependent variables.

Barriers to Innovation.

How accurately do the following statements reflect significant barriers to innovation at your firm?

	Not Accurate						Highly Accurate
1. Lack of good ideas for new products or services	1	2	3	4	5	6	7
2. Difficulties associated with managing ambiguous and complex processes.....	1	2	3	4	5	6	7
3. Overcoming a rigid corporate culture or the company's historic way of doing things....	1	2	3	4	5	6	7
4. Lack of capital available to fund R&D or innovative engineering projects	1	2	3	4	5	6	7
5. Lack of human capital for innovative work	1	2	3	4	5	6	7
6. A business environment that is too competitive to concentrate on long-range projects ..	1	2	3	4	5	6	7
7. Very slow market growth	1	2	3	4	5	6	7

Sources of Ideas for Innovation.

Please indicate the degree to which the following groups are important sources of new product or business process ideas:

	Not Important						Very Important
1. Key customers	1	2	3	4	5	6	7
2. Key partners or suppliers	1	2	3	4	5	6	7
3. Competitors	1	2	3	4	5	6	7
4. Our firm's R&D department or engineers	1	2	3	4	5	6	7
5. Our firm's sales and marketing managers.....	1	2	3	4	5	6	7
6. Our firm's other managers or employees.....	1	2	3	4	5	6	7

Targets of Innovation.

In which aspects of your business do innovative ideas or practices most commonly arise?

	Very Rarely						Very Often
1. Creation of new or better products.....	1	2	3	4	5	6	7
2. Creation of new or better services	1	2	3	4	5	6	7
3. Development of new or better product delivery methods	1	2	3	4	5	6	7
4. Development of more efficient or effective internal processes	1	2	3	4	5	6	7
5. Creation of new ways of establishing relationships with customers	1	2	3	4	5	6	7

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leadership behaviors. Using a sample (N = 76) of business founders of relatively new, small organizations, this study examined the relationship between their psychological capital (Luthans and Youssef, 2004) and their self-perceptions of authentic leadership (Avolio *et al.*, 2004; Luthans and Avolio, 2003). Results indicate initial empirical support for this relationship. Limitations and recommendations for practice and future research conclude the article.

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This study empirically examines how a firm's strategic orientation impacts its management of innovative activities. Drawing on the strategic management and innovation literatures, we develop and empirically test hypotheses arguing that a firm's strategic orientation will impact its perception of barriers to innovation, its sources of ideas for innovation, and its targets for innovation. The data, from over 244 firms, generally support the hypotheses. The study's findings suggest that a firm's strategic management and its management of innovation are highly integrated.