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Antecedents and outcomes of strategic thinking

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ABSTRACT

This study focuses on the factors that influence strategic thinking at the organizational level. Based on previous research on strategic thinking in diverse management fields including marketing strategy, strategic management, and human resource management, this research provides a hypothetical model that links the firm's internal and external variables regarding strategic thinking at the organizational level, which in turn links to marketing performance.

The results of empirical analysis provide evidence that the attitude of firms' management toward risk taking, the CEO's emphasis on strategic thinking, interdepartmental teams in the organization, and marketing competency foster strategic thinking at the organizational level, but formalization in the organizational structure impedes it. Contrary to the proposed hypotheses, centralization in the organizational structure is positively related to strategic thinking at the organizational level. The results also show that market turbulence and technological turbulence foster strategic thinking at the organizational level and there is a positive relationship between strategic thinking and marketing performance.

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1. Introduction

The ability to think strategically is an increasingly important requirement for managers at diverse levels in organizations. Nurturing sound management practices and rigorous strategic thinking are the most important step a leader and a company can undertake to avoid decline and sustain growth (Bernhut, 2009). Previous research on strategic thinking in diverse management fields including marketing strategy, strategic management, and human resource management pays attention to such issues as: describing the concept and need for strategic thinking (Fairholm & Card, 2009; Gluck, Kaufman, & Steven, 1982; Graetz, 2002; Heracleous, 1998; Kim, 2004; Koo, 2000; Lattimer, 2008; Liedtka, 1998a; Sanders, 1998; Singer, 2008; South, 1981); what the process of strategic thinking entails (Liedtka, 1998b; Stacey, 1996; Senge, 1990); methods of strategic thinking (Allio, 2006; Crouch, 1998; Senge, 1992; Weber, 1984); how to develop and improve strategic thinking (Abraham, 2005; Barnett & Berland, 1999; Bates & Dillard, 1993; Bonn, 2001, 2005; Easterby-Smith & Davis, 1983; Garratt, 2005; Goldman, 2007, 2008; Hanford, 1995; Mason, 1986; Stumpf, 1989; Zabriskie & Huellmantel, 1991); consequences of strategic thinking; and how to estimate the level of strategic thinking (Bernhut, 2009; Fodness, 2005; Goldfarb & Yang, 2009; Struebing, 1996).

However, comprehensive research on the antecedents and outcomes of strategic thinking is sparse. This paper attempts to refresh the concept of strategic thinking and identify the elements thereof.

Then, this study provides a hypothetical model that links the antecedents (the firm's internal and external variables) to strategic thinking at the organizational level, which in turn is linked to outcomes (marketing performance). The model is empirically analyzed using data collected from South Korean firms.

This research may help to advance the theories and practice of marketing strategy and strategic management. The proposed conceptual framework for understanding the relationship between the antecedents of strategic thinking and strategic thinking at the organizational level may be useful to identify factors that foster strategic thinking in an organizational context. Moreover, a theoretical framework to comprehend the relationship between strategic thinking at the organizational level and the firm's marketing performance may be helpful to confirm the consequences of strategic thinking.

This paper proceeds as follows. The first section defines strategic thinking and profiles its elements. The second section develops a model to understand the antecedents and outcomes of strategic thinking; it also develops hypotheses. The third section describes the research methodology. The fourth section focuses on model estimation and empirical results. The final section concludes by discussing the theoretical and practical implications of the study.

2. Definition and elements of strategic thinking

2.1. Definition of strategic thinking

Previous research on strategic thinking provides somewhat varying definitions of strategic thinking depending upon the focus. South (1981, p. 20) asserted that "strategic thinking is a thought process probably

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first developed centuries ago by military organizations. And these organizations have found it useful to develop aids to strategic thinking which help them focus on the right issues, and provide a common frame of reference for discussing and reviewing strategy." This definition emphasizes tools or aids for strategic thinking. Struebing (1996, p. 22) noted that "strategic planning often yields less than expected results. Companies should instead focus on strategic thinking, a dynamic process that continually reviews missions, strategies, and operations relative to customers' needs and market forces." This definition focuses on the functions of strategic thinking.

Liedtka (1998a,b, p. 30) points out, "Strategic thinking is traditionally defined as creative, disruptive, future-focused, and experimental in nature and seen to be at odds with traditional notions of strategic planning. Redefining strategic thinking in terms of a systematic or holistic view, a focus on intent, thinking in time, a hypothesis-driven approach, and an ability to be intelligently opportunistic integrates the concept more comfortably into strategic planning process." In the same vein, Graetz (2002, p. 456) argued that "in an environment characterized by flux and uncertainty, a capacity for innovative, divergent strategic thinking rather than conservative, convergent strategic planning is seen as central to creating and sustaining competitive advantage." Bonn (2005, p. 337) coherently defined strategic thinking as "a way of solving strategic problems that combines a rational and convergent approach with creative and divergent thought process." The above definitions emphasize the elements or characteristics of the strategic thinking process.

Abraham (2005, p. 5) observes, "Strategy implies competing and outwitting competitors. Strategy is about being different from the competitors – finding the race to run and winning it." He defines strategic thinking as "the process of finding alternative ways of competing and providing customer value," (Abraham, 2005, p. 5). This definition focuses on not only the objectives but also the functions of strategic thinking.

Based on previous research, we define strategic thinking as "a way of solving strategic problems that combines a rational and convergent approach with a creative and divergent thought process to find alternative ways of competing and providing customer value."

2.2. Elements of strategic thinking

Prior research has suggested a number of key elements that are relevant to strategic thinking. Bonn (2005) proposed systematic thinking, creativity, and vision as the principal elements of strategic thinking. We argue that market orientation is another critical element of strategic thinking. Thus, we posit that systematic thinking, creative thinking, vision-driven thinking, and market-oriented thinking are the key elements of strategic thinking. Fig. 1 shows the strategic thinking elements.

2.2.1. Systematic thinking

Kaufman (1991, p. 69) describes strategic thinking as "a switch from seeing the organization as a splintered conglomerate of disassociated parts competing for resources, to seeing and dealing with the corporation as a holistic system that integrates each part in relationship to the whole." Senge (1990, p. 43) names this approach, "systems thinking." He argued, "We must look into the underlying structures, which shape individual actions and create the conditions where types of events become likely," (Senge, 1990, p.43). Stacey (1996) argued that such an integrated perspective of organizations requires a thorough understanding of the internal and external dynamics of organizational life.

2.2.2. Creative thinking

Bonn (2005, p. 338) argues that "strategy is about the development of novel solutions to create competitive advantage. Strategic thinkers must search for new approaches and envision better ways of doing

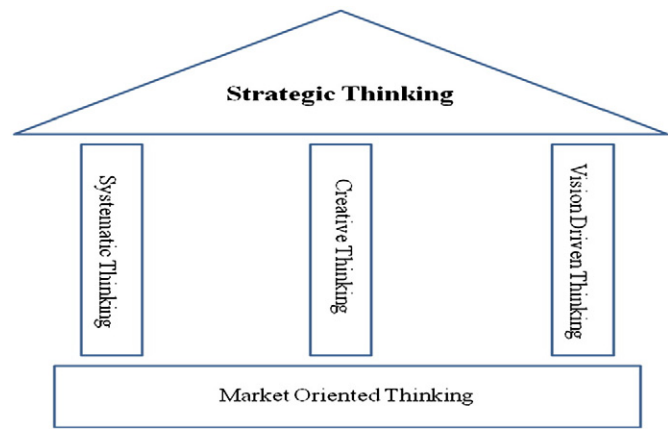


Fig. 1. The elements of strategic thinking.

things, in other words, be creative." Amabile (1998, p. 79) stated that "creative thinking refers to how people approach problems and solutions – their capacity to put existing ideas together in new combinations." De Bono (1996, p. 17) asserted that "without creativity we are unable to make full use of the information and experience that is already available to us and is locked up in old structures, old patterns, and old perceptions."

2.2.3. Vision-driven thinking

Senior managers need to make sense of complex and multifaceted projects and synthesize many possible meanings (Boland, 1984). Weick (1995, p. 27) argues that "people who face complex situations need some sort of guidance, values, priorities, and clarity about preferences to help them develop viable strategies." Collins and Porras (1998) showed that leaders of companies with a strong sense of vision placed great emphasis on building an organization that had a deep understanding of its reason for existence and its core values, that is, fundamental and enduring principles that guide and inspire people throughout the organization and bind them together around a common identity.

2.2.4. Market-oriented thinking

Prior research shows considerable interest in the market-orientation concept (Day, 1992; Gronroos, 1989; Rivera, 1995; Webster, 1988) and its usefulness in enhancing firms' marketing performance (Jaworski & Kholi, 1993; Narver & Slater, 1990; Ruekert, 1992). Rivera (1995) defined market orientation as a strategy that is used to attain a sustainable competitive advantage. Competitive advantage results from the use of resources and capabilities to generate differential satisfaction in profitable markets.

Sustainability is achievable because the performance of market-oriented behavior requires complex organizational knowledge that cannot be duplicated easily by competitors. Sustainability is also achievable because market-orientation attainment requires constant monitoring and encouragement of the personnel's commitment (Lado, Maydeu-Olivares, & Rivera, 1998). Satisfaction permits the firm to achieve a psychological differentiation position that leads to brand loyalty and higher profits (Lambin, 1993).

3. Model and research hypotheses

In this study, we have reviewed previous research regarding the factors that foster or impede strategic thinking. In addition, previous research on the factors that influence innovation and market orientation is also examined because strategic thinking, innovation, and market orientation are likely to have considerable commonalities. That is, many firms that face severely unstable and turbulent environments seek

competitive advantage through strategic thinking, the development of breakthrough products, and/or market orientation (Abraham, 2005; Lynn, Morone, & Paulson, 1996; Slater & Narver, 1994, 1995; Song & Parry, 1999).

Previous research on strategic thinking such as Bonn (2001) has suggested the following managerial practices that promote intrinsic motivation for strategic thinking in an organization: match employees with assignments that make use of their expertise and abilities; give employees autonomy in how they approach their work; provide the necessary resources; establish supportive work-teams; encourage recognition by supervisors; and create a climate where the whole organization supports creative efforts. Dibrell, Down, and Bull (2007) show that the most financially successful firms use a dynamic strategic planning process that combines key elements from both formalized and ad-hoc strategic planning through the addition of strategic flex-points. Bernhut (2009) noted that the most important initiative of a leader and a company to avoid decline is to return to sound management practices and rigorous strategic thinking. Fodness (2005) showed that the raw materials of strategic thinking (creative and critical thinking, decision making, and problem solving) can be transformed into a practical system for enhancing the strategic promise and performance of marketing.

Prior research on market orientation (Ruekert, 1992) notes that market orientation is the degree to which the business unit gets and uses information about clients, develops a strategy leading to clients' needs, and implements a strategy of responding to clients' wishes. Rivera (1995) indicates that market orientation is a strategy that leads to obtaining a durable competitive advantage. Previous research on market orientation showed that market orientation is influenced by such factors as top management emphasis (Kohli & Jaworski, 1990; Slater & Narver, 1994), risk aversion (Hafer & Gresham, 2008; Jaworski & Kholi, 1993), interdepartmental connection (Jaworski & Kholi, 1993; Kirca, Jayachandran, & Bearden, 2005), interdepartmental

conflict (Jaworski & Kholi, 1993; Kirca et al., 2005), and organizational systems (formalization, centralization, and payment system orientation: Jaworski & Kholi, 1993; Siguaw, Brown, & Widing, 1994). Besides, previous research on market orientation showed a direct causal connection between market orientation and organizational performance (Jaworski & Kholi, 1993; Kirca et al., 2005; Narver & Slater, 1990; Ruekert, 1992).

Prior research on innovation has examined the determinants and outcomes of radical product innovations. Im, Nakata, Park, and Ha (2003) and Moon (2006) surveyed company employees who were involved in new product innovation to inquire about how strategic, organizational, and process factors foster or impede new product innovation. They showed that new product innovation is influenced by factors such as the organizational culture, organizational structure, R&D collaboration with suppliers, and interface with customers. Song and Parry (1997) also identified the strategic, tactical, and environmental factors that foster new product innovation.

Based on previous studies on strategic thinking, market orientation, and new product innovation, we provide a hypothetical model that links a firm's internal and external variables to strategic thinking, which in turn is linked to the firm's marketing performance. Fig. 2 depicts these relationships. Organizational culture, organizational structure, and resources/competencies are identified as the internal variables that foster or impede strategic thinking at the organizational level. Market turbulence and technological turbulence are identifiable as the external variables that influence strategic thinking.

3.1. Internal variables that influence strategic thinking

3.1.1. Organizational culture

Social psychologists such as Schein (1965) and his colleagues demonstrate that corporate behavior, in particular an organization's resistance to change, is inevitably a function of its culture. Allio (2006)

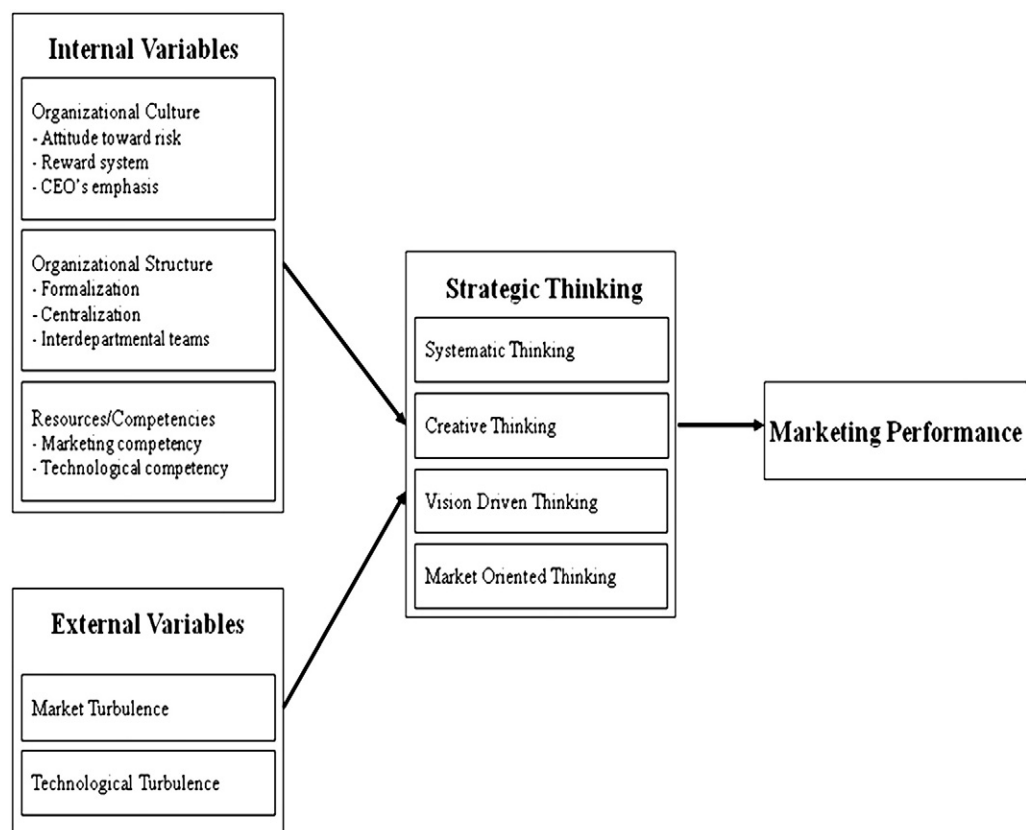


Fig. 2. A model to understand the antecedents and outcomes of strategic thinking.

stated that corporate culture is one of the ten big elements of strategic thinking. The degree of strategic thinking depends on the presence or absence of some internal factors of the company.

Hafer and Gresham (2008) and Jaworski and Kholi (1993) show that top management's risk aversion inhibits the firm's market orientation. Chandy and Tellis (1998) show that the stronger is a firm's willingness to cannibalize former investments, the greater is the possibility of radical product innovation. Bonn (2001) observes that strategic thinking is about ideas and the development of novel solutions to create competitive advantage. Top management's positive attitude toward change is essential to develop novel solutions. H1: top management's favorable attitude toward risk-taking fosters strategic thinking within the organization.

The reward and compensation system is a critical factor of organizational culture because it can either encourage or impede employees' actions (Hambrick & Snow, 1989). Compensation can take the form of a fixed wage or salary and/or variable long-term contingent pay such as stock options. Long-term contingent pay is an important form of incentive that is useful for aligning the actions of managers with organizational outcomes (Jensen & Murphy, 1990). Firms may link incentives to quantitative performance criteria (accounting or market based) or include qualitative criteria. Bonn (2005) declared that a reward system that includes long-term and qualitative aspects of executive performance can be a key contributor to the achievement of an organization's strategic objectives due to its influence on executive behavior. H2: reward systems that include a high portion of long-term and qualitative aspects of performance in the total pay-mix foster strategic thinking within the organization.

Kohli and Jaworski (1990), Kirca et al. (2005) and Slater and Narver (1994) showed that top management's emphasis on market orientation fosters the firm's market orientation. Liedtka (1998a,b) points out that strategic thinking includes a system perspective as one of its five constituents. In the same vein, Bonn (2001) noted that a crucial element of strategic thinking is the ability to take a holistic perspective of the organization and its environment. A holistic view requires the ability to distance oneself from day-to-day operational problems and see how problems and issues are connected to the overall pattern that underlies particular details and events. Thus, top management's emphasis on strategic thinking may encourage employees to take a holistic perspective and thereby foster strategic thinking. H3: top management's emphasis on strategic thinking fosters strategic thinking within the organization.

3.1.2. Organizational structure

From the perspective of organizational structure, Pandelica, Pandelica, and Dumitru (2009) show that formalization and centralization are organizational structural characteristics that inhibit market orientation. That is, formalization involves the establishment of roles, procedures, and authority through rules. As a result, formalization reduces the dissemination and usage of market information and accordingly, inhibits market orientation.

Bonn (2005) observed that organic structures are more conducive to strategic thinking because they enhance interaction and communication and encourage the generation and presentation of new ideas. Conversely, mechanistic structures are more likely to restrain interaction, communication, and the exchange of ideas. Dibrell et al. (2007) found that the most financially successful firms use a dynamic strategic thinking process that combines key elements from both formalized and ad-hoc strategic planning through the addition of strategic flex-points.

Based on their finding, we develop the following hypothesis. H4: formalization in the organizational structure inhibits strategic thinking within the organization.

Prior research on innovation yields mixed results regarding whether organizational autonomy is positively or negatively related to innovation. Olson, Walker, and Ruekert (1995) show that high autonomy in the firm is positively related to radical product innovation. On the

contrary, Ettlie, Bridges, and O'Keefe (1984) report that radical process innovation is promoted by a centralized decision-making structure and an aggressive technology-oriented strategy. Moon (2006) observes that in developing a radically new product, a firm may face unforeseen situations that fall outside the scope of existing accumulated knowledge. To overcome this kind of situation, a centralized decision-making structure may be necessitated. Conversely, an organizational structure with smooth information flow and high autonomy may suit continuous and more frequent product innovation.

On the other hand, Matsuno, Mentzer, and Ozsomer (2002) show that limited commissioning of authority in the decision-making process has a negative effect on market orientation. Bonn (2005) notes that the involvement of middle managers in the strategic decision-making process fosters strategic thinking within an organization. Liedtka (1998b) also points out that the involvement of middle managers in the strategy process enriches the repository of ideas and frameworks that senior managers can work with. That is, decentralization in the organizational structure may help senior managers to share decision making with lower-level employees and middle managers and accommodate new knowledge and develop innovative strategies.

Based on this reasoning, we propose the following hypothesis. H5: centralization in the organizational structure inhibits strategic thinking within the organization.

Matsuno et al. (2002) demonstrates that departmentalization is negatively related to market orientation. In the same vein, Kirca et al. (2005) show that interdepartmental connections or teams are positively related to market orientation. Pandelica et al. (2009) note that the connections between departments, that is, the extension of formal and informal contacts between the employees of various departments, intensify market orientation as they lead to a better transmission of market information within the organization.

Bonn (2001, p. 66) noted, "Organization provides the context in which individual strategic thinking can occur. Organizations need to create the structures, processes, and systems that take advantage of the ingenuity and creativity of every individual employee." Thus, to encourage the generation of ingenuity and creativity from all individual employees, interdepartmental connections or teams should be arranged. H6: interdepartmental teams in the organization foster strategic thinking within the organization.

3.1.3. Resources/competencies

From the perspective of resources and competencies, Ruekert (1992) shows that market-oriented training determines employees' sensitivity to clients' needs and stimulates market orientation. Market-oriented training may help to enhance the marketing competency of the organization, and in turn, marketing competency may foster market orientation and strategic thinking.

Song and Parry (1997) identify marketing skills and resources and technical skills and resources as sources of competitive advantage for succeeding in new product development. They showed that a project's fit with the firm's existing marketing skills and resources is positively related to proficiency in idea development and screening, business and market opportunity analysis, new product testing, and new product commercialization. Stumpf (1989) notes that strategic thinking involves a manager's ability to know the business and markets; to manage subunit rivalry; to find and overcome threats; to stay on strategy; to be an entrepreneurial force; and to accommodate adversity. Most of these points are classifiable as marketing competencies.

In addition, Song and Parry (1997) show that a project's fit with the firm's technological skills and resources is positively related to proficiency in the technological development stage of new product development, which in turn is linked to positional advantage in product differentiation such as being more innovative and meeting customers' needs better. Gatignon and Xuereb (1997) also showed that firms with high technological competency are more likely to implement radically new product innovations. New product innovations and

strategic thinking have much in common: both require solving strategic problems with creative and divergent thinking.

Considering that the definition of strategic thinking is a way of solving strategic problems that combines a rational and convergent approach with creative and divergent thought processes to find alternative ways of competing and providing customer value, marketing and technological competencies are needed for strategic thinking. H7: marketing competency in the organization fosters strategic thinking within the organization. H8: technological competency in the organization fosters strategic thinking within the organization.

3.2. External variables that influence strategic thinking

Prior research on market orientation has acknowledged that external environmental factors influence the firm's market orientation or moderate the impact of market orientation on business performance. One research stream, viz., Greenley (1989), Harrison (1989), Kim (1999) and Thompson and Strickland (1978), describes external environmental factors as major determinants of strategy establishment. Another research stream, that is, Jaworski and Kholi (1993), Slater and Narver (1994), and Song and Parry (1997), posited external environmental factors as moderators of the linkage between strategy and performance. Considering the conceptualization of strategic thinking by Weber (1984), that is, "strategic thinking is dealing with uncertainty," we can expect that uncertainty or environmental factors influence strategic thinking directly. In addition, Lattimer (2008) argued that the depth of business uncertainty influences the need for strategic thinking. Based on the above, we consider external environmental variables as being antecedents rather than moderators of strategic thinking.

Han, Kim, and Srivastava (1998) show that turbulence in the market and technology strengthens the market orientation-innovativeness relationship. Gatignon and Xuereb (1997) also demonstrated that when market demand is uncertain, firms with high technology and market orientation achieve better innovation performance.

Lattimer (2008) notes that the current global economic crisis, sudden demise of giant firms, and depth of business uncertainty underscore the necessity of strategic thinking. Sanders (1998) showed that the nature of strategic thinking is the application of chaos and complexity principles to organizational life. She asserted that only the human mind is capable of adequately dealing with today's complexity. By invoking visual images of how the world operates, we may hone our unconscious mind to intuitively recognize patterns in chaos. Considering that the nature of strategic thinking is the management of chaos and complexity, environmental uncertainties are likely to be critical antecedents of strategic thinking.

Based on this reasoning, we propose the following hypotheses. H9: market turbulence fosters strategic thinking within the organization. H10: technological turbulence fosters strategic thinking within the organization.

3.3. Strategic thinking and marketing performance

Prior research on market orientation acknowledges that market orientation has a positive impact on marketing performance (Jaworski & Kholi, 1993; Kirca et al., 2005; Narver & Slater, 1990; Ruekert, 1992). In the same vein, previous research on innovation shows that innovation has a positive influence on business performance (Damanpour & Evan, 1984; Han et al., 1998; Moon, 2006).

Fodness (2005) notes that the raw materials of strategic thinking (creative and critical thinking, decision making, and problem solving) can be transformed into a practical system for enhancing marketing performance. Bernhut (2009) pointed out that the most important thing a leader and a company can do to avoid decline in business is to return to sound management practices and rigorous strategic thinking. Goldfarb and Yang (2009) showed that firms with a higher estimated probability of strategic thinking are more likely to survive

in the marketplace. H11: strategic thinking within the organization has a positive impact on marketing performance.

4. Method

Our overall research design, which combines interviews and survey research, follows the procedure adopted by previous studies of the antecedents and outcomes of market orientation, innovation, and strategic thinking. Measurement scales were developed based upon previous studies and group interviews with top- and mid-level managers and front-line employees. After completing the group interviews and consulting with a panel of experts, we prepared a draft questionnaire. The draft questionnaire was pre-tested twice. The first pretest was conducted by interviewing six graduate students of two Korean business schools and eight managers (four top-level managers and four mid-level managers) of two Korean companies. The second pretest was conducted in relation to fifty front-line employees of two Korean firms. Both pretests yielded minor suggestions for improvement, which were incorporated in the final version of the questionnaire.

4.1. Sample design and data collection

To investigate the factors that influence strategic thinking in the organization, we collected data from 217 Korean firms. The respondents were top- and mid-level managers and front-line employees in the marketing, R&D, production, finance, human resource, information, and planning departments. The sampling frame was defined in two stages. First, all the 758 Korean companies that traded in the KOSPI (Korea Composite Stock Price Index) of the Korea Exchange (previously the Korea Stock and Futures Exchange) were identified. Second, the identified companies were contacted by a phone call for a one-page survey. The purpose of this second step was two-fold, as suggested by Song and Parry (1999): to gain the firm's tentative commitment to participate in the study, and to identify key contact persons. This pre-survey identified 481 firms.

For each selected company, we asked the top- and mid-level managers and the front-line employees in the marketing, R&D, production, finance, human resource, information, and planning departments to complete the questionnaire. Each participant was asked to consider all the strategic decisions that his/her company had made during the preceding three years. We finalized the data-collection phase with an e-mail to the contact person thanking him/her for his/her cooperation. After three follow-up e-mails and two phone calls, we received 217 questionnaires. The effective company response rate was 45% (217/481).

To confirm that the 217 sample companies represented the population, we checked for respondents' self-selection bias. To do this, we randomly selected 217 firms from the set of non-sample companies and analyzed whether there were significant differences in the sales, capital, and number of employees between the sample and non-sample groups. We did not find any significant differences between these two sample groups.

Because the data for this study were collected in Korea, some background information on the situation in Korea would be helpful. Korea may be epitomized by two words, dynamic and turbulent. Korea has closely followed the Japanese path to success. Fouser (2011) succinctly introduced the characteristics of Korea as follows: "Korea began an export-led manufacturing drive in the 1960s that lasted for 20 years until the 1973 oil crisis. Strong economic growth resumed after a short period of adjustment and remained strong until the early 1990s. The 1997 Asian financial crisis marked the beginning of divergence between Korea and Japan. With the economy on verge of collapse, Korea was forced to turn to the IMF for financial assistance. In return, the IMF demanded deep structural changes in the financial system. The depth of the crisis made it clear that Korea had to change a great deal to overcome the situation. The activist

leadership of Korea helped the nation accept reality and move toward becoming 'Dynamic Korea.'

Korea emerged from the Asian financial crisis stronger and with greater self-confidence. The crisis also taught Korea the importance of flexibility and a sense of urgency, both of which helped it to recover quickly from the 2008 global financial crisis. Korea is highly depended on exports. In 2010, exports accounted for 45% of Korea's GDP. Of the G20 nations, Korea has the highest dependence on exports. Imports, many of which are raw materials, make up 40% of GDP, meaning that trade accounts for 85% of GDP. The high dependency on trade explains why Korea is flexible and responsive to change. It has to be, lest it lose out in the world market place. It also explains why Korea should be able to avoid the worst of the demographic drag in the future: the domestic economy is already a small percentage of GDP. The biggest challenge for Korea, then, is managing its unique role as the most trade-dependent nation in the G20." (Fouser, 2011, p.7).

4.2. Measures

All the variables were measured with multiple-item scales. Although some items were developed specifically for this study, other measurement items were derived from existing validated scales. Table 1 reports the items used to measure each of the constructs and the reliability and validity of the measurement items. All the items employed a zero-to ten point scale.

To measure the degree of strategic thinking, we used four items as shown in Table 1. These items were developed based upon previous research into strategic thinking (for instance, Bonn (2005)) and market orientation. These items measure the degree of strategic thinking at the organizational level.

To measure marketing performance, we used three different scales. One three-item scale measured the profitability, a second three-item scale measured sales, and a third three-item scale measured the market share. The use of a subjective scale may be criticized for not generating objective measures of marketing performance across firms and industries. However, as argued by Song and Parry (1997), this is an artifact of real-world differences between firms, industries, and economic situations rather than a criticism of these scales. Moreover, many recent marketing studies also used subjective measures of performance (Jaworski & Kholi, 1993; Olson et al., 1995).

Management attitude toward risk refers to the attitude of a firm's top management toward risk taking. All the items were adapted from Dewar and Dutton (1986). The 'reward system: long-term and qualitative versus short-term and quantitative' refers to a firm's system of rewarding employees for their contribution in relation to the spectra of long-term vs. short-term and qualitative vs. quantitative. These measures were developed based upon previous research into strategic thinking (for instance, Bonn (2005)). The CEO's emphasis refers to the CEO's emphasis and stress on strategic thinking in the company. These measures were adapted from items developed by Kirca et al. (2005), Kohli and Jaworski (1990) and Slater and Narver (1994). Formalization in the decision-making structure refers to the way a firm is organized for its decision making in relation to the spectrum of formalization vs. informality. These measures were adapted from the items developed by Ettl et al. (1984). Centralization in the decision-making structure refers to the way a firm is organized for its decision making in relation to the spectrum of centralization vs. autonomy. These measures were also adapted from the items developed by Ettl et al. (1984). 'Interdepartmental teams' refers to the degree of connection between departments and the extension of formal and informal contacts between the employees of various departments. These measures were developed based upon previous research into market orientation (for instance, Matsuno et al. (2002)). Marketing competency refers to the firm's existing marketing capabilities. This construct was measured with three items that address the firm's marketing research,

and advertising/promotion skills and resources. These measures were adapted from the items developed by Cooper (1979). Technological competency refers to the firm's existing technological capabilities. The three-item scale used to measure this construct addresses the firm's R&D, engineering, and design/specification skills and resources. These measures were also adapted from the items developed by Cooper (1979). Market turbulence refers to the uncertainty, chaos, and complexity of the firm's product market. These measures were adapted from items developed by Jaworski and Kholi (1993) and Slater and Narver (1994). Technological turbulence refers to the speed and radicalness of innovation and the uncertainty and complexity of the technology that are related to the firm's product market. These measures were also adapted from items developed by Jaworski and Kholi (1993) and Slater and Narver (1994).

5. Results of data analyses

In this research, we employed a structural equation modeling approach and used the AMOS 7.0 program to fit the measurement and structural model. The detailed estimation results are as follows.

5.1. Results of the measurement model

The relationships between the latent variables and measurement variables were assessed. The Cronbach's alpha coefficient of each of the constructs was bigger than .6, as shown in Table 1, and thus the reliability was acceptable. In addition, composite reliability was also appraised via AMOS (Fornell & Larcker, 1981). The composite reliability (ρ) of each of the constructs except 'reward system' was bigger than .5, as shown in Table 1, and thus the reliabilities were secured.

As discussed before, we suggested that there are two types of antecedent of strategic thinking, which are internally and externally originated. In this case, our model may be hierarchical and may entail second-order confirmatory factor analysis (CFA). Thus, we used CFA of the first and second orders, respectively. Following Marsh and Hocevar (1985), by calculating the target coefficient (target coefficient = first-order measurement model χ^2 /second-order measurement model χ^2), we compared CFA of the first and second orders to decide the fitness with data. A T value that is closer to unity implies that second-order CFA can replace first-order CFA. In this study, the T values of the internal and external variables were .55 and .47, which are far from unity. The fitness indices of second-order CFA of the internal and external variables revealed that the fitness was poor. Therefore, we took the results of first-order CFA to implement structural model analyses.

The factor loadings of all the measurement variables were bigger than .6, as shown in Table 1. We also evaluated convergence validity via the average variance extracted (AVE) based on the factor loadings (Hair, Black, Babin, Anderson, & Tatham, 2006). The AVE values of all constructs except 'reward system' were bigger than .5, as Table 1 shows, and thus convergence validity was secured. Moreover, the Φ coefficients signifying the correlations among the constructs did not include 1.0, and thus we could confirm discriminant validity among the constructs (Anderson & Gerbing, 1988; Moon, Park, & Choi, 2010).

This study used a single informant technique in data collection and might be subjected potentially to common method bias. In order to check this potential bias, Harman's single-factor test was used (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). If common method bias exists, either a single factor will emerge from a factor analysis of all survey items or one general factor that accounts for most of the variance will result. The analysis revealed more than one factor with eigenvalue greater than 1.0, and the first factor accounted for only 37% of the variance. The result indicates that common method bias was not a problem in the study.

Table 1
Factor loadings and reliability/validity of measurement items.

Constructs	Items	Factor loadings	Reliability/validity
Management attitude toward risk	Top managers in my firm favor low-risk projects (reverse scale).(×1)	.804	$\alpha = .822$ $\rho = .766$ AVE = .568
	Top managers in my firm have shown a strong preference for high-risk projects (with chances of very high returns).(×2)	.813	
Reward system	My company's management promotes and encourages new, high-risk projects.(×3)	.705	$\alpha = .699$ $\rho = .483$ AVE = .459
	My company's reward system includes a high portion of long-term performance measures in the pay mix regarding total compensation.(×4)	.668	
	My company's reward system includes a high portion of quantitative performance measures in the pay mix regarding total compensation (reverse scale).(×5)	.641	
CEO's emphasis	My company's reward system uses qualitative goal-congruent measures of performance in addition to accounting-based measures.(×6)	.663	$\alpha = .819$ $\rho = .761$ AVE = .568
	Top management in my firm emphasizes day-to-day operational issues (reverse scale).(×7)	.745	
	Top management in my firm has shown a strong preference for a holistic perspective of the organization and its environment.(×8)	.818	
Formalization	My firm's CEO promotes and encourages strategic thinking.(×9)	.726	$\alpha = .793$ $\rho = .701$ AVE = .643
	My company uses a dynamic decision-making process that combines both formalized and ad-hoc strategic planning through the addition of strategic flex-points (reverse scale).(×10)	.822	
	In my company, roles, procedures, and authority through rules are established for decision making.(×11)	.807	
Centralization	My company's decision-making structures are mechanistic structures that restrain interaction, communication, and the exchange of ideas.(×12)	.814	$\alpha = .831$ $\rho = .674$ AVE = .689
	In my company, high autonomy is given to diverse functional departments and hierarchies for most decision making (reverse scale).(×13)	.712	
	In my company, important decisions are centralized and usually made by the CEO.(×14)	.836	
Interdepartmental teams	The organizational structure of my company requires that we achieve a consensus on all decisions (reverse scale).(×15)	.865	$\alpha = .778$ $\rho = .565$ AVE = .540
	My company has connections between departments and an extension of formal and informal contacts between the employees of various departments.(×16)	.746	
	In my company, interdepartmental connections or teams are not well arranged (reverse scale).(×17)	.725	
Marketing competency	My company has the structures, processes, and interdepartmental teams that take advantage of the ingenuity and creativity of employees.(×18)	.741	$\alpha = .833$ $\rho = .792$ AVE = .649
	Overall, my company has greater resources for marketing research than major competitors in the industry.(×19)	.785	
	Overall, my company has greater distribution resources than major competitors in the industry.(×20)	.931	
Technological competency	Overall, my company has greater advertising/promotion resources than major competitors in the industry.(×21)	.682	$\alpha = .841$ $\rho = .783$ AVE = .655
	Overall, my company has greater R&D resources than major competitors in the industry.(×22)	.771	
	Overall, my company has greater technological and engineering resources than major competitors in the industry.(×23)	.836	
Market turbulence	Overall, my company has greater resources for product design and specification than major competitors in the industry.(×24)	.744	$\alpha = .850$ $\rho = .798$ AVE = .611
	In my company's industry, market demand is stable (reverse scale).(×25)	.743	
	In my company's industry, the market structure, competition, and performance are very uncertain.(×26)	.836	
Technological turbulence	In my company's industry, the market environment is very chaotic, complex, and turbulent.(×27)	.733	$\alpha = .881$ $\rho = .724$ AVE = .728
	In my company's industry, technological change is incremental (reverse scale).(×28)	.882	
	In my company's industry, technological innovation is very speedy.(×29)	.760	
Strategic thinking	In my company's industry, the technological environment is very chaotic, complex, and turbulent.(×30)	.911	$\alpha = .733$ $\rho = .651$ AVE = .589
	Overall, my company's decision-making is systematic.(y1)	.727	
	Overall, my company's decision-making is creative.(y2)	.691	
Profit	Overall, my company's decision-making is vision-driven.(y3)	.724	$\alpha = .813$ $\rho = .761$ AVE = .616
	Overall, my company's decision-making is market-oriented.(y4)	.683	
	How successful was your company from an overall profitability standpoint? (0 = a great financial failure, i.e., far less than our minimum acceptable profitability criteria; 10 = a great financial success, i.e., far in excess of our minimum acceptable profitability criteria.) (y5)	.766	
Sales	Relative to competing firms, how successful was your company in terms of profits? (0 = far less than competing firms; 10 = far greater than competing firms.) (y6)	.918	$\alpha = .830$ $\rho = .784$ AVE = .641
	Relative to your firm's objectives, how successful was your company in terms of profits? (0 = far less than the objectives; 10 = far greater than the objectives.) (y7)	.677	
	Relative to competing firms, how successful was your company in terms of sales? (0 = far less than competing firms; 10 = far greater than competing firms.) (y9)	.797	
Market share	Relative to your company's objectives, how successful was your company in terms of sales? (0 = far less than the objectives; 10 = far greater than the objectives.) (y10)	.861	$\alpha = .805$ $\rho = .751$ AVE = .576
	How successful was your company from an overall market-share standpoint? (0 = far less than our minimum acceptable market-share criteria; 10 = far greater than our minimum acceptable market-share criteria.) (y11)	.799	
	Relative to competing firms, how successful was your company in terms of market share? (0 = far less than competing firms; 10 = far greater than competing firms.) (y12)	.811	
	Relative to your company's objectives, how successful was your company in terms of market share? (0 = far less than the objectives; 10 = far greater than the objectives.) (y13)	.683	

Table 2
Standardized path coefficients and fit indices of the structural model.

Determinant	Strategic thinking	Marketing performance		
		Profit	Sales	Market share
Management attitude toward risk (H1)	.141(.132) ^b			
Reward system (H2)	.176(.155)			
CEO's emphasis (H3)	.098(.239) ^a			
Formalization (H4)	-.177(-.158) ^b			
Centralization (H5)	.083(.137) ^a			
Interdepartmental teams (H6)	.221(.207) ^b			
Marketing competency (H7)	.266(.198) ^b			
Technological competency (H8)	.218(.221)			
Market turbulence (H9)	.076(.065) ^b			
Technological turbulence (H10)	.089(.073) ^a			
Strategic thinking (H11)		.233(.217) ^b	.198(.173) ^b	.209(.188) ^b
Model fitness (measurement and structural models)		CMIN/DF = 1.677 RMSEA = .072 RMR = .126 GFI = .864 AGFI = .792 PGFI = .610	CMIN/DF = 1.667 RMSEA = .081 RMR = .124 GFI = .853 AGFI = .797 PGFI = .605	CMIN/DF = 1.783 RMSEA = .083 RMR = .119 GFI = .866 AGFI = .782 PGFI = .612

^a Significant at the 5% level.
^b Significant at the 1% level, numbers in parentheses are critical ratios of non-standardized coefficients.

5.2. Analyses of the path coefficients of the structural model

To assess the causal relationships among ten determinants, strategic thinking, and marketing performance, the path coefficients were estimated via AMOS 7.0. The structural model estimations were conducted three-fold for three marketing performance constructs, that is, profit, sales, and market share. Table 2 presents the standardized path coefficients from

the model estimation and the model fitness indices. Fig. 3 shows the structural equation model and the standardized path coefficients.

We evaluated the fitness of the whole model including the measurement and structural models via CMIN/DF, RMSEA, RMR, GFI, AGFI, and PGFI, which are known as relatively stable indices. The results showed that CMIN/DF was 1.667–1.783, i.e., between one and three; RMSEA was .072–.083 and thus smaller than .10; RMR, GFI, AGFI, and PGFI

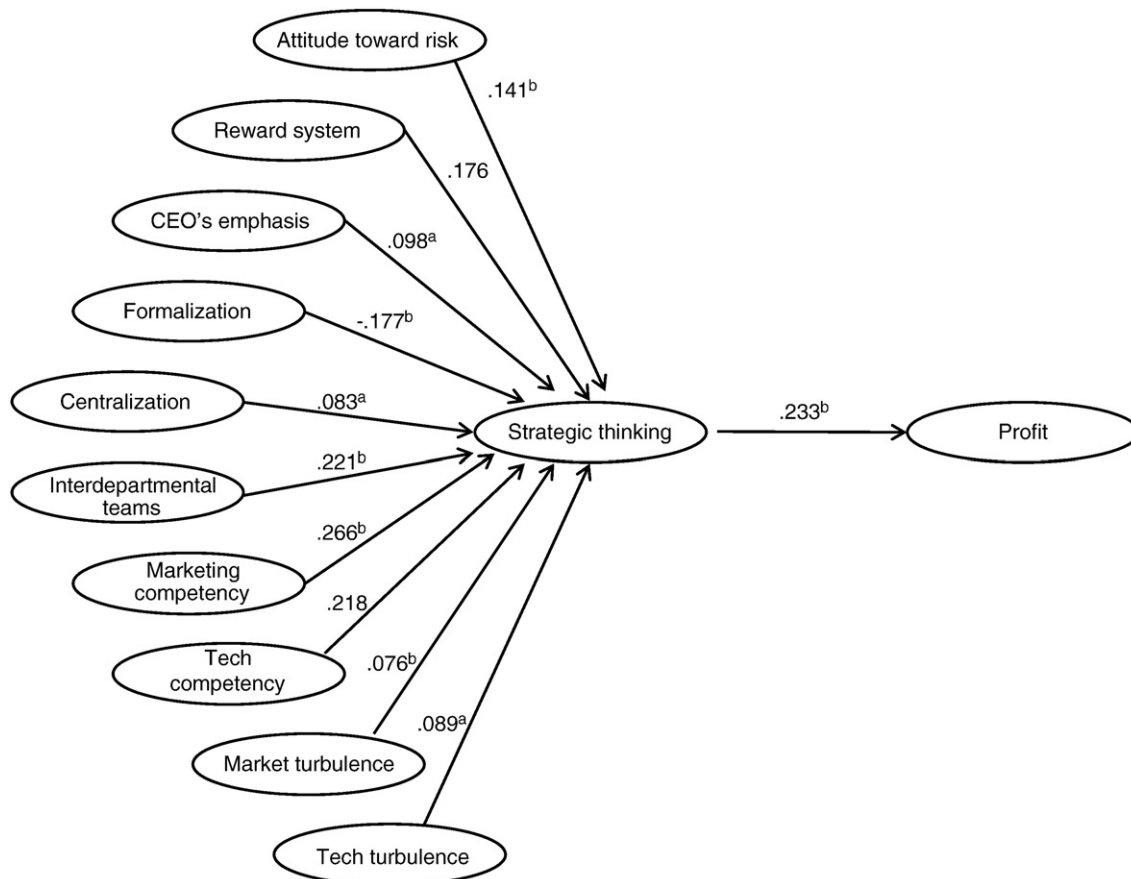


Fig. 3. The structural equation model and standardized path coefficients. ^aSignificant at the 5% level, ^bsignificant at the 1% level.

were smaller than or similar to .10, .9, .9, and .6, respectively, thus denoting a satisfactory level considering prevailing criteria of model fitness (Bae, 2009; Hu & Bentler, 1999).

As can be seen in Table 2, the results of path coefficient analyses showed that a firm's strategic thinking was positively and significantly related to management attitude toward risk, CEO's emphasis, interdepartmental teams, marketing competency, market turbulence, and technological turbulence. As well, a firm's strategic thinking was negatively and significantly related to formalization in the decision-making structure. These results support H1, H3, H4, H6, H7, H9, and H10.

Therefore, a firm's strategic thinking appears to be positively influenced by management attitude toward risk, CEO's emphasis, informality in the decision-making structure, interdepartmental teams, marketing competency, market turbulence, and technological turbulence. In addition, a firm's strategic thinking appears to be positively and significantly related to marketing performance in terms of profit, sales, and market share. These results support the interpretation of strategic thinking as mediating the effects of a firm's internal and external factors on marketing performance. This result supports H11.

The findings do not support all hypotheses. Contrarily to H5, strategic thinking was positively and significantly related to centralization in the decision-making structure. This may mean that a centralized decision-making structure is more effective for encouraging strategic thinking in an unforeseen, chaotic, and complex situation such as the Asian financial crisis of 1998 and the global financial crisis of 2008. This result resonates with the findings of Ettlie et al. (1984) and Moon (2006).

The coefficient of technological competence was positive as hypothesized but insignificant. As well, the coefficient of the long-term and qualitative reward system was not significant. Thus, H2, H5, and H8 were not supported in the sample.

6. Discussion

The results of this research confirm the usefulness of our conceptual framework for understanding the relationships among a firm's strategic thinking, marketing performance, and antecedents of strategic thinking.

6.1. Theoretical implications

The principal contributions of this study to the strategic thinking literature are an identification of the determinants and a substantiation of the marketing performance outcome of strategic thinking. Previous research on strategic thinking in diverse management fields including marketing strategy, strategic management, and human resource management has paid attention to such issues as: describing the concept and need for strategic thinking; what the process of strategic thinking entails; methods of strategic thinking; how to develop and improve strategic thinking; consequences of strategic thinking; and how to estimate the level of strategic thinking. However, research on the identification of the antecedents of strategic thinking and substantiation of the marketing performance outcome thereof is sparse. This study provided a model that links the antecedents, strategic thinking, and marketing performance outcomes.

In particular, the data on firms' internal and external variables and strategic thinking examined here clearly support the following five conclusions. First, organizational culture, such as the management's attitude toward risk taking and CEO's emphasis on strategic thinking, influences the firm's strategic thinking. The importance of management attitude toward risk taking assumes much significance given Dewar and Dutton's (1986) notion of the role of management attitude toward change in radical product innovation.

Second, our findings suggest that organizational structure, such as formalization and centralization in the decision-making structure, and interdepartmental teams, influence the firm's strategic thinking.

That is, the result underscores the importance of organic rather than formal structures and connections between departments to foster strategic thinking. The results of previous research on the effects of centralization in the decision-making structure on innovation and market orientation are mixed. Matsuno et al. (2002) showed that high autonomy in the firm is positively related to market orientation. Contrarily, Ettlie et al. (1984) pointed out that radical innovation is promoted by a centralized decision-making structure. The findings of this research resonate more with those of Ettlie et al. (1984). As noted by Matsuno et al. (2002), a decentralized organizational structure may be positively related to strategic thinking. Nevertheless, if a firm is facing adversities such as a global financial crisis, a centralized rather than decentralized organizational structure may be more effective to foster strategic thinking.

Third, this study confirmed the importance of marketing competency and technological competency in strategic thinking. This finding resonates with those of Song and Parry (1997). The present results highlight the importance of a firm's marketing skills and resources as well as technological capabilities for its strategic thinking.

Fourth, our findings confirmed the impact of a firm's external variables on strategic thinking. This result resonates with the findings of Han et al. (1998) and Slater and Narver (1994). Considering that a firm may face unforeseen situations that lie beyond the scope of the existing accumulated knowledge in technologically turbulent fields, this finding underscores the impact of market and technology turbulence on strategic thinking.

Fifth, this study confirms the positive impact of strategic thinking on marketing performance. This finding resonates with those of Fodness (2005), Jaworski and Kholi (1993), Kirca et al. (2005), Narver and Slater (1990), and Ruekert (1992). Considering that the most important thing a CEO and a company can do to avoid a decline in business is to return to sound management practices, this finding underscores the importance of rigorous strategic thinking for enhancing marketing performance.

6.2. Managerial implications

The results have clear implications for marketing strategy and strategic management. Firms are advised to assess their internal and external factors for providing favorable conditions for strategic thinking. With regard to internal factors, firms are advised to assess their organizational cultures, such as attitudes toward risk, CEO's emphasis, organizational structure, e.g., formalization, centralization in decision-making, and interdepartmental teams, and marketing resources and competencies. With regard to external factors, firms are recommended to foster strategic thinking when they are faced with turbulent market situations and speedy technological change.

6.3. Limitations and implications for further research

The results need qualification in several ways. First, the use of subjective scales to measure marketing performance constitutes a limitation. Further research may use objective measures of marketing performance such as data from accounting reports.

Second, this research did not involve the impact of organizational behavioral factors on strategic thinking and marketing performance. Akgun, Lynn, and Yilmaz (2006) analyzed the effects of the learning process in new product development teams on product success. Schulze and Hoegl (2006) studied the relationship between knowledge creation modes in new product development and new product success. Further research may address the relationship between team learning processes or the knowledge creation mode and strategic thinking and marketing performance.

Third, further research may address the moderating effects of external variables (market turbulence and technological turbulence) on the relationship between the antecedents of strategic thinking and marketing

performance. For example, when a company performs in a stable vs. turbulent market situation, an organization with a decentralized rather than centralized decision-making structure is likely to foster more strategic thinking and vice versa.

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