A CONTINGENT RESOURCE-BASED VIEW OF PROACTIVE CORPORATE ENVIRONMENTAL STRATEGY

J. ALBERTO ARAGÓN-CORREA
University of Granada

SANJAY SHARMA
Wilfrid Laurier University

We integrate perspectives from the literature on contingency, dynamic capabilities, and the natural resource-based view of the firm to propose how dimensions of the general competitive environment of a business will influence the development of a dynamic, proactive corporate strategy for managing the business-natural environment interface. We also explain how certain characteristics of the general business environment—uncertainty, complexity, and munificence—moderate the relationship between the dynamic capability of a proactive environmental strategy and competitive advantage. We conclude with a discussion of implications for research and practice.

The relationship between an organization’s strategy for managing its business-natural environment interface on the one hand and its competitive advantage on the other has been debated in the organizations and the natural environment literature. Some early researchers argued that increased environmental regulation could lead to unproductive investments, higher costs, and a possible loss of competitive advantage (e.g., Walley & Whitehead, 1994). Others argued that stringent environmental regulations presented firms with opportunities for improved efficiency (Porter & van der Linde, 1995) and international competitive advantage (Porter, 1991). Indeed, studies showed that first movers, in going beyond environmental regulatory compliance, created entry barriers that favored industry incumbents (Dean & Brown, 1995) and also provided them with sources of competitive advantage in international markets (Nehrt, 1998). Moreover, proactive corporate environmental strategies or a pattern of environmental practices that went beyond compliance with environmental regulations were found to be associated with improved financial performance (Judge & Douglas, 1998; Klassen & McLaughlin, 1996)."}

Authors of the cited studies directly examined the link between environmental strategy and financial performance using one or a few indicators of a firm’s environmental and financial performance, without accounting for the underlying organizational variables that possibly moderated this relationship. For example, Klassen and McLaughlin (1996) found a positive relationship between the environmental awards won by firms and their stock prices. These studies hinted at the external factors and internal variables accompanying proactive environmental strategies that might influence this relationship. Indeed, researchers showed that proactive environmental strategies in the form of investments in pollution prevention technologies (rather than reactive investments in pollution control) only led to environmental and competitive improvements when they were associated with the development of certain strategic man-

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1 We use the term environment to refer to the natural environment, environmental strategy to refer to a firm’s strategy to manage the interface between its business and the natural environment, and environmental regulations to refer to regulations that legislate the impact of business activities on the natural environment. In contrast, when we refer to the general or competitive environment of business, we use the term general business environment or business environment.
The resource-based view (RBV) of the firm (Barney, 1986, 1991; Wernerfelt, 1984) provides a theory to explain competitive advantage as an outcome of the development of valuable organizational capabilities, such as continuous innovation, organizational learning, and stakeholder integration, associated with a proactive environmental strategy (Hart, 1995; Sharma & Vredenburg, 1998). Resource-based studies have unpacked the organizational resources and capabilities that link environmental strategy and organizational performance (e.g., Marcus & Nichols, 1999; Russo & Fouts, 1997; Sharma & Vredenburg, 1998). For example, Christmann (2000) showed that complementary process capabilities contributed to cost advantage when a firm implemented "best practices" for environmental management.

Occupying a theoretical position between the strategic choice perspectives advocated in the studies cited immediately above and institutional perspectives maintaining the primacy of exogenous forces in shaping corporate environmental strategies (e.g., Hoffman, 1999; Jennings & Zandbergen, 1995), a few empirical studies represent a more balanced approach to examining the influence of exogenous factors on the development or acquisition of competitively valuable internal environmental capabilities. For example, Marcus and Geffen (1998) longitudinally examined how electricity generation firms acquired pollution prevention competencies as a result of interactions between conflicting institutional (government and market) forces and individual firm capabilities of organizational learning and search for talent and technology. Majumdar and Marcus (2001) found that strategic choice of environmental strategies by electric utilities in the United States was contingent upon whether or not environmental regulations allowed them discretion in their technology investments. Moreover, these authors argue that flexible regulations were more likely to result in competitive advantage, because they allowed firms to adopt efficient and productive technologies. Russo and Fouts (1997) found that industry growth moderated the relationship between environmental strategy and organizational performance, because it required riskier investments, entailed organic management structures, and promoted greater interest in intangible assets such as reputation, all of which contributed to improved organizational economic performance.

These studies have begun to contribute to an understanding of the factors in the general business environment that may influence the development of an organization's proactive environmental strategies and competitively valuable organizational capabilities. However, scholars lack a general theory to explain how characteristics of the general business environment, such as uncertainty, complexity, and munificence, will affect the development of a proactive corporate environmental strategy and its impact on competitive advantage.

The consideration of exogenous factors usually has been absent from the RBV literature, but this literature, too, has recently contained arguments for greater attention to the influence of the market conditions under which different resources may be valuable (Barney, 2001; Priem & Butler, 2001a,b). Empirical evidence has shown that patterns of effective capabilities (those that enhance organizational fit and performance) vary with market dynamism (Eisenhardt & Martin, 2000) or a competitive business environment (Brush & Artz, 1999) and enable a dynamic fit with the changing general business environment (Zajac, Kraatz, & Bresser, 2000). Additionally, the efficacy of organizational capabilities varies with market dynamism, and the general business environment affects the process that allows the development of dynamic capabilities (Eisenhardt & Martin, 2000; Helfat, 1997; Teece, Pisano, & Shuen, 1997).

To propose a generic theory of how the characteristics of the general business environment influence the development of the dynamic capability of a proactive environmental strategy and its impact on competitive advantage, we draw upon contingency theory, which posits that organizational performance (competitive advantage) is a result of the proper alignment of endogenous organizational design variables with exogenous context variables (Burns & Stalker, 1961; Lawrence & Lorsch, 1967). Another tenet of contingency theory is that different levels of environmental variation require different degrees of strategic formality as a means to match organizational resources with opportunities and threats in the general business environment (Andrews, 1971; Hofer & Schendel, 1978; Jauch, Osborn, & Glueck, 1980; Miller & Friesen, 1983).
In integrating the dynamic capabilities and the contingent perspectives, we accept the view that the general business environment influences a firm’s strategy but does not mechanistically determine it, thus avoiding the criticism of the contingent literature as deterministic. We also address the lack of specific examples in the dynamic capabilities literature by presenting proactive environmental strategy as a capability that enables organizations to maintain dynamic alignment with their general business environment.

We extend the RBV of the natural environment (Christmann, 2000; Hart, 1995; Majumdar & Marcus, 2001; Marcus & Nichols, 1999; Russo & Fouts, 1997; Sharma & Vredenburg, 1998; Shrivastava, 1995b) to develop a contingent RBV (Brush & Artz, 1999; Zajac et al., 2000) of the natural environment. We offer an explanation of how characteristics of the general business environment influence the development of a proactive environmental strategy as a dynamic capability. We also examine how the general business environment moderates the competitive value of a proactive corporate environmental strategy. We offer propositions to explain, from a contingent perspective, why two firms with similar resources (similar physical assets, technologies, and human skills) may develop different environmental strategies and/or obtain differential levels of competitive advantage with similar environmental strategies.

**ENVIRONMENTAL STRATEGY AND THE CONTINGENCY PERSPECTIVE**

Corporate strategies for managing the interface between business and the natural environment can be classified along a continuum that ranges from reactive to proactive. At one end of the continuum, a reactive posture is a response to changes in environmental regulations and stakeholder pressures via defensive lobbying and investments in end-of-pipe pollution control measures. At other end of the continuum, proactive postures involve anticipating future regulations and social trends and designing or altering operations, processes, and products to prevent (rather than merely ameliorate) negative environmental impacts (e.g., Aragón-Correa, 1998; Hart & Ahuja, 1996; Hunt & Auster, 1990; Post & Altman, 1992; Russo & Fouts, 1997; Sharma & Vredenburg, 1998).

Authors taking a natural resource-based view of the firm (Christmann, 2000; Hart, 1995; Majumdar & Marcus, 2001; Marcus & Nichols, 1999; Russo & Fouts, 1997; Sharma & Vredenburg, 1998; Shrivastava, 1995b) have argued that the positive relationship between proactive environmental strategies and organizational performance (e.g., Judge & Douglas, 1998; Klassen & McLaughlin, 1996; Klassen & Whybark, 1999; Russo & Fouts, 1997) results when firms develop complex capabilities. These include the tacit capabilities of total quality management, the socially complex capabilities of cross-functional and cross-stakeholder management, and the rare capabilities of shared vision (Hart, 1995; Sharma & Vredenburg, 1998). These capabilities have performance implications in terms of lower costs, improved reputation, and strategic alignment with future changes in the general business environment (Hart, 1995; Sharma & Vredenburg, 1998). The capabilities are complex and path dependent (Barney, 1991; Dierickx & Cool, 1989; Hart, 1995) on the accumulation of, and the interaction between, resources such as physical assets, technologies, and people (Marcus & Nichols, 1999; Ramus & Steger, 2000; Russo & Fouts, 1997; Sharma, 2000; Shrivastava, 1995a,b).

**Proactive Environmental Strategy As a Dynamic Capability**

Dynamic capabilities consist of a set of specific and identifiable processes that, although idiosyncratic to firms in their details and path dependent in their emergence, have significant commonality in the form of best practices across firms, allowing them to generate new, value-creating strategies (Eisenhardt & Martin, 2000). Dynamic capabilities, by definition, vary with the level of market dynamism and enable an organization to adapt to changes in the general business environment (Cockburn, Henderson, &...
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Stern, 2000; Rosenbloom, 2000). For example, Hel-fat (1997) showed that, in response to exogenous changes in oil prices, firms in the U.S. oil industry with larger amounts of complementary technological knowledge and physical assets also undertook greater amounts of research and development in alternative (synthetic) fuel processes. In the following paragraphs we characterize a proactive environmental strategy as a dynamic capability in terms of individual elements of the above definition (Eisenhardt & Martin, 2000).

First, a proactive environmental strategy is dependent on specific and identifiable processes (Eisenhardt & Martin, 2000), such as those connected to the complex environmental capabilities of stakeholder integration, continuous innovation and improvement, and higher-order shared learning (Hart, 1995; Sharma & Vredenburg, 1998). Further, such a strategy consists of best practices, showing a commonality across firms and contributing to proactive investments in pollution prevention, as well as to competitive advantage (Christmann, 2000; Majumdar & Marcus, 2001). Some of these practices are linked to cost advantage, such as process-focused practices that increase efficiency and productivity and reduce inputs and wastes (Christmann, 2000; Hart, 1995; Hart & Ahuja, 1996; Klassen & Whybark, 1999). Others are linked to differentiation advantages, such as product-focused practices involving redesign for the environment and highlighting the environmental attributes of products and services to green consumers (Hart, 1995). To the extent these practices are tacit, causally ambiguous, firm specific, socially complex, path dependent, and value adding for consumers, they may provide competitive advantage (Hart, 1995; Marcus & Geffen, 1998; Sharma & Vredenburg, 1998).

Second, owing to its social complexity and organizational specificity, a proactive environmental strategy is also idiosyncratic in its details (Eisenhardt & Martin, 2000). Reactive environmental investments are often driven by environmental regulations that advocate specific technologies and processes (Majumdar & Marcus, 2001; Sharma, 2001), but proactive approaches involve firm initiatives based on managerial discretion (Majumdar & Marcus, 2001) and interpretations of environmental issues as opportunities (Andersson & Bateman, 2000; Sharma, 2000). Hence, “key players are likely to interpret the conditions they face and assign meaning to the actions they take in fairly idiosyncratic ways” (Marcus & Geffen, 1998: 1147).

Third, as a dynamic capability, a proactive approach to the natural environment requires the path dependence and embeddedness of the capabilities of stakeholder integration (Marcus & Geffen, 1998; Sharma & Vredenburg, 1998), higher-order learning, shared vision, and continuous improvement (Hart, 1995; Sharma & Vredenburg, 1998). A dynamic capability of proactive environmental strategy requires a complex integration of these environmental capabilities through the use of organizational and managerial resources (Andersson & Bateman, 2000; Russo & Fouts, 1997; Sharma, 2000).

Finally, a proactive environmental strategy is built through a path-dependent process of integrating a series of tacit capabilities and is therefore nonreplicable or inimitable (Teece et al., 1997). A proactive strategy that focuses on pollution prevention is a more comprehensive and socially complex process than compliance, necessitating significant cross-functional employee involvement, coordination, and integration (Russo & Fouts, 1997), as well as reconfiguration and recombination of resources. Proactive strategies such as pollution prevention approaches need to be integrated into the administrative, entrepreneurial, and engineering dimensions of a firm (Aragón-Correa, 1998).

Thus, a proactive strategy to manage the interface between a business and its natural environment has the characteristics of a dynamic capability that enables an organization to align itself with changes in its general business environment. Further, the extent to which the dynamic capability of proactive environmental strategy will lead to a positive impact on an organization’s competitiveness will depend on exogenous factors that affect each firm differently via managerial perceptions.

The Contingent RBV

In general, the contingency theory argument is that superior organizational performance is a result of the proper alignment of endogenous organizational design variables with exogenous context variables (Burns & Stalker, 1961; Lawrence & Lorsch, 1967). Although organization theory perspectives emphasize fit between the general business environment and an organiza-
tion's structure (e.g., Donaldson, 1995), the strategy literature suggests that different levels of environmental variation require different degrees of decision-making comprehensiveness and strategic formality to match organizational resources with opportunities and threats in the general business environment (Andrews, 1971; Hofer & Schendel, 1978; Jauch et al., 1980; Miller & Friesen, 1983).

Proponents of the RBV have recently called for an inclusion of a contingency perspective in assessments of the competitive value of organizational resources and capabilities (Barney, 2001; Priem & Butler, 2001a,b). Indeed, in recent empirical studies researchers have assessed certain variables in the general business environment to examine this linkage in specific industry contexts. For example, Miller and Shamsie (1999) showed that knowledge-based resources in Hollywood studios generated greater competitive benefits only in uncertain and risky business environments. Similarly, Maijoor and Van Witteloostuijn (1996) showed how a changed Dutch regulatory environment stimulated demand for audit services, which generated benefits from firm-specific, rent-producing resources. Brush and Artz (1999), who coined the term contingent resource-based theory, found that, for a sample of veterinarians, the value of practice capabilities was dependent on the type of veterinary service being offered and the implicit information asymmetry in the client-provider relationship. Further, Zajac et al. (2000) modeled the dynamics of strategic alignment by showing that changes of strategy in the U.S. savings and loans industry could be predicted on the basis of differences in specific organizational resources and forces in the general business environment. They further showed that a strategic fit with the general business environment generated greater competitive benefits than did a deviation from alignment.

The contingency theory, RBV, and organizations and the natural environment literature have all shown that managerial perceptions of the general business environment influence strategy. Managers may interpret environmental issues as threats or as opportunities (Sharma, 2000) and may view environmental pressures from various stakeholders as having weaker or stronger influences on their environmental strategies (Henriques & Sadorsky, 1996, 1999). In order to maintain alignment between changing managerial perceptions of an exogenous general business environment and complex capabilities for managing the business-natural environment interface, organizations need to develop the dynamic capability of a proactive environmental strategy.

A CONTINGENT RBV OF A PROACTIVE ENVIRONMENTAL STRATEGY AND COMPETITIVE ADVANTAGE

In this section we present a series of propositions explaining how the characteristics of the general business environment may influence the development of the dynamic organizational capability of a proactive environmental strategy. Simultaneously, we present a series of related propositions explaining how each dimension of the general environment will moderate the link between a firm's proactive environmental strategy and its competitive advantage. We examine the influence of the general business environment using the three characteristics of environmental uncertainty, complexity, and munificence commonly used in the literature (e.g., Amit & Schoemaker, 1993; Boyd, 1990; Dess & Beard, 1984). We acknowledge that other characteristics of the general business environment may also moderate the link between environmental strategy and organizational competitive advantage and that it may be important to study general business environment gestalts in the form of interactions among variables. However, such examination is outside the scope of this research. We attempt to explain in greater depth a few specific influences within the complex configuration of variables in the general business environment.

Figure 1 graphically represents the propositions explaining the moderating effect of variables in the general business environment on the development of the dynamic capability of a proactive environmental strategy and on the relationship between such an environmental strategy and a firm's competitive advantage.

Environmental Uncertainty

Coping with uncertainty in the general business environment has been considered a central problem for organizations (Thompson, 1967). Definitions of environmental uncertainty can be classified into two groups: (1) those based on
managers’ perceptions of the business environment and (2) those based on the environment’s objective features. Definitions of the first type imply that firms respond to a general environment as it is interpreted by the decision makers and that its unperceived characteristics do not affect either the decisions or the actions of management (e.g., Anderson & Paine, 1975; Child, 1972; Pieffer & Salancik, 1978). At the same time, researchers who study uncertainty in the business environment using objective criteria argue that there is a weak empirical relationship between managers’ perceptions and objective characteristics (e.g., Boulton, Lindsay, Franklin, & Rue, 1982; Downey, Hellriegel, & Slocum, 1975; Osborn & Hunt, 1974).

Both perspectives have inherent weaknesses (Sawyerr, 1993; Yasai-Ardekani, 1989); therefore, some scholars have proposed a mixed perspective. For example, Milliken proposes that uncertainty in the general business environment is “an individual’s perceived inability to predict something [the business environment] accurately” because of “[in]sufficient information” or the inability to “discriminate between relevant data and irrelevant data” (1987: 136). Similarly, Miller and Friesen call dynamism or uncertainty in the general environment “the rate of change of innovation in the industry as well as the uncertainty or unpredictability of the actions of competitor or customer” (1983: 222).

The RBV has traditionally focused on the competitive implications of internal organizational resources and capabilities. Researchers have discussed the importance of the general business environment only to a limited extent. For example, Black and Boal (1994) pointed to the importance of taking uncertainty into account in the study of resources and the difficulty of determining a priori which resources give sustainable performance when managers face uncertainty. Also, Amit and Schoemaker (1993) stressed the difficulty of making management decisions about investments in strategic assets
in an uncertain environment, assuming that the likelihood of success would be greater if managers were able to anticipate possible futures. Further, Miller and Shamsie's (1999) study of the capabilities of Hollywood studios showed the relationship between uncertainty and the generation of appropriate resources or capabilities.

Like Miller and Shamsie (1999), we adopt Milliken's (1987) breakdown of uncertainty into three types. Environmental state uncertainty occurs when managers perceive their general business environment or one of its components to be unpredictable; organizational effect uncertainty occurs when managers have difficulty understanding or predicting the impact of changes in the general business environment on their organizations; and decision response uncertainty occurs when managers perceive an inability or risk in predicting the consequences of individual decisions.

**Environmental state uncertainty.** Scholars have argued that managers facing uncertain general business environments tend to be more proactive, take greater risks, and use more innovative strategies than managers in less turbulent environments (Miles & Snow, 1978; Milliken, 1987; Paine & Anderson, 1977), because they attempt to anticipate events and implement preventive actions rather than merely respond to events that have already occurred. They "seek to identify and adopt new products and processes in an attempt to minimize the effects of an environment that strategists understand poorly" (Buchko, 1994: 414). In such dynamic (and therefore uncertain) contexts, intensive managerial approaches are followed, and organizations generally practice selective decentralization (Alexander, 1991) and deploy innovative strategies (Miller, 1987). This is because dynamism is "change that is hard to predict and that heightens uncertainty for key organizational members" (Dess & Beard, 1984: 56). For example, after the Union Carbide accident in Bhopal, both Eli Lilly and Baxter International responded by investing in programs that went beyond regulatory compliance. They did so because of uncertainties in the business environment created by pressures from multiple stakeholders and because of the increasing hostility of regulators that was likely to lead to new regulations and expectations for environmental performance (Prakash, 2000).

For organizations managing the business-natural environment interface, innovative technologies contribute to a proactive approach (Shrivastava, 1995a,b). However, as environmental regulations and certification standards become legislated and concretized, managers have less discretion (Sharma, 2000) and less opportunity to invest in the development of environmental capabilities (Aragon-Correa, 1998; Hunt & Auster, 1990; Post & Altman, 1992; Roome, 1992; Sharma, 2000). Majumdar and Marcus (2001) have shown how flexible environmental regulations enlarged managers' choices and opportunities for proactive strategies in the form of pollution prevention innovations in the U.S. electric utility industry. Similarly, Marcus and Nichols (1999) have shown how increased regulatory scrutiny for aging nuclear power plants led to greater centralization and lower managerial discretion.

Proactive organizations are more likely to decentralize decision making about the interface between business and the natural environment, passing it to line managers and allowing them discretion to anticipate strategic futures (Sharma, 2000) and to develop capabilities accordingly. Aragon-Correa (1998) found that the characteristics and objectives of "prospector" organizations (Miles & Snow, 1978), as measured on the entrepreneurial dimension, were similar to those required for a proactive environmental strategy in terms of the choices made about products, markets, and ways of competing. Proactive firms invested more than reactive firms in the development of new products and designs with minimal negative impacts on the natural environment (Aragon-Correa, 1998).

Environmentally proactive firms also invested in R&D, in technology, and in activities that supported natural environmental objectives at all levels (Bringer & Benforado, 1994), as well as in the development of their human resources, because a proactive environmental strategy is "people intensive and depends upon tacit skill development through employee involvement" (Hart, 1995: 993). Therefore, a firm is more likely to invest in developing its tangible and intangible resources to generate the environmental capabilities required for a proactive environmental strategy in uncertain general business environments.
Proposition 1a: Perceived state uncertainty in the general business environment increases the likelihood that a firm will use its capabilities and resources to develop a proactive environmental strategy.

In uncertain general business environments, the objectives of an organization may be conflicting and shifting. The contingent theory argument is that in uncertain environments successful firms adopt more differentiated structures than unsuccessful firms and use more sophisticated integration devices (Lawrence & Lorsch, 1967). Although uncertainty may provide a firm an opportunity for niche specialization (Wholey & Brittain, 1986), ongoing innovation characterized by a proactive environmental strategy gives the firm better opportunities to achieve stability by reducing the risk of concentrating on a single product or market segment. Miller and Shamsie (1999) showed that the greater the uncertainty in the business environment, the greater a firm’s product variety and, therefore, the greater its innovation. Further, they found that in uncertain business environments the most innovative firms achieved the best industry performance, because they achieved differentiation and reduction of uncertainty.

Pollution prevention approaches that usually accompany a proactive environmental strategy are innovative and provide organizations with opportunities to obtain rare advantages (Hart, 1995; Russo & Fouts, 1997), especially when they face uncertain environments. These advantages include significant cost savings relative to competitors; these savings result from avoiding the cost of installing and operating end-of-pipe pollution control devices, increased productivity and efficiency, reduced costs of implementing regulations, and reduced legal liabilities (Sharma & Vredenburg, 1998). Differentiation benefits of proactive strategies include greater legitimacy and improved corporate reputation and, hence, preferential treatment from consumers and stakeholders (Sharma & Vredenburg, 1998). For example, in an uncertain business environment in which landfill disposal of automobiles was being actively debated, BMW obtained first mover advantages in the form of cost reduction and consumer preference in European markets by developing innovative systems for recycling automobile components, before German regulations made it obligatory to do so (Menon, Menon, Chowdhury, & Jankovich, 1999).

Proactive environmental strategies that include a focus on pollution prevention require a decentralized and people-intensive structure (Hart, 1995) that can generate a competitive advantage in uncertain business environments. The tacit nature of people-intensive environmental capabilities makes them difficult to observe in practice and, therefore, hard to imitate (Hart, 1995). The higher the environmental state uncertainty, the more difficult it is for competitors to obtain the information they need to duplicate environmental capabilities.

Proposition 1b: Perceived state uncertainty in the general business environment strengthens the association between a proactive environmental strategy and competitive advantage.

**Organizational effect and decision response uncertainties.** Organizational effect and decision response uncertainties respectively arise from a lack of organizational resources (or capabilities) and from a lack of information about the consequences of managerial actions. Miller and Shamsie (1999) have shown that these effect uncertainties are negatively associated with product variety. Therefore, firms that face organizational effect and decision response uncertainties find it more difficult to allocate sufficient resources to generate the complex environmental capabilities required for a proactive environmental strategy. Moreover, decision response uncertainty complicates the administration and use of existing resources and capabilities in developing a proactive environmental strategy. For instance, faced with a cyclical downturn in health care expenditure in the United States, Baxter International merged with American Hospital Supply Corporation (AHSC) in 1985. Owing to uncertainty about the effects of the merger on the combined organization and also to AHSC’s lack of environmental capabilities, Baxter reduced resource allocation to environmental programs altogether and focused on what it could measure: cost cutting (Prakash, 2000).

Managerial interpretations, attitudes, and perceptions have been shown to significantly influence the development of a firm’s strategy for managing the business–natural environment interface (e.g., Anderson & Bateman, 2000; Egri &
A proactive environmental strategy requires managers to exercise discretion and to experiment and take risks (Sharma, 2000), which are more difficult when they perceive organizational effect and decision response uncertainties and, thus, threats in the general business environment (Sharma, 2000). For instance, fossil fuel producers and users have strongly resisted curbs on carbon emissions and carbon taxes because of concerns over their inability to forecast the costs and competitive impacts of such measures, as well as an expressed inability to invest in pollution control technologies (Levy, 1999). In the United States nuclear power industry, Marcus and Nichols (1999) showed that firms that did not reduce organizational effect and decision response uncertainties by learning from unusual events tended to allocate resources toward maintenance rather than operations, which influenced the extent to which they moved away from proactive safety procedures toward minimum safety standards.

Proposition 2a: Perceived organizational effect uncertainty in the general business environment decreases the likelihood that a firm will use its capabilities and resources to develop a proactive environmental strategy.

Proposition 3a: Perceived decision response uncertainty in the general business environment decreases the likelihood that a firm will use its capabilities and resources to develop a proactive environmental strategy.

Even if a firm can generate environmental capabilities and undertake a proactive environmental strategy, uncertainty about internal resources and consequences of managerial actions will detract from its achieving competitive advantage through such a strategy. King and Zeithaml (2001) have shown that differences in top and middle managers’ beliefs about the contribution of a competency to their firm’s competitive advantage (linkage ambiguity) is negatively associated with firm performance. In addition, organizational and decision effect uncertainty can modify the moderating influence of state uncertainty on competitive advantage. For instance, during its penetration of former Soviet Union markets in the early 1990s, Honeywell faced high exogenous uncertainty over the evolution of both market forces and regulatory institutions. Therefore, it was driven toward becoming the “cocreator” of a new market system and toward implementing high-visibility environmental pilot projects supported by government. However, “the development of these initiatives required substantial firm-level resource commitments, with a very uncertain return, so that Honeywell used the wait and see option rather than actually making use of its dynamic capabilities” (Rugman & Verbeke, 2000: 383).

Proposition 2b: Perceived organizational effect uncertainty weakens the association between a proactive environmental strategy and competitive advantage.

Proposition 3b: Perceived decision response uncertainty weakens the association between a proactive environmental strategy and competitive advantage.

Complexity

Complexity in the general business environment is generally defined as proliferation and diversity of factors and issues in that environment (Duncan, 1972; Miller & Friesen, 1983; Smart & Vertinsky, 1984; Tan & Litschert, 1994). The greater the number of factors in the general business environment a manager perceives she or he must deal with, and the greater the differences among those factors, the more complex the business environment.

Managers perceiving complex business environments find it difficult to make in-depth changes, and therefore tend to make small adjustments (Smart & Vertinsky, 1984). They also have difficulty determining the key factors strategically important for success in a complex sector (Amit & Schoemaker, 1993). Paradoxically, from the resource-based perspective, sophisticated organizational resources and capabilities are the most suitable for complex situations, because they confuse competitors, thus providing the potential for competitive advantage. However, these resources and capabilities are also difficult to create, administer, and use/implement (Black & Boal, 1994).

Best practices and processes associated with proactive environmental strategies require far-
reaching organizational and managerial changes, are more systemic than most social issues, and affect a broader constellation of organizational functions (Russo & Fouts, 1997). A proactive environmental approach involves multiple stakeholders at all levels (including employees, suppliers, shareholders, local communities, and environmental nongovernmental organizations [NGOs]) and requires technological changes in systems, processes, and products/services. For instance, product stewardship requires integrating the external and internal perspectives of stakeholders into product design and development processes (Hart, 1995). These radical changes are more difficult to make in a complex business environment, in which organizations simply tend to make small adjustments (Smart & Vertinsky, 1984). Further, the organizational changes required to develop a proactive environmental strategy are themselves a further source of complexity.

To illustrate, the Canadian forestry industry has spent the last ten years trying to figure out the appropriate certification standard to adopt for marketing its wood products. Most Canadian forestry firms export to the United States, Europe, and Asia, besides selling in the domestic market. The Western European markets prefer Forestry Stewardship Council (FSC) certification, the United States markets prefer International Standards Organization (ISO) 14001 certification, and the Canadian market is gradually moving from a preference for Canadian Standards Association—Sustainable Forestry Management (CSA-SFM) standards to FSC standards. However, the Asian and Eastern European markets usually have no certification requirements. Moreover, Canadian and United States environmental NGOs and local aboriginal groups are pressuring the industry to adopt certain advanced environmental practices not covered by the various certification standards.

All of these certification standards go far beyond the requirements of Canadian environmental regulations, but they are nevertheless necessary for a firm to sell in its chosen markets. Several firms have moved from minor changes in practices (as required by regulations) to adoption of an easier standard (e.g., ISO 14001), and then shift to another, more difficult standard. However, this complexity of shifting standards has prevented many firms from undertaking a systemic and coordinated investment of resources in building the environmental capabilities necessary for a proactive environmental strategy.

Other factors that can contribute to complexity in the business environment include scientific debates about such environmental issues as global warming, conflicts between state/provincial and national/international environmental regulations, conflicting stakeholder perspectives, and different technologies for pollution prevention.

**Proposition 4a: Perceived complexity in the general business environment decreases the likelihood that a firm will use its capabilities and resources to develop a proactive environmental strategy.**

Nevertheless, if an organization is able to develop the dynamic capability of a proactive environmental approach in a complex business environment, it is likely to generate a competitive advantage. Miller and Friesen (1983) found the most profitable firms in a diversified business environment were also the most innovative. Also, Nehrt (1996) found that when the degree of environmental regulatory complexity increased, the first movers in pollution prevention in the paper industry had a competitive advantage due to the learning curves they had generated.

Sophisticated, complex organizational capabilities and resources are more suitable for complex situations because they are difficult for competitors to identify and imitate and are also difficult to achieve, administer, and use (Black & Boal, 1994). Complexity creates suboptimization, poor imitability, and superior rents for firms capable of generating the appropriate resources and capabilities (Amit & Schoemaker, 1993). Proactive environmental strategies are socially complex because they require integration of a number of external and internal views (Marcus & Geffen, 1998; Russo & Fouts, 1997). These views are often contradictory and/or difficult to understand. Therefore, proactive environmental approaches adopted in complex environments are innovative and rare and can provide more valuable management capabilities for an organization than reactive approaches, placing the organization in a better competitive position than other firms in the same general business environment.
Additionally, perfectly asymmetric information increases the complexity of the general business environment. Brush and Artz (1999) have shown that services offered by firms in complex business environments primarily exhibit credence characteristics—that is, characteristics that are difficult to evaluate, even after the services are purchased. Similarly, indicators of "green credence," such as certification or good reputation, which result from proactive environmental strategies, can be an important source of competitive advantage when the business environment is complex. A credible standard reduces transaction costs, provides access to markets, improves environmental performance and reduces costs, lowers insurance costs, improves access to credit, creates tolerance from environmental agencies, and equips firms to implement future laws and participate in law-making processes (Prakash, 2000).

Proposition 4b: Perceived complexity in the general business environment strengthens the association between a proactive environmental strategy and competitive advantage.

Munificence

Munificence is the degree to which the general business environment can support a sustained rate of organizational growth (Starbuck, 1976) or sales growth (Dess & Beard, 1984). Growth provides slack resources for exploration and innovation, facilitates conflict resolution, and helps maintain organizational coalitions. Indicators of munificence in a certain geographical area include a high concentration of similar firms and specialized supplies, which may include research coming from nearby universities, and an abundance of skilled labor (Decarolis & Deeds, 1999). In contrast, an environment can instead show hostility, defined as "the degree of threat to the firm posed by the multifacetedness, vigour and intensity of the competition and the downswings and upswings of the firm's principal industry" (Miller & Friesen, 1983: 222).

In the context of the natural environment, munificence also includes government subsidies or tax incentives for alternative energy technologies; bank financing at lower rates for environmentally friendly technologies; lower insurance premiums for lower environmental risks; development of accessible, environmentally friendly technologies in universities; alternative inputs (e.g., grass fibers or kenaf instead of wood pulp for paper manufacture); and affluent consumers willing to pay premiums for green products and services.

Organizations facing scarcity (hostility) in the general business environment have been shown to respond by restricting channels of communication, formalizing procedures, and centralizing decision making (Cameron & Zammuto, 1983). Yasai-Ardekani (1989) showed that, in munificent business environments, perceived exogenous pressures were positively related to structural complexity, measured in terms of professional qualifications and the decentralization of operating decisions. Conversely, he found that, in scarce business environments, perceived pressures led to greater formalization of procedures and the centralization of strategic decisions. We noted above that proactive environmental strategies require structural complexity, nonformalization, and decentralization (Russo & Fouts, 1997). Therefore, conditions of scarcity in the general business environment make it more difficult to establish the organizational and managerial processes, resources, and capabilities necessary for developing the dynamic capability of a proactive environmental strategy. To illustrate, Luz International, a commercial company supplying solar thermal plants, was able to survive during the period when the U.S. government encouraged renewable energy with tax credits, but it filed for bankruptcy in 1991, when the Department of Energy gave very low priority to renewable technologies and federal resources were devoted instead to fusion research (Levy, 1999).

However, the munificence within the geographical area in which a firm is situated increases the opportunity to acquire resources for developing capabilities (Decarolis & Deeds, 1999). Organizations that can obtain resources more easily are better than their competitors at generating organizational capabilities (McEvily & Zaheer, 1999). Slack resources in a munificent business environment provide opportunities to innovate and to make investments in the processes, routines, and changes in structures necessary to generate a proactive approach for managing the business–natural environment interface. McEvily and Zaheer (1999) found that one of the organizational capabilities favored in
the context of a munificent business environment was connected to the capability for pollution prevention. Similarly, measuring industry growth as an indicator of the munificence of a sector, Russo and Fouts (1997) showed that firms in high-growth environments usually have organic structures, which also helps their efforts to develop preventive environmental policies.

**Proposition 5a: Perceived munificence in the general business environment increases the likelihood that a firm will use its capabilities and resources to develop a proactive environmental strategy.**

The moderating effect of munificence in the general business environment on the link between a proactive environmental strategy and competitive advantage is less clear. Yasai-Ardekani (1989) found a link between structural organizational changes and munificence but advised future research on the performance implications of those structural responses. Although Miller and Friesen (1983) argued that the firms with the greatest profits were those that innovated the least in hostile business environments, they could not show the connection empirically. Smith and Grimm (1987) found the opposite: changes to focused innovation strategies appeared to be the most appropriate in a hostile general business environment, when competition increased after deregulation.

Russo and Fouts (1997) found that firms that invest in proactive environmental practices of pollution prevention, while adding financial risk, also perform better than competitors in high-growth industries. They also showed that the greater the industry growth, the greater the positive impact of environmental performance on firm profitability. Kotha and Nair’s (1995) findings complement these results by showing that firms in friendly business environments are more profitable than those in hostile environments, even when they do not innovate. Therefore, one can argue that a munificent business environment favors an organization’s potential for converting its proactive environmental strategy into performance that is superior to that of competitors with reactive environmental strategies. However, it must be noted that any competitive advantage obtained by a firm as a result of a proactive environmental strategy may be obfuscated by several other types of potential advantages (unrelated to environmental strategy) that the competitors may obtain in a munificent business environment.

Brush and Artz (1999) found that the emphasis on capabilities involving both experience and credence qualities becomes more important for organizational performance when competition is intense (i.e., in a hostile business environment). They highlight that when specific competitors lack some capabilities, the experience- and credence-based capabilities of a firm become even more important for success under competitive conditions. Therefore, the dynamic capability of a proactive environmental strategy can generate a competitive advantage when the general business environment is hostile and competitors lack this capability. Moreover, conditions of hostility in an industry make it difficult to imitate complex and dynamic capabilities (Teece et al., 1997), such as a proactive environmental strategy.

**Proposition 5b: Perceived munificence (low hostility) in the business environment weakens the association between a proactive environmental strategy and competitive advantage.**

**DISCUSSION AND RESEARCH IMPLICATIONS**

In the organizations and the natural environment literature, researchers recognize the role of a firm’s resources in its development of a proactive environmental strategy. These resources include technology (Shrivastava, 1995a), managerial skills, attitudes, and interpretations (Andersson & Bateman, 2000; Cordano & Frieze, 2000; Sharma, 2000), as well as complex environmental capabilities for pollution prevention, continuous innovation, and stakeholder integration (Hart, 1995; Russo & Fouts, 1997; Sharma & Vredenburg, 1998). We argue that the extent to which these resources and capabilities will actually lead to the development of a proactive environmental strategy as a dynamic capability will be facilitated by the perceived state uncertainty and munificence of the general business environment and will be hindered by the perceived organizational effect and decision response uncertainties and the complexity of the business environment. Therefore, firms with similar characteristics (capabilities, performance, and activity) may develop different ap-
proaches for managing the interface between their businesses and the natural environment. In our explanations we have built on recent studies (Majumdar & Marcus, 2001; Marcus & Geffen, 1998) examining the influence of exogenous variables on organizational environmental strategy.

In the organizations and the natural environment literature, scholars have argued for a positive association between proactive environmental strategies and superior performance or competitive advantage (e.g., Hart, 1995; Klassen & McLaughlin, 1996; Russo & Fouts, 1997; Sharma & Vredenburg, 1998). We propose that this relationship may only hold under certain conditions and that the general business environment moderates this relationship. Thus, proactive environmental approaches may not always be competitively beneficial for firms. Specifically, we propose that state uncertainty and the complexity of the general business environment facilitate the link between a proactive environmental strategy and competitive advantage but that organizational effect and decision response uncertainties have a negative, moderating influence on this link. A munificent business environment may allow firms with a proactive environment strategy to generate better performance, but competitive advantage will be enhanced in a hostile business environment, where firms in general will find it difficult to follow consistent strategies.

The RBV literature recently has contained calls for consideration of the influence of the general business environment on the value of resources and capabilities (Barney, 2001; Priem & Butler, 2001a,b). Our article contributes to this literature by offering a systemic perspective on the impact of dimensions of the general business environment on the value of resources and capabilities, and it reinforces studies that have addressed these influences (e.g., Brush & Artz, 1999; Majoor & Van Witteloostuijn, 1996; Miller & Shamsie, 1999).

We argue that organizations need to identify and analyze specific organizational and human resources, in addition to focusing on pollution control/prevention technologies and specific organizational capabilities that will generate a proactive environmental strategy—to the dynamic capabilities literature and reinforce the idea that such capabilities are influenced not only by market dynamism but also by other dimensions of the general business environment.

This article makes a contribution by integrating the contingency literature (e.g., Lawrence & Lorsch, 1967; Milliken, 1987) and the reconceptualized dynamic capabilities literature (Eisenhardt & Martin, 2000) with work grounded in the natural RBV of the firm (Hart, 1995; Marcus & Nichols, 1999; Russo & Fouts, 1997; Sharma & Vredenburg, 1998). The integration of the dynamic capability perspective helps us avoid some of the limitations that have been ascribed to the contingency view, such as a static orientation and overdeterminism (Zajac et al., 2000).

We accept the idea that although an organization’s general business environment shapes and influences its strategy, it does not mechanistically determine it. Moreover, we recognize that the characteristics of the general business environment and the threats and opportunities it presents to an organization have a subjective component, since they are influenced by managerial interpretations.

We argue that organizations need to identify and analyze specific organizational and human resources, in addition to focusing on pollution control/prevention technologies and specific organizational capabilities that will generate dynamic proactive environmental strategies. For example, the capacity of an organization to learn about the business–natural environment interface and to manage this knowledge can have a fundamental influence on the development of sustainable solutions to environmental problems (Marcus & Nichols, 1999). In empirical studies the broad propositions examining the contingent natural RBV we have presented need to be supported by intermediate hypotheses that explore the specific resources and capabilities that generate proactive environmental strategies and the extent to which these capabilities are competitively valuable (inimitable, nonsubstitutable, path dependent, and socially complex) under different contingent conditions.

We recognize that a firm’s environmental strategy is influenced by multiple factors, such as organizational and managerial variables (Andersson & Bateman, 2000; Ramus & Steger, 2000; Sharma, 2000), stakeholder pressures (Henriques & Sadorsky, 1999), and the overall institu-
tional environment (Hoffman, 1999; Jennings & Zandbergen, 1995). We urge a consideration of the influence of the dimensions of an organization's general business environment, in addition to internal factors. Empirical studies that examine the comparative influence of these variables on the development of a firm's environmental strategy will advance the environmental strategy literature by explaining why certain firms continue with reactive environmental strategies while others become proactive.

Thus, it is useful to expand the contingent view empirically by examining the influence of specific perceived characteristics in the general business environment, such as competitors' environmental strategies, radical changes in pollution technology, major societal value changes toward environmental preservation, and the multiplicity of stakeholder perspectives about preservation of the natural environment. Empirical approaches can be used to measure the comparative effects of these various dimensions of the business environment in order to determine those that are most influential at various stages of evolution of the managerial understanding of environmental issues and the evolution of environmental strategies (e.g., Hunt & Auster, 1990; Post & Altman, 1992).

For example, is munificence more important in generating proactive environmental approaches when environmental issues are ambiguous and are being socially constructed (Jennings & Zandbergen, 1995)? Is complexity beneficial for generating proactive approaches when managers have greater discretion to experiment with various environmental solutions, and negative when environmental solutions are concretized and regulated? What are the interactive effects of the different dimensions of the general business environment? Will a munificent business environment override the effects of uncertainty? One long-term aim of empirical work in this area might be to examine configurations of organizations with different types of environmental strategies associated with specific dimensions of the general business environment and specific firm resources and capabilities.

Measures have been developed in the contingency literature for the various dimensions of the general environment as perceived by managers (e.g., Beyer et al., 1997; Gronhaug & Falkenberg, 1989; Lefebvre, Mason, & Lefebvre, 1997), as well as for environmental strategy (e.g., Aragón-Correa, 1998; Roome, 1992; Sharma & Vredenburg, 1998). However, the real challenge is to develop empirical measures of the competitive value of environmental capabilities in terms of imitability, social complexity, nonsubstitutability, and path dependence. It is also necessary for researchers to develop measures for dynamism. Such measures could be used to separate static resources from dynamic capabilities and to test the dynamic capability perspective— that is, to answer the question of whether such capabilities create a dynamic alignment between organizational resources and changing business environments. Longitudinal process-based studies, such as Marcus and Geffen's (1998) examination of the electricity generation industry, are useful in this regard.

For policy makers this research echoes Majumdar and Marcus's (2001), in proposing that environmental regulations should shift away from prescribing technological solutions and allow flexible approaches that foster innovation in processes, technologies, and products. Policy makers can create a munificent business environment by providing incentives for innovative pollution prevention and design for the environment approaches, and by eliminating subsidies for fossil fuels and nonrenewable materials. At the same time, they should work with industry associations and consumer groups across international jurisdictions to create environmental certification standards that are universal and uniform. Doing this would reduce the complexity and state uncertainty that often result from standards and regulations in domestic markets that conflict with standards and regulations in international markets.

Managers should realize that the adoption of a few environmental practices or a proactive environmental approach for a limited period of time will not necessarily lead to competitive advantage. Rather, it is important to adopt a long-term, consistent strategy that fosters the following: continuous outside-in learning from multiple stakeholders, so as to reduce the complexity and state uncertainty of conflicting environmental issues; development of managerial and organizational knowledge for managing the organization and effect uncertainty at the business–natural environment interface; and generation of continuous improvement and innovation. Organizations that adopt a consistently proactive approach will develop a dynamic ca-
pability through which they will reap rewards during periods of state uncertainty and complexity in the general business environment by reducing organization and effect uncertainty at the business–natural environment interface.

In summary, this article emphasizes the importance of the general business environment in generating the dynamic capability of a proactive environmental strategy and its moderating role in generating competitive advantage from such a strategy. We argue that the proactive environmental strategy and competitive advantage link may not always be positive, depending on the influence of different characteristics of the general business environment, such as uncertainty, complexity, and munificence. Moreover, the generation of proactive environmental strategies may be facilitated or hindered by the very same dimensions of the general business environment.

REFERENCES


Sanjay Sharma is an associate professor of strategy and sustainability at Wilfrid Laurier University. He received his Ph.D. from the University of Calgary. His current research interests focus on the development of competitively valuable environmental capabilities, organizational knowledge building from stakeholder engagement, and the influence of stakeholder pressures on corporate environmental performance.