Environmental Marketing Strategy and Firm Performance: Effects on New Product Performance and Market Share

William E. Baker
San Diego State University

James M. Sinkula
University of Vermont

Recent studies on marketing and the natural environment have called for research that links environmental marketing strategies to the performance of the firm. This research operationalizes the enviropreneurial marketing (EM) construct and examines its relationship with firm performance. It is the first empirical research to operationalize the EM construct. The new scale, albeit a first attempt, demonstrates encouraging psychometric properties. According to the resource-based view of the firm, a resource such as EM should directly influence firms' capabilities (e.g., new product development success) but not competitive advantage (e.g., change in market share). A nationwide study of top-level marketing managers supports this perspective. In addition, although market turbulence also affects new product development success, it does not have an impact on EM. This suggests that EM formation is driven by internal rather than external forces.

Keywords: *environmental marketing strategy; enviropreneurial marketing; corporate environmentalism; new product success; organizational performance*

Historically, management theory has viewed the "environment" as consisting of legal, political, economic, social, and technical elements. Hart (1995) argued that this construal is "narrow" because it ignores issues pertaining to the well-being of, and constraints imposed by, the natural environment. Ultimately, such constraints could render some product-market policies and strategies unsustainable. The opinion that the current expansionist paradigm (King 1995; Stone and Washington-Smith 2002) of product-marketing strategy may not be sustainable indefinitely is not new (Hoffman and Ehrenfeld 1998). Some firms have implemented carefully designed environmental marketing strategies that have led to competitive advantage in product-market niches. Consider the following example:

> Novo Nordisk, the fast-growing Danish pharmaceutical and biotechnology company, has been a pioneer in "green chemistry," that is, finding biological substitutes for synthetic chemicals. Novo's commitment to this technology during the past two decades (before synthetic chemicals were widely perceived as environmentally unacceptable) has now placed it in the lead (with a 50% share) in the emerging world market for industrial enzymes and biological insecticides; it is well positioned for entry into developing countries. (Hart 1995:998)

In the future, there are likely to be increasing circumstances where adapting to the constraints imposed by the natural environment will be necessary for survival and prosperity. Yet, little empirical work has been done in marketing that examines environmental marketing strategy as

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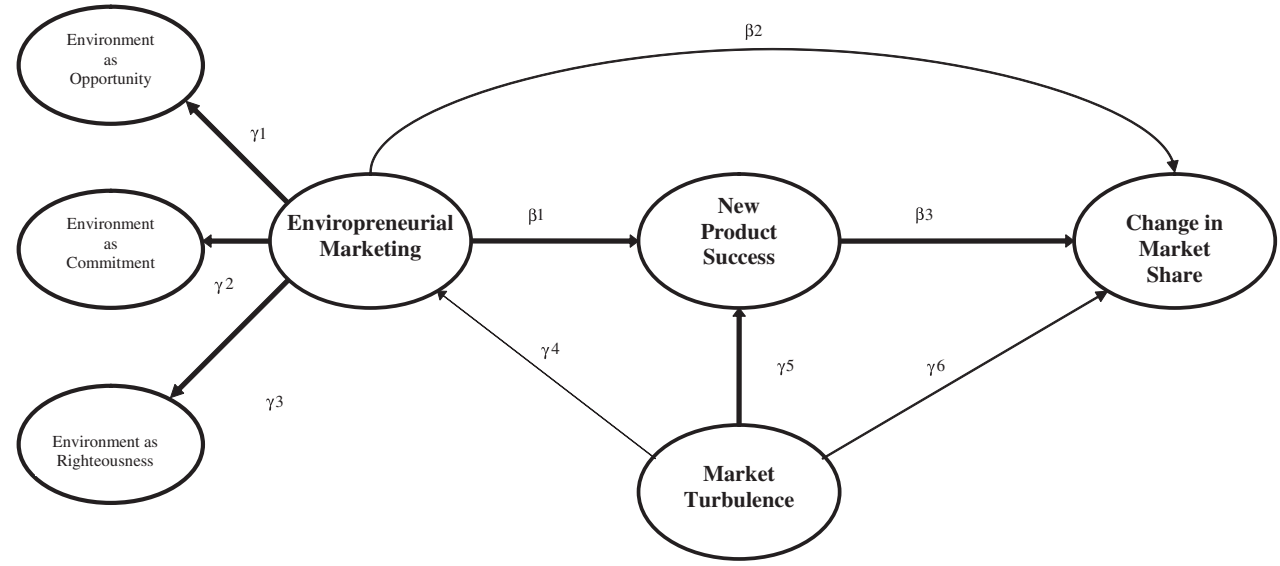
FIGURE 1
Measurement and Structural Relationships



NOTE: Bold lines represent expectation of a significant relationship. Enviropreneurial marketing is a second-order construct with measurement paths represented by γ_1, γ_2, and γ_3.

it relates to firm performance and competitive advantage (Banerjee, Iyer, and Kashyap 2003; Sharma and Vredenburg 1998). While some traditional management scholars (March and Simon 1958) view constraints brought on by the natural environment as simply a subclass of the larger problem of effectiveness (i.e., creating flexible, efficient strategies that can thrive in changing markets), others view its omission as inadequate (Hart 1995).

As Figure 1 illustrates, our purpose in this article is to advance the process of empirically integrating an environmental perspective into the marketing literature by examining the role of enviropreneurial marketing (EM) on firm performance and to assess the extent to which EM is cultivated by external market priorities or by elements intrinsic to the firm (e.g., culture). This entails the development of an operationalization of the EM construct. The resource-based view of the firm (RBV; Barney 1991; Wernerfelt 1984) is used as a theoretical framework to test the effect of EM on new product success and change in market share.

Enviropreneurial Marketing

Numerous management scholars have begun to argue that few of our past economic, organizational, and marketing principles can persist for very long into the future because they are simply not environmentally sustainable (Gladwin, Kennelly, and Krause 1995; Hart 1995; King 1995; Shrivastava 1995). Our intent is not to make the case that the earth's resources are strained. Nor is it to belabor the importance of corporate citizenship as key in sustaining and allocating the scarce physical resources of our planet (O'Callaghan 1996; Piasecki 1995). This argument, we maintain, is well known and generally accepted. It is already relatively common for firms to cultivate market niches that are both profitable and environmentally responsible (Graham and Havlick 1999). However, it may be difficult to reach "green" customers because many have a negative attitude toward business and toward advertisers (Zinkhan and Carlson 1995). Still, many firms are able to balance societal concerns with market opportunities. They are able to "leverage environmental issues as marketing propositions for transactional exchanges" (Menon and Menon 1997:57). In some cases, this type of behavior is merely a calculated response to external pressure. In other cases, it reflects cultural values that include good corporate (and world) citizenship. In the latter case, the desire for profit is tempered by the desire to do the right thing. Managers in such firms might be described as entrepreneurs who are, at the same time, environmental advocates. It is our position that true EM is not manifest simply by a recognition of the importance of environmental concerns and/or a need to respond to them but by a commitment to develop marketing strategies that balance organizational and societal concerns.

Consider Green Mountain Coffee Roasters (GMCR), a purveyor of roasted coffee beans from around the world.

GMCR has a procurement system built on a principle of "fair trade." This is essentially a price floor paid to farmers who grow and harvest coffee beans (Stecklow and White 2004) and guarantees that farmers are paid a fair price for their harvest. Fair trade allows them to continue farming and expand their capacity and standard of living while maintaining the quality of fragile ecosystems. It also secures a long term–supply of the highest quality, organically grown beans for GMCR. GMCR's enviropreneurial focus is a unique resource that has allowed them to cultivate specific product development capabilities, thereby successfully developing entirely unique product lines of coffee. In their marketing, they promote the Fair Trade label as a guarantee of premium taste and quality production. GMCR provides an excellent example of a functional union between corporate and societal interests.

More than a decade ago, Varadarajan (1992) called for enviropreneurship as "an idea whose time has come" (p. 342). Accordingly, he defined the term *enviropreneurial marketing* as "environmentally-friendly marketing practices, strategies, and tactics initiated by a firm in the realm of marketing: (1) to achieve competitive differentiation advantage for the firm's offerings vis-à-vis competitors' offerings, and (2) influenced by the firm's views on the duties and responsibilities of a corporate citizen" (p. 342). Subsequently, Menon and Menon (1997) argued that "environmental concerns had begun to reshape the landscape in which global organizations compete" (p. 51). Building on Varadarajan's premise, they set out to conceptualize and refine the nature and scope of enviropreneurial marketing (EM) as that which emphasizes "the need for an entrepreneurial approach in melding ecological concerns and marketing strategy objectives" (Menon and Menon 1997:52). Those adopting such an approach would see environmental issues as market opportunities, be willing to take risk, make commitments (both financial and nonfinancial) that are substantial and visible, and possess a fundamental desire to do the right thing. In reality, EM does not exist in isolation but instead flows from an *organization-wide* philosophy that places the physical environment among the top concerns and potential differentiating factors of the firm. However, we contend that the environmental responsiveness of the marketing department reflects the broader vision of the firm. Of course, instituting an initiative of unilateral environmental responsiveness means taking risk; one that could result in success or in failure. At issue is how to adeptly tap the capabilities that accrue from the cultivation of EM as a unique resource of the firm.

The extant literature on EM suggests to us that it is a multidimensional construct, one that is best viewed as a "higher-order" construct that gives rise to a domain of subconstructs. Our goal is to draw from the domain of EM subconstructs that represent the melding of ecological concerns and marketing strategy objectives in a committed, responsible, and proactive fashion. Therefore, we adopt a perspective of EM as "environment as commitment," "environment as righteousness," and "environment as opportunity" as the core of our EM operationalization. As the reader will see later, this goal guides the construction of our measurement model. Before elaborating on our conceptual model, however, we would like to briefly discuss some related concepts and how they differ from EM.

Corporate Environmentalism, Environmental Orientation, and Environmental Strategy

Impressive progress has been made in integrating and recognizing the importance of the natural environment in marketing strategy decision making (Gladwin et al. 1995; Hart 1995; King 1995; Sharma and Vredenburg 1998; Shrivastava 1995; Varadarajan 1992). As is typical when developing a research domain, however, many definitions of terms and constructs arise. The introduction of the natural environment into discussions of marketing strategy is no exception. Our intent is not to resolve all the issues that accompany competing definitions. It is to provide a working understanding of the terminology so that we may compare, contrast, and ultimately position EM in the context of related constructs. Three such constructs are (1) corporate environmentalism, (2) environmental orientation, and (3) environmental strategy focus (Banerjee 2002).

Corporate environmentalism is defined as "the organization-wide recognition of the legitimacy and importance of the biophysical environment in the formulation of organization strategy, and the integration of environmental issues into the strategic planning process" (Banerjee 2002: 181). After a meticulous search of the literature, Banerjee (2002) and Banerjee et al. (2003) found two primary components of corporate environmentalism. These can be described as environmental orientation (internal and external) and environmental strategy focus (corporate and marketing).

Environmental orientation reflects the extent to which employees *recognize* the legitimacy of environmental issues and the impact that the firm has on those issues (Banerjee 2002). Internal environmental orientation refers to the environmentally related values and standards held by organizations. This orientation can be formally codified in mission statements, policies, and procedures, but it may also be informally expressed in corporate cultures through employee norms and behaviors. External environmental orientation reflects the need to respond to stakeholders with environmental concerns. This orientation relies on managers' perceptions of whom the stakeholders are as well as which pressing environmental issues merit response.

Environmental strategy focus reflects the degree to which environmental issues are integrated into the strategic planning process (Banerjee 2002; Banerjee et al.

2003). It focuses on *whether* managers consider the environment when making plans. This sense of focus can be delineated and has been operationalized at the marketing strategy or corporate level.

These prior construals of environmental constructs tell us whether firms recognize and integrate environmental concerns into strategic decision making. EM focuses on *why*, at what *level*, and to what *degree* managers rely on environmental concerns in their strategy formulation. Consider why. Marketers might engage in EM because they see a market opportunity, because they are merely complying with the law, or because they see it as the right thing to do. Consider the level at which EM strategizing is conducted. It could be done at the corporate or the functional/divisional level, by top management or by mid-level management. Consider degree. Environmental issues may enter into marketing strategy development in the form of commitments that are irreversible or ones that are loosely held. Environmental strategy may result in investments, financial and nonfinancial, that are quite substantial or minimal. There is no guarantee that these investments will be viewed favorably by all organizational stakeholders. For example, Mathur and Mathur (2000) found a negative reaction by stockholders (a drop in market value of 3.14%) to certain corporate announcements of green marketing activities. In their study, "announcements for green promotional efforts produce[d] significantly negative stock price reactions" (Mathur and Mathur 2000:193). As a result, certain commitments may be made visible more than others or directed to differing sets of stakeholders. EM is designed to capture the set of circumstances outlined above. Above all, EM is understood here to encompass proactive, entrepreneurially grounded, environmental marketing strategy that does not exist in isolation but is influenced by the firm's views on corporate citizenship (Varadarajan 1992) vis-à-vis its obligation to stakeholders. It is this commitment to the environment (or lack thereof) that we believe defines the strength (or weakness) of organizations' EM efforts and its ultimate influence on corporate behavior.

CONCEPTUAL MODEL AND HYPOTHESES

Environmental Marketing Strategy and Firm Performance

Theoretical underpinnings for our hypotheses regarding EM and firm performance are drawn from both resource theory (Barney 1991; Wernerfelt 1984) and the emerging natural resource–based view of the firm (Hart 1995). More recent evidence that supports our hypotheses comes from a case study of the Canadian oil and gas industry. Here Sharma and Vredenburg (1998:729) argued that a strategy of being environmentally proactive should be viewed as a key organizational resource that is associated with the emergence of "unique organizational capabilities . . . which, in turn, were seen to have implications for firm competitiveness."

The resource-based view (RBV) of the firm proposes that organizational performance depends on organization-specific resources and capabilities. RBV implies specific path dependencies between resources, capabilities, and firm performance. Hence, "RBV takes the perspective that valuable, costly to copy firm resources and capabilities provide the key sources of sustainable competitive advantage" (Hart 1995:986). Resources can be tangible or intangible, are valuable and nonsubstitutable. They are usually tacit, socially complex, and rare. According to RBV, firm resources lead to capabilities, and capabilities influence firm performance (Barney 1991; Wernerfelt 1984). In certain circumstances, it is difficult to discern differences between capabilities and performance. For example, new product success is considered here as a capability, but some might consider it a dimension of firm performance.

Marketers have, naturally, been highly interested in how various strategies and orientations affect company performance. To clearly address this issue, however, researchers and practitioners alike must agree on acceptable measures of performance. In understanding market-based performance measures, the literature reveals three themes: (1) while the majority of performance measures are subjective (self-report), research suggests that subjective perceptions are highly correlated with objective measures such as return on investment (ROI) and sales growth (Dess and Robinson 1984; Han, Kim and Srivastava 1998); (2) performance is a multifaceted concept that includes dimensions of effectiveness, efficiency, and adaptability (Walker and Ruekert1987); and (3) performance measures that reflect effectiveness (as opposed to adaptability or efficiency) are likely to be most useful to managers. The latter points are supported by Clark (2000) who found that, in a survey of senior marketing managers, "perceptions of marketing performance appear multidimensional both in terms of the number of measures used and the methods of evaluating those measures . . . of all the perspectives, effectiveness is the most important concern of managers" (p. 21).

Baker and Sinkula (forthcoming) have recently analyzed 40 empirical studies that have examined the market orientation–performance relationship. They show that performance in these studies is most often measured with self-report measures of new product success, profitability, or market share. However, it is not uncommon to use measures of ROI, sales or sales growth, and overall performance as indicators of company performance (Baker and Sinkula 1999; Jaworski and Kohli 1993; Slater and Narver 1994). This research uses change in market share as an indicator of firm performance.[1] This measure of performance was chosen not only to replicate proven measures

used in past research but also because Walker and Ruekert (1987:19) regard it as a performance dimension of primary importance to top corporate and business unit managers. They argued that an operationalization of the "success of a business' products and programs in relation to those of its competitors in the market . . . measured by such items as sales growth in comparison with that of competitors or changes in market share" represents an *effectiveness* dimension of performance. As we stated earlier, Clark (2000) found this dimension of most importance to managers. Since, by definition, changes in market share represent improving or declining performance relative to competitors, it inherently reflects the attainment or loss of competitive advantage.

Of course, organizational performance can be construed on a variety of dimensions, and no single resource can be expected to have the same effect on all dimensions. We mentioned new product success earlier. New product success represents an *adaptability* dimension, one that reflects "the business' success in responding over time to changing conditions and opportunities in the environment" (Walker and Ruekert 1987:19). Clearly, adaptability is a different dimension of organizational success than is effectiveness. Hence, we concur with the resource-based view in treating new product success as a capability rather than a measure of organizational performance.

Historically, management theorists have viewed the external environment as including legal, political, economic, social, and technical elements. Hart (1995) argued that the omission of the natural environment in strategic deliberations has rendered existing theory regarding the sources of competitive advantage as incomplete. He inserted the natural environment as an element of RBV (which he called the *natural* resource-based view of the firm) and argued that "competitive advantage will be rooted increasingly in a set of emerging capabilities such as waste minimization, green *product design*, and technology cooperation with the developing world . . . strategists and theorists must begin to grasp how environmentally oriented resources and capabilities can yield sustainable sources of competitive advantage" (p. 991, italics added).

Following Hart (1995), who argued that innovative environmental strategies lead to unique capabilities, we view EM not as a capability but as a resource that enables capabilities. For example, an organization leaning highly toward EM would develop well-honed environmentally related capabilities in new product development, procurement (Drumwright 1994), and distribution. Such capabilities would allow the firm a degree of expertise in pollution control, product stewardship, and sustainable development (Hart 1995). In turn, the firm's unique capabilities will lead to enhanced organizational performance and, according to RBV, competitive advantage. An EM-related competitive advantage could derive from the use of sustainable development to drive down costs.

According to RBV, resources influence capabilities, which in turn influence competitive advantage. Resources do not directly influence competitive advantage. Juxtaposed onto Figure 1, EM (a resource) should directly influence new product success (a capability), but it should not affect change in market share (a measure of competitive advantage).

In their study of Canadian oil and gas firms, Sharma and Vredenburg (1998) posited that "the greater the degree to which a company adopts proactive environmental responsiveness strategies, the greater the likelihood that firm-specific organizational capabilities will emerge" and, in turn, that "the greater the degree to which firm-specific organization capabilities emerge within a company, the greater the likelihood of competitive benefits flowing from these capabilities" (p. 743). Relying on RBV theory, they do not argue for direct effects of resources on firm performance. Given this backdrop, the following hypotheses regarding EM and firm performance are offered below:

Hypothesis 1: EM (a resource) is directly and positively related to the firm's new product success (a capability) in its principal market segment.

Hypothesis 2: New product success (a capability) is directly and positively related to changes in market share (an indicator of competitive advantage) in the firm's principal market segment.

Market Turbulence, EM, and Firm Performance

Market turbulence and EM. Capitalism, by nature, is evolutionary and turbulent; a form of economic change (Zinkhan and Zinkhan 1997). Hart (1995) noted that "technological discontinuities or shifts in external circumstances may render existing competencies obsolete or, at a minimum invite the rapid redeployment of new resources" (Tushman and Anderson 1986, p. 989). Taking our guidance from Wernerfelt's (1984) seminal piece on resources in the firm, we view market turbulence as a composite of (1) change in production/service technology, (2) competitive intensity, and (3) the general rate of change in an industry. He argued that dynamism in the marketplace can facilitate first mover advantage and "resource position barriers" that will affect competitors' desire and ability to develop substitute resources (p. 173). Given this, one might expect selected firm-specific resources to surface in more turbulent environments. EM may be one such resource. For example, recent research on turbulence has suggested that certain marketplace upheavals or stakeholder interests may fuel the organization's desire to construct and enact EM (Jennings and Zandbergen 1995).

Alternatively, one could argue that socially complex, intangible resources such as EM are culturally rooted and less susceptible to the pressures of turbulence. Research

on market orientation, another socially complex, intangible resource, could shed light on this argument. In their pioneering work in market orientation, Narver and Slater (1990) and Jaworski and Kohli (1993) both found a positive relationship between market orientation (a firm resource) and company performance. These authors expected market turbulence to affect market orientation and to affect the strength of market orientation's effect on performance. No convincing evidence for these relationships was found (Jaworski and Kohli 1993; Slater and Narver 1994). Slater and Narver (1994) asserted that market orientation is a product of culture, not external market forces. In summary, although the role of market turbulence in the acquisition of EM as a firm resource is important, it is difficult at this juncture to predict the nature of that relationship. We do believe that, at the very least to support future research, it is important to investigate it.

Market turbulence and new product success. There is significant support for a market turbulence–new product success relationship (Calantone, Garcia, and Droge 2003). Gatignon and Xuereb (1997) noted that "the success of an innovation is not independent of the market in which the firm functions" (p. 80). Static industries often portend low levels of innovation, particularly product innovation, among the firms that comprise them (Hope 1988). Here, innovation may be more adaptive and incremental in nature as opposed to innovation that is radical. External shocks to such industries will likely affect performance through a type of forced product innovation. Firms that do not respond to turbulence with product changes that, at minimum, follow the competition will underperform, while proactive participants are likely to outperform. One of the key findings of Moorman and Miner (1998) was that turbulence affected organizational improvisation in new product actions and had a moderating effect on the relationship between improvisation and new product/process outcomes. Since market turbulence places demands on firms to improvise in new product actions and innovate faster and more effectively, we do expect an effect on new product success.

Hypothesis 3: Market turbulence is directly and positively related to the firm's new product success.

Market turbulence and change in market share. While "the relationship between market structure and innovation has interested and puzzled economists for a very long time" (Hope 1988:475), there is little in the literature that posits direct relationships between market turbulence and change in market share (or other indicators of firm performance). Obviously, all firms cannot leverage a turbulent environment to improve their relative market performance. Market dynamism, however, does create an opportunity for aggressive firms to enact the type of radical changes that can improve their position. Since the ability of market turbulence to be parlayed into market share gains is dependent on the presence of the firm's specific resources and capabilities, we do not expect a direct effect of dynamism on change in market share. Yet, as illustrated in Figure 1, to add insight to our findings, we do test the relationship.

METHOD

Given that ours represents the first attempt to measure EM, we chose a cross-sectional, ex post facto survey design as the approach to the research study. Our data come from a broad sample of upper-level marketing executives, whom we assessed by virtue of their stature in the organization, had strategic marketing responsibilities and experience. While the unit of analysis in the study is the business unit, we used single informants as participants for the research. This approach is entirely consistent with past studies on marketing strategy (Henard and Szymanski 2001), some of which have compared single to multiple respondent approaches and found no differences (Slater and Narver 1998). Some of the survey items were adopted from previous research (Baker and Sinkula 1999; Slater and Narver 1994), while EM strategy, a new construct, was based on the conceptual/theoretical writings of Menon and Menon (1997) and Varadarajan (1992). We use structural equations modeling (SEM) to test the study hypotheses. We turn now to a description of the sampling frame and data collection procedure.

Sampling Frame and Mailing Procedure

Data for the study come from a direct mail survey of top marketing executives drawn from a nationwide sample of manufacturing and service organizations. The mailing list of 2,000 companies was acquired from Dun & Bradstreet. The sample was randomly drawn from a universe of for-profit firms across all Standard Industrial Classification (SIC) categories and with at least $100 million annual revenue. Half of the sample was specified to be firms with more than $500 million in annual revenue; half of the sample was specified to be original equipment manufacturers. To ensure an appropriate level of knowledge regarding both the firm's marketing strategies and its organization-wide objectives, participants were chosen from the upper levels of the organizational marketing hierarchy (i.e., vice president of marketing or above). Individuals with this status in the organization could be expected to thoroughly understand the factors that they and top management input into the strategy process. If the environment is a priority, it is reasonable to presume that they would know and understand the genesis of this priority.

Following the procedure recommended by Dillman (1978), the direct mail questionnaire was sent to the sam-

ple of companies in three waves. The second and third mailings were sent only to firms who had not yet responded. Each wave contained a copy of the questionnaire and modified cover letter. No explicit incentives were provided. In addition to returned questionnaires due to faulty addresses, follow-up phone calls were conducted to assess nonresponse. Results indicated that 20 percent of the questionnaires did not reach their intended respondents. The resulting pool of 243 completed questionnaires represented an effective response rate of 15.1 percent. Of the responses, 47.2 percent were original equipment manufacturers; 40.7 percent had annual revenue exceeding $500 million.

Although lower than what we would have liked, this response rate is not unusual in today's research environment (e.g., see Homburg and Pflesser 2000; Gatignon and Xuereb 1997). The organizational stature of the respondent, length and difficulty of the questionnaire, and comparable response rates in similar studies led us to conclude that the sample was adequate for purposes of the study.

Measures

While many of our measures have been used in prior research (Baker and Sinkula 1999; Narver and Slater 1990; Slater and Narver 1994), the core element of this study (EM) is a new construct. Fortunately, much groundwork for the operationalization of the construct has been laid by Menon and Menon (1997), Varadarajan (1992), and others (Hoffman 2000; Ledgerwood and Broadhurst 2000; Piasecki 1995). This groundwork permitted us to develop a series of tightly targeted questions. We discuss the operationalization of EM and other measures below. The appendix includes a list of all construct measures, including those that were not ultimately used in the analyses.

Enviropreneurial marketing. EM is a measure of environmental strategy. It is uniquely marketing focused and entrepreneurially grounded. In addition, it prompts the respondent to focus on the reasons why environmental issues enter into marketing strategy development with items that are linked to concepts like competitive advantage, commitment, and doing the right thing for the environment.

In accordance with the literature, we conceptualize and operationalize EM as a three-factor second-order construct. Following Menon and Menon (1997) and Varadarajan (1992), EM is measured by probing respondents on the following dimensions: (1) environment as opportunity, (2) environment as commitment, and (3) environment as righteousness.

Environment as opportunity uses items that query environmental marketing strategies that (1) were designed to "achieve a competitive differentiation advantage" (Varadarajan 1992:342), (2) took a "more proactive stance with respect to corporate environmentalism" (Menon and Menon 1997:53), and (3) "saw environmental concerns as an opportunity" (Menon and Menon 1997:54). The literature suggests that a true enviropreneurial marketing strategist is not only able to identify (see) market opportunities in environmental concerns but is also willing to entrust company resources to the strategy (Hoffman 2000). Environment as commitment, therefore, uses items that focus on environmental marketing strategies that take the form "of investments (financial and nonfinancial) that are very substantial and visible" and are also considered to be "commitments that are irreversible." An important element of the EM construct is the notion that managers view the pursuit of environmentally friendly endeavors as the right thing to do. Hence, the third dimension of the EM construct can be described as environment as righteousness. Here, measures are aimed at the firm's business philosophy of conservationism, sustainability, and at the degree to which environmental issues enter into marketing strategy development because this is fundamentally "the right thing to do." Hence, environment as righteousness measures the "firm's views on the duties and responsibilities of a corporate citizen" (Varadarajan 1992:342).

Our measure of EM employed the following instructions: "Now we'd like to ask about how your organization deals with issues pertaining to the physical environment (e.g., sustainable development, pollution, etc). Environmental issues enter into our marketing strategy development:" followed by a selection of alternative reasons (see appendix). We used 7-point Likert-type scales where 1 = *strongly disagree* and 7 = *strongly agree*. Confirmatory factor analyses were used to assess the validity of a second-order factor model composed of three first-order components and to purge inappropriate measures from the EM scale. Description of this process is provided in the Results section of this article.

Performance measures. Since environmental initiatives in new product development can take many forms (e.g., cost reduction, choice of materials, product design) and occur at any stage in the supply chain, an attempt to capture the precise nature and role of EM in new product development was beyond the scope of this study. Accordingly, we chose to employ an accepted, general measure of new product success to capture any effect of EM initiatives. New product success (Baker and Sinkula 1999) consisted of four items measured on a 7-point Likert-type scale anchored by *low-high* (i.e., "new product introduction rate relative to largest competitor," "degree of product differentiation," "new product success rate relative to largest competitor," and "first to market with new applications"). Change in market share consisted of items on a 7-

TABLE 1
Construct Means, Standard Deviations, Correlations, and Alpha Coefficients Among Constructs

			Correlation Matrix						
Construct	M	SD	*1*	*2*	*3*	*4*	*5*	*6*	*7*
1. Enviropreneurial marketing (EM)[a]	4.31	0.94	*.74*	.82	.65	.72	.23	.01*	–.01*
2. Environment as opportunity (EAO)	4.17	1.27		*.73*	.25	.39	.22	–.08*	–.01*
3. Environment as commitment (EAC)	4.08	1.29			*.76*	.31	.13	.10*	–.06*
4. Environment as righteousness (EAR)	4.76	1.23				*.68*	.18	.05*	.04*
5. New product success	4.54	1.22					*.84*	.22	.21
6. Change in market share	4.67	1.06						*.90*	.03*
7. Market turbulence	4.89	1.07							*.62*

NOTE: The alpha coefficient for each construct is indicated in italics along the diagonal.
a. EM is the unweighted average of EAO, EAC, and EAR.
* Not significant at $p \leq .05$.

TABLE 2
Enviropreneurial Marketing Alternative Measurement Models

	First-Order Construct Model	*Second-Order Construct Model (all measures)*	*Second-Order Construct Model (reduced measures)*
Goodness-of-fit statistics			
χ^2	$240.67_{(27\ df)}$	$93.84_{(24\ df)}$	$11.91_{(6\ df)}$
χ^2/df, $p < .00$	8.91, $p < .0001$	3.91, $p < .0001$	1.99, $p < .064$
RMSEA	.18	.11	.06
TLI	.29	.74	.95
CFI	.57	.86	.99

NOTE: RMSEA = root mean square error of approximation; TLI = Tucker-Lewis Index; CFI = Comparative Fit Index.

point Likert-typescale anchored by *significant decrease–significant increase*. Change in market share was measured by "change in market share relative to largest competitor," "change in market share," and "change in sales relative to largest competitor." These scales were influenced by Walker and Ruekert (1987), who discussed organizational performance measures based on organizational adaptability, effectiveness, and efficiency.

Market turbulence. Market turbulence was measured with three items on a 7-point Likert-type scale anchored by *low-high*. Respondents were asked to describe "the extent to which product/service technology has changed during the past 3 years," "the level of competitive intensity in your principal served market segment," and "in general, the rate of change in the marketplace in your principal served market segment." These measures mirror those of Slater and Narver (1994).

Industry covariates. A number of control variables deemed to be important determinants of performance (Aaker 1988; Bain 1959; Day 1984) were included. The measures, which were drawn from related research on market orientation (Baker and Sinkula 1999; Jaworski and Kohli 1993; Narver and Slater 1990), include relative size, growth, buyer power, supplier power, seller concentration, ease of entry, technological change, and government control.

RESULTS

Structural equation models (SEMs) were employed to test the study hypotheses (Jöreskog 1993). Confirmatory factor analyses (CFAs) were used to ensure internal consistency and unidimensionality of each construct's measures. CFA and other means were used to test for the discriminant validity of the constructs. The characteristics of all model factors and constructs, their means, standard deviations, reliability measures, and correlations with the other constructs in the model are provided in Table 1.

Alternative measurement models for EM are reported in Table 2. The final second-order measurement model for EM, with its tested measurement relations and results, is shown in Table 3. The primary SEM model evaluation is shown in Table 4. We begin with a discussion of the tests performed to establish the convergent and discriminant validity of the measures, starting with the second-order construct EM.

Measure Validation

Second-order construct. Given that it is a new construct, we followed rigorous methods (Anderson 1987; Churchill 1979; Gerbing and Anderson 1988) to validate the EM scale. First, an exploratory principal components factory analysis revealed that each of the measures loaded

TABLE 3
Enviropreneurial Marketing Second-Order Measurement Model

Indicator (parameter)	*Environment as Opportunity*	*Environment as Commitment*	*Environment as Righteousness*
Standardized first-order loadings (γ_i)[a]			
EAO1 (λ_1)	.68[b]		
EAO2 (λ_2)	.91		
EAC1 (λ_3)		.82[b]	
EAC2 (λ_4)		.76	
EAR1 (λ_5)			.76[b]
EAR2 (λ_6)			.70
Standardized second-order loadings (γ_j)[a]			
First-order construct (parameter)		Enviropreneurial Marketing	
Environment as opportunity (γ_1)		.74[b]	
Environment as commitment (γ_2)		.55	
Environment as righteousness (γ_3)		.76	
Goodness-of-fit statistics			
χ^2(6 *df*), $p < .00$			11.91, $p < .064$
χ^2/*df*			1.99
Tucker Lewis Index			.99
Bentler's Comparative Fit Index			1.00
RMSEA			.06

NOTE: EAO = environment as opportunity; EAC = environment as commitment; EAR = environment as righteousness; RMSEA = root mean square error of approximation.
a. All reported loadings significant at $p < .001$.
b. Fixed parameter.

TABLE 4
Parameter Estimates for the Causal Paths

Parameter	*Hypothesis*	*Path*	*Standardized Estimate*[a]
β_1	Hypothesis 1	EM→New Product Success	[redacted]
β_2		EM→Change in Market Share	.01 (–0.29)
β_3	Hypothesis 2	New Product Success→Change in Market Share	.21 (2.24)*
γ_4		Market Turbulence→EM	.02 (0.23)
γ_5	Hypothesis 3	Market Turbulence→New Product Success	.33 (4.14)*
γ_6		Market Turbulence→Change in Market Share	–.03 (0.03)
Goodness-of-fit statistics			
χ^2(232 *df*)			361.6
χ^2/*df*			1.56
Tucker Lewis Index			.97
Bentler's Comparative Fit Index			.98
RMSEA			.05

EM = enviropreneurial marketing; RMSEA = root mean square error of approximation.
a. *t* values from the unstandardized solution are shown in parentheses.
*$p < .05$.

on their respective first-order factors (Environment as Opportunity, Environment as Commitment, Environment as Righteousness), as expected. Next, a series of CFA analyses were conducted to (1) establish the validity of our conceptualization of EM as a second-order construct with three first-order factors and (2) prune weak loading indicants from the measurement model. This series of CFAs is described as follows.

First, a CFA analysis tested EM as a first-order construct with nine indicants. As reported in Table 2, the fit was poor. As expected, key measures of fit including chi-square/*df*, the Comparative Fit Index (CFI), the Tucker Lewis Index (TLI), and root mean square error of approximation (RMSEA) were unacceptable (Brown and Cudeck 1993; Bentler and Cho 1988; Marsh, Balla, and McDonald 1988). Next, the second-order construct operationalization with three first-order factors (environment as opportunity, environment as commitment, environment as righteousness) was tested using all nine measures of EM, three indicants per each first order construct. As reported

in the table, the fit improved but remained unacceptable. Three of the measures, one for each of the first-order factors, did not load satisfactorily. The final CFA analysis excluded these three indicants. This reduced second-order construct operationalization was assessed to be acceptable. Notably, the chi-square in this final construct model was insignificant (χ^2 = 11.9, df = 6, p < .064). Jarvis, MacKenzie, and Podsakoff (2003) suggested that model insignificance may be the strongest indicator of adequate fit.[2] Table 3 shows the loadings and fit indices resulting from fitting the final EM operationalization model to the data. All first-order factor loadings were strong and highly significant (p < .001). The factor loadings of each first-order construct to the second-order construct were also large and highly significant (p < .001). The appendix lists the measures for each construct and identifies which measures were removed from the model.

Discriminant validity for the three subconstructs was assessed by conducting a series of two-factor CFA models in which the phi coefficient was constrained to unity and then freed (Anderson 1987; Bagozzi and Phillips 1982). A chi-difference test was then performed on all possible pairs of the three constructs. The models with the free parameters were found to be superior, providing evidence of the discriminant validity of the constructs. We also assessed discriminant validity by contrasting the squared correlation of each factor pair with the variance extracted from each factor (Fornell and Larcker 1981). In each case, the average variance extracted exceeded the squared correlation, supporting discriminant validity.

First-order constructs. Market turbulence, new product success, and change in market share were all configured as first-order constructs. A three-factor confirmatory factor analysis was conducted to test for convergence of the items on their expected construct. Results indicated that the model fit the data well (χ^2/df = 1.57, CFA = .99, TLI = .99, RMSEA = .05) and that the items converged on their expected constructs (i.e., t values ranged from 4.03 to 18.66, average item reliability = .74, all coefficient alphas were acceptable—see Table 1). In addition, to test discriminant validity, a chi-difference test was then performed on all possible pairs of the three constructs (Anderson 1987; Bagozzi and Phillips 1982). The models with the free parameters were found to be superior, providing evidence of the discriminant validity of the constructs.

Tests of Hypotheses

A SEM methodology was employed to test the hypotheses. In the interest of parsimony, Figure 1 illustrates the proposed latent variable model without indicator variables. The parameter estimates for the causal paths are shown in Table 4. Based on such indicators of model adequacy as the discrepancy ratio (χ^2/df = 1.56), Bentler's CFI (.98), the Tucker Lewis Index (.97), and the RMSEA (.05), the fit of the overall model to the data appears to be good.

Test results on EM hypotheses. As can be seen in Table 4, the parameter estimates for the structural paths γ_5, β_1, and β_3 were all positive and statistically significant (and γ_4, γ_6 and β_2 are not). This is consistent with the effects posited in the hypotheses. As hypothesized in Hypothesis 1, the endogenous construct new product success is positively related to EM (β_1 = .31, p < .001). Hypothesis 2 proposed a direct effect of new product success on change in market share. This too was supported (β_3 = .21, p < .025). As would be expected by RBV theory, there was no direct effect of EM on change in market share (β_2 = .01). Instead, as expected by RBV theory, it appears that EM influenced new product success, while new product success influenced change in market share.

Test results on market turbulence hypotheses. Hypothesis 3 maintained that market turbulence would directly affect new product success. This was supported (γ_5 = .33, p < .001). It is interesting that there was no direct effect of market turbulence on either EM (γ_4 = .02) or change in market share (γ_6 = –.03). The absence of an effect of market turbulence on EM provides preliminary support to the proposition that, like market orientation, EM is a socially complex resource that is culturally driven. The absence of an effect of market turbulence on change in market share reflects the logic that market turbulence may affect the necessity for action, but changes in market share are net zero outcomes.

Covariate relationships. While no hypotheses were offered, we did include covariates in our model to examine their effects on new product success and change in market share. To strengthen our conclusions regarding the hypothesized structural relationships, these variables were modeled as direct paths to new product success and change in market share. Of the nine covariates included (see appendix), three were significantly related to the variables in question. The ability of the firm to negotiate lower prices from suppliers was positively related to both new product success (t = 2.13, p < .03) and change in market share (t = 1.98, p < .05). The sales growth rate in the firm's principal served market was positively related to new product success (t = 4.11, p .001), but not change in market share. Government regulation was negatively related to new product success (t = 3.06, p .002), but not change in market share.

DISCUSSION

The purpose of this research is to advance the process of empirically integrating an environmental perspective into the marketing literature by examining the role of

enviropreneurial marketing (EM) on firm performance and to assess the extent to which EM is cultivated by external market priorities or is more intrinsic to the firm. In keeping with this purpose, we (1) developed a rigorously configured, albeit first-cut, measure of enviropreneurialism, and (2) modeled its relationships with new product success and change in market share. In addition, we explored the relationship of EM with market turbulence. Ours is the first attempt to operationalize the concept of enviropreneurial marketing, which was pioneered in the marketing literature more than a decade ago (Varadarajan 1992). It is also the first to show the specific configuration of effects of EM on company performance. In attempting to understand these relationships, we observed that there are certain path dependencies in our results that mirror the theory referred to as the resource-based view of the firm (Barney 1991; Wernerfelt 1984).

As we discuss our results below, the reader should view them in light of the constraints of the study. Specifically, the cross-sectional nature of the data limited the degree to which we were able to explore organizational improvement. In addition, we sampled primarily large, well-established organizations. It may be interesting to examine EM activities in smaller organizations. We do not include all possible antecedents of EM in our empirical model; only turbulence was examined. Our results were limited to the effect of EM on product-related capabilities. Other capabilities, for example, other marketing mix and cost-related variables, were not studied here. Finally, it should be noted that ours is a first attempt to operationalize the EM construct and that there is room for refinement.

Conclusions and Implications for Scholars and Suggestions for Future Research

We find it reasonable to expect that, in practice, a higher-order construct (EM) exists and that it, in turn, gives rise to organization-wide enviropreneurial-specific values and behaviors. Hence, our explication of the EM construct leads us to conclude that it is best operationalized as a second-order factor. In so doing, our approach has been to sample from the domain (Churchill 1979) of first-order constructs to provide a meaningful, yet parsimonious, measure of enviropreneurial-related organizational values and behaviors. In the day-to-day operations of the firm, not only do these values allow EM-related strategies to ensue, but they influence their effectiveness and efficiency. Accordingly, we followed well-accepted protocols for scale development and testing (Anderson 1987; Churchill 1979; Gerbing and Anderson 1988) to configure an EM measure that demonstrates a strong second-order model fit with our observed data. Strong empirical findings confirm the original conceptualization of EM as a construct that is composed of a philosophy of doing the right thing as well as a desire to take advantage of market opportunities.

While we studied EM in the context of the marketing function (for that is how it is defined), it is likely that the values and behaviors that promote environmental consciousness are shared across the organization. Future research should investigate the extent to which the vision of top leadership influences EM and the degree to which the effects of EM are organization-wide rather than occurring solely in a marketing context. Also, studies that examine the extent to which EM affects the firm's overall image, its ability to recruit dedicated employees, and its adeptness at negotiating political landscapes would be useful.

According to the resource-based view of the firm, organizations identify and differentiate themselves by the set of resources they choose to develop. Indeed, firms can be thought of as bundles of resources. RBV considers a strategically important resource as something that is rare; it is not widely distributed within an industry. For example, most firms do not aspire to enviropreneurialism as a primary differentiating factor. In support of this, only 10% of the participating firms in this study scored above 5.5 (range of 1 to 7) on EM. RBV would categorize enviropreneurial marketing as a unique organizational resource, one that is difficult to learn and costly to copy. According to the RBV, the degree of tacitness of a resource enhances this difficulty. Tacit resources (such as market orientation and EM) are skill based. Following RBV theory, we conceptualized EM as a valuable (rent-producing) resource.

The path dependencies suggested by RBV and supported in our results can be described as resource → capability → competitive advantage. Our first hypothesis posited that a firm's EM strategy development is positively related to new product success, while Hypothesis 2 stated that new product success is positively related to change in market share. These hypotheses were borne out. These results are consistent with the perspective that unique resources (EM) lead to unique capabilities (new product success). But this is where the direct effect of EM may end. That is, RBV suggests no direct effect of EM on a firm's competitive advantage (e.g., change in market share). The ability of EM to ultimately translate into competitive advantage depends on firms' entire bundle of capabilities (i.e., strength of distribution, supply chain efficiency, pricing power, etc.). This notion was borne out by an absence of a significant relationship of EM with change in market share. However, it should be reassuring to environmentalists that EM did not relate negatively to market share. A fear of trading off environmentalism with performance may be hindering some firms from becoming more environmental in their focus. For example, some firms may not want to emphasize environmental benefits for fear of dilut-

ing brand identity, opting instead to emphasize what they view to be the primary attributes of the brand.

Our investigation regarding the role of market turbulence implies that EM is a deeply ingrained business philosophy, although a longitudinal study would be required to verify this. In this study at least, turbulence in the marketplace did not relate to the level of EM in organizations. This result is consistent with those that have examined other tacit, skill-based resources in organizations (Slater and Narver 1994). As operationalized here, EM captures not only the mind-set that there are opportunities in environmental efforts but that firms have responsibilities to the environment and to future generations. Businesses that have embedded this mind-set in their culture are not likely to change as turbulence increases or decreases. Certainly, this notion must be tested in future research.

Mentioned earlier, our results were limited to product-related activities, and other marketing mix variables may come into play. Certainly the argument can be made that EM strategies can lead to price superiority made possible by cost advantage (Porter 1980). EM may drive substantial cost advantages made possible by reducing waste, conserving energy, reusing materials, and addressing life-cycle costs (Shrivastava 1995:955). EM may also have positive impacts on overall corporate image, which might translate into increased market share and profitability. One could also hypothesize that EM would affect the organization's bottom line directly through the potential for reducing long-term risks associated with resource depletion, fluctuations in energy costs, product liabilities, and pollution and waste management (Shrivastava 1995:955). This is fertile ground for future research.

Implications for Managers

Implications for managers are numerous. First, managers should not assume that a business philosophy that includes a commitment to the environment is inconsistent with the proposition that the first priority of any firm is its own welfare and that of its stakeholders. Results in this study suggest that while EM strategies may have their basis in promoting the public good, it is not necessarily to the detriment of the organization. This is consistent with Mathur and Mathur (2000), who found that only certain types of environmental marketing strategies result in negative stock price reactions. Indeed, there are many examples of firms that have used EM to improve their competitive position.

Second, a future challenge for managers who wish to monitor their competition is to discern firms that are truly embarking on an EM strategy versus firms that are employing the environment as a means to placate special interest groups or pander to niche target markets. Given that external market pressures do not seem to drive firms' decisions to adopt EM, managers may be able to discriminate true EM by monitoring the extent to which governmental or special interest pressures are increasing in served markets and by the extent to which the adoption of environmental prerogatives are occurring at the strategic or tactical level in the firm.

Third, in the case of another socially complex resource, market orientation, we have learned that gaps between philosophy and function can create problems (Moorman and Rust 1999). In other words, it is important that firms' embarking on EM are able to develop the capabilities to support their intent. These capabilities must occur at both the marketing R&D interface (i.e., the ability to effectively integrate environmentally friendly elements into new product designs) and the marketing-customer interface (i.e., the ability to effectively engage elements of the marketing mix to launch and sustain products).

Enviropreneurial marketing has its basis in shared organizational values that foster innovation and the creation of economic value that is also compatible with the physical environment. It is an approach that is not for everyone and, in that sense, can be considered a unique resource for firms that adopt it as an operating philosophy. Will others follow? While it currently is not for everyone, EM may eventually become the norm as we evolve toward a sustainable business paradigm.

APPENDIX
Items Used to Operationalize Constructs

Enviropreneurial Marketing (7-point scales anchored by *strongly disagree* and *strongly agree*)

Environmental issues enter into our marketing strategy development:

EAO1	As an opportunity to create a strategic advantage.
EAO2	Because we see environmental imperatives as market opportunities.
EAO3	As a result of compliance or social obligation rather than a proactive strategy.[a,b]
EAC1	In the form of investments (financial and non-financial) that are very substantial and visible.
EAC2	In the form of commitments that are irreversible.
EAC3	Usually as an individuals tactic aimed at enhancing economic performance within an existing product line.[a,b]
EAR1	Because part of our business philosophy involves a commitment to conservationism and sustainable development.
EAR2	Because it is the right thing to do.
EAR3	Because of compliance with government directives.[a,b]

Market Turbulence (7-point scales anchored by *low-high*)

MT1	The extent to which production/service technology in your principal market has changed during the past 3 years.
MT2	The level of competitive intensity in your principal served market segment.
MT3	In general, the rate of change in the marketplace in your principal served market segment.

New Product Success (7-point scales anchored by *low-high*)

NPS1	New product introduction rate relative to largest competitor.
NPS2	Degree of product differentiation.
NPS3	New product success rate relative to largest competitor.
NPS4	First to market with new applications.

Change in Market Share (7-point scales anchored by *significant increase–significant decrease*)

RS1	Change in sales revenue relative to your largest competitor.
RS2	Change in market share.
RS3	Change in market share relative to your largest competitor.

Covariate Measures (7-point scales anchored by *low-high*)

Relative Size:

The size of your unit's sales revenues in your principal served market segment in relation to those of your largest competitor.

Growth:

The average annual growth rate, during the past 3 years, of total sales in your principal served market segment.

Buyer Power:

The extent to which your unit's customers are able to negotiate lower prices.

Supplier Power:

The extent to which your unit is able to negotiate lower prices for your suppliers.

Seller Concentration:

The percentage of total sales accounted for by the top four competitors in your principal served market segment.

Ease of Entry:

The likelihood of a new competitor being able to earn satisfactory profits in your principal served market segment.

Government Control:

The extent to which government regulation inhibits your ability to expand product or customer markets.

Sales:

Total sales (less than $500 million, more than $500 million)

Company Type:

Business activity (manufacturer, other)

a. Negative relationship.
b. Removed from scale.

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NOTES

1. As the reader will see later, we do not operationalize our performance measure as a single-item indicant but as a multi-item construct.

2. The results of the hypothesis tests reported below were unaffected by the operationalization of EM. That is, EM as a first-order construct with nine indicants, EM as a second-order construct reflecting three first-order constructs with three indicants each, or EM as a second-order construct reflecting three first-order constructs with two indicants each all produced the same results in the SEM analysis. The latter operationalization was chosen because of its fit to the data, not because of its influence on the outcome of hypothesis tests.

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ABOUT THE AUTHORS

William E. Baker (william.baker@sdsu.edu) is an associate professor of marketing at San Diego State University. His research interests lie primarily in advertising effectiveness, new product success, organizational learning, and market orientation. He has published in leading scholarly journals including the *Journal of the Academy of Marketing Science*, the *Journal of Product and Innovation Management*, the *Journal of Consumer Psychology*, the *Journal of Advertising*, *Psychology & Marketing*, and the *Journal of Market Focused Management*. He has also

served as the head of research in a major communications firm and is actively involved in consulting.

James M. Sinkula (james.sinkula@uvm.edu) is John L. Beckley Professor of Marketing in the School of Business Administration at the University of Vermont. His research interests lie primarily in the areas of organizational learning, market orientation, product innovation, environmental marketing strategy, and organizational performance. He has published in the leading scholarly journals, including the *Journal of Marketing*, the *Journal of the Academy of Marketing Science*, the *Journal of Product and Innovation Management*, the *Journal of Business Research*, the *Journal of Advertising Research*, the *Journal of Market Focused Management*, the *Journal of Business and Industrial Marketing*, the *Journal of International Marketing*, and others.