



How Strategy-Making Processes Can Make a Difference

Author(s): Stuart Hart and Catherine Banbury

Source: *Strategic Management Journal*, May, 1994, Vol. 15, No. 4 (May, 1994), pp. 251-269

Published by: Wiley

Stable URL: <http://www.jstor.com/stable/2486885>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <https://about.jstor.org/terms>



Wiley is collaborating with JSTOR to digitize, preserve and extend access to *Strategic Management Journal*

HOW STRATEGY-MAKING PROCESSES CAN MAKE A DIFFERENCE

STUART HART

School of Business Administration, University of Michigan, Ann Arbor, Michigan, U.S.A.

CATHERINE BANBURY

Robert O. Anderson School of Management, University of New Mexico, Albuquerque, New Mexico, U.S.A.

Strategy-making is usually portrayed in dichotomous terms: rational vs. incremental, or formulation vs. implementation. It may, however, be more valid to think of organizations as entities capable of developing resources and skills in multiple strategy-making process modes. This paper first develops measures to identify firms with different levels and types of strategy-making process 'capability' then examines empirically their relationships to five dimensions of perceived performance, using data collected from a sample of 285 top managers. Results indicate that firms with high process capability—the simultaneous use of multiple strategy-making process modes—outperform single-mode or less process-capable organizations.

The competitive realities of the 1990s appear to demand not only efficiency and high quality, but also fast cycle capability (Stalk and Hout, 1990), strategic flexibility (Womack, Jones, and Roos, 1990), and attention to social-environmental concerns (Schmidheiny, 1992). Increasingly, scholars are recognizing that these objectives can only be achieved through effective strategic processes and organizational capabilities (Senge, 1990; Ulrich and Lake, 1990; Chakravarthy and Doz, 1992). Strategy-making can thus be conceptualized as a key process requiring purposeful design just as product development, production, order fulfillment, or service quality represent critical firm processes (Hammer and Champy, 1993).

Unfortunately, most existing strategy-making process models do not fully capture the complexity and variety of the phenomena. Strategy-making is typically portrayed in 'either/or' terms—either rational or incremental (e.g., Lindblom, 1959;

Fredrickson, 1984), or separated into formulation and implementation activities (e.g., Andrews, 1971; Porter, 1980). Empirical work has examined a wide range of processes, using different performance measures, resulting in little cumulative knowledge (e.g. Miller and Friesen, 1977; Fredrickson, 1984; Shrivastava and Grant, 1985; Guth and MacMillan, 1986; Wooldridge and Floyd, 1990). Furthermore, there is little convergence even among studies focused on the same constructs (e.g., Miller and Friesen, 1983; Fredrickson and Mitchell, 1984). There has been little effort to integrate existing models or examine the extent to which multiple strategic processes are required (Huff and Reger, 1987).

Indeed, with a few important exceptions (e.g., Miller and Friesen, 1977, 1978, 1984; Shrivastava and Nachman, 1989), research on the linkage between strategy-making processes and firm performance has adopted an econometric perspective. Linear models are constructed to estimate the additive effects of a set of process predictors on dependent constructs. While this design has the advantage of isolating statistically the independent effects of each of the predictors, it

Key words: Strategy-making, process, mode, capability, performance

CCC 0143-2095/94/040251-19
© 1994 by John Wiley & Sons, Ltd.

Received 6 May 1991
Final revision received 5 August 1993

does not provide insight into which combinations of processes perform especially well (Hambrick, 1984).

Resource-based theory suggests that it may be more appropriate to think of firms as possessing different combinations or levels of strategic resources and capabilities (Wernerfelt, 1984; Dierickx and Cool, 1989; Barney, 1991). Firms able to develop and accumulate several different process skills into a complex strategy-making 'capability' might thus be expected to outperform less process-capable organizations. This paper examines the extent to which such capability—the simultaneous use of multiple processes of strategy-making—facilitates superior performance within particular organizational and environmental contexts.

PRIOR RESEARCH

The empirical classification of organizations is an undertaking still in its infancy. Given McKelvey's (1975) guidelines which emphasize defining the broadest possible population of firms and including as many organizational attributes as possible, few attempts at classification in the field of management to date would qualify. There have, however, been several attempts to classify organizations along a more constrained set of dimensions. For example, Filley and Aldag (1978), Galbraith and Schendel (1983), and Miller and Friesen (1986) have all developed empirical taxonomies of firms based upon the content of the organization's strategy.

Fewer attempts have been made to classify empirically firms according to their strategic processes. Extensive empirical work has been conducted on the Miles and Snow (1978) typology (see Zahra and Pearce, 1990), however, most of this work has focused on testing specific hypotheses with respect to the typology rather than the empirical validation of the classification system. While Mintzberg, Raisinghani, and Theoret's (1976), Hickson *et al.*'s (1986) and Shrivastava and Grant's (1985) work is also significant, each adopted the *strategic decision* as the unit of analysis. Development of an empirical taxonomy using the *organization* as the unit of analysis has been more limited.

For example, Miller and Friesen (1977, 1978, 1984) used Q-type factor analysis to identify ten

'archetypes' of strategy-making. Eighty-one case studies were coded and clustered into the 10 types using measures of environment, structure, and strategy process. This work clearly broke new ground methodologically and offered a fresh approach to organizational classification. However, the resulting taxonomy was quite coarse-grained since it did not identify specific strategy process types distinct from structure or environment (Hambrick, 1984). Shrivastava and Nachman (1989) used a similar approach in their empirical classification of 27 business cases. However, the constructs used in the classification system in this study were limited to those relating to executive leadership and design processes.

Despite the limited efforts at empirical classification of strategy processes, the literature contains a bewildering array of conceptual models, dimensions, and typologies. Table 1 provides only a partial list of the models extant. The literature makes it clear that executives and organizational members can assume a variety of postures and roles in strategy-making (Shrivastava and Nachman, 1989). Top management discretion varies widely from very little to a great deal (Hambrick and Finkelstein, 1987). In fact, the role played by top managers can range all the way from that of a 'commander', where strategy is consciously formulated at the top and issued to the rest of the organization (Bourgeois and Brodin, 1984) to what might be called the 'sponsor'—where strategy emerges from below and is merely recognized and approved by the top (Mintzberg, 1978). Similarly, the complementary role played by organizational members can range all the way from that of the 'good soldier', where members execute the plans formulated by top management (Guth and MacMillan, 1986), to that of an 'entrepreneur', where they are expected to behave autonomously and pursue new initiatives (Burgelman, 1983).

The framework developed by Hart (1992) sought to integrate the range of conceptualizations described in the above literature. The integrative framework took a 'systems' view of strategy-making by focusing on the role interrelationships between top managers and organizational members in strategy-making (Table 2). Specifying both *who* is involved in strategy making and in *what manner* provided a useful organizing principle for framework development since, as Westley and Mintzberg (1989) have observed,

Table 1. Selected strategy-making process models

Allison (1971)	Mintzberg (1973)	Chaffee (1985)	Nonaka (1988)
—Rational	—Entrepreneurial	—Linear	—Deductive
—Organizational	—Planning	—Adaptive	—Compressive
—Bureaucratic	—Adaptive	—Interpretive	—Inductive
Ansoff (1987)	Bourgeois and Brodwin (1984)	Grandori (1984)	Mintzberg (1987)
—Systematic	—Commander	—Optimizing	—Plan
— <i>Ad Hoc</i>	—Change	—Satisficing	—Position
—Reactive	—Cultural	—Incremental	—Ploy
—Organic	—Collaborative	—Cybernetic	—Perspective
	—Crescive	—Random	—Pattern
Mintzberg and Waters (1985)			
—Entrepreneurial			
—Planned			
—Ideological			
—Umbrella			
—Process			
—Consensus			
—Unconnected			
—Imposed			

strategy is a two-way street requiring both visionary leaders and empowered followers. In short, strategy-making was framed as a process involving the total organization (Nonaka, 1988).

Focusing on the interaction between top managers and organizational members facilitated the identification of different processes or 'modes' of strategy-making. Table 2 identifies the five strategy-making process modes developed by Hart (1992): Command, Symbolic, Rational, Transactive, and Generative. Each mode reflects a pattern of interaction between the roles performed by the top managers and organizational members and represents a resource or skill set available to the firm (Barney, 1991; Dierickx and Cool, 1989). Together, the five modes embody those patterns of action—routines—which reflect the nature of the strategy-making process (Nelson and Winter, 1982). Thus, the strategy-making process modes constitute five useful dimensions upon which to calibrate the strategy-making capability of firms.¹

RESEARCH HYPOTHESES

Hart's (1992) five modes of strategy-making were not seen as mutually exclusive. In fact, it was

assumed that firms could develop skill in several modes over time, resulting in varying levels of strategy-making 'capability'. Since firms are likely to possess different bundles or combinations of strategic processes, this paper advances research hypotheses which address two primary areas of interest: (1) the performance implications of combining two or more process modes (capability); and (2) the impact of key contingency factors on the process–performance linkage (contingencies).

Capability

Several authors have advocated explicitly the desirability of combining different modes of strategy-making either sequentially (Allison, 1971: 255) or simultaneously (Mintzberg, 1973: 44). Chaffee (1985) went beyond this to suggest that there might be a hierarchy of strategy-making types, where each successive level of strategy-making incorporates those that are less complex. Building upon Boulding's (1956) hierarchical framework of systems, she suggested that the Linear mode of strategy-making constitutes the first level, followed by the Adaptive mode, and finally, the Interpretive mode. This paralleled Boulding's three classes of systems—machine, biological, and cultural, and suggested that firms accumulate strategic process skills over time.

In a similar vein, Gluck, Kaufman, and Walleck

¹ The authors wish to recognize one of the anonymous reviewers for the idea that the five modes offer five dimensions on which to calibrate strategy-making processes.

Table 2. An integrative framework of strategy-making processes

Descriptors	Command	Symbolic	Rational	Transactive	Generative
Style	<i>Imperial</i> strategy driven by leader or small top team	<i>Cultural</i> strategy driven by mission and a vision of the future	<i>Analytical</i> strategy driven by formal structure and planning systems	<i>Procedural</i> strategy driven by internal process and mutual adjustment	<i>Organic</i> strategy driven by organizational actors' initiative
Role of top management	<i>Commander</i> provide direction	<i>Coach</i> motivate and inspire	<i>Boss</i> evaluate and control	<i>Facilitator</i> empower and enable	<i>Sponsor</i> endorse and sponsor
Role of organizational members	<i>Soldier</i> obey orders	<i>Player</i> respond to challenge	<i>Subordinate</i> follow the system	<i>Participant</i> learn and improve	<i>Entrepreneur</i> experiment and take risks

^a From Hart (1992)

(1982) proposed that firms pass through a series of stages as they become more adept at strategic management. They observed that organizations start with financial and forecast-based planning, later adding strategic analysis skills (Hofer and Schendel, 1978), before achieving full strategic management capability which requires broad diffusion of strategic thinking throughout the organization (Ansoff, 1979).

Consistent with the above, resource-based theory (Wernerfelt, 1984; Ulrich and Lake, 1990; Barney, 1991) holds that a competitive advantage based upon a single resource or skill is easier to identify than a competitive advantage that involves multiple competencies. A strategy-making process that requires a complex pattern of coordination between many actors and diverse resources should therefore be more difficult to comprehend and imitate than strategic processes that depend upon the exploitation of only a single dominant resource (Winter, 1987; Grant, 1991).

Elaborating on this argument, Dierickx and Cool (1989) posited that the imitability of an organizational capability is related to the process through which it may be acquired. For example, time compression diseconomies (difficulties in developing capabilities quickly), asset mass efficiency (the initial level of capability influences the pace of its further accumulation), interconnectedness (the pace of a capability's accumulation is influenced by the level of other asset stocks), and causal ambiguity (lack of clarity about how a capability operates) all influence the extent to which capabilities bestow advantage. It follows then that firms able to accumulate more complex resources and capabilities in strategy-making should be more successful at sustaining competitive advantage than those firms with simpler or less-developed capabilities (Barney, 1991).

Applying this logic to the Hart (1992) framework, firms able to develop competence in multiple modes of strategy-making might come to possess a complex firm resource that is difficult for competitors to imitate. For example, a firm dominated by the Command mode of strategy-making relies on the idiosyncratic capabilities of a single (or a few) individual(s). Should this person(s) leave the organization or be attracted away by competitors, the firm's strategy-making capability would be severely impaired. In con-

trast, a firm using Symbolic, Transactive, and Generative processes of strategy-making demonstrates a more complex, deeply embedded capability requiring the concerted effort of hundreds (or even thousands) of people. Such an organization possesses a difficult-to-copy asset that could yield competitive advantage. Thus, firms able to accumulate several process skills into a complex strategy-making capability should outperform less process-capable organizations.

The emerging paradox perspective on organizational effectiveness (e.g., Bourgeois and Eisenhardt, 1988; Quinn, 1988; Quinn and Rohrbaugh, 1983; Hart and Quinn, 1993) suggests that high performance also requires the simultaneous mastery of seemingly contradictory or paradoxical organizational skills—decisiveness and reflectiveness, broad vision and attention to detail, and bold moves and incremental adjustment. Strategy-making that combines discrepant or paradoxical processes should therefore be associated with higher performance. Thus, firms able to combine maximally differing processes (e.g., Command and Transactive or Symbolic and Generative) should demonstrate higher performance than firms relying on one or two 'similar' strategy-making processes (e.g., Rational and Symbolic).

Firms possessing such capability might also be expected to perform on more dimensions than single-mode or less process-capable organizations. For example, a firm restricted to the Rational mode might focus primarily on profitability, to the exclusion of other performance criteria. However, a firm with additional skills in the Symbolic and Transactive modes would add dedication to a shared vision and mission (Symbolic) and a strong cross-functional learning orientation (Transactive). Such a firm might be expected not only to manage for profitability, but also emphasize quality (due to Transactive processes), and long-term growth prospects (due to Symbolic processes) as well.

In summary, firms relying upon any single mode may suffer from limitations and biases while firms that combine the different routines (Nelson and Winter, 1982) implicit in the five modes should experience fewer blind spots and enhanced performance. In general then, the higher the firm's competence within a given mode, and the greater the number of strategy-making modes it has accumulated (high

capability), the higher its expected performance. This suggests the following hypothesis:

Hypothesis 1: The more firms are able to develop skill in multiple strategy-making modes (high strategy-making process capability), the better their performance.

Contingencies

Empirical work on the strategy-making process–performance linkage has taken a contingency perspective since the early studies of Miller and Friesen (1983), Fredrickson (1983), and Fredrickson and Mitchell (1984). This trend has continued to the present (e.g., Fredrickson, 1984, 1986; Miller, 1987; 1989). Thus, it is clear that research on the process–performance linkage must examine or control for key contingency factors. Hypotheses are developed below that examine the moderating effects of one key internal contingency (firm size) and one key external contingency (competitive environment).

Firm size

As the number of employees hired by the firm grows, the distance between top managers and organizational members increases; additional levels of management are necessarily created, and the strategy-making process becomes less centralized (Weber, 1947; Pugh *et al.*, 1963) and more complex (Chandler, 1962; Bower, 1970). Where the small firm can formulate and implement strategy simultaneously due to the small size of the top management team and managers' direct contact with operations (i.e., the Command mode), the larger firm must frequently develop more rational and formalized approaches to planning and resource allocation (Hage and Aiken, 1969; Lorange and Vancil, 1977).

Furthermore, as an organization grows, complexity increases and coordination problems mount as the ability of top managers to personally direct members' actions weakens (Lawrence and Lorsch, 1967; Hall, 1977). Thus, as firms grow in size, there is increasing pressure to develop not only more formal, but also more symbolic (mission-based) and participative (involvement-based) approaches to management (Tichy and Devanna, 1986; Block, 1987; Hamel and Pra-

halad, 1989). Greater involvement of organizational members in strategic processes seems to alleviate coordination problems and more effectively focus members' activities and resources (Guth and MacMillan, 1986; Wooldridge and Floyd, 1990; Westley, 1990). As size increases, therefore, effective firms might be expected to evolve from reliance on one or two modes of strategy-making (low capability) to a multiple-mode process (high capability). This suggests the following hypothesis:

Hypothesis 2: Size is a moderator of the process-performance relationship. Specifically, strategy-making process capability will be positively associated with performance in larger firms but not in smaller firms.

Environment

Dess and Beard (1984) identified three key dimensions of an organization's environmental state: dynamism, complexity, and munificence. A munificent environment allows for the accumulation of slack resources by the firm and should provide the organization with both the opportunity and resources for innovation. As such, it represents the conceptual opposite of environmental hostility, as defined by Miller and Friesen (1983). Dess and Beard (1984) postulated that a munificent environment should be a significant predictor of firm profitability, irrespective of firm strategy. Thus, consistent with Porter (1980), industry structure should in part determine firm profitability. Since munificent environments, by definition, create the context for success regardless of strategy, the following hypothesis seems appropriate:

Hypothesis 3a: Munificent competitive environments will be associated with high performance regardless of strategy-making process capability.

Unlike munificent environments, however, Dess and Beard (1984) viewed dynamic and complex environments as presenting the firm with greater levels of uncertainty. As a consequence, they expected to see an increase in the amount of information processed by organizations operating in these situations. Unfortunately, empirical studies of the relationship between

strategy-making process, environment and performance have yielded contradictory results.

For example, Miller and Friesen's (1983) study found that as environmental dynamism increased, successful firms engaged in more analysis and more innovation in the planning process. Fredrickson (1984) and Fredrickson and Mitchell (1984), however, found that comprehensiveness of analysis predicted economic performance in a stable environment, but inhibited performance in an unstable environment. Finally, Bourgeois and Eisenhardt's (1988) study of microcomputer firms operating in 'high velocity' environments suggested that effective firms were both highly analytical and careful, but also made strategic decisions quickly with the CEO driving the process.

Emery and Trist's (1965) concept of environmental turbulence provides partial reconciliation of these seeming contradictions. An environment can be dynamic (unstable) even if it changes in predictable ways or is composed of only a few simple linkages (the nature of the Fredrickson study industry environment). A turbulent environment, however, is one that is both *dynamic* and *complex*—it changes both frequently and unpredictably, and embodies many inter- and intraorganizational linkages (more consistent with Miller's and Bourgeois and Eisenhardt's definition of dynamism). A turbulent environment appears to require a more sophisticated level of analysis and information processing than does a stable or simple dynamic environment. Indeed, Priem, Rasheed, and Kotulic (1992) found a strong positive rationality-performance relationship for firms facing highly turbulent environments, while no relationship was seen for firms facing environments with medium or low levels of turbulence.

Emery and Trist also suggest that shared values and a sense of purpose represent effective coping mechanisms in turbulent environments: Organizations that are able to institutionalize a mission and vision should be more likely to succeed since individual managers and organizational members are able to make consistent decisions quickly, as required under conditions of turbulence (Bourgeois and Eisenhardt, 1988; Hamel and Prahalad, 1989).

As the competitive environment becomes more turbulent, therefore, firms might be expected to evolve from reliance on a single mode of strategy

making (low capability) to a multiple-mode strategic process (high capability). Such capability may be required for success in turbulent environments whereas more stable competitive environments might allow firms to utilize simpler strategy-making processes and still be successful. This suggests the following hypothesis:

Hypothesis 3b: Turbulence is a moderator of the process-performance relationship. Specifically, strategy-making process capability will be positively associated with performance in turbulent environments but not in stable environments.

METHODS

To provide a preliminary test of the above hypotheses, a set of questionnaire items was designed to tap the five strategy-making modes articulated in the Hart (1992) framework as well as five performance dimensions and two key contingency factors. These data were then gathered via a survey of top managers from a large sample of firms in the industrial midwest.²

Data collection

The sample of firms for this study was selected from the population of all businesses operating from a location in a large metropolitan region in the industrial midwest, as defined by the fourth quarter 1987 records of the State's Unemployment Insurance Records. This population included organizations of nearly all types and sizes, excluding only farms, railroads, and government operations. In order to capture all the larger firms in the region and to prevent the sample from being dominated by very small firms, a probability proportional to size (PPS) design was used to select a representative sample of 3,625 firms. To provide comparable numbers of firms by sector, manufacturing and business service firms were over-sampled, while retail and wholesale firms were under-sampled.

A questionnaire covering a wide range of issues was mailed to the Chief Executive Officer or President (by name) of the 3,625 firms in the

² See Denison and Hart (1987) for details on study and sample design.

sample in September 1988. The initial mailing was followed by a mail prompt, a second mailing of the questionnaire, a second mail prompt, and extensive telephone follow-up. 720 completed surveys were received for a response rate of 20 percent. Respondent firms fell into the following size categories (number of employees): 1-5 (39%), 6-25 (20%), 26-100 (17%), 101-500 (19%), and > 500 (5%). Respondents' sectoral breakdown was as follows: Retail (12%), Wholesale (9%), Manufacturing (35%), Finance and Insurance (11%), Business Services (17%), and Other Services (16%). Nonresponse bias was analyzed both with regard to sector and size. Overall, response rates were quite similar across categories, although larger firms were slightly more likely to respond than smaller firms.

Note that the methods used in this study to select the sample were designed for several purposes. Efforts were made to sample the region as a whole while, at the same time, securing adequate representation of all major business sectors to ensure the reliability of later comparative analyses. The probability of each firm falling in the sample was determined by the size of the firm, plus the specific sampling fraction used for the firm's industrial sector. Based upon this design, the study sample was representative of firms of all sizes and major industrial sectors in the region.

Measures

As noted above, *strategy-making process* was operationalized through seventeen items in the questionnaire (see Appendix). The items were projective in nature and asked the CEO to respond to each using a 7-point Likert scale ranging from 1 (strongly disagree) through 7 (strongly agree). To insure both validity and reliability, the 17 items were factor analyzed using Principal Components Analysis and the Kaiser Criterion to estimate the number of factors. Final factor loadings were then determined via oblique rotation, since significant interrelationship was anticipated among the modes. The five factors which emerged clearly reflected the five strategy-making modes postulated in the framework, demonstrating their unidimensionality.³ Table 3 contains a summary

³ Details on the factor analyses are available from the authors upon request.

of the items and descriptive statistics for the resulting mode factors. Also included is the Alpha coefficient for each of the factors, which indicates adequate reliability and internal consistency.

Perceived performance was conceived as a multidimensional construct, following the work of Venkatraman and Ramanujam (1986). They proposed three general levels of firm performance: 1. *Financial Performance*; accounting-based measures such as ROA, ROS, and ROE. These indicators tap current profitability; 2. *Business Performance*; market-based measures such as market share, sales growth, diversification, and product development. There appear to be two dimensions here: those indicators related to sales growth and market share in existing businesses (growth/share), and those indicators related to the future positioning of the firm (e.g., new product development, diversification into new businesses); and 3. *Organizational Effectiveness*; stakeholder-based measures such as employee satisfaction, quality, and social responsibility. There seem to be two dimensions here also: Those indicators related to quality (e.g., product quality, employee satisfaction, overall quality), and those indicators related to social responsiveness (e.g., environmental and community).

Accordingly, five dimensions of performance were postulated: Current Profitability, Growth/Share, Future Positioning, Quality, and Social Responsiveness. These dimensions were operationalized through 13 questionnaire items. Respondents were asked to assess their company's performance on each of these items, compared to that of other companies in the same market and at a similar stage of development. Comparisons were made on a 7-point Likert scale for each item ranging from 1 (low performer) to 7 (high performer). The 13 items were factor analyzed, using the same procedure as described for the strategy-making process items. As expected, five valid and reliable factors emerged from this procedure: Current Profitability, Growth/Share, Future Positioning, Quality, and Social Responsiveness. Table 3 contains the descriptive statistics, Alpha coefficients, and items for each of the five performance factors.

Objective measures of performance (sales, asset base, and profits) were also collected, which enabled the calculation of 3-year average ROA and 3-year average sales growth. However,

Table 3. Empirical constructs

Modes	Mean	S.D.	Alpha	Items	(n = 439)
Command	5.17	1.15	0.67	CEO sets strategy CEO determines vision CEO makes & executes strategy	
Symbolic	5.52	0.97	0.70	Challenge our people 20 year corporate dream Personal example	
Rational	3.86	1.43	0.76	Written strategic plan Formal procedure Written mission statement	
Transactive	5.21	0.95	0.70	Formal analysis Strategy is iterative Ongoing planning involving all People have input	
Generative	4.93	0.96	0.61	Market feedback People willing to risk Experiments encouraged Employees understand	
Performance	Mean	S.D.	Alpha	Items	(n = 339)
Current profit	4.34	1.44	0.75	Profitability/ROA Cash flow	
Growth/share	4.40	1.37	0.69	Sales growth Market share	
Future position	3.78	1.08	0.64	Market diversification Product/service change New products next year	
Quality	5.49	0.80	0.67	Product/service development Overall company performance Employee satisfaction	
Social responsiveness	3.95	1.57	0.72	Quality Environmental responsibility Local community responsibility	
Contingencies	Mean	S.D.	Alpha	Items	(n = 485)
Complexity	4.77	1.43	0.67	Actions affect competitors Complex business environment	
Munificence	2.78	0.74	0.63	Market will grow 12 month business outlook good	
Dynamism	4.32	0.87	0.63	Changing customer preferences Changing social values Changing business environment Difficult to anticipate change New competition unpredictable Unforeseen threats Innovation from the market Performance public policy link	

only one-third of the respondents provided adequate data to compute the necessary percentages and ratios. For those cases where both subjective and objective performance data were available, the correlation between the two was computed to test for convergent validity. When industry effects were controlled for, correlations

between the subjective and objective performance measures for profitability and sales growth were highly significant. For example, the correlation between the subjective and objective profitability measures was 0.55 for manufacturing firms ($p < 0.01$) and the correlation between the two sales growth measures was 0.40 for service firms

($p < 0.05$). The correlations grew in magnitude and significance as more homogeneous subsets were examined. Specifically, performance measure convergence was analyzed sequentially for firms in SIC codes 35 (Machinery), 354 (Metalworking Machinery), and 3544 (Dies, Tools, Jigs, and Fixtures). The correlations increased progressively for the profitability measures ($r = 0.74$, 0.78, and 0.99, respectively for the 2, 3, and 4 digit SIC code designations). These results are consistent with recent research which indicates that subjective assessments of business performance obtained from senior managers correlate strongly with secondary (objective) measures (Dess and Robinson, 1984; Venkatraman and Ramanujam, 1987). Given the general convergence in measures and supporting research, the use of the subjective measures of performance was deemed appropriate for the purposes of this study.

Two *contingency variables* were also employed, as described above—the firm size and competitive environment. These contingency variables also served as control variables in the capability analyses. Firm size was operationalized as the natural log of total (FTE) employment for the firm in 1988, as suggested by Fredrickson and Mitchell (1984). Multiple environmental factors were utilized as suggested by Dess, Ireland, and Hitt (1990). The firm's competitive environment was conceptualized using the three dimensions proposed by Dess and Beard (1984)—dynamism, complexity, and munificence. These three dimensions were operationalized through twelve questionnaire items. For 10 of the 12 items, a 7-point Likert scale, where 1 = strongly disagree and 7 = strongly agree, was used. A 5-point scale ranging from 1 (poor economic outlook) to 5 (excellent economic outlook) was used for the remaining two items which were utilized to operationalize munificence. These 12 items were factor analyzed using the same procedure as that described above. Contrary to Dess and Beard's three factor model of environmental characteristics (dynamism, complexity and munificence), four unidimensional environmental factors emerged from this procedure: change, unpredictability, munificence, and complexity. Hence, Dynamism is a multidimensional factor comprised of change and the unpredictability of change. Table 3 contains a summary of the items, descriptive statistics, and Alpha coefficients for

each of the three environmental factors—Munificence, Complexity and Dynamism. As suggested by Emery and Trist (1965), the measure for Turbulence was then constructed by combining the Dynamism and Complexity factors together into a single index.

Data analysis

To test the hypotheses, a subset of the sample (285 of the 720 returns) composed of CEO respondents from dominant (versus diversified) businesses was identified. Following Rumelt (1974), dominant businesses were defined as those in which the main product or service constituted 70 percent or more of sales. The CEO subset minimized the possibility of confounded results due to mixed respondent data. Also, by conducting the analysis at the business level, the results were not diluted or confounded by the inclusion of diversified firms.

Capability

Firms were categorized *a priori* according to their level of strategy-making process capability using the deductive approach (Hambrick, 1984).⁴ Firms were divided into one of six groups on the basis of whether or not they exhibited competence in none (Low Capability, $n = 65$), one (Singles, $n = 81$), two (Doubles, $n = 76$), three (Triples, $n = 59$), four (Fours, $n = 37$) or all five of the strategy-making modes (High Capability, $n = 19$). A firm was defined as possessing competence in a given mode if its value fell into the upper one-third of the sample distribution for the mode in question.

Dummy variable regression was then performed using five of the six capability types as the independent variables and the five performance

⁴ Strategy-making capability types were also identified *inductively* using Q-type cluster analysis. The five cluster solution was chosen as the best based upon interpretability of the clusters. Both a 'high capability' ($n = 91$) and a 'low capability' ($n = 20$) group emerged from this analysis along with a group of firms oriented toward Command, Symbolic and Rational processes ('top down', $n = 102$), a group oriented toward Transactive and Generative processes ('bottom up', $n = 37$), and a group falling in the middle on all five modes ('medium capability', $n = 87$). Since Q-type cluster analysis produces groups which are statistically different from one another, but not necessarily clearly conceptually different, the deductive approach was chosen as the preferred method for testing the hypotheses posed in this study.

factors as the dependent variables. The Doubles group served as the omitted class and Turbulence, Munificence, and Size were included as control variables. Mean effects coding was used such that each group was compared with the entire set of configurations, rather than with the single, omitted reference class (Cohen and Cohen, 1983: 201).

Contingencies: Firm size

The sample of firms was divided into the following three groups: (1) small firms—between one and eight employees; (2) medium-sized firms—between 8 and 50 employees; and (3) large firms—50 or more employees. Multivariate analysis of variance (MANOVA) was then used to test the hypotheses related to firm size. The five performance factors were treated as the dependent variables, the six capability types were used as the independent variables, with Turbulence and Munificence treated as covariates.

Contingencies: Environment

To test the hypotheses related to competitive environment, it was necessary to operationalize Munificent and Turbulent environments, as well as their conceptual opposites, Hostile and Stable environments, respectively. The competitive environment was considered to be munificent for those firms registering a value above the midpoint of that scale. Hostility was indicated by a value below the same scale midpoint. A firm was considered to be in a turbulent environment if the respondent perceived the competitive environment to be simultaneously complex and dynamic; that is if the two indices registered above the scale midpoints. A stable environment, on the other hand, was indicated by values below the midpoints of the two scales. For each of these four subsets of the data, MANOVAs were conducted to test for the effects of each of the six capability types on performance, controlling for the effects of firm size.

RESULTS

Table 4 contains the intercorrelations among the key indexes and constructs used in the study. The correlation matrix shows that, as expected,

the five modes are strongly intercorrelated, but each relates with a different set of performance dimensions. For example, the Symbolic mode is highly correlated with Future Positioning; the Transactive and Generative modes with Quality; and the Rational and Symbolic modes with Growth/Share. The Rational mode was the only process even moderately associated with Current Profitability.

The contingency factors also showed an interesting pattern of relationships. Size was strongly correlated with the Rational mode and Growth/Share; Munificence was associated with Symbolic processes and Quality, Growth/Share, and Future Positioning. Finally, Turbulence was related to Transactive and Rational processes and Future Positioning. While interesting, these bivariate results shed little light on the interactions among strategy-making process capability, key contingency factors, and perceived performance. For this, we turn to the capability and contingency analyses.

Capability

The results for the dummy variable regression were significant and in the predicted direction (see Table 5). As might be expected, the contingency factors (especially Munificence and Turbulence) were powerful predictors of perceived performance. Net of these controls, however, strategy-making process capability was also a significant predictor. High Capability bore a positive and statistically significant relationship to all the performance dimensions except for Current Profitability. Furthermore, a lack of capability (reflected by the Low Capability and Singles groups) was negatively related to all the performance dimensions, and for Future Positioning, Quality, and Social Responsiveness, the negative relationship was statistically significant. The Triples and Fours were generally unrelated to performance with the exception of Triples being somewhat predictive of Future Positioning. Overall, the results provide support for Hypothesis 1: *The more firms are able to develop strategy-making process capability, combining skills in all five modes of strategy-making, the higher their performance.* However, the capability–performance relationship does not appear to be linear since intermediate levels of capability did not exhibit any consistent pattern

Table 4. Intercorrelations between empirical constructs^a

Construct	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Command	1.00												
2. Symbolic	0.28***	1.00											
3. Rational	0.15***	0.34***	1.00										
4. Transactional	0.13***	0.40***	0.33***	1.00									
5. Generative	0.15***	0.31***	0.27***	0.40***	1.00								
6. Profit	-0.04	-0.00	0.12*	-0.02	-0.04	1.00							
7. Growth Share	0.01	0.21***	0.21***	0.12*	0.05	0.43***	1.00						
8. Future Position	0.02	0.32***	0.23***	0.28***	0.24***	0.05	0.34***	1.00					
9. Quality	0.10*	0.17**	0.14**	0.21***	0.22***	0.40***	0.30***	0.13*	1.00				
10. Social	0.12*	0.14**	0.24***	0.09*	0.13*	0.08	0.06	-0.01	0.16**	1.00			
11. Size	0.00	0.12*	0.29***	0.08	-0.11*	0.11*	0.24***	-0.03	0.10*	1.00			
12. Munificence	0.08	0.33***	0.15**	0.13**	0.16**	0.13*	0.27***	0.33***	0.32***	0.08	-0.04	1.00	
13. Turbulence	0.13***	0.14**	0.24***	0.29***	0.11*	-0.08	-0.01	0.23***	-0.04	0.17**	0.09	-0.09	1.00

^a Sample size = 285, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 5. Capability-based analyses: Regression of strategy process capability on performance measures

	Profit	Growth	Future	Quality	Social
Low cap	-0.02	-0.09	-0.22**	-0.20**	-0.13
Singles	0.01	0.00	-0.06	-0.17*	-0.28***
Triples	0.06	0.08	0.14+	-0.03	-0.04
Fours	-0.04	-0.07	0.03	0.01	0.01
High cap	0.03	0.17+	0.15+	0.23*	0.33***
Size	0.14*	0.27***	0.10+	0.01	0.08
Munificence	0.11+	0.28***	0.32***	0.27***	0.07
Turbulence	-0.10+	-0.04	0.19***	-0.09	0.13*
adj R^2	0.01	0.15	0.20	0.13	0.08
N	278	278	278	278	278
F	1.49	7.17	9.49	6.24	4.13
p	0.16	0.000	0.000	0.000	0.000
SE	1.46	1.28	1.05	0.75	1.60

+ $p < 0.10$

* $p < 0.05$

** $p < 0.01$

*** $p < 0.001$

of relationship to performance. Strategy-making process capability also does not appear to relate to the current profitability of firms.

Contingencies

Firm size

Results of the multivariate analysis of variance (MANOVA) conducted on the large and small firms are summarized in Table 6 (medium-sized firms were omitted to maximize the contrast).⁵ Note that Munificence and Turbulence were treated as covariates in the analysis in order to control for their influence on perceived performance. For small firms, it was found that lower capability (Singles and Doubles) significantly predicted performance (at the 0.05 level). For large firms, in contrast, it was found that High Capability significantly predicted performance (at the 0.05 level). These results provide support for Hypothesis 2: *Strategy-making process capability is positively associated*

with performance in larger firms but not in smaller firms. In fact, lower levels of capability (competence in only one or two modes) was significantly related to performance for small firms. This finding goes beyond the predicted relationship. Recall, however, that small firms in this sample were those with only 1–8 employees. Perhaps such firms are simply too small for their CEOs to distinguish major differences in the roles for top managers and organizational members in the most effective firms.

Environment

Results of the MANOVAs conducted on those firms operating in turbulent and stable environments are also summarized in Table 6.⁶ Note again that Munificence and Size were treated as covariates in the analysis to control for their influence on perceived performance. Munificence was used as a covariate in all four MANOVA analyses. In each case, it was positively and significantly related to performance thereby confirming Hypothesis 3a: *Munificent competitive*

⁵ For small firms, the dependent variables—Future Positioning, Growth/Share, Profitability, Quality, and Social Responsibility—satisfied both the homogeneity and normal distribution requirements for MANOVA. The Bartlett test was used to test homogeneity. Similarly, for the large firms, the homogeneity and normal distribution assumptions were satisfied in all but one case: Quality was not homogeneous.

⁶ For firms operating in a turbulent or stable environment, the dependent variables again satisfied the homogeneity and normal distribution assumptions in all but one case: Quality was not homogeneous in a turbulent environment. The Bartlett test was again used to test for homogeneity.

Table 6. Contingency-based analyses: MANOVAs on the relationship between strategy process capability and performance^{a,b}

	Firm size ^c		Environment ^d	
	Large	Small	Turbulent	Stable
Covariates ^{c,d}	4.81***	1.81 ⁺	4.79***	1.99*
Capabilities				
Low-capability (n = 65)	0.34	0.68	1.36	0.83
Singles (n = 81)	0.96	3.07*	3.52**	0.88
Doubles (n = 76)	0.66	2.72*	1.87	0.66
Triples (n = 59)	0.22	0.31	1.82	0.12
Fours (n = 37)	0.54	1.16	0.64	1.16
High-capability (n = 19)	2.49*	1.79	4.78***	1.06

⁺ p < 0.10, * p < 0.05, ** p < 0.01, *** p < 0.001

(a) Performance includes Future, Growth, Profit, Quality and Social

(b) Table contains F-statistic for overall MANOVAs calculated using Hotellings test

(c) Covariates for MANOVAs on large and small firms were Turbulence and Munificence

(d) Covariates for MANOVAs on firms in Turbulent and Stable environments were Size and Munificence

environments are associated with high performance regardless of strategy-making process capability.

For the firms in a turbulent competitive environment, both High Capability and Low Capability were significant in predicting performance (at the 0.001 and 0.01 levels respectively). For those firms in a stable environment, however, no level of strategy-making process capability predicted performance. These results thus provide only partial support for Hypothesis 3b: *Strategy-making process capability is positively associated with performance in turbulent environments but not in stable environments.* The result indicating that low capability is also predictive of performance in turbulent environments was unexpected and will be discussed further in the concluding section.

LIMITATIONS OF THE STUDY

Before discussing these results and drawing conclusions, it is necessary to note several

important limitations of the study. First, the single respondent design requires that the results be interpreted with caution. Clearly, additional research is needed to garner multiple respondents—both top managers and organizational members—within a smaller sample of organizations. Indeed, the degree of organizational consensus concerning strategy-making processes is an important extension of this work (Wooldridge and Floyd, 1989). As a part of this undertaking, measures also need to be developed to tap the strategy-making processes from both the point of view of organizational members as well as top managers.

Second, while the population of firms employed in the study was broadly defined (enhancing generalizability), the narrow geographical scope (midwestern United States) limits external validity. Further work is needed on samples of firms drawn from diverse geographical and cultural contexts. Also, the dependence upon subjective performance measures requires the exercise of some caution in interpretation. How-

ever, as Dess and Robinson (1984) noted, there are few options when it comes to studying privately-held firms. Future research should focus upon a sample of publicly-held firms where secondary objective performance data are readily available. However, judgement will still be required for the performance dimensions related to Future Positioning, Quality, and Social Responsibility.

Finally, while the deductive approach to classifying firms provided a direct test of the capability hypothesis, it did not discriminate among specific combinations of strategy-making process modes. Hence, the lack of results for the intermediate levels may mean that in aggregating firms possessing capability in two, three or four modes, we combined both functional and dysfunctional combinations, thereby confounding the results. Future research might aim to identify *specific* combinations of strategy making modes in an effort to overcome this limitation.

DISCUSSION AND CONCLUSIONS

Even with the above caveats in mind, the results reported here shed an interesting light on how strategy-making processes can make a difference. These data suggest that even after controlling for size and key factors in firms' competitive environment, strategy-making processes are significant predictors of firm performance. Firms able to accumulate several modes of strategy-making into a complex strategy-making process 'capability' appear to outperform less process-capable organizations on virtually every performance dimension save current profitability. The lack of relationship between process and profitability may be explained, in part, through the realization that *today's* strategic processes have little connection to the *current* profitability of the firm: current profits reflect actions taken in the past and should thus show a lag effect from strategy-making processes. Indeed, factors such as industry structure and competitive strategy (Porter, 1980) or accounting practices and control systems might be expected to better predict current profitability.

This finding raises questions about the use of accounting measures of profitability (ROI, ROA) as the main dependent variables in strategic

process research—the approach taken by most previous work on the topic (e.g., Miller and Friesen, 1983; Fredrickson and Mitchell, 1984). Future research in this area would be well advised to include dependent constructs relating to new product development, innovation, and social responsiveness along with the more traditional constructs of profitability and sales growth. Since the cross-sectional nature of this study prohibited the examination of lag effects, a longitudinal design would also help to uncover the relationships between strategy-making processes and dimensions of firm performance over a more extended period of time. In fact, it is quite possible that performance itself is a contingency that determines, in part, the strategy-making processes used by the firm (Chakravarthy and Lorange, 1991).

Two conclusions appear evident from the results presented in this paper. First, *capability counts*: The more firms in the study were able to develop competence in multiple modes of strategy-making process, the higher their performance. Indeed, the best-performing firms combined high levels of skill in all five of the strategy-making modes defined by Hart (1992). These firms were simultaneously planful and incremental, directive and participative, controlling and empowering, visionary and detailed. Their strategy-making processes were, by definition, complex and reached deep into the organization, involved people throughout the firm. Thus, strategy-making processes do appear to constitute a firm resource that offers the potential for competitive advantage (Barney, 1991).

Second, the results suggest an interesting insight about situation and context—*high capability is robust*: Firms demonstrating high strategy-making process capability showed high levels of performance even after controlling for the effects of firm size and competitive environment. There appear to be few, if any, 'costs' to accumulating capabilities in strategy-making process. This does not suggest that there is 'one best way' of strategy-making, but does indicate that higher levels of strategy-making process capability facilitate superior performance in a wide variety of settings and situations.

However, treating size and environment as contingencies (rather than controls) does reveal some differences with regard to strategic process and performance: High strategy-making process

capability appears to make the most difference for larger firms operating in turbulent environments. Smaller firms operating in more stable environments do not appear to benefit from high levels of strategy-making capability.

Contrary to expectation, however, both high and low strategy process capability predicted performance in turbulent environments. This seemingly paradoxical finding merits further discussion and research. Previous studies have suggested that firms successful at operating in fast-changing, 'high velocity' environments have executives who are able to accelerate their cognitive processing (Eisenhardt, 1989). They have a deep personal knowledge of the business and the product, enabling them to consider more information and alternatives than their slower counterparts. However, such firms, after initially gathering advice widely, quickly restrict the decision process to only a small number of the most experienced executives (Bourgeois and Eisenhardt, 1988).

It may be that turbulent environments, which are both complex and rapidly changing, are not conducive to intermediate levels of process capability. Perhaps firms operating in turbulent environments must make a choice—either develop 'fast-cycle' competence in multiple modes of strategy-making, or 'throw process to the wind' and concentrate on the content of the business (product and technology). Additional research is needed to unravel this apparent paradox. Additional contingency work is also necessary to examine for moderating effects of other factors such as competitive strategy, national origin of firm, and stage of firm development.

Since the data described in this paper are cross-sectional, the firms included in the sample are at various stages of development. Longitudinal data would enable one to study how strategy-making processes develop and accumulate over time (Dierickx and Cool, 1989). With multitime data, it would be possible to address questions such as: Do firms acquire competence in different modes sequentially, passing through predictable stages? For new firms, is it better to begin emphasizing one mode over the others? Why do some firms 'stop' at particular points, never to accumulate a full set of strategy-making capability?

For managers, these findings have clear impli-

cations: The *process* through which strategy is made holds the potential for competitive advantage and requires purposeful design and management attention. To achieve high performance, top managers must provide a strong sense of strategic direction and organizational members must be active players in the strategy-making process. In fact, firms which combine high levels of competence in multiple modes of strategy-making appear to be the highest performers. Purity of process thus appears to be much less the objective than the nurturing of multiple, competing processes of strategy-making deep within the organization.

ACKNOWLEDGEMENTS

Jane Dutton, Paul Shrivastava, Dan Denison, Avi Fiegenbaum, and two anonymous referees provided valuable comments and suggestions on earlier versions of this article. The School of Business Administration at the University of Michigan provided support for the research.

REFERENCES

- Allison, G. (1971). *Essence of Decision*. Little, Brown & Co., New York.
- Andrews, K. (1971). *The Concept of Strategy*. Richard Irwin, Homewood, IL.
- Ansoff, I. (1979). *Strategic Management*. MacMillan, London.
- Ansoff, I. (1987). 'The emerging paradigm of strategic behavior', *Strategic Management Journal*, 8, pp. 501–515.
- Barney, J. (1991). 'Firm resources and sustained competitive advantage', *Journal of Management*, 17, pp. 99–120.
- Block, P. (1987). *The Empowered Manager*. Jossey-Bass, San Francisco, CA.
- Boulding, K. (1956). 'General systems theory—The skeleton of science', *Management Science*, 2, pp. 197–208.
- Bourgeois, L. J. and D. Brodwin (1984). 'Strategic implementation: Five approaches to an elusive phenomenon', *Strategic Management Journal*, 5, pp. 241–264.
- Bourgeois, L. J. and K. Eisenhardt (1988). 'Strategic decision processes in high velocity environments: Four cases in the microcomputer industry', *Management Science*, 14, pp. 816–835.
- Bower, J. (1970). *Managing the Resource Allocation Process*. Harvard Business School Press, Boston, MA.
- Burgelman, R. (1983). 'A model of interaction of

- strategic behavior, corporate context, and the concept of strategy', *Academy of Management Review*, **8**, pp. 61-70.
- Chaffee, E. (1985). 'Three models of strategy', *Academy of Management Review*, **10**, pp. 89-98.
- Chakravarthy, B. and Y. Doz (eds.) (1992). 'Strategy process: Managing corporate self-renewal', *Strategic Management Journal*, **13**, Summer Special Issue.
- Chakravarthy, B. and P. Lorange (1991). *Managing the Strategy Process*. Prentice-Hall, Englewood Cliffs, NJ.
- Chandler, A. (1962). *Strategy and Structure*. MIT Press, Cambridge, MA.
- Cohen, J. and P. Cohen (1983). *Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences*. Lawrence Erlbaum Associates, London.
- Denison, D. and S. Hart (1987). *Revival in the Rustbelt*. Institute for Social Research, Ann Arbor, MI.
- Dess, G. and D. Beard (1984). 'Dimensions of organizational task environments', *Administrative Science Quarterly*, **29**, pp. 52-73.
- Dess, G., R. D. Ireland and M. Hitt (1990). 'Industry effects and strategic management research', *Journal of Management*, **16**, pp. 7-27.
- Dess, G. and R. Robinson (1984). 'Measuring organizational performance in the absence of objective measures: The case of the privately-held firm and conglomerate business unit', *Strategic Management Journal*, **5**, pp. 265-273.
- Dierickx, I. and K. Cool (1989). 'Asset stock accumulation and sustainability of competitive advantage', *Management Science*, **35**, pp. 1504-1511.
- Eisenhardt, K. (1989). 'Making fast strategic decisions in high-velocity environments', *Academy of Management Journal*, **32**, pp. 543-576.
- Emery, F. and E. Trist (1965). 'The causal texture of organizational environments', *Human Relations*, **18**, pp. 21-32.
- Filley, A. and R. Aldag (1978). 'Characteristics and measurement of an organizational typology', *Academy of Management Journal*, **21**, pp. 578-591.
- Fredrickson, J. (1983). 'Strategic process research: Questions and recommendations', *Academy of Management Review*, **8**, pp. 565-575.
- Fredrickson, J. (1984). 'The competitiveness of strategic decision processes: Extension, observations, future directions', *Academy of Management Journal*, **27**, pp. 445-466.
- Fredrickson, J. (1986). 'The strategic decision process and organizational structure', *Academy of Management Review*, **11**, pp. 280-297.
- Fredrickson, J. and T. Mitchell (1984). 'Strategic decision processes: Comprehensiveness and performance in an industry with an unstable environment', *Academy of Management Journal*, **27**, pp. 399-423.
- Galbraith, C. and D. Schendel (1983). 'An empirical analysis of strategy types', *Strategic Management Journal*, **4**, pp. 153-173.
- Gluck, F., S. Kaufman and A. Walleck (1982). 'The four phases of strategic management', *Journal of Business Strategy*, **2**, pp. 9-21.
- Grandori, A. (1984). 'A prescriptive contingency view of organizational decision making', *Administrative Science Quarterly*, **29**, pp. 192-209.
- Grant, R. (Spring 1991). 'The resource-based theory of competitive advantage: Implications for strategy formulation', *California Management Review*, pp. 114-135.
- Guth, W. and I. MacMillan (1986). 'Strategy implementation versus middle management self-interest', *Strategic Management Journal*, **7**, pp. 313-327.
- Hage, J. and M. Aiken (1969). 'Routing technology, social structure and organizational goals', *Administrative Science Quarterly*, **14**, pp. 368-379.
- Hall, R. (1977). *Organizations: Structure and Process*. Prentice-Hall, Englewood Cliffs, NJ.
- Hambrick, D. (1984). 'Taxonomic approaches to studying strategy: Some conceptual and methodological issues', *Journal of Management*, **10**, pp. 27-41.
- Hambrick, D. and S. Finkelstein (1987). 'Managerial discretion: A bridge between polar points of view of organizational outcomes'. In B. Staw and L. L. Cummings (eds.), *Research in Organizational Behavior*. JAI Press, Greenwich, CT, pp. 362-376.
- Hamel, G. and C. K. Prahalad (1989). 'Strategic intent', *Harvard Business Review*, **67**, pp. 63-76.
- Hammer, M. and J. Champy (1993). *Reengineering the Corporation*. Harper Business, New York.
- Hart, S. (1992). 'An integrative framework for strategy-making processes', *Academy of Management Review*, **17**, pp. 327-351.
- Hart, S. and R. Quinn (1993). 'Roles executives play: CEOs, behavioral complexity, and firm performance', *Human Relations*, **46**, pp. 543-574.
- Hickson, D., R. Butler, D. Cray, G. Mallory and D. Wilson (1986). *Top Decisions*. Jossey-Bass, San Francisco, CA.
- Hofer, C. and D. Schendel (1978). *Strategy Formulation: Analytical Concepts*. West Publishing, St. Paul, MN.
- Huff, A. and R. Reger (1987). 'A review of strategic process research', *Journal of Management*, **13**, pp. 211-236.
- Lawrence, P. and J. Lorsch (1967). *Organization and Environment*. Harvard Business School Press, Boston, MA.
- Lindblom, C. (1959). 'The science of "muddling through"', *Public Administration Review*, **19**, pp. 79-88.
- Lorange, P. and R. Vancil (1977). *Strategic Planning Systems*. Prentice-Hall, Englewood Cliffs, NJ.
- McKelvey, B. (1975). 'Guidelines for the empirical classification of organizations', *Administrative Science Quarterly*, **20**, pp. 509-525.
- Miles, R. and C. Snow (1978). *Organizational Strategy, Structure, and Process*. McGraw-Hill, New York.
- Miller, D. (1987). 'Strategy making and structure: Analysis and implications for performance', *Academy of Management Journal*, **30**, pp. 7-32.
- Miller, D. (1989). 'Matching Strategies and strategy-making: Process, content, and performance', *Human Relations*, **42**, pp. 241-260.
- Miller, D. and P. Friesen (October 1977). 'Strategy-

- making in context: Ten empirical archetypes', *Journal of Management Studies*, pp. 253-280.
- Miller, D. and P. Friesen (1978). 'Archetypes of strategy formulation', *Management Science*, **24**, pp. 921-933.
- Miller, D. and P. Friesen (1983). 'Strategy-making and environment: The third link', *Strategic Management Journal*, **4**, pp. 221-235.
- Miller, D. and P. Friesen (1984). *Organizations: A Quantum View*. Prentice Hall, Englewood Cliffs, NJ.
- Miller, D. and P. Friesen (1986). 'Porter's (1980) generic strategies and performance: An empirical examination with American data', *Organization Studies*, **7**, pp. 37-55.
- Mintzberg, H. (1973). 'Strategy-making in three modes', *California Management Review*, **16**, pp. 44-53.
- Mintzberg, H. (1978). 'Patterns in strategy formation', *Management Science*, **24**, pp. 934-949.
- Mintzberg, H. (1987). 'The strategy concept I: Five Ps for strategy', *California Management Review*, **30**, pp. 11-24.
- Mintzberg, H., D. Raisinghani and A. Theoret (1976). 'The structure of "unstructured" decision processes', *Administrative Science Quarterly*, **21**, pp. 246-275.
- Mintzberg, H. and J. Waters (1985). 'Of strategies, deliberate and emergent', *Strategic Management Journal*, **6**, pp. 257-272.
- Nelson, R. and S. Winter (1982). *An Evolutionary Theory of Economic Change*. Harvard University Press, Cambridge, MA.
- Nonaka, I. (1988). 'Toward middle-up-down management: Accelerating information creation', *Sloan Management Review*, **29**, pp. 9-18.
- Porter, M. (1980). *Competitive Strategy*. Free Press, New York.
- Priem, R., A. Rasheed and A. Kotulic (1992). 'Rationality in strategic decision processes, environmental dynamism and firm performance: A test of competing theories', Working paper, University of Texas at Arlington.
- Pugh, D., D. Hickson, C. Hinings, K. Macdonald, C. Turner and T. Lupton (1963). 'A conceptual scheme for organizational analysis', *Administrative Science Quarterly*, **8**, pp. 289-315.
- Quinn, R. (1988). *Beyond Rational Management*. Jossey-Bass, San Francisco, CA.
- Quinn, R. and J. Rohrbaugh (1983). 'A spatial model of effectiveness criteria: Toward a competing values approach to organizational analysis', *Management Science*, **29**, pp. 363-377.
- Schmidheiny, S. (1992). *Changing Course*. MIT Press, Cambridge, MA.
- Senge, P. (1990). *The Fifth Discipline*. Doubleday, New York.
- Shrivastava, P. and J. Grant (1985). 'Empirically derived models of strategic decision-making processes', *Strategic Management Journal*, **6**, pp. 97-113.
- Shrivastava, P. and S. Nachman (1989). 'Strategic leadership patterns', *Strategic Management Journal*, **10**, pp. 51-66.
- Stalk, G. and T. Hout (1990). *Competing Against Time*. The Free Press, New York.
- Tichy, N. and Devanna, M. (1986). *The Transformational Leader*. Wiley, New York.
- Ulrich, D. and D. Lake (1990). *Organizational Capability*. Wiley, New York.
- Venkatraman, N. and V. Ramanujam (1986). 'Measurement of business performance in strategy research: A comparison of approaches', *Academy of Management Review*, **11**, pp. 801-814.
- Venkatraman, N. and V. Ramanujam (1987). 'Measurement of business economic performance: An examination of method convergence', *Journal of Management*, **13**, pp. 109-122.
- Weber, M. (1947). *The Theory of Social and Economic Organization*. Free Press, Glencoe, IL.
- Wernerfelt, B. (1984). 'A resource based view of the firm', *Strategic Management Journal*, **5**, pp. 171-180.
- Westley, F. (1990). 'Middle managers and strategy: Microdynamics of inclusion', *Strategic Management Journal*, **11**, pp. 337-351.
- Westley, F. and H. Mintzberg (1989). 'Visionary leadership and strategic management', *Strategic Management Journal*, **10**, pp. 17-32.
- Winter, S. (1987). 'Knowledge and competence as strategic assets'. In D. Teece (ed.), *The Competitive Challenge*. Ballinger, Cambridge, MA, pp. 159-184.
- Womack, J., D. Jones and D. Roos (1990). *The Machine that Changed the World*. Rawson Associates, New York.
- Wooldridge, B. and S. Floyd (1989). 'Strategic process effects on consensus', *Strategic Management Journal*, **10**, pp. 295-302.
- Wooldridge, B. and S. Floyd (1990). 'The strategy process, middle management involvement, and organizational performance', *Strategic Management Journal*, **11**, pp. 231-241.
- Zahra, S. and J. Pearce (1990). 'Research evidence on the Miles-Snow typology', *Journal of Management*, **16**, pp. 751-768.

APPENDIX: STRATEGY-MAKING PROCESS MODE ITEMS

1 Strongly disagree	2	3	4	5	6	7 Strongly agree
---------------------------	---	---	---	---	---	------------------------

Command mode

Strategy, for this company is primarily set by the CEO and a few of his or her direct reports. The CEO primarily defines our firm's 'vision'—its basic purpose and general direction. The Chief Executive of our company determines and executes the strategy based upon analysis of the business situation.

Symbolic mode

As a top manager, I regularly challenge our people with new goals and aspirations. I have a 'dream' about where this company will be in 20 years and do my best to communicate this sense throughout the organization. As CEO, I serve as a personal example of the way our people should behave.

Rational mode

Our company adopts a written strategic plan each year to guide our operating activities. Strategic planning in our firm is a formal procedure occurring in a regular cycle. We have a written mission statement that is communicated to employees. Formal analysis of the business environment and our competitors forms the basis for our company's strategic plan.

Transactive mode

Strategy is made on an iterative basis, involving managers, staff and executives in an on-going dialogue. Business planning in our company is ongoing, involving everyone in the process to some degree. Most people in this company have input into decisions that affect them. Our company continually adapts its strategy based upon feedback from the market.

Generative mode

Most people in this organization are willing to take risks. People are encouraged to experiment in this company so as to identify new, more innovative approaches or products. Employees in this company understand what needs to be accomplished in order for the organization to survive and prosper.