Strategic Management Journal, Vol. 14, 137–153 (1993)

ENTREPRENEURSHIP AND THE CONCEPT OF FIT: A MODEL AND EMPIRICAL TESTS

JOHN L. NAMAN and DENNIS P. SLEVIN
Joseph M. Katz Graduate School of Business, University of Pittsburgh, Pittsburgh, Pennsylvania, U.S.A.

This paper reports the results of a study designed to investigate entrepreneurship and 'fit' in small and medium sized high technology manufacturing firms. A normative model of fit has been developed, which including the variables of entrepreneurial style, organizational structure, and mission strategy, determines a measure of the firm's fit with its environment. The normative model of fit proposed here is based on variables and relationships found to be important in previous empirical studies. Data on environmental turbulence, entrepreneurial style, organization structure, mission strategy, and financial performance were collected from 82 manufacturing firms. A measure of fit was calculated for each firm. Findings indicate that performance among firms was positively related to the measurement of fit. In short, fit is an important construct for firm success. Implications include prescriptive guidance to assist practitioners in diagnosing and correcting 'misfit' for individual firms.

The concept of fit is central in distinguishing the field of strategic management (Summer, *et al.*, 1990) from its brethren: finance, managerial controls, human resources, marketing, organization behavior. Over the past 30 years, there has been increasing academic and practitioner interest in the issue of a fit between a firm and its environment, strategy, structure, and processes (Chandler, 1962; Lawrence and Lorsch, 1967; Galbraith and Nathanson, 1979; Steiner, 1979; Nadler and Tushman, 1979; Waterman, 1982; Miles and Snow, 1984; Gupta and Govindarajan, 1984; Venkatraman and Camillus, 1984; Drazin and Van de Ven, 1985; Galbraith and Kazanjian, 1986; Keeley and Roure, 1990; Miller, 1991; Rao, Mahajan, and Varaiya, 1991; Datta, 1991). In order to adequately collect and analyze empirical data, fit must be operationalized and measured appropriately to the theory or hypotheses being tested. Others have called on 'researchers [to] focus on how fit is to be *measured*, recognizing that different approaches to measurement are needed for the 'content' and 'process' of fit. (Venkatraman and Camillus, 1984: 520, emphasis theirs). This paper responds to the need to systematically develop and examine models and measures of fit in entrepreneurial-style strategic management. A specific model of fit is proposed and tested using data from a sample of high technology manufacturing firms that compete in regional and national markets.

The entrepreneurial firm is generally distinguished in its ability to innovate, initiate change, and rapidly react to change flexibly and adroitly. It seeks ways to accentuate and perpetuate the strengths of innovation, flexibility, and responsiveness while providing more sophisticated and efficient management (Guth and Ginsberg, 1990). Many organizations need improved means of increasing the skills and effectiveness of entrepreneurial management and assisting their developing into (more) successful

Key words: Entrepreneurship, strategic fit, normative model, firm performance, environment

0143–2095/93/020137–17$14.00

Received 11 November 1991
Final revision received 20 October 1992

organizations. An empirically validated normative model of fit should be of assistance to practicing entrepreneurs and in training future entrepreneurs (Naman and Tuggle, 1990).

There are many different perspectives on entrepreneurship. Mintzberg (1973: 55–94) described the role of entrepreneur—designing and initiating change in the organization—at the individual level. At the organization level, Miller (1983) examined the entrepreneurial style of top management teams in terms of their propensity for risk-taking, innovation, and proactiveness. Others have broadened the entrepreneurial perspective to include entire organizations (Stevenson and Gumpert, 1985; Quinn, 1985; Galbraith and Kazanjian, 1986; Stevenson and Jarillo, 1990). It should be noted that the organizational-level entrepreneurial style is not restricted to new ventures or small business.

The entrepreneurship perspective adopted for this model follows that of Miller and Friesen (1982), Miller (1983), Drucker (1985), Pinchot (1985), Stevenson and Gumpert (1985), Burgelman and Sayles (1986), Covin and Slevin (1986, 1988, 1991), Kao (1989), Jennings and Lumpkin (1989), and Stevenson and Jarillo (1990). 'Entrepreneurship can be viewed as a characteristic of organizations and can be measured by looking at managerial behavior as the firm engages in the entrepreneurial process. Entrepreneurial firms are those in which the top managers have entrepreneurial management styles, as evidenced by the firm's strategic decisions and operating management philosophies.' (Covin and Slevin, 1986). With respect to fit, we respond to Galbraith and Kazanjian's stated need to 'develop an ambidextrous capability to manage in . . . very different fashions within the bounds of the same organization' [1986: 162].

ALTERNATIVE CONCEPTUALIZATIONS OF FIT

There are many different perspectives of fit. Venkatraman and Camillus (1984) developed a conceptual scheme that partitions different perspectives by domain of fit (external, internal, integrated) and content or process of fit. Within the context of their scheme, the normative model set forth herein is *integrated* over internal and external domains of fit. The normative model is primarily concerned with the content of fit, elements to be aligned, and only indirectly with processes of arriving at fit.

In their 1979 review of congruence and fit, Galbraith and Nathanson distinguish between research on individual dimensions of fit, represented by Lawrence and Lorsch (1967), and integrated or total organizational fit.

> The concept of fit or congruence among all the dimensions of the organization has emerged from several sources. Scott began talking [about] 'a cluster of managerial characteristics' (Scott, 1971: 6). . . . Leavitt (1962, 1965) is one of the first to discuss the degree to which task, structure, people, and processes form an integrated whole. [Galbraith and Nathanson, 1979: 266].

A normative model must account for empirically validated individual fits and theoretically aggregate the integrated or total fit [Govindarajan, 1988; Venkatraman and Prescott, 1990].

A NORMATIVE MODEL OF FIT

An integrated model of fit has the possibility of containing a large number of diverse variables (Capon, Farley, and Hoenig, 1990; Covin and Slevin, 1991) to account for both external economic factors and internal organizational factors. Primary external variables must capture the important effects of industry environment and strategy. Recent research has shown 'some organizational alignments do produce supernormal profits, independent of the profits produced by traditional industry and strategy variables' (Powell, 1992: 119; Hansen and Wernerfelt, 1989). Primary internal variables must capture the important effects of organizational structure and management style. Four key variables were selected that are both measurable and central to the concept of fit. The proposed model is shown in Table 1.

The model begins with a measure of environment as a driving force in the fit equation. Think of a sample of firms that could be ranked in terms of environmental turbulence. Their percentile score on environmental turbulence should relate to their percentile score on entrepreneurship (Covin and Slevin, 1991). For example, if a firm scores in the 80th percentile concerning environmental turbulence, the theory

Table 1. Normative model of fit

WTPERF = f(MISFIT)
or = $c_0 + c_1$ MISFIT
where c_1 is negative ($c_1 < 0$)

MISFIT = |DENT-ENTREP| + |DENT-STRUCT| + |DENT-MSTRAT|

Where: |. . .|	= Absolute value function
DENT	= Desired level of ENTrepreneurship = value of standardized measure of environmental turbulence
ENTREP	= value of standardized measure of entrepreneurial style
STRUCT	= value of standardized measure of organization structure
MSTRAT	= value of standardized measure of mission strategy
WTPERF	= value of standardized measure of WeighTed average PERFormance

suggests that it should also score in the 80th percentile on the entrepreneurship dimension. If for example it scored in the 60th percentile on entrepreneurship, then it would have a 'misfit' of 20 percentile units according to this modeling procedure. The measure of the environment thus provides a specification of the 'desired' level of entrepreneurship that should be present in the firm. The variable 'DENT' (Desired level of ENTrepreneurship) forms the basis for specifying any misfits that might be present in terms of organizational structure and mission strategy. For example, if the DENT score of 80 is calculated as a result of the environmental turbulence meaure, then this score provides the basis for determining misfit in the areas of organizational structure and mission strategy. In other words, in a hypothesized sample of firms, if a firm scores in the 80th percentile on environmental turbulence, to be perfectly matched it should be also scoring in the 80th percentile on entrepreneurship, organizational structure, and mission strategy. The specific measures and mathematical techniques for calculating misfit are presented in a later section. Absolute values are proposed because misfits can occur in either positive or negative directions. For example, a firm can be too entrepreneurial for its environment and its organization structure (Slevin and Covin, 1990).

Other models of fit

Why model Fit? To the extent to which it is possible, we wish to 'achieve definitional content through abstraction . . . [that] may support the use of mathematical modeling as a solution strategy.' (Smith, 1989: 972). Mathematical models provide for theory building and testing by using a universal and objective language. Substantive assumptions such as transitivity are most easily brought to the surface and tested.

A close analysis of the several models given below reveals a barely submerged, hopefully emerging conceptual issue relating 'slack' and 'efficiency' to the process of fit. Oversimplified, is fit representative of efficient allocation of managerial resources? If so, misfit must be associated with misallocation of management energy.

Notions of fit have been included in previous strategic models. Gupta and Govindarajan operationalized the contingent 'match between strategy and organization' (1984: 27) by incorporating cross-product (multiplicative interaction) terms in a linear equation. An explicit test for the presence of monotonicity was performed. Keeley and Roure developed a five equation structural model to study 'interrelationships' (1990: 1258), although there was no explicit measure of fit. Datta (1991) used a regression equation to analyze fit relationships by examining the sign, significance, and magnitudes of coefficients. Venkatraman and Prescott computed MISALIGN, the misalignment of 17 'strategy variables significantly related to ROI in [each firm's] environment' (1990: 8) from the PIMS data base. Their holistic approach considered 'the multivariate deviation in the pattern of a business unit's resource allocation profile from an ideal profile (1990: 5).

Much closer to the normative model developed herein, Miller used correlation analysis to establish the strength of environmental–organization matches and indexes of structural and strategic alignment or *match* were computed for each firm as follows: Structural Match $= -\Sigma[(x_i)-(y_j)]^2$ {for all i,j ϵ set of pairs specified} where x and y are standardized scores for the ith environmental and jth structural variables, respectively . . . All variables are standardized to have mean 0 and standard deviation 1. Each component of *mismatch* is simply the squared difference between standardized scores of a pair of environmental and structural variables.' (1991: 43, emphasis as in original).

Theoretically, the normative model is grounded in the organizational psychology concept of fit set forth by Nadler and Tushman (1979). In their words, 'Between every pair of [components] there exists a degree of congruence, or 'fit'. Specifically, the congruence between two components is defined as follows: the degree to which the needs, demands, goals, objectives, and/or structures of one component are consistent with the needs, demands, goals, objectives, and/or structures of another component.' (1979: 451). They note, and we concur, 'Because components cover a range of different types of phenomena, however, fit can be more clearly defined only by referring to specific fits between specific pairs of components.' (1979: 451). As will be detailed in the literature review that follows, the normative model is based solely on fit pairs that have been empirically validated by other researchers.

Nadler and Tushman proposed an aggregate model of organizational fit based on 'a basic hypothesis [:] . . . other things being equal, the greater the total degree of congruence or fit between the various components, the more effective will be (the organization), . . . leading to higher levels of goal attainment, utilization of resources, and adaptation.' (1979: 451–452). Following Govindarajan (1988) and Miller (1991), the notion of 'total degree' is unambiguously operationalized most parsimoniously as summation. Summation is consistent with a postulated independence of specific fits between specific pairs of components. Summation is also consistent with postulated commutativity of the individual fits, i.e., independence of the order in which specific fits (or misfits) are aggregated.

Absolute value function for balance and contingency cases

The justification for the absolute value function is twofold. First, the absolute value function mathematically embodies the notion of *balance* in determining misfit (by equating over-measure with under-measure). The balance notion [Mintzberg, 1991] in fit may subsume a resource-based perspective, i.e., that finite managerial efforts are a human capital resource [Singh and Montgomery, 1987] that must be allocated to affect change in entrepreneurial style, organizational structure, etc. Over-allocation of attention to entrepreneurial style would presumably under-allocate managerial effort in another area. The holistic approach of Venkatraman and Prescott incorporates such a notion in modeling the multivariate deviation in the pattern of a business unit's resource allocation profile' [1990: 5].

Secondly, the absolute value function folds multiple *contingencies* into a manageable number of terms. The summation of absolue value *misfit* terms conglomerates contingency cases. For example, the three term expression |DENT-ENTREP| + |DENT-STRUCT| + |DENT-MSTRAT| succinctly represents 27 contingency cases illustrated by the 3 × 3 × 3 cube shown in Figure 1. By incorporating myriad contingency cases, the model manifests robustness without undue complexity or multiplicative interaction terms. (In the figure, check marks signify a desired level of a variable and small arrows indicate the direction that the variable would have to be increased or decreased in order to achieve fit.)

Miller (1991) similarly summed misfit differences in calculating an index of fit. However, Miller used 'the *squared difference* between standardized scores' (1991: 43, emphasis added), $\Sigma[(x_i)-(y_j)]^2$, which theoretically implies that larger misfit differences disproportionately relate to performance. Govindarajan found 'significant support' (1988: 843) for an approach using euclidean distance between unstandardized scores. Given no strong rationale for a nonlinear relationship, the absolute value index is based on the hypothesis that misfit is approximately linearly proportional with performance degradation.

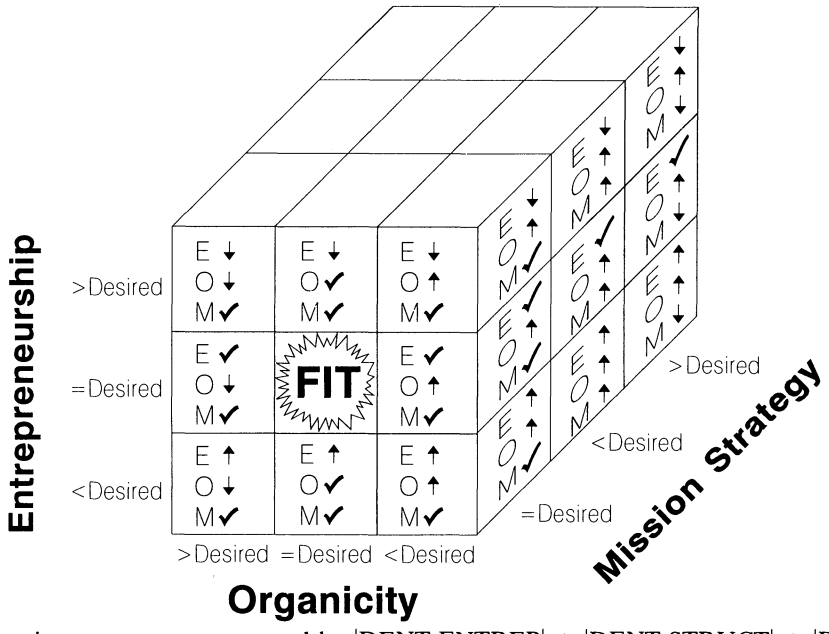

Figure 1. 27 Contingency cases represented by |DENT-ENTREP| + |DENT-STRUCT| + |DENT-MSTRAT|

Unit weights

Unit weighting, +1 or −1 depending on direction, of *standardized* variables was chosen for the normative model for two reasons. First, there was no readily apparent theoretically and empirically validated weighting scheme. Secondly, 'for mathematical reasons, unit linear models will yield predictions highly correlated with those of linear models of optimal weights.' (Dawes, 1988: 209; Dawes, 1979). It should be noted that Miller (1991) and Govindarajan (1988) similarly used unit weighting in summing misfits, without suggesting any explicit reasons as above.

Variables pertaining to fit

The model is based on variables and relationships found important in previous empirical studies. Measures of environmental turbulence, entrepreneurial style, organization structure, mission strategy, and financial performance are incorporated. For each of these variables, specific references will be provided and measurement will be discussed in detail in the Methods section following this section.

By way of overview, Table 2 summarizes findings in the literature, listed for specific variables or pairs of fit variables associated with firm performance. Theory underlying each finding will not be reviewed. See Covin and Slevin's (1991) conceptual model for a broad review of these relationships.

METHODS

The sample

The senior executives of 364 business firms were contacted and asked to complete research questionnaires for this study. These 364 firms represent all Southwestern Pennsylvania facilities classified as 'manufacturing' by Standard Industrial Classification (SIC) codes and as 'advanced technology' by a monitoring survey performed in 1988 by the University Center for Social and Urban Research at the University of Pittsburgh (DeAngelis, 1989). The firms complete in regional and national markets. (Firms were classified as 'advanced technology' facilities in the monitoring survey if they employed advanced process technology or if they operated in technology-based industries.) Three weeks after the initial mailing telephone calls were made to all nonresponding firms in an attempt to improve the response rate. Based on information obtained via this telephone follow-up, 70 of the 364 firms in the initial universe of firms were subsequently excluded from the

Table 2. Literature on specific fit pairs

Entrepreneurship as firm behavior	**Entrepreneurship–environment**
1977 Khandwalla	1971 Kilby
1983 Miller	1973 Mintzberg
1984 Burgelman	1976 Biggadike
1987 Khandwalla	1978 Pfeffer and Salancik
1989 Jennings and Lumpkin	1982 Miller and Friesen
1990 Slevin and Covin	1983 Miller
1990 Stevenson and Jarillo	1987 Khandwalla
1991 Covin and Slevin	1987 Sandberg and Hofer
Entrepreneurship–mission strategy	**Mission strategy**
1980 Gellar	1962 Chandler
1982 Tichy, Fombrun, and Devanna	1974 Rumelt
1984 Gupta and Govindarajan	1978 Miles and Snow
1984 Maidique and Hayes	1979 Abell and Hammond
1986 Zahra	1980 Hall and Saias
	1984 Gupta and Govindarajan
	1989 Venkatraman
Organizational structure	**Entrepreneurship–organization structure**
1962 Chandler	1977 Khandwalla
1974 Rumelt	1983 Miller
1979 Mintzberg	1984 Burgelman
1980 Hall and Saias	1984 Maidique and Hayes
1982 Miller and Friesen	1985 Drucker
	1985 Stevenson and Gumpert
Entrepreneurship–performance	1986 Schuler
1982 Miller and Friesen	1986 Zahra
1986 Covin and Slevin	1987 Bahrami and Evans
1986 Zahra	1988 Covin and Slevin
1988 Covin and Slevin	1989 Hisrich and Peters
1990 Cornwall and Perlman	1990 Slevin and Covin

research (primarily due to having less than five employees). Of the remaining 294 firms, 122 completed and returned the research questionnaire for a response rate of 41.50 percent.

The questionnaires for 40 firms were excluded for various conditions listed below. Some firms were excluded on more than one criterion, so the sum of exclusions exceeds the actual number of firms excluded. Nineteen of the 121 firms in the sample had been in business for less than 5 years or failed to give the number of years and were excluded. Nine firms were excluded due to having less than five employees. Nine firms had more than 500 employees and were excluded for being too large (largest = 10,000). Two firms reported a mission strategy indicating sale, bankruptcy, or liquidation. Eleven firms failed to give answers to questions used in the analysis. As shown in Table 3, of the 82 respondent firms, financial information was volunteered by 57 for sales and 46 for return on sales (Net income *after* taxes ÷ gross sales).

The measures

Measures of environmental turbulence, entrepreneurial style, organization structure, firm's

Table 3. Descriptive statistics for usable research questionnaires

	Age	Emp	Ret on sales	Gross sales
Minimum	5	5	−5.89%	$324,000
Maximum	104	400	35.23%	$105,000,000
Mean	24.634	88.171	7.62%	$10,022,400
Standard dev	21.111	99.005	8.54%	$17,882,800
N of cases	82	82	46	57

mission strategy, and financial performance were employed in this research. Each of these measures has been previously validated and used more than once by researchers. Additionally, each of the operational measures, including mission strategy, was selected on the basis of being usable for *ex ante* prediction. Specific references are provided for each measure as each is discussed below. Actual scale items used for environmental turbulence, entrepreneurial style, and organizational structure are given in the appendix.

Environmental turbulence

An eight-item scale was used to measure environmental turbulence. Miller and Friesen's (1982) five-item, seven-point scale of environmental dynamism and Khandwalla's (1977) three-item, seven-point scale of environmental hostility were used to measure environmental turbulence. Previously, both scales have been found to be significantly positively correlated with firm performance (Covin and Slevin, 1989). The environmental turbulence index has a mean value of 3.945, a standard deviation of 0.781, a range of 1.0–7.0, a response range of 2.400–6.033, and a Cronbach-α coefficient of 0.629.

Entrepreneurial style

A nine-item 7-point Likert type entrepreneurial style scale was used. This scale was developed by Covin and Slevin (1986, 1988) based on the work of Miller and Friesen (1982), and Khandwalla (1976/77). Entrepreneurial style is an aggregate measure of three dimensions: the willingness to take business related risks, the willingness to be proactive when competing with other firms, and the willingness to innovate, i.e., to favor change and innovation in order to obtain competitive advantage (Miller, 1983; Covin and Slevin, 1988). The entrepreneurial style index has a mean of value of 4.388, a standard deviation of 0.816, a range of 1.0 to 7.0, a response range of 2.222 to 6.444, and a Cronbach-α coefficient of 0.805.

Organization structure

Organization structure was limited to a seven-item scale that measures organicity—that is, the extent to which organizations are structured in organic vs. mechanistic manners. This scale was developed by Khandwalla (1977) to measure the organic-mechanistic orientation of a business. As with the entrepreneurial style scale, respondents were asked to indicate on a 7-point Likert-type scale the extent to which each item of the measure characterizes the collective management style of their firm's top managers. The ratings on these items were averaged to arrive at a single organicity index for the firm. The higher the index, the more organic the firm's structure. The interaction of entrepreneurial style and organicity, as measured by this index, has been found to be significantly positively correlated with firm performance (Covin and Slevin, 1988). The index has a mean value of 4.937, a standard deviation of 1.026, a range of 1.0–7.0, a response range of 1.429–7.000 and a Cronbach-α coefficient of 0.827.

Mission strategy

The operationalization of Mission Strategy entails selecting or creating an instrument that measures *ex ante* management intent and is theoretically and operationally compatible with the measure of desired level of entrepreneurship. Entrepreneurial management style may be associated with particular mission strategies, particularly growth and innovation (Davidsson, 1991; Stevenson and Jarillo, 1990; Drucker, 1985). Gellar (1980) argued that a venturesome and innovative top management style is appropriate in 'invest/grow' situations; a moderately conservative management style is appropriate in 'earn/protect' situations; and a risk averse, highly conservative management style is appropriate in 'divest/harvest' situations. Miller and Friesen found entrepreneurial firms' 'managers prefer rapidly growing and opportuneful settings' (1982: 6) and are associated with dynamic and competitive environments. In short, current theory and research suggest that entrepreneurial management style is particularly well-suited to and common among firms with build-oriented mission strategies. Thus, the operational measure of mission strategy must be a lens that focuses on critical attributes related to growth and minimizes the many other aspects and dimensions of the mission strategy construct.

An instrument developed by Gupta and Govindarajan (1984) ('Intended Strategy') was selected to measure mission strategy. The organizational-level mission strategy is operationalized as the aggregation of product-market strategies for the

portfolio of products offered by a business unit. The determination of fit as an ordinal difference requires a measure of mission strategy that also is ordinal. As will be shown below, the resulting portfolio measure is ordinal, spanning a continuous spectrum, in contrast to nominal categorizations such as Build, Hold, and Harvest referred to above. This operationalization is based on three arguments concerning the derivation, meaning, and use of the measure: first that the measure is based on a sum over several nominal product-market strategies, second that the weighted index represents a continuous variable of discretionary managerial trade-offs between market share growth and profitability, and third that sets of nominal categorizations such as the six categories of Hofer and Schendel (1978) map onto the trade-off continuum. Gupta and Govindarajan (1984) aggregated the four response category assessments into a weighted average strategy index (MSTRAT), using a +1 weight for Build, 0 for Hold, −1 for Harvest, and −2 for Divest. They argue, 'By definition, strategic mission (or portfolio strategy) signifies the nature of the SBU's intended trade-offs between market share growth and short-term earnings/cash flow maximization (Abell and Hammond, 1979; Henderson, 1970). Similar to Larreche and Srinivasan (1982), [Gupta and Govindarajan] view potential strategic missions as spanning a continuous spectrum. At one end of the spectrum are SBUs whose mission is to increase market share and competitive position event though short-term earnings and cash flow generation may be low or negative; . . . At the other end are SBUs whose mission is either divestiture or the maximization of short-term earnings and cash flow even though the slippage in the SBUs market share and competitive position may ensue' (1984: 26). It is further shown that the ordinal property is consistent with categorizations such as the six categories of Hofer and Schendel (1978) that 'reflect a more or less steady transition from a "build" strategy at one end to a "pure harvest" or "divest" strategy at the other.' (1984: 27).

The mission strategy index scale for the sample has a mean of 0.335, a standard deviation of 0.409, a continuous range of −2.00–1.00, and a response range of −0.700–1.000. From the weighting scheme described above, it directly follows that an index value of 1 signifies a build strategy, 0 a hold strategy, −1 a harvest strategy, and −2 a divest strategy. Responses less than −1—indicating 'preparation for sale, liquidation, or bankruptcy'—were excluded from this research (2 firms eliminated, about 2% of otherwise usable firms).

Financial performance

Financial performance was measured with a modified version of an instrument developed by Gupta and Govindarajan (1984). The respondents were first asked to indicate on a 5-point Likert-type scale, ranging from 'of little importance' to 'extremely important,' the degree of importance their firm attaches to each of the following financial performance criteria: sales level, sales growth rate, cash flow, return on shareholder equity, gross profit margin, net profit from operations, profit to sales ratio, return on investment, and ability to fund business growth from profits. To minimize the potential impact of individual bias, these 'importance' scores were mathematically adjusted to sum to 1. The respondents were then asked to indicate on another 5-point Likert-type scale, ranging from 'not at all satisfied' to 'highly satisfied,' the extent to which their firm's top managers are currently satisfied with their firm's performance on each of these same financial performance criteria. These 'satisfaction' scores were multiplied by the 'importance' scores to compute a weighted average performance index for each new venture. This scale has a mean of 3.014, a standard deviation of 0.841, and weighted average response range of 1.00–5.00.

Firm performance can be measured both in 'objective' and 'subjective' ways, and indeed is a complex issue (Sandberg and Hofer, 1987). The issues relevant to performance measurement in the context of small firms are well documented by Sapienza, Smith, and Gannon. These authors note that

> . . . it is quite common for owner/entrepreneurs to refuse to provide objective and actual measures of organizational performance to researchers. Furthermore, often when such data are made available they are not representative of the firm's actual performance, as many owner/entrepreneurs for a variety of reasons report manipulated performance outcomes (e.g., profits) [1988: 46].

Given the need for valid performance measures, and the difficulty in collecting valid data, there is merit in the use of multiple measures of performance. The employment of multiple performance measures, particularly when there is reason to question the validity of a single measurement method, serves corroboration purposes and permits the assessment of inter-method reliability (Govindarajan, 1988). Therefore, both objective and subjective measures of performance were collected in the research.

As a validity check, the sampled firms were requested to furnish their actual gross sales and net income after taxes at the end of the survey instrument. Sales data were volunteered by 70 percent of the firms, income figures by only 56 percent (see Table 3). Return on Sales was calculated as net income after taxes ÷ gross sales for the 56 percent who supplied the requisite data. The correlation between weighted average performance and return on sales was $r = 0.295$, Bartlett Chi-square statistic (df = 1, $N = 46$) = 3.956, $p = 0.047$. Thus, for the half of the sample that could be validated, objective financial measures correspond satisfactorily with the empirical performance measure.

The analytical technique

The model required that the desired level of entrepreneurship be calculated for each firm, followed by differences between desired and reported levels for each of the three misfit terms, summed into the misfit measure (MISFIT = |DENT-ENTREP| + |DENT-STRUCT| + |DENT-MSTRAT|). A linear regression was computed to assess the strength of the relationship between misfit and performance. Correlations were calculated to analyze further the relationship of the terms composing misfit with respect to performance. A complementary *ex post* principal components factor analysis was performed to gain an understanding of the relationship of the various components of performance with respect to aggregate misfit.

RESULTS

Table 4 presents the results of the regression analysis. This table shows that the influence of MISFIT on firm performance is significant at the $p < 0.02$ level. The regression coefficient has a negative sign, implying that the relationship is consistent with the model. Regressions (not shown) using higher order polynomial terms of MISFIT failed to demonstrate any useful contribution of the higher order terms: the relationship is essentially linear over the domain of MISFIT and range of performance studied.

Table 4. Regression analysis of MISFIT with firm performance as dependent variable

Variable	Coef.	t	*P*(2-Tail) $N = 82$
Constant	0.452	2.091	0.040
MISFIT	−0.122	−2.410	0.018
Analysis of variance:			
Source	df	*F*-RATIO	*P*
Regression	1	5.806	0.018
Residual	80		

As a validity check, Pearson correlation coefficients between firm performance, WTPERF, and each of the terms that make up MISFIT were calculated (see Table 5). The signs are all negative, consistent with the assumptions of the model. That some the coefficients are individually not significant is of no concern because the model was *designed* to account parsimoniously for myriad contingency contexts (mixes of various levels of misfit in the terms) by aggregating misfit. The results are consistent with the design as well as the holistic systems interpretation that 'the use of reductionist analyses presumes that any individual bivariate interaction between a component of environment and a component of strategy will be strong enough to emerge as a statistically significant effect on performance, which is at best a questionable assumption' (Venkatraman and Prescott, 1990: 4).

These correlation coefficients convey information about managerial practices. The coefficient values can be interpreted as follows: if

Table 5. Pearson correlations with firm performance

Variable	Correlation	P (2-Tail)	$N = 82$
MENT	−0.145	0.195	
MORG	−0.160	0.151	
MMSS	−0.293	0.007	

the value is low or near 0 (as two are), the measure of misfit for that term is approximately normally distributed around the desired level of entrepreneurship, DENT. If the value is non-zero (as one is), the sample reflects a *systematic* degree of misfit from the desired level for that term. The two-tail probabilities shown in Table 5 are useful for determining the significance of a suspected systematic misfit as an estimate for the population from which the sample was drawn.

In the sample data base, the misfit of the mission strategy (MMSS) term appears to be systematic *within* the firms, somewhat separate from the aggregate misfit across (*between*) the firms. For perfect fit, the model calls for a Build mission strategy to be associated with high environmental turbulence, i.e., the model predicts that it is desirable to innovate and grow when the environment is turbulent and the sample results are consistent with behavior to the contrary. The systematic misfit revealed in these data may be interpreted as (too) many firms falling back into a Hold or Harvest strategy under high environmental turbulence.

To complement the analysis of components of misfit with respect to performance, we were compelled to analyze the components of performance with respect to aggregate misfit. An *ex-post* principal components factor analysis was performed in order to understand better the components of performance (WTPERF) with which misfit is associated. With varimax rotation, the factor on which MISFIT loaded highest contained the components of WTPERF that appear to be most closely related to sales and mission strategy (see Table 6). Profit-oriented components loaded to the other significant factor. Together, these two factors account for 64.4 percent of the total variance of WTPERF and MISFIT. As additional terms are incorporated in future extensions to the MISFIT model, closer correspondence between various aspects of performance and misfit may emerge. (Note that a need for longitudinal data can be inferred).

Table 6. Factor analysis of components of performance (WTPERF)

Rotated loadings (sorted)		
1	2	Description
0.863	0.047	Return on shareholder equity
0.835	0.254	Net profit from operations
0.820	0.020	Return on investment
0.761	0.331	Profit to sales ratio
0.701	0.389	Gross profit margin
0.694	0.133	Ability to fund growth from profits
0.612	0.386	Cash flow
0.331	0.798	Sales level
0.304	0.786	Sales growth rate
0.042	−0.664	MISFIT
42.46%	21.89%	Percent of total variance explained

DISCUSSION AND CONCLUSION

The bottom line conclusion concerning this normative model and empirical test is that 'fit matters.' It was not intuitively obvious that such disparate variables of environment, entrepreneurship, organicity and, mission strategy could be used to determine how a firm is matched to its current situation. As environments become more demanding in the future, it appears safe to argue that fit will matter even more. Successful firms will engage in a continuous process of organizational learning and adaptation. Managers will be charged to modify continuously the variables in their control in order to maximize the fit score for their firm. This model provides some basis for specifying fit and encouragement that fit as a construct is empirically related to firm performance.

Limitations and weaknesses

This initial modeling effort was limited by design, in order to investigate the potential benefit of a class of such models before expending research time and resources. Since the cost-benefit ratio now appears favorable, subsequent models can specifically address the limitations and weaknesses of this initial model. Promising areas for future work are identified and discussed below and in the concluding section on Future Research Directions.

Alternatives exist for this formulation of fit. A competitive alternative to *balance* fit (*over-fit* is equally bad as *under-fit*) might incorporate a 'law of diminishing returns' based on a notion that *under-fit* is worse than *over-fit*. From a process viewpoint, under-fit might represent 'critical' factors and over-fit merely 'slack' wastage. Formulations of different notions (including

Miller's [1991] squared function) can be tested with an appropriate gathering of empirical data.

The data base was limited to small and medium sized high technology firms in a portion of Pennsylvania. The normative model is not grounded in empirical evidence from large, generally publicly-held corporations or government bureaucracies. The most pronounced difference would be expected to arise from the inability of large organizations to change as quickly as the sample, thus requiring a *different timeframe* in which the *same processes* of (mis)fit will act. Because the firms compete in national markets, the geographic range is expected to generalize fairly well across the North American market, but not necessarily globally, due to different mixes in government regulation, labor–management culture, etc. It is expected that high technology may span both service and manufacturing firms because of the education-level demands on both labor and management. In fact, it is the presumed lower education requirements in low technology service and manufacturing firms that causes us to be cautious about generalizing this model and these results across all firms in the small to medium size range. Further research will have to focus on the contingent relationship of education-level to participation and organicity of structure (among other organization level variables). Another limitation that is not obvious is a range limitation on the measure of Mission Strategy (Gupta and Govindarajan, 1984). The measure, as now defined, appears to be most applicable in stable markets. If a firm is operating in an environment where the industry is growing (or shrinking) by a significant amount, say 15–20 percent annually, then holding market share means growing 15–20 percent annually. Thus, a Build Strategy in a stable market may be equivalent to a Hold Strategy in a growing market. This interaction of market growth and strategy might well be better represented by measuring the dimension of 'growth' in terms of sales volume and eliminate consideration of market share. Thus, a Build strategy would be more tightly associated with expansion in capacity—manufacturing plant or service personhours—than changes in market share (see Measures subsection of Methodology in this paper or Gupta and Govindarajan [1984] for the original formulation).

Also, the measure of Mission Strategy used provides only a limited perspective on the multidimensional construct known as strategy. The essential value of the measure is that it can be used *ex ante* by both practitioners and researchers. The need and challenge for future research is to extend the breadth of the strategic intentions perspective without compromising the predictive value and, for purposes of strategic control, link it firmly with *ex post* actual or realized strategy.

The eight-item scale currently used to measure overall environmental turbulence is conceptually inconsistent with the index of mission strategy aggregated over product-markets. For consistency and increased precision, the environmental measure should be measured for the build, hold, and harvest product-markets and proportionally weighted using the mission strategy sales percentages for build, hold, and harvest product-markets. The development and validation of an improved measure of environmental turbulence are near-term goals for future research.

Implications for managers

Implications include prescriptive guidance to assist practitioners in diagnosing and correcting 'misfit' for individual organizations. The initial instrument and subsequent refinement represent *transfer of useful knowledge* to top management teams from research findings. The guidance is: 1. knowledge of *how* to manage, what variables to attend to; 2. a rough guide to prioritizing efforts (toward the most misfit first); and 3. a means of self-evaluating progress in fit efforts or as a means of evaluating consultants' 'improvement programs.'

More subtly, as managers consider fit within the framework of this model, some will be led to question what is immutable and what can be changed. For example, a turbulent environment generally cannot be directly changed by a single firm, but new products can be developed for markets of differing turbulence such that changing the mix of products essentially shifts the organization to a more desirable position in the competitive environment. While this notion is certainly not new from a marketing management perspective, what is new is that strategic managers can more proactively manage their strategic choices such that the strategic consequences are (more) beneficial, at least from a point of view of strategic fit.

Future research directions

Synergy among variables

A benefit and characteristic of 'fit,' expressed or implied, is that of the *synergy* among content or process variables of the organization and environment. This test of the mathematical model supports the further development of such models based on variables and factors that 'are not strictly independent but, rather, reinforce each other.' (Stevenson and Jarillo, 1990: 25). Therefore, future modeling efforts must include efforts to operationalize *synergy of fit* by some process of including important synergistic effects without resorting to methods that become bogged down by an exponentially expanding number of multiplicative interaction terms.

Longitudinal studies

The instrument developed here and undergoing refinement offers exciting opportunities to repeatedly measure fit over extended periods of time. Such longitudinal data would provide vitally needed repeated measures with which to develop and test *dynamic models* of management behavior vis-à-vis strategic fit (Venkatraman and Prescott, 1990). The stage has been set for such future research by having as general a model of fit as research data allow at this time.

ACKNOWLEDGEMENTS

Preliminary findings in this paper were presented at the International Workshop on the Formation, Management and Organization of Small and Medium Enterprises, Jönköping, Sweden, September 25–27, 1991. Part of the financial support for this research was provided by funds from the Foster McCarl, Jr. Fellowship in Entrepreneurship and the Institute of Entrepreneurship Studies, Katz Graduate School of Business, University of Pittsburgh. The authors would like to thank Jeffrey G. Covin for his helpful comments and suggestions.

REFERENCES

Abell, D. F. and J. S. Hammond (1979). *Strategic Market Planning*. Prentice Hall, Englewood Cliffs, NJ.

Bahrami, H. and S. Evans (1987). 'Stratocracy in high technology firms', *California Management Review,* **30**(1), pp. 51–66.

Biggadike, E. R. (1976). *Corporate Diversification: Entry Strategy and Performance*. Division of Research, Graduate School of Business Administration, Harvard University, Boston, MA.

Burgelman, R. A. (1984) 'Designs for corporate entrepreneurship', *California Management Review,* **26**(2), pp. 154–166.

Burgelman, R. A. and L. R. Sayles (1986). *Inside Corporate Innovation: Strategy, Structure, and Managerial Skills*. Free Press, New York.

Capon, N., J. Farley, and S. Hoenig (1990). 'Determinants of financial performance: A meta-analysis', *Management Science,* **36**(10), pp. 1143–1159.

Chandler, A. D. (1962). *Strategy and Structure: Chapters in the History of the American Industrial Enterprise*. M.I.T. Press, Cambridge, MA.

Cornwall, J. R. and B. Perlman (1992). *Organizational Entrepreneurship*. Irwin, Homewood, IL.

Covin, J. G. and D. P. Slevin (1986). 'The development and testing of an organizational-level entrepreneurship scale'. In R. Ronstadt, J. A. Hornaday, R. Peterson and K. H. Vesper (eds), *Frontiers of Entrepreneurship Research 1986*. Center for Entrepreneurial Studies, Babson College, Wellesley, MA, pp. 628–639.

Covin, J. G. and D. P. Slevin (1988). The influence of organization structure on the utility of an entrepreneurial top management style', *Journal of Management Studies,* **25**(3), pp. 217–234.

Covin, J. G. and D. P. Slevin (1989). 'The strategic management of small frms in hostile and benign environments', *Strategic Management Journal,* **10**, pp. 75–87.

Covin, J. G. and D. P. Slevin (1991). 'A conceptual model of entrepreneurship as firm behavior', *Entrepreneurship Theory and Practice*, Fall, pp. 7–25.

Datta, D. K. (1991). 'Organizational fit and acquisition performance: Effects of post-acquisition integration', *Strategic Management Journal,* **12**, pp. 281–297.

Davidsson, P. (1991). 'Continued entrepreneurship: Ability, need, and opportunity as determinants of small firm growth', *Journal of Business Venturing,* **6**, pp. 405–429.

Dawes, R. M. (1988). *Rational Choice in an Uncertain World*. Harcourt Brace Jovanovich, New York.

Dawes, R. M. (1979). 'The robust beauty of improper linear models in decision making', *American Psychologist*, **34**, pp. 571–582.

DeAngelis, J. P. (1989). *The 1988 Surveys of Advanced Technology Facilities in Southwestern Pennsylvania*. Graduate School of Public and International Affairs, University of Pittsburgh, Pittsburgh, PA.

Drazin, R. and A. H. Van de Ven (1985). 'Alternative forms of fit in contingency theory', *Administrative Science Quarterly,* **30**, pp. 514–539.

Drucker, P. F. (1985). *Innovation and Entrepreneurship*, Harper and Row, New York.

Galbraith, J. R. and D. A. Nathanson (1979). 'The role of organizational structure and process in strategy implementation' and related commentaries.' In D. E. Schendel and C. W. Hofer (eds), *Strategic Management: A New View of Business Policy and Planning*. Little, Brown, Boston, MA, pp. 249–302.

Galbraith, J. R. and R. K. Kazanjian (1986). *Strategy Implementation: Structure, Systems, and Process*, 2nd ed.,. West, New York.

Gellar, A. (1980). 'Matching people to business strategies', *Financial Executive,* **48**(10), pp. 18–21.

Govindarajan, V. (1988). 'A contingency approach to strategy implementation at the business unit level: Integrating administrative mechanisms with strategy', *Academy of Management Journal,* **31**(4), pp. 828–853.

Guth, W. D. and A. Ginsberg (Summer 1990). 'Guest editors' introduction: Corporate entrepreneurship', *Strategic Management Journal,* **11**, pp. 5–15.

Gupta, A. K. and V. Govindarajan (1984). 'Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation', *Academy of Management Journal,* **27**(1), pp. 25–41.

Hall, D. J. and M. A. Saias (1980). 'Strategy follows structure!', *Strategic Management Journal,* **1**, pp. 149–163.

Hansen, Gary S. and B. Wernerfelt (1989). 'Determinants of firm performance: The relative importance of economic and organizational factors', *Strategic Management Journal,* **10**, pp. 399–411.

Henderson, B. D. (1970). *Perspectives on the Product Portfolio*, Boston Consulting Group, Boston, MA.

Hisrich, R. D. and M. P. Peters (1989). *Entrepreneurship: Starting, Developing, and Managing a New Enterprise*. Irwin, Homewood, IL.

Hofer, C. W. and D. Schendel (1978). *Strategy Formulation: Analytical Concepts*, West, St. Paul, MN.

Jennings, D. F. and J. R. Lumpkin (1989). 'Functionally modeling corporate entrepreneurship: An empirical integrative analysis', *Journal of Management,* **15**(3), pp. 485–502.

Kao, J. J. (1989). *Entrepreneurship, Creativity and Organization: Text, Cases, and Readings*. Prentice-Hall, Englewood Cliffs, NJ.

Keeley, R. H. and J. B. Roure (1990). 'Management, strategy, and industry structure as influences on the success of new firms: A structural model', *Management Science,* **36**(10), pp. 1256–1267.

Khandwalla, P. N. (1977) *The Design of Organizations*. Harcourt Brace Jovanovich, New York.

Khandwalla, P. N. (Winter 1976/77). 'Some top management styles, their context and performance', *Organization and Administrative Sciences,* **7**(4), pp. 21–51.

Khandwalla, P. N. (1987). 'Generators of pioneering innovative management: Some Indian evidence', *Organization Studies,* **8**(1), pp. 39–59.

Kilby, P. (1971). *Entrepreneurship and Economic Development*. Free Press, New York.

Larreche, J. C. and V. Srinivasan (1982). 'STRATPORT: A model for the evaluation and formulation of business portfolio strategies', *Management Science,* **28**(9), pp. 979–1001.

Lawrence, P. R. and J. W. Lorsch (1967). *Organization and Environment*. Irwin, Homewood, IL.

Leavitt, H. J. (1962). 'Unhuman organizations', *Harvard Busines Review,* **40**(4).

Leavitt, H. J. (1965). 'Applied organizational change'. In J. March (ed.), *The Handbook of Organizations*, Rand-McNally, Chicago, IL.

Maidique, M. A. and R. H. Hayes (1984). 'The art of high technology management', *Sloan Management Review,* **25**(2), pp. 17–19.

Miles, R. E. and C. C. Snow (Spring 1984). 'Fit, failure and the hall of fame', *California Management Review,* **26**(3), pp. 10–28.

Miles, R. E. and C. C. Snow (1978). *Organizational Strategy, Structure and Process*. McGraw-Hill, New York.

Miller, D. (1983). 'The correlates of entrepreneurship in three types of firms', *Management Science,* **29**(7), pp. 770–791.

Miller, D. (1991). 'Stale in the saddle: CEO tenure and the match between organization and environment', *Management Science,* **37**(1), pp. 34–52.

Miller, D. and P. H. Friesen (1982). 'Innovation in conservative and entrepreneurial firms: Two models of strategic momentum', *Strategic Management Journal,* **3**, pp. 1–25.

Mintzberg, H. (1973) *The Nature of Managerial Work*. Harper and Row, New York.

Mintzberg, H. (1979). *The Structuring of Organizations: A Synthesis of the Research*. Prentice-Hall, Englewood Cliffs, NJ.

Mintzberg, H. (Winter 1991). 'The effective organization: Forces and forms', *Sloan Management Journal,* **32**(2), pp. 54–67.

Nadler, D. A. and M. Tushman (1979). 'A congruence model for diagnosing organizational behavior'. In D. A. Kolb, I. M. Rubin, and J. M. McIntyre (eds), *Organizational Pyschology,* 3rd ed.,. Prentice-Hall, Englewood Cliffs, NJ, pp. 442–458.

Naman, J. L. and F. D. Tuggle (May 1990). 'Toward an expert system to help entrepreneurs diagnose problems', Paper presented at TIMS/ORSA, Las Vegas.

Pfeffer, J. and G. R. Salancik (1978). *The External Control of Organizations: A Resource Dependence Perspective*. Harper and Row, New York.

Pinchot, G. (1985) *Intrapreneuring*, Harper and Row, New York.

Powell, T. C. (1992). 'Organizational alignment as competitive advantage', *Strategic Management Journal,* **13**, pp. 119–134.

Quinn, J. B. (1985). 'Managing innovation: Controlled chaos', *Harvard Business Review,* **63**(3), pp. 73–84.

Rao, V. R., V. Mahajan and N. P. Varaiya (1991). 'A balance model for evaluating firms for acquisition', *Management Science*, **37**(3), pp. 331–349.

Rumelt, R. P. (1974). *Strategy, Structure and Economic Performance*. Harvard University Press, Cambridge, MA.

Sandberg, W. R. and C. W. Hofer (1987). 'Improving new venture performance: The role of strategy, industry structure, and the entrepreneur', *Journal of Business Venturing,* **2**(1), pp. 5–28.
Sapienza, H. J., K. G. Smith and M. J. Gannon (1988). 'Using subjective evaluations of organizational performance in small business research', *American Journal of Small Business,* **12**(3), pp. 45–53.
Schuler, R. S. (1986). 'Fostering and facilitating entrepreneurship in organizations: Implications for organization structure and human resource management practices', *Human Resource Management,* **25**(4), pp. 607–629.
Scott, B. R. (1971). 'Stages of corporate development', Harvard University, Intercollegiate Case Clearing House Report No. 9-371-294 BP 998, Boston, MA.
Singh, H. and C. Montgomery (1987). 'Corporate acquisition strategies and economic performance', *Strategic Management Journal,* **8**, pp. 377–386.
Slevin, D. P. and J. G. Covin (Winter 1990). 'Juggling entrepreneurial style and organizational structure—How to get your act together', *Sloan Management Journal,* pp. 43–53.
Smith, Gerald F. (1989). 'Defining managerial problems: A framework for prescriptive theorizing', *Management Science,* **35**(8), pp. 963–981.
Steiner, G. A. (1979). 'Contingency theories of strategy and strategic management'. In D. E. Schendel and C. W. Hofer (eds), *Strategic Management: A New View of Business Policy and Planning*. Little, Brown, Boston, MA, pp. 405–416.
Stevenson, H. H. and D. E. Gumpert (1985). 'The heart of entrepreneurship', *Harvard Business Review,* **63**(2), pp. 85–94.
Stevenson, H. H. and J. C. Jarillo (1990). 'A paradigm of entrepreneurship: Entrepreneurial management', *Strategic Management Journal,* **11**, pp. 17–27.
Summer, C. E., R. A. Bettis, I. H. Duhaime, J. H. Grant, D. C. Hambrick, C. C. Snow and C. P. Zeithaml (1990). 'Doctoral education in the field of business policy and strategy', *Journal of Management,* **16**(2), pp. 361–398.
Tichy, N. M., C. J. Fombrun, and M. A. Devanna (1982). 'Strategic human resource management', *Sloan Management Review,* **23**, pp. 47–61.
Venkatraman, N. (1989). 'Strategic orientation of business enterprises: The construct, dimensionality, and measurement', *Management Science,* **35**(8), pp. 942–962.

APPENDIX: MEASURES OF KEY VARIABLES

VARIABLE 1-ENVIRONMENTAL TURBULENCE

Please answer the following questions in reference to the industry that accounts for the largest percentage of your business unit's sales (in other words, your principal industry). Please circle the number in each scale that best approximates the actual conditions in your business unit's principal industry.

1. Our business unit must rarely change its marketing practices to keep up with the market and competitors	1 2 3 4 5 6 7	Our business unit must change its marketing practices extremely frequently (e.g., semi-annually)
2. The rate at which products/services are getting obsolete in the industry is very slow (e.g., basic metal like copper)	1 2 3 4 5 6 7	The rate of obsolescence is very high (as in some fashion goods and semiconductors)
3. Actions of competitors are quite easy to predict (as in some basic industries)	1 2 3 4 5 6 7	Actions of competitors are unpredictable
4. Demand and consumer tastes are fairly easy to forecast (e.g., for milk companies)	1 2 3 4 5 6 7	Demand and tastes are almost unpredictable (e.g., high-fashion goods)

5. The production/service technology is not subject to very much change and is well established (e.g., in steel production)	1 2 3 4 5 6 7	The modes of production/service change often and in a major way (e.g., advanced electronic components)

How would you characterize the external environment within which your business unit functions?

(4 = Both are equally characteristic of my business unit's external environment)

6. Very safe, little threat to the survival and well-being of my business unit	1 2 3 4 5 6 7	Very risky, one false step can mean my business unit's undoing
7. Rich in investment and marketing opportunities	1 2 3 4 5 6 7	Very stressful, exacting hostile; very hard to keep afloat
8. An environment that my business unit can control and manipulate to its own advantage, such as a dominant firm has in an industry with little competition and few hindrances	1 2 3 4 5 6 7	A dominating environment in which my business unit's initiatives count for very little against the tremendous political, technological or competitive forces

VARIABLE 1-ENVIRONMENT. TURBULENCE TOTAL (Items 1–8)

Source: Items 1–5, Miller, D. and P. H. Friesen (1982). 'Innovation in conservative and entrepreneurial firms: Two models of strategic momentum', *Strategic Management Journal*, 3, pp. 1–25. Items 6–8, Khandwalla, P. N., (1977) *The Design of Organizations*, Harcourt Brace Jovanovich, New York.

VARIABLE 2-ENTREPRENEURIAL STYLE

In general, the top managers of my business unit favor . . .

9. A strong emphasis on the marketing of tried and true products or services	1 2 3 4 5 6 7	A strong emphasis on R & D, technological leadership, and innovations

How many new lines of products or services has your business unit marketed in the past 5 years?

10. No new lines of products or services	1 2 3 4 5 6 7	Very many new lines of products or services
11. Changes in product or service lines have been mostly of a minor nature	1 2 3 4 5 6 7	Changes in product or service lines have usually been quite dramatic

In dealing with its competitors, my business unit . . .

12. Typically responds to actions which competitors initiate	1 2 3 4 5 6 7	Typically initiates actions to which competitors then respond
13. Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc.	1 2 3 4 5 6 7	Is very often the first business to introduce new products/services, administrative techniques operating technologies, etc.

14. Typically seeks to avoid competitive clashes, preferring a "live-and-let-live" posture	1 2 3 4 5 6 7	Typically adopts a very competitive, "undo-the-competitors" posture

In general, the top managers of my business unit have . . .

15. A strong proclivity for low risk projects (with normal and certain rates of return)	1 2 3 4 5 6 7	A strong proclivity for high risk projects (with chances of very high return)

In general, the top managers of my business unit believe that . . .

16. Owing to the nature of the environment, it is best to explore gradually via cautious, incremental behavior	1 2 3 4 5 6 7	Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives

When confronted with decision making situations involving uncertainty, my business unit . . .

17. Typically adopts a cautious, "wait and see" posture in order to minimize the probability of making costly decisions	1 2 3 4 5 6 7	Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities

VARIABLE 2-ENTREPRENEURIAL STYLE TOTAL (Items 9–17)

Source: Item 15 adapted from Khandwalla, P. N., (1977). *The Design of Organizations*, Harcourt Brace Jovanovich, New York. Items 9, 10, 11, and 16 adapted from Miller, D. and P. H. Friesen, (1982). 'Innovation in conservative and entrepreneurial firms: Two models of strategic momentum', *Strategic Management Journal,* 3, pp. 1–25. Items 12, 13, 14 and 17 from Covin, Jeffrey G. and Dennis P. Slevin, (1988). 'Entrepreneurial style/organizational structure audit', copyright 1988 Jeffrey G. Covin and Dennis P. Slevin, in Slevin, Dennis P. (1989). *The Whole Manager: How to Improve Your Professional and Personal Effectiveness*, AMACOM, New York.

VARIABLE 3-ORGANIZATION STRUCTURE (ORGANICITY)

In general, the operating management philosophy in my business unit favors . . .

18. Highly structured channels of communication and a highly restricted access to important financial and operating information	1 2 3 4 5 6 7	Open channels of communication with important financial and operating information flowing quite freely throughout the business unit
19. A strong insistence on a uniform managerial style throughout the business unit	1 2 3 4 5 6 7	Managers' operating styles allowed to range freely from the very formal to the very informal
20. A strong emphasis on giving the most say in decision making to formal line managers	1 2 3 4 5 6 7	A strong tendency to let the expert in a given situation have the most say in decision making even if this means temporary bypassing of formal line authority
21. A strong emphasis on holding fast to tried and true management principals	1 2 3 4 5 6 7	A strong emphasis on adapting freely to changing circumstances without too

despite any changes in business conditions		much concern for past practice
22. A strong emphasis on always getting personnel to follow the formally laid down procedures	1 2 3 4 5 6 7	A strong emphasis on getting things done even if it means disregarding formal procedures
23. Tight formal control of most operations by means of sophisticated control and information systems	1 2 3 4 5 6 7	Loose, informal control; heavy dependence on informal relationships and norms of cooperation for getting work done
24. A strong emphasis on getting line and staff personnel to adhere closely to formal job descriptions	1 2 3 4 5 6 7	A strong tendency to let the requirements of the situation and the individual's personality define proper on-job behavior

VARIABLE 3-ORGANICITY (Items 18–24)

Source: Items 18–24, adapted from Khandwalla, P. N., (1977). *The Design of Organizations*, Harcourt Brace Jovanovich, New York.

VARIABLE 4-MISSION STRATEGY

Given below are descriptions of several alternative mission strategies. Depending upon the context, each of these descriptions may represent the strategy for all, only a fraction, or none of a business unit's products. Please indicate below what *percentage of your business unit's current total sales revenue* is accounted for by products represented by each of these descriptions. Your answers should total 100%.

25. ***Build Strategy***—Increase sales and market share, be willing to accept low returns on investment in the short-to-medium term, if necessary ____%

26. ***Hold Strategy***—Maintain market share and obtain a reasonable return on investment ____%

27. ***Harvest Strategy***—Maximize profitability and cash flow in the short-to-medium term, be willing to sacrifice market share if necessary ____%

28. ***Divest Strategy***—Prepare for sale, liquidation, or bankruptcy ____%

29. ***Other***—None of the above (please specify) ____%

TOTAL 100%

VARIABLE 4-MISSION STRATEGY

Item 25 BUILD STRATEGY	**____%**
Minus Item 27 HARVEST STRATEGY	**____%**
TOTAL SCORE	**____%**

Source: Items 25–29, Gupta, A. K. and V. Govindarajan (1984). 'Business unit strategy, managerial characteristics, and business unit effectiveness at strategy implementation.' *Academy of Management Journal.* **27**(1), pp. 25–41.