UNIVERSALISTIC AND SITUATIONAL IMPERATIVES IN STRATEGIC PLANNING SYSTEMS DESIGN: A CANONICAL ANALYSIS

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This study seeks to improve our understanding of the design characteristics of effective strategic planning systems. Predictions drawn from two alternative models of systems design are tested with data from 54 business organizations. The findings suggest that the systems design task entails the confluence of both universalistic ("one best way") and situational ("contingency" or "fit") imperatives.

INTRODUCTION

How should strategic planning systems (SPS) be designed to best meet the strategic planning needs of an organization? A wealth of empirical research in strategic management has been directed at providing answers to this question. Contingency approaches to SPS design (Lorange & Vancil, 1976) have dominated this research stream. However, the practical utility of contingency theories, relative to "universalistic" theories, is not yet unanimously held. Revolving around either a "rational-comprehensive" (Andrews, 1971) or its alternative "incrementalist" (Quinn, 1980) perspective, universalistic prescriptions about the design of strategic planning processes are still growing acceptance among planning professionals (see for example Steiner, 1979).

Should strategic planning systems be designed around universalistic principles, or should they be designed to fit situational imperatives? The real systems design issue facing organizations is much broader than a simple choice between alternative perspectives of SPS design. The issue becomes more readily apparent in light of a fundamental tenet of general systems theory (Buckley, 1967): the elements of an effective system are in their ideal or equilibrium states, while at the same time satisfying the demands of its environment. Applying this principle to SPS design implies that both universalistic (i.e., "ideal" states) and contingency (i.e., situational fit) imperatives simultaneously govern strategic planning effectiveness. From a practitioner perspective, the challenge to the planning executive is thus to utilize the "best" feasible combination of universalistic and situational imperatives when designing the SPS.

This paper reports the findings of a cross-organizational study to determine the extent to which the design of effective SPS reflects universalistic and/or situational imperatives. Based on the research findings, the paper then suggests guidelines which planning executives can refer to when designing their respective planning systems.

THE CONCEPTUAL MODEL AND PREDICTIONS FROM PREVIOUS RESEARCH

Strategic planning systems are a product of multiple design decisions. Although conceptually many scholars recognize this, most research have tended to focus on only a few variables at a time. The literature on SPS has traditionally centered on either the *process* (Vancil & Lorange, 1975) or the *output* (Andrews, 1971) of strategic planning. There is, however, a growing awareness that the tightness of the *linkages* between strategic planning and operational planning (Hobbs & Heany, 1977), the *administration* of the planning system (Camillus, 1979) and *timing* considerations such as the frequency or cycle time of planning activities (Camillus & Grant, 1980) are also important. In

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addressing the research question, this study examines the relationship between SPS effectiveness and a more comprehensive set of design variables.

The conceptual model employed in this study is:

SPS Effectiveness = *f* (Situational, systems design and strategy/system fit variables)

The study utilizes corporate strategy as the situational characteristic to which systems design is tailored. This decision is a response to the dearth of studies dealing with strategy as a contingency factor in SPS design. Further, of the numerous situational factors believed to impinge upon SPS design, strategy has been advocated as the primary determinant of systems design (Lorange, 1979). In particular, corporate strategy is defined using planned product/market diversity (Rumelt, 1974) and growth orientation (Glueck, 1980). Each strategy/system "fit" term is operationalized as the cross-product of a systems design variable and its hypothesized strategy determinant.

A comprehensive review of the strategic planning, management control and organization theory literature provides support for 13 expected design characteristics of effective strategic planning systems (Calingo, 1984). These systems design principles are summarized in the following hypotheses.

Universalistic Model. Strategic planning effectiveness is positively related to the following systems design characteristics:

1. Comprehensive strategic planning process (Andrews, 1971);

2. Line executives actively participating in the planning process (Steiner, 1979);

3. Loose content linkage between the strategic and the operational plan (Shank, Niblock, & Sandalls, 1973);

4. Passive, process- related role for the chief corporate planner (Taylor & Irving, 1971);

5. Less frequent strategic plan review and/or revision (Camillus & Grant, 1980); and

6. Complete corporate strategic plan contents (Locke, Shaw, Saari, & Latham, 1981.

Contingency Model. Strategic planning effectiveness is positively related to the fit between corporate strategy and SPS design.

1. If a firm is pursuing a higher level of product/market diversity, it will be more effective in strategic planning if it implements a planning system with any, or a combination, of the following:

   a. Comprehensive strategic planning process (Rhyne, 1981);
   b. Participative planning process (Heau, 1976); and
   c. Complete strategic plan contents (Khandwalla, 1976).

2. If a firm is pursuing relatively more growth-oriented strategies, it will be more effective in strategic planning if it implements a system with any, or a combination, of the following:

   a. Participative planning process (Mintzberg, 1979);
   b. Loose strategic/operational plan linkage (Camillus, 1972);
   c. Passive, process-related corporate planner role (Camillus, 1979; and
   d. Less frequent plan review and/or revision (Gordon & Miller, 1976).

METHOD

Sample

Data for the study come from a combination of semistructured interviews of, and mail-questionnaire surveys from corporate planning executives of 54 business organizations in the United States. Most of the firms are large (i.e., in the ≥ $200 million sales category) with an overall median size of $1.1 billion sales. The number of participants represents 55 percent of the 98 firms contacted for the study, this response rate being higher than the 22 percent obtained in a previous corporate mail survey of "*Fortune* 500" firms (Gaedeke & Tootelian, 1976).

Since the participating companies do not constitute a random sample of the general population of U.S. firms, statistical tests of significance made are descriptive of the sample and, in a strict sense, are not inferential of the population. It is interesting to note, however, that the sample of companies possesses attributes that appear to be characteristic of a large part of American corporations. The distribution of the sample firms by broad industry group, i.e., industrials, public utilities, transportation and financial,

closely approximates the distribution of these groupings in the Standard & Poor's (S & P) "500" ($chi^2 = .53$). It will be recalled that the S & P 500 is a generally accepted model of the composition of the entire U.S. stock market. Within S & P 500's industrial group, the sample is most characteristic of firms engaged in Forbes power, energy, resources, capital goods and diversified-companies industrial categories.

Non-response bias in survey research can seriously impair the validity of survey-based generalizations. Oppenheim (1966, p. 34) has suggested that the existence of non-response bias may be detected by assuming that late respondents are similar to nonrespondents and then testing for differences between early and late respondents. A regression analysis has, therefore, been preferred using the informant's response time (rank order) as independent variable and composite measure of his or her firm's performance, obtained by factor analysis, as dependent variable. The object is to see if early respondents reported a significantly higher strategic planning effectiveness than late respondents. Their resulting regression coefficient did not significantly differ from zero, indicating that early and late respondents did not differ significantly in terms of effectiveness measures. This strongly suggests the absence of non-response bias in the sample.

Measures

Corporate Strategy. Measures of the two dimensions of corporate strategy have been gathered from each informant:

1. *Planned product/market diversity* has been measured using Rumelt's (1974) system which orders firms into four broad categories—single business (i.e., not diversified), dominant business, related businesses and unrelated businesses (i.e., most diversified)—based on the economist's "specialization ratio." A variation of this measure (i.e., *present* diversity) significantly correlated ($r = .46$, $p < .001$) with an external measure, the number of four-digit SIC industries as reported by Dun & Bradstreet.

2. *Corporate growth orientation* has been measured by asking the informants to indicate the percentage of their 1982 corporate revenues that was achieved by business units pursuing each of three alternative "grand strategies" (Glueck, 1976) or growth orientations. These are stability, growth and retrenchment. The resulting weighted sum is a score ranging from one (signifying a tendency toward retrenchment) to three (signifying a trend toward aggressive growth). Previous applications (Gupta & Govindarajan, 1984) of this measurement method have been successful in constructing strategy variables that have reasonable predictive validity. The growth orientation score is significantly correlated ($r = .60$, $p < .05$) with a parallel measure derived by content-analyzing a random sample of Annual Reports.

Strategic Planning Systems. The six systems design variables studied have been operationally defined using the following measures:

1. The *comprehensiveness* of the *planning process* is evaluated by first translating the "rational-comprehensive" model of strategy formulation (Andrews, 1971) into a list of 11 activities undertaken during a typical strategic planning cycle. The informants have been asked how many, and which of these activities are being performed by their companies in an organized way. The resulting measure, with a range of 0 to 11, meets Guttman's .90 reproducibility criterion which indicates that it constitutes a unidimensional scale.

2. The extent of line executives' *participation* in the planning process is measured using three Likert-scaled items which assess the degree to which the line managers (i.e., general managers of business units or functional areas) prepare strategic plans for their respective units, provide substantive input into the corporate-level strategic planning process, and review the corporate strategic plan prior to its approval. This scale has an internal consistency reliability of .52, which definitely meets its corresponding .45 acceptability criterion (Van de Ven & Ferry, 1980, p. 79).

3. The *content linkage* between strategic planning and operational planning is measured by Likert-type and ordered categorical items assessing the following: (a) the extent to which programs for the functional areas are included in the corporate strategic plan; (b) the degree of financial documentation in the corporate strategic plan; and (c) how the firm analyzes a difference between *budgeted* profit and the profit *projected* for the same year in the most recent corporate strategic plan. The composite scale has an internal consistency reliability of .89, well above the acceptability criterion.

4. The *chief planner's role* is measured by a series of Likert-type items which assess the extent to which the role of the chief corporate planning executive is that of a decision-maker, an instigator, an integrator, a con-

sultant, a coordinator or an analyst (Camillus, 1979). The resulting composite measure has a Cronback alpha of .66, indicating that it forms an internally constant scale.

5. The *plan review frequency* indicates how often the company undertakes a formal process for reviewing and updating its corporate strategic plan.

6. The *plan completeness* is measured by four Likert-type items assessing the degree to which the company's mission, performance goals and objectives, management policies and planning assumptions are formally stated in the corporate strategic plan (Camillus, 1986). The resulting measure has an internal consistency reliability, as measured by Cronback alpha, of .73 which is well above the corresponding .46 criterion of acceptability.

Since systems design variables have been mostly operationalized as multiple-item measures, composite indices are derived from an R-type factor analysis (with varimax rotation) of the items. Each composite includes only those items that are significantly intercorrelated at the .05 level or higher. This simplifies the analysis because it reduces the number of variables to be considered in the statistical data analysis. Furthermore, it has also ensured that summative indices are derived on the basis of their constituent items' conceptual and statistical interrelatedness—a necessary condition for construct validity.

Strategic Planning Effectiveness. Self-ratings of strategic planning effectiveness along two dimensions have been obtained from each informant:

1. The extent of *goals achievement of the SPS* has been evaluated by the degree to which it has achieved (on a 0-to-100 scale) each of 12 generic strategic planning objectives derived from Zutshi (1981). The firm's 12 scores have then been added, taking into consideration each objective's relative importance to the firm as perceived by the informant. An analysis of the items' intercorrelations using the multitrait-multimethod matrix (Campbell & Fiske, 1959) has shown that the variable possesses a strong covergent validity and moderate discriminant validity—two necessary conditions for construct validity.

2. *Organizational effectiveness* has been operationally defined as the extent to which the firm has achieved (on 0-to-100 scale), relative to competitors, each of 10 generic measures of organizational performance, weighted by their perceived importance. The ten performance attributes have been derived by combining the eight organizational effectiveness items in Lawrence and Lorsch's (1967) original scale with *Fortune's* (Makin, 1983) eight attributes of corporate reputation. Seven of these dimensions are externally verifiable and have correlated significantly (ave. $r = .40$, $p < .05$) with parallel objective measures. Table 1 presents the correlation coefficients resulting from this concurrent validation.

Self ratings are used in this study because they have been suggested (Heneman, 1974) to be more accurate and precise than superiors' ratings when, as in this research, the self-ratings have been elicited under conditions of anonymity or confidentiality. Heneman suggests that self-rating are probably more credible because superiors are typically less well-informed and more subject to halo errors. Furthermore, recent evidence in strategic planning (Higgins, 1981) does not find any significant difference between the chief executive's and the chief planner's levels of satisfaction with their planning system.

FINDINGS

Correlational Analysis

Since some of the measures used in this study has, at best, ordinal rather than interval or ratio scales and negatively skewed rather than normal distributions, nonparametic analyses might be more appropriate than parametric techniques. However, since the rank-order and product-moment correlations among all variables have been found to be very similar, the data has been analyzed using the more powerful and versatile parametric tests.

The product moment correlations between the two measures of strategic planning effectiveness and the rest of the variables are shown in Table 2. The correlation coefficients show varying degrees of significant positive relationships between strategic planning effectiveness and four systems design variables: (a) process comprehensiveness, (b) line participation, (c) plan review frequency, and (d) plan completeness. These design variables concern the process, timing and output aspects of the strategic planning system. These findings are consistent with the universalistic prescriptions made by Andrews (1971), Camillus and Grant (1980), Locke et al. (1981) and Steiner (1979) regarding these design variables.

TABLE 1

Correlations of Organizational Effectiveness Items With Parallel Measures

Effectiveness criterion	Parallel Measure	Correlation coefficient
Four-year average annual sales growth	Industry-adjusted sales growth from COMPUSTAT data base	.69[3]
Four-year average return on equity	Industry-adjusted ROE from COMPUSTAT data base	.55[3]
Four-year average return on investment	Industry-adjusted ROI	.42[2]
Innovativeness	Ratio of R & D expenses to number of employees	.18
Value to investors as a long-term investment	Four-year average annual EPS growth rate.	.43[2]
Corporate social responsibility	Social Involvement Disclosure (Abott & Monsen, 1979) from content analysis of a sample of Annual Reports	-.12
How competitors rate the company's overall performance relative to the rest in its principal industry	Score in *Fortune's* survey of corporate reputations	.37

[2] $p < .05$ (one-tailed test).
[3] $p < .01$

The correlations also show varying degrees of significant positive relationships between strategic planning effectiveness and five dimensions of strategy/system fit. They suggest critical design variables which need to be tailored to fit the firm's planned product/market diversity and/or growth orientation. For planned diversity, these design variables are process comprehensiveness and line participation. Likewise, line participation, strategic/operational plan linkage and plan review frequency are the critical design choices which must be tailored to the firm's growth orientation.

Collectively, the results so far present a picture that is consistent with both universalistic and contingency models of systems design. They suggest that effective strategic planning systems are designed in a way that the design elements assume "ideal states" and that these design elements fit their strategic settings.

Canonical Correlation Analysis

Since the objective of the data analysis is to evaluate the multiple relationships between two criterion variables and 13 predictor (SPS and strategy/system fit) variables, canonical correlation analysis has been selected to be the appropriate statistical technique. Canonical correlation enables the determination of which predictor variables *separately* account for statistically significant variation in strategic planning effectiveness (a multidimensional criterion). Due to the fact that the number of variables included in the canonical correlation analysis is quite high relative to the sample size, the results of the analysis should be considered tentative and, in relation to the correlation analysis earlier, confirmatory.

TABLE 2

Product Moment Correlations With Effectiveness Criteria

Variable	SPS multi-goal achievement (n = 47)	Organizational effectiveness (n = 40)
System Design		
Comprehensive strategic planning process	.504[4]	.065
Participative planning process	.500[4]	.337
Loose strategic/operational plan linkage	.191	.093
Passive, process-related planner role	-.078	-.218
Less frequent plan review/revision	.497[4]	.023
Complete corporate strategic plan	.362[3]	.139
Strategy x Systems Design Fit		
Diversity x Comprehensive process	.309[2]	.151
Diversity x Participative process	.279[2]	.243
Diversity x Complete plan	.182	.133
Growth x Participative process	.399[3]	.314[2]
Growth x Loose linkage	.238[2]	.160
Growth x Process planner	.122	.057
Growth x Less frequent plan review	.450[4]	.146

[2] $p < .05$ (one-tailed test).

[3] $p < .01$.

[4] $p < .001$.

Multiple linear regression on each of the two effectiveness criteria had also been tried. The results are essentially parallel with the canonical analysis in that plan completeness and fit between growth orientation and plan review frequency have been the most important predictors in the regression functions.

In brief, canonical correlation analysis determines two vectors of weighting coefficients (a vector for the criterion variables and another for the predictor variables) such that if linear variates (or canonical factors) are formed of each set of variables, these variates would be maximally correlated. This technique is similar to factor analysis in that it reduces a large number of relationships to a smaller number of factors. However, while factor analysis establishes orthogonal factors, each accounting for a maximum amount of the variance among variables in one domain, canonical analysis establishes orthogonal factor *pairs*, each accounting for a maximum amount of the covariance between the respective sets of variables in *two different domains* (Alpert & Peterson, 1972).

The results of the canonical analysis are shown in Table 3. Since only the first canonical correlation is significant, the meaning of the second canonical pair will not be interpreted. The first canonical correlation of .74 indicates that about 55 percent of the variance in the criterion factor is explained by the predictor factor-significant at about the .05 level. It should be noted though that this represents the optimal relationship between linear combinations of the two sets of variables.

The "redundancy" (or shared variance) measures between the two sets of variables give a less inflated estimate of the overall relationship. The redundancy of the criterion set, given the predictor set, is .28; that of the predictor set, given the criterion set, is .10. These redundancies, both significant at the .01 level, show that a fair proportion of the variance in each set of variables is explained by the other set's canonical factor.

The meanings of the criterion and predictor factors in the canonical relationship may be interpreted by examining the factor loadings or correlations between the original variables in each set and their respective canonical factors (review Table 3). The factor loadings suggest that the criterion factor is a function of the extent to which the SPS has achieved a set of generic strategic planning purposes and, to a much lesser degree, organizational effectiveness.

TABLE 3
Canonical Correlations[5]

Canonical factor no.	Canonical correlation	Chi square	Degrees of freedom	Level of significance
1	.740	42.93	30	.059
2	.687	19.15	14	.159

Factor Loadings[6]

	Factor 1	Factor 2
Criterion Variable Set		
SPS multi-goal achievement	.979	.204
Organizational effectiveness	.216	.976
Predictor Variable Set		
Planned product/market diversity	.119	.184
Corporate growth orientation	.266	.284
Comprehensive strategic planning process	.710	-.072
Participative planning process	.621	.355
Loose strategic/operational plan linkage	.284	.079
Passive, process-related planner role	-.047	-.313
Less frequent plan review/revision	.712	-.135
Complete corporate strategic plan	.481	.093
Strategy x Systems Design Fit		
Diversity x Comprehensive process	.402	.129
Diversity x Participative process	.330	.283
Diversity x Complete plan	.224	.146
Growth x Participative process	.483	.354
Growth x Loose Linkage	.296	.168
Growth x Process planner	.159	.047
Growth x Less frequent plan review	.607	.073

[5]Computations by BMD-P6M procedure

[6]Factor loadings are correlations between original variables and canonical factors. Criterion loadings greater than .50 are underlined. Loadings of predictors whose squared multiple correlations with both criterion variables have p-values of .05 or better (one-tailed test) are also underlined.

The predictor factor loadings suggest that strategic planning effectiveness is strongly related to a set of "universalistic" and "situational" SPS design imperatives. These are:

1. Comprehensiveness of the strategic planning process
2. Degree of line executives' participation in the planning process
3. Frequency of review and/or revision of the corporate strategic plan

TABLE 4

Determinants of Strategic Planning Effectiveness Comparison of Results of Correlational and Canonical Analyses

	Confirmed at $p < .05$	Not confirmed
Significant at $p < .05$	Process comprehensiveness Line participation Plan review frequency Plan completeness Growth x Line participation Growth x Plan review frequency	Diversity x Process : comprehensive Diversity x Line participation Growth x Content Linkage
Correctionall Analyses	1	2
Not signifcant	3	4 Planner role Content Linkage Diversity x Plan completeness Growth x Planner role

$chi^2 = 4.97$, $p < .05$.

4. Completeness of the strategic plan contents

5. The fit between growth orientation and line participation

6. The fit between growth orientation and plan review frequency

These results are all consistent with the zero-order correlations shown in Table 2 in that these design features are all strongly related to either measure of strategic planning effectiveness.

DISCUSSION

This study has examined 13 predictions about systems design consistent with two alternative models of SPS design—the universalistic and the contigency perspectives. Of the nine determinants of strategic planning effectiveness found to be statistically significant in the correlational analysis, six are borne out in the canonical analysis (see Table 4). The convergent findings suggest the following tentative prescriptions for effective strategic planning:

1. *The firm should undertake a comprehensive strategic planning process.* The organization's strategy repre-

sents the match between the company's strengths and weaknesses, and the environmental opportunities and threats it faces. Comprehensiveness of the strategic planning process is an effective way of assuring that the strategic choice would represent a much better match than would any other strategic alternative that could be developed.

2. *The line managers should be heavily involved in the strategic planning process.* Thus, the corporate strategic plan and the strategy it embodies should reflect the collective thinking of those managers most intimately familiar with their businesses and their task environments.

3. *If the firm is pursuing aggressive growth, it becomes even more imperative that the line managers be heavily involved in the strategic planning process.* A growth strategy calls for creativity in the development of strategic alternatives. A participative planning process is an effective way of developing this creativity orientation (Locke & Schweiger, 1978).

4. *The corporate strategic plan should not be reviewed and/or revised more frequently than on a biennial basis.* Re-examining the company mission, changing corporate strategy and revising divisional charters too frequently would reduce strategic planning to a monotonous, bureaucratic exercise (Quinn, 1980).

5. *If the firm is pursuing aggressive growth, it becomes even more imperative that the strategic plan be reviewed and/or revised less frequently.* The monotony of routine would easily stifle innovative and creative thinking within management, a necessary ingredient of successful growth strategies.

6. *The corporate strategic plan should explicitly state the company's mission, performance goals and objectives, management policies, and key planning assumptions.* This enables the communication of an explicit strategy or "key business value" (Peters & Waterman, 1982) throughout the organization. Furthermore, goal setting theory (Locke et al., 1981) suggests that explicit goals are better than "no goals" or "do your best" goals.

The research findings provide fresh empirical evidence suggesting both universalistic and situational imperatives for designing effective strategic planning systems. Kotter's (1980) integrative model of organizational dynamics provides a theoretical explanation for this argument. In brief, Kotter suggests that both contingency and universalistic perspectives are, to some extent, right and, more importantly, wrong in being too limited. Although contingency approaches are rooted in the systems approach, they neglect an important characteristic of an open system: that its elements strive for "adaptive" states that facilitate the system's adaptation to environmental changes. On the other hand, universalistic models neglect the importance of fit among the elements of the system.

Therefore, achieving excellence in strategic planning systems design involves creating a balance between two potentially conflicting imperatives. These are the demand for the system's consistency with its situational setting, in particular corporate strategy, and the need to position system elements in ideal or adaptive states that facilitate organizational adaptation. Balancing these potentially conflicting design imperatives makes SPS design an act of strategic choice in itself. This suggests that strategists should approach the systems design task as more of an art, than a science.

The need to position system elements in their ideal states should be especially important when an organization is undergoing a quantum strategic change, thereby necessitating a "synoptic" exercise in strategy formulation (Andrews, 1971) involving line managers to the fullest extent feasible. Achieving the synoptic objective of developing innovative thinking and creativity among line managers dictates that these synoptic exercises be undertaken less frequently (Camillus, 1982). Further, undertaking a planning process that is comprehensive in terms of analytical breadth is an effective way of assuring that the strategy adopted represents indeed the best match between the organization and its environment. Finally, plan completeness enables the communication of an explicit strategy statement to organizational members, thus triggering the development of a culture that will facilitate strategy implementation.

The need for strategy-congruence becomes more important during the "implementation" phase of strategic management. It should be noted that some activities undertaken during this stage may be appropriately labeled as "strategy formulation." However, these activities entail adhoc modifications or incremental changes to the "grand" strategy derived through the synoptic exercise (Quinn, 1980). Strategy-congruence ensures that the strategic planning system generates behaviors (e.g., creativity and control) which will facilitate strategy implementation.

While it has been argued that balancing these design imperatives makes systems design more of an art, it is ap-

parently feasible to reconcile these conflicting demands. A reconciliation is made possible by approaching SPS design in terms of the strategy formulation-implementation continuum or the "temporal dimension" of Camillus's (1982) synoptic vs. incrementalist exercises. The need for adaptive system states becomes more perceptible when the organization is undertaking its triennial or quinquennial synoptic exercise, while the demands for strategy/system fit becomes more prominent during the intervening incremental exercises.

It is, therefore, conceivable that the data for this study have been gathered at a time when some companies were undergoing their synoptic, formal exercises, while others were undergoing their incremental exercises. This highlights the limitations of a cross-sectional research methodology which does not capture this important distinction. The major implication of this is a further ground for advocating the longitudinal case study as the theoretically correct avenue for investigating issues of strategic planning systems design and performance.

LIMITATIONS

The interpretation for the research findings is subject to the typical threats to internal and external validity. The lack of total control over other confounding influences on strategic planning effectiveness reduces the internal validity of the study. Further, the sample size does not enable a cross-validation sample to assess the stability of the associations found. These disadvantages, however, are offset by the above standard psychometric properties of the measures used.

The analysis was restricted to cross-sectional data. Thus, although the paper discusses the "determinants" of strategic planning effectiveness, the direction of causality is always in doubt. Strictly speaking, the data warrant only references to "correlates" of strategic planning effectiveness.

In a strict statistical sense, the results can be generalized only for population segments that have characteristics similar to those of the data sample. Specifically, only business firms have been studied; therefore, the research findings may not hold for other types of organizations. Subject to these limitations, the research findings are sufficiently significant to warrant speculation about the design of effective strategic planning systems.

CONCLUSION

Prior research into the determinants of strategic planning effectiveness has tended to focus only a few design characteristics of strategic planning systems. Moreover, previous studies have tended to adopt either a universalistic ("one best way") or a situational ("contingency" or "fit") systems design paradigm. The purpose of this study, which deviates from these prior trends, is to examine in a multivariate setting whether the designs of effective strategic planning systems are consistent with a universalistic model, a contingency model, or both. The selection of explanatory variables is based upon a synthesis of prior research, but since the models are not exhaustive, the analysis should be viewed as exploratory.

In general, the findings indicate that strategic planning effectiveness is a function of key systems design characteristics that are consistent with both universalistic and situational imperatives. These findings are significant for at least two reasons. First, they provide additional guidelines for planning executives as to how to design their planning systems in order to meet their firms' strategic planning objectives. Second, they raise many important questions for future research concerning the possibility of constructing an integrated and pragmatically defensible framework that reconciles both universalistic and situational perspectives of SPS design.

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