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MIDDLE MANAGEMENT INVOLVEMENT IN STRATEGY AND ITS ASSOCIATION WITH STRATEGIC TYPE: A RESEARCH NOTE

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This paper reports the results of a study that investigated the strategic involvement of 259 middle managers in 25 organizations. Drawing from previous clinical research, a theoretical typology of middle management roles in strategy is developed. Measures for each role are derived, and the relationship between middle management strategic involvement and Miles and Snow's (1978) strategic type is examined. Results suggest the usefulness of these measures in assessing both the level and type of middle management strategic activity. In addition, the findings show that middle managers in Prospectors report significantly higher levels of upward and divergent forms of strategic involvement than those in Analyzers and Defenders.

Traditionally, middle-level managers have not been considered part of the strategy process except in providing informational inputs and directing implementation. Contemporary theory and descriptions suggest, however, that middle managers regularly attempt to influence strategy and often provide the impetus for new initiatives (Burgelman, 1983a,b; Mintzberg and Waters, 1985). Bower (1970) was one of the first to recognize the contributions of middle managers: they '... are the only men [sic] in the organization who are in a position to judge whether [strategic] issues are being considered in the proper context' (297–298). More recently, empirical research has confirmed middle management's upward influence on strategic decisions (Schilit, 1987) and has shown a positive relationship between middle management involvement in strategy and organizational performance (Wooldridge and Floyd, 1990).

Thus, the literature provides evidence that middle managers' influence extends beyond implementation, but there are no theories or measurable constructs that rigorously describe middle management's strategic roles. In clinical research (Bower, 1970; Burgelman, 1983a; Kanter, 1983), descriptions of involvement are rich, but inferences are limited. Quantitative studies (Schilit, 1987; Wooldridge and Floyd, 1990), on the other hand, permit broader generalization but fail to describe roles unique to middle managers.

The present study begins by building a typology of four middle management strategic roles and links these to organizational strategy (Miles and Snow, 1978). Based on existing research,

Key words: Middle management, strategy process, strategic involvement

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measures of the roles are developed and utilized in a study of the typology's construct validity. The results suggest the usefulness of the measures in assessing both the level and type of middle management strategic activity.

A TYPOLOGY OF MIDDLE MANAGEMENT INVOLVEMENT IN STRATEGY

The typology is premised on the view that strategy is 'a pattern in a stream of actions' (Mintzberg and McHugh, 1985) and that it develops out of a continuous, interactive learning process involying managers throughout the organization (Bower, 1982; Mintzberg, 1990). Within this process, 'action and cognition are intertwined ...[and] managers develop a concrete experience base from which a strategic framework can gradually be abstracted' (Burgelman, 1988:78). Thus, each of the four roles described below is a synthesis of action and cognition unique to the position of middle managers.

One basis for defining who middle managers are can be found in Likert's (1961) discussion of the 'linking pin.' Here, a superior in one group is a subordinate in the next, and so on, throughout the organization. As participants in multiple, vertically related groups, 'linking pins' coordinate top- and operating-level activities. Conceptually, therefore, middle management can be defined as the coordination of an organizational unit's day-to-day activities with the activities of vertically related groups

As 'linking pins,' middle managers take actions that have both upward and downward influences on strategy formation. Upward influence affects top management's view of organizational circumstances (Bower, 1970; Nonaka, 1988; Dutton and Jackson, 1987) and/or the alternative strategies under consideration (Burgelman, 1983b; Wooldridge and Floyd, 1990). Middle management's downward influence, on the other hand, affects the alignment of organizational arrangements with the strategic context (Nutt, 1987; Schendel and Hofer, 1979).

Actions, of course, are based on ideas, and a well recognized dichotomy (Huff and Reger, 1987) is the basis for the typology's second distinction. On the one hand, strategy is a change process and requires divergent ideas that, if acted upon, alter the organization's concept of strategy. On the other hand, strategy is an 'integrated pattern' (Mintzberg, 1979) and requires ideas that coordinate dissimilar activities and support a coherent direction. Although few ideas are purely divergent or integrative, recognizing these two as poles of a continuum provides an appealing basis for classifying middle management's cognitive contributions.

As shown in Figure 1, combining action and cognition along these lines results in four types of middle management strategic involvement. Championing alternatives and synthesizing information represent upward forms of involvement, while facilitating adaptability and implementing deliberate strategy are downward forms.

Championing alternatives

Bower (1970) provides rich descriptions of the process by which middle managers become champions of strategic alternatives. His study shows how middle managers select certain projects, nurture them with 'seed money,' and when they prove successful, advocate them as new business opportunities. Similarly, for new venture divisions, Burgelman (1983a,b) shows that middle-level managers frequently become 'organizational champions' for initiatives developed at the operating level. Distinct from 'product championing,' this role centers on influencing corporate management to adjust their current concept of strategy. Hutt, Reingen and Ronchetto (1988) use network analysis to document com-

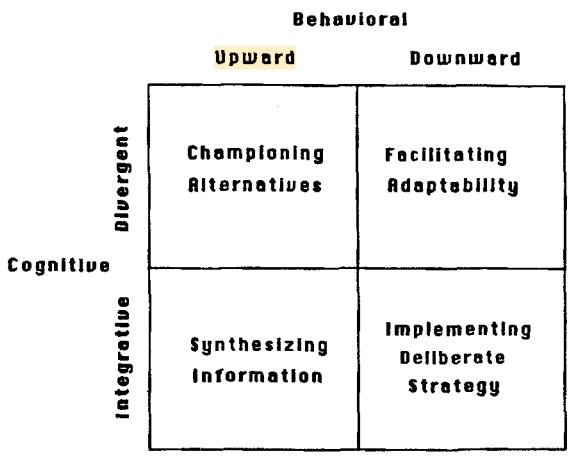

Figure 1. A typology of middle management involvement in strategy

munication links, and their analysis clearly shows the emergence of middle management champions. Middle managers are central in all phases of the project, act as strong advocates, and engage in a 'web' of communications. Championing alternatives, therefore, defined as the persistent and persuasive communication of strategic options to upper management, appears to be an important middle management function in strategy.

Synthesizing information

Not all the ideas brought upward by middle managers are strategic proposals, however. Middle managers also supply information to top management concerning internal and external events (Thompson, 1967; Westley, 1990). As organizational linking pins, middle managers are positioned uniquely 'to combine strategic ... with hands-on ... information' (Nonaka, 1988:15). They infuse information with meaning through evaluation, advice, and subjective interpretation (Ranson, Hinings, and Greenwood, 1980). By applying the category 'threat' and 'opportunity,' for example, middle managers affect how issues are interpreted (Dutton and Jackson, 1987). In addition, middle managers use information to promote their own agendas (Dutton and Duncan, 1987), and 'synthesizing' may be a precursor to championing a strategic initiative. Synthesizing information, therefore, defined as the interpretation and evaluation of information, affects top management perceptions, and is a second way middle managers upwardly influence the formation of strategy. The function is integrative in that it combines ambiguous and diverse data and interprets it within a given strategic context. Over time, however, these subjective interpretations may lay the groundwork for strategic change.

Facilitating adaptability

Several qualitative studies (Bower, 1970; Burgelman, 1983a; Kanter, 1983; Kidder, 1981) show how middle-level managers make organizations more flexible and stimulate behavior that diverges from official expectation. Matrix structures, task forces, and simple informality increase information sharing (Kanter, 1983; Mintzberg, 1979) and facilitate learning by encouraging organization members to sense changing conditions, experiment with new approaches, and adapt appropriately (Chakravarthy, 1982). Often, middle managers shield these activities from top management while they garner excess resources and relax regulations to help emergent approaches get underway. In this way, middle managers nourish adaptability apart from the plans embedded in deliberate strategy, or sometimes in spite of them (Bower, 1970; Kanter, 1983). Thus, facilitating adaptability, defined as fostering flexible organizational arrangements, is a third important strategic function of middle management.

Implementing deliberate strategy

Implementation of top management's strategy is often considered the key strategic role of middle-level managers (Nutt, 1987; Schendel and Hofer, 1979) and the purpose is to control performance with respect to desired ends (Hrebiniak and Joyce, 1984). Even in the most deliberate contexts, however, strategies are revised as new information presents itself (Quinn, 1980). Implementation involves a series of interventions concerning organizational structures, key personnel actions, and control systems (Hrebiniak and Joyce, 1984). Implementing deliberate strategy, therefore, defined as managerial interventions that align organizational action with strategic intentions, is the fourth middle management strategic function included in the typology. While such interventions may facilitate organizational change, the function is integrative since it links organizational activities to top management intention.

Categorizing involvement theoretically is not meant to suggest discrete breaks in behavior, and the four roles combine synergistically into patterns of involvement. For example, using downward influence to build adaptive structures often promotes the development of divergent strategic alternatives. Thus, the relative mix or emphasis placed on each role constitutes the nature of middle management involvement in the strategy process.

RELATIONSHIPS TO THE MILES AND SNOW (1978) TYPOLOGY

The Miles and Snow (1978) typology is a well established theory that appears to hold

implications for middle management involvement in strategy. Located at one extreme of a strategic continuum, Defenders produce a limited set of products directed at narrow market segments. The goal is to create a stable environment and defend against intrusions by competitors. A Defender strategy reduces the demand for innovative offerings championed by middle managers, and since Defenders tend to ignore events outside the existing domain, the perceived need for synthesizing information is also diminished. Both technology and administration stress efficiency, and this leaves little room for middle management to facilitate adaptability through organic administrative arrangements.

At the other extreme, Prospectors constantly exploit new product and market opportunities. Growth is achieved through innovation, and this encourages middle managers to synthesize a wide range of environmental events and champion a constant stream of initiatives. Flexibility displaces efficiency as an operational priority, and middle management's downward influence is needed to facilitate adaptability within technological and administrative subunits. Thus, the adaptive cycle of Prospectors increases the relative importance of upward and divergent forms of middle management involvement.

Located between these extremes, Analyzers, combine elements of both Defenders and Prospectors. While the majority of the Analyzer's revenues come from established products, these firms also exploit new opportunities by imitating the proven successes of Prospectors. To accommodate these competing demands, Analyzers separate stable from dynamic areas of operation and thereby provide consistent priorities from the perspective of some middle managers. Middle managers whose responsibilities encompass both sets of priorities (e.g. product managers or managers of multiple subunits), however, face the need for a broader, and more complex, repertoire of strategic activity.

Specifically, since Analyzers are more risk averse than Prospectors, middle managers are likely to incorporate more stringent criteria and justify proposals more thoroughly. This increases the complexity of the championing task, requiring managers to be both entrepreneur and bureaucrat. Similarly, key top management informants need to focus information synthesis both on the performance of existing operations and emerging market opportunities. Finally, downward influence is split between dual core technologies (Miles and Snow, 1978); one stressing efficiency and control and the other, flexibility and adaptability.

In short, some middle managers in Analyzer firms have responsibilities similar to those found in either Defender or Prospector organizations. Most, however, are charged with more complex strategic responsibilities designed to manage shifting priorities. On average, therefore, the levels of upward and divergent activity reported by middle managers in Analyzers is expected to fall between the levels in Prospector and Defender organizations. In addition, since strategic responsibilities in Analyzer organizations vary considerably from manager to manager and for the same manager over time, there is likely to be more variance in reported levels of upward and divergent involvement.

Finally, Reactors are a 'residual' set of organizations that pursue an inconsistent mix of entrepreneurial, engineering, and administrative choices. They are the least understood type (Zahra, 1987), and past research has found it difficult to interpret their behavior (Hrebiniak and Snow, 1980). Generalizing about middle management involvement in these firms, therefore, is problematic.

In sum, the following relationships are expected:

H1: Reported levels of activity related to facilitating adaptability, synthesizing information, and championing alternatives will vary by strategic type.

1A: Managers in Prospector organizations will report the highest levels of activity in these areas.

1B: Managers in Analyzer organizations will report levels of activity between those reported in Prospector and Defender organizations.

1C: Managers in Defender organizations will report the lowest levels of activity.

H2: Reports of middle management involvement in strategy within Analyzer organizations will exhibit more variability than reports by managers within other types of organizations.

Implementation

Middle management's primary role in strategy is seen by many researchers as the implementation of top management intention and a recent study

suggests that middle managers themselves share this perception (Reid, 1989). Middle managers, therefore, are likely to recognize implementation as their primary strategic responsibility. Further, since this is likely to be true for all middle managers, reported levels of implementation activity are not expected to vary by strategic type. Thus, the following hypotheses are suggested:

H3: Middle managers will report significantly higher levels of activities for implementing deliberate strategy than for the championing, facilitating, or synthesizing roles.

H4: There will be no significant difference in the levels of involvement in implementation reported by middle managers in organizations of different strategic types.

METHODS

To examine the validity of the typology and its relationships to strategy in a relatively generalizable context, it was necessary to collect in depth, background information from a diverse set of organizations, and to survey a large sample of managers. To accomplish this, we offered an MBA course in two graduate programs where participants gained access into an organization, collected company documents, interviewed top and middle-level managers, and administered a middle management survey. From these sources, student investigators developed cases on strategy content, strategy process, and organizational structure. To ensure data integrity and comparability, substantial class time was devoted to developing skills in research method. All 25 projects were conducted according to a strict timetable, adhered to a detailed 'table of contents' and were conducted at the business-level. Small class sizes (under 20) allowed close supervision and consultation by the authors. Table 1 highlights key features of the data from each organization.

The goal in each case was to elicit survey responses from a representative sample of middle managers. For an operational definition of middle managers that would permit comparison across organizations, we followed Pugh *et al.* (1968):

> Middle managers are organization members who link the activities of vertically related groups and who are responsible for at least sub-functional work flow, but not the work flow of the organization as a whole.

Using organizational charts, a group was identified for each organization. The number of respondents solicited depended on the size, number of levels, and variety of functions in the organization. This produced a sample of 264 middle managers from a variety of functional areas.[1] Consistent with the above definition, the hierarchical breakdown was 16 percent one level below the top manager of the firm or division, 66 percent two levels below, and 17 percent three levels below the top.[2] Because surveys were delivered by investigators that worked within the organization studied, 98 percent of those who agreed to participate returned completed questionnaires (n = 259).

Developing measures of middle management strategic involvement

Different measurement problems require different approaches, and the issue here is operationalizing a typology that classifies phenomena previously described in clinical studies. Consistent with the need to evolve 'concepts into constructs and developing measures of those constructs' (Fredrickson, 1983:572), the approach draws on existing descriptions of middle management to develop structured questionnaire items. The objectives were to produce reliable and valid measures of middle management strategic involvement and to examine the theoretical consistency between strategic type and the four roles.

Accordingly, creation of the instrument began with a review of Bower (1970), Burgelman

[1] Although it was considered outside the scope of this paper, an analysis of the effects of functional orientation on middle management involvement in strategy yielded significant results. Specifically, as might be expected, managers in boundary spanning functions were found to be more involved in strategy than those in nonboundary spanning roles. Functional orientation did not interact with strategic type in explaining involvement, however, and the effects, therefore, can be considered independently.

[2] The sample included some managers who reported directly to the chief executive. Because organizations were studied at the business strategy level, however, none were general managers. Including the second level group as middle managers is consistent with the working definitions used in other research (Burgelman, 1983a, 1983b; Ireland *et al.* 1987; Nutt, 1987).

Table 1. Characteristics of the research sample

Firm # and industry	No. mid. mgr. respondents	Champ.[2]	Facilitat.	Synth.	Implementation	Strategic Type	Industry Growth	Industry Stability
1. Biotech. (37)[1]	6	2.58	1.69	2.80	2.78	P	0.079	0.053
2. Insurance (250)	9	2.30	1.66	2.33	2.56	D	0.255	0.340
3. Paper Prod. (1000)	11	2.26	1.74	1.98	2.60	A	0.184	0.080
4. Insurance (500)	10	2.47	1.88	2.52	2.39	A	0.255	0.340
5. Health Care (1000)	16	2.60	1.50	2.74	2.53	P	0.076	0.063
6. Insurance (950)	14	2.48	1.85	2.10	2.53	D	0.255	0.340
7. Insurance (650)	16	2.17	1.75	2.46	2.33	D	0.255	0.340
8. Health Care (150)	8	2.16	1.69	2.36	2.64	A	0.076	0.063
9. Sporting Goods (350)	7	2.39	1.68	2.28	2.32	A	−0.037	0.041
10. Banking (300)	6	2.05	1.67	1.47	2.59	D	0.126	0.379
11. Insurance (1250)	17	2.31	1.89	2.15	2.55	P	0.255	0.340
12. Insurance (550)	10	2.40	1.67	2.01	2.48	A	0.255	0.340
13. Publishing (450)	8	2.40	1.81	2.52	2.52	P	0.157	0.055
14. H.V.A.C. (375)[3]	5	2.56	1.78	2.10	2.61	P	0.117	0.059
15. Construction (465)	7	2.28	1.65	2.58	2.56	A	0.117	0.059
16. Natural gas (600)	10	2.55	1.91	2.81	2.72	P	−0.094	0.112
17. Food service (550)	21	2.22	1.61	1.86	2.43	D	0.123	0.040
18. Insurance (59)	15	2.21	1.52	2.77	2.51	D	0.255	0.340
19. Precision optics (7500)	20	2.40	1.72	2.67	2.40	A	0.125	0.070
20. Analytical inst. (90)	5	2.44	1.63	2.69	2.71	P	0.125	0.070
21. Grocery products (900)	12	1.97	1.72	1.75	2.32	A	0.140	0.026
22. Consulting (55)	5	2.52	1.82	2.19	2.41	A	0.140	0.155
23. Grocery products (600)	8	2.66	1.82	2.41	2.42	A	0.140	0.026
24. Petroleum refining (500)	6	2.39	1.84	2.80	2.50	D	0.016	0.120
25. Reprographics (550)	7	2.63	2.38	2.52	2.70	P	0.113	0.138
Overall mean (n = 259)		2.36	1.74	2.35	2.50		0.14	0.155

[1]Approximate number of employees in the firm or division appears in parentheses.
[2]Mean organizational responses divided by the number of items making up the scale.
[3]H.V.A.C. is the acronym commonly used for heating, ventilation, and air conditioning contractors.

(1983a,b), and Kanter (1983) to identify specific examples of each role. These were formatted as 5-point Likert-type items where respondents rated how frequently they performed each activity (1 = never, 5 = very frequently). The frequency scale was intended to capture the event to which managers perceived the roles to be part of their work activity, rather than to measure the number of times a given activity was performed.

The items were pretested on 27 practicing managers who were encouraged to provide comments and ask questions. They were then introduced to the typology and asked to provide additional examples for each role. Table 2 presents an abbreviated listing of the 21 indicators, which were believed to capture the essence of the four roles. Managers also responded to a global scale similar to that used in previous research ('Overall, how involved are you in the creation and implementation of the organization's strategy:' 1 = not at all, 5 = to a great extent) (Wooldridge and Floyd, 1990). Accompanying instructions clarified that the activities listed were not intended to be a comprehensive description of mangerial work and provided guarantees of confidentiality. A copy of the complete instrument is available from the authors.

It was anticipated that these four roles could be identified as separate factors in an analysis of the 21 questionnaire items. Expectations concerning item-factor correspondence are shown by the classifications in Table 2. Because of the exploratory nature of the research, the hypothesized factors were assumed to be orthogonal. Our primary purpose was to use the factor analysis to condense the data and to create measurement scales rather than to determine the factor patterns or the intercorrelations as is often done in other confirmatory procedures. Thus, a principal components analysis followed by varimax rotation was used.[3] Table 2 also shows the results from this factor analysis. Although five significant factors emerged, only one variable loaded unambiguously on the fifth factor and a scree test (Cattell, 1965) suggested eliminating it.

Three decision rules (Kim and Mueller, 1978) suggested support for the *a priori* beliefs about the underlying dimensions of the variables: (1) at least three of the expected variabled loaded highly (> 0.3) on each of the four factors, (2) the eigenvalues for all four factors were greater than 1.0, and (3) the factors exhibited a relatively simple structure. Thus, the factors were named based on the variables loading on them and in accordance with expectations.

Finally, to develop measurement scales of the four types of involvement, a second factor analysis was performed on a subset of the original 21 items. In this iteration, five variables were eliminated on the basis of their having loadings greater than 0.30 on more than one factor, and in one case, because the item loaded highly on the fifth factor, which was dropped. Table 3 shows the resulting factor structure which is very similar to the corresponding item-factor loadings in Table 2.

The loadings in Table 3 were used to compute weighted, additive scales for each of the four types of middle management strategic involvement. The item 'Encourage informal discussion ...' loaded on implementing rather than facilitating, and the item 'Gather information on the feasibility of new programs' loaded on championing rather than synthesizing. Although these loadings were not consistent with expectations, on reflection they seemed theoretically appropriate. Alphas for the resulting measures are also shown in Table 3.

Measuring strategic type

The organization's strategy was identified based on interviews, annual reports, and survey items of strategy content that were incorporated into the questionnaire. These latter measures were based on the strategy variables identified in Segev (1989), and means on each item were generated from multiple, middle manager respondents. The top manager of each organization was surveyed on strategy content, and with middle manager responses, provided the basis for self-typing.

In addition, each author reviewed the cases to corroborate the student's classification. The authors' independent assessments matched for all 25 firms, but there were three cases where student investigators disagreed. The disparity was quickly resolved, however, through discussions

[3] In addition, since a principal components analysis with varimax rotation produces orthogonal factors, the viability of such independence was examined. A principle-factor solution with oblique rotation produced similar results. The results of this analysis are available from the authors.

Table 2. Factor analysis of 21 descriptions of middle management strategic involvement

Items	Factor loadings				
	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Championing alternatives					
Justify and define new programs	0.82	0.08	0.15	0.01	0.20
Evaluate the merits of new proposals	0.56	0.23	0.28	0.12	−0.03
Search for new opportunities	0.60	0.21	0.21	0.26	−0.16
Propose programs or projects to higher level managers	0.70	0.11	0.13	0.22	0.04
Justify programs that have already been established	0.07	0.16	0.23	0.12	0.77
Facilitating adaptability					
Encourage informal discussion and information sharing	0.19	0.63	0.13	0.06	−0.07
Relax regulations to get new projects started	0.02	0.05	0.03	0.66	0.13
'Buy time' for experimental programs	0.20	−0.01	0.04	0.44	0.61
Develop objectives and strategies for unofficial projects	0.36	0.16	−0.23	0.40	0.07
Encourage multidisciplinary problem solving teams	0.08	0.22	0.55	0.41	−0.14
Locate and provide resources for trial projects	0.25	0.06	0.20	0.63	−0.01
Provide a safe haven for experimental programs	0.03	0.04	−0.02	0.79	0.14
Synthesizing information					
Gather information on the feasibility of new programs	0.80	0.14	0.12	−0.05	0.20
Communicate the activities of competitors, suppliers, etc	0.10	0.13	0.73	−0.02	0.19
Assess changes in the external environment	0.19	0.09	0.75	−0.05	0.15
Communicate implications of new information	0.34	0.14	0.57	0.16	−0.02
Implementing deliberate strategy					
Monitor activities to support top management objectives	−0.02	0.75	0.08	0.01	−0.01
Implement action plans designed to meet objectives	0.26	0.39	0.37	−0.03	0.11
Translate goals into action plans	0.22	0.58	0.19	0.17	−0.03
Translate goals into individual objectives	0.08	0.64	0.14	0.12	0.09
Sell top management initiatives to subordinates	0.16	0.62	−0.04	−0.02	0.21
Eigenvalue	5.55	1.87	1.56	1.35	1.03
Variance (%)	26.4	8.9	7.4	6.4	4.9
(Cumulative variance = 54.1%)					

Table 3. Final factor analysis

Items	Factor Loadings			
	Championing Factor 1	Implementing Factor 2	Facilitating Factor 3	Synthesizing Factor 4
Championing alternatives				
Justify and define new programs	0.86*	0.09	0.07	0.10
Evaluate the merits of new proposals	0.60*	0.25	0.11	0.15
Search for new opportunities	0.58*	0.25	0.21	0.17
Propose programs or projects to higher level managers	0.70*	0.12	0.25	0.10
Facilitating adaptability				
Encourage informal discussion and information sharing	0.19	0.65*	0.00	0.11
Relax regulations to get new projects started	−0.01	0.09	0.70*	0.03
'Buy time' for experimental programs	0.23	−0.01	0.59*	0.05
Locate and provide resources for trial projects	0.26	0.07	0.63*	0.09
Provide a safe haven for experimental programs	0.03	0.08	0.81*	−0.06
Synthesizing information				
Gather information on the feasibility of new programs	0.84*	0.13	0.02	0.06
Communicate the activities of competitors, suppliers etc	0.13	0.15	0.04	0.85*
Assess changes in the external environment	0.22	0.11	0.04	0.83*
Implementing deliberate strategy				
Monitor activities to support top management objectives	0.00	0.77*	−0.01	−0.02
Translate goals into action plans	0.20	0.58*	0.14	0.22
Translate goals into individual objectives	0.11	0.66*	0.14	0.12
Sell top management initiatives to subordinates	0.16	0.59*	0.03	0.00
Eigenvalue	4.52	1.74	1.51	1.15
Variance(%)	28.2	10.8	9.4	7.2
Alpha	0.82	0.70	0.66	0.70
(Cumulative variance = 55.7%)				
Loadings used in measurement scales				

*$p <$

with the responsible investigator. Since the cases drew on archival as well as self-report measures, the procedure was consistent with recent recommendations concerning the valid measurement of the Miles and Snow typology (Shortell and Zajac, 1990). Table 1 shows the classification of each firm.

Controls

To reduce threats to internal validity, several control variables were introduced into the analysis. First, at the industry level, munificence and dynamism (Dess and Beard, 1984) can be expected to affect the intensity and type of middle management involvement in strategy. Munificence may generate slack resources (Cyert and March, 1963) thereby facilitating upward and divergent forms of involvement. Similarly, dynamism heightens the need for flexibility and may therefore encourage divergent strategic thinking. Thus, the growth and stability of industry revenues over the 5 years just prior to the study were computed from data in *Standard and Poor's Industry Surveys*. These variables are components of the munificence and dynamism scales, respectively, created by Dess and Beard (1984). Following their procedure, we calculated values as the regression coefficient of time on the dependent variable and the dispersion about the regression line (both divided by mean industry revenues to correct for absolute industry size).

At the firm level, organizational size and overall financial performance could also affect the relationships in the hypotheses. Because they are more informal, smaller organizations have been described as more conducive to innovation and upward influence (Mintzberg, 1979; Kanter, 1983). Thus, the natural log of the number of employees in each organization was introduced as a control variable. In addition, unusually high or low financial performance could create an atypical emphasis on efficiency over innovation and flexibility Accordingly, a variable was created by summing the top manager's response to six items that rated return on assets, sales growth rate, overall financial performance, overall organizational effectiveness, overall competitive position, and meeting organizational objectives. Since performance norms and accounting procedures differ by industry, this measure was considered preferable to published financial data, and comparing this data with available financial statements revealed no inconsistencies.

At the individual level, the middle manager's tenure in the company, position, age, number of years working for the same superior, and perceived power have the potential to influence involvement in strategy (Schilit, 1987). During the pretest and the solicitation of participants, however, it became clear that perceptions of the organization's strategy and participation in it were sensitive issues. Confidentiality, therefore, limited our ability to collect background data. Two variables, however, were included on the questionnaire and introduced into the analysis: tenure in position and organization level. We believed tenure in position to be a reasonable surrogate for age, tenure in company, and years working with a superior, and in most cases, hierarchical level is likely to be associated with perceived power.

RESULTS

Table 4 reports means, standard deviations, and correlations among the study's variables. As the Table shows, significant inter-relationships exist among measures of the four involvement roles and the global involvement measure.

Multivariate analysis of variance (MANOVA) was used to examine the overall association among the four types of middle management strategic involvement and the organization's strategic type. The growth and stability of industry revenues, the respondent's hierarchical level,[4] time in present position, organizational size, and the firm's performance were included in the analysis as covariates. Of these controls, only two, time in present position and organizational size, had significant effects. For the sake of parsimony and to preserve statistical power, the remaining covariates were eliminated from the analysis. This procedure did not change the pattern of results and follows standard practice (Tabachnick and Fidell, 1989).

Multivariate tests of significance showed that the relationship between the two remaining covariates and the combined dependent variables approached significance ($p = 0.057$). Univariate

[4] Since position in the hierarchy is a categorical variable, the three levels were represented by two dummy variables.

Table 4. Means, standard deviations, and correlations (n = 259)

	Means	S.D.	1	2	3	4	5	6	7	8	9	10
1. Championing alternatives	2.36	0.46										
2. Facilitating adaptability	1.74	0.45	0.33**									
3. Synthesizing information	2.35	0.85	0.37**	0.12								
4. Implementing deliberate strategy	2.50	0.34	0.40**	0.21**	0.31**							
5. Tenure in position	2.49	1.98	0.06	−0.13*	0.02	−0.05						
6. Industry growth	0.15	0.09	−0.10*	0.00	−0.10*	−0.09	−0.02					
7. Industry stability	0.17	0.14	−0.06	0.05	−0.03	−0.01	−0.05	0.32				
8. Organizational size	6.31	1.16	0.02	0.07	−0.04	−0.12*	0.13*	−0.03	−0.16			
9. Overall performance	4.16	1.27	0.00	−0.10	0.00	0.01	0.19**	−0.15	−0.03	−0.05		
10. Global involvement	2.75	1.03	0.48**	0.19*	0.36**	0.31**	0.04	−0.05	−0.06	0.00	0.01	

*$p < 0.05$ **$p < 0.01$. Since industry growth, industry stability, organizational size and overall performance are organizational level variables, intercorrelations among them reflect a sample size of 25.

Table 5. MANOVA results—effects of strategic type

Involvement measures	Strategy type ($F_{2,253} = 2.51$, $p = 0.011$) Defenders	Analyzers	Prospectors	F
Championing	2.25	2.39	2.46	3.73*
Facilitating	1.68	1.71	1.90	4.92**
Synthesizing	2.25	2.34	2.45	1.22
Implementation	2.47	2.46	2.63	5.28**

*$p < 0.05$ **$p < 0.01$.

tests showed only the relationship between facilitating adaptability and time in position to be statistically significant ($p = 0.02$).[5]

The multivariate tests of significance also showed that the combined dependent variables were associated significantly with strategic type ($F_{2,253} = 2.50$, $p = 0.011$). As Table 5 shows, univariate follow-up tests provided partial support for Hypothesis 1. Differences in reported levels of involvement were in the hypothesized direction and were significant for championing ($p = 0.026$), facilitating ($p = 0.008$), and implementation ($p = 0.006$). Scheffe tests revealed that managers in prospecting firms reported significantly ($p < 0.05$) higher levels of championing than managers in Defenders and significantly higher levels of facilitating and implementation than managers in both Analyzers and Defenders. No significant differences were found, however, between Analyzers and Defenders, nor between any of the groups for the synthesizing role.

To test Hypothesis 2, which predicted that responses within Analyzer organizations would be more dispersed than the responses within other organizations, the variances of the responses for each role were compared according to the decision rules in Neter, Wasserman, and Kutner (1983). The hypothesis received partial support. Variances were significantly higher in Analyzer firms for the global measure of involvement ($p < 0.05$) and for responses concerning synthesizing ($p < 0.05$) and implementation ($p < 0.01$). Variances were not significantly higher, however, for the championing and facilitating roles.

As predicted in Hypothesis 3, t-tests revealed that reported *levels* of implementation activity were significantly higher than reported levels of championing ($p = 0.000$), facilitating ($p = 0.000$), and synthesizing ($p = 0.002$). Contrary to Hypothesis 4, however, significant *differences* in reported levels of middle management implementation activity did emerge across strategic types.

DISCUSSION

The development of a theoretically grounded typology represents an important step for research in this area. The factor analysis produced a reliable set of scales that were largely consistent with the theory. Correlations with the global involvement measure and observed differences across strategic types further support the scales' construct validity. Thus, the measures appear to represent and discriminate the four roles with reasonable accuracy.

Refining the measures yielded several insights into the nature of the roles and suggested areas where future researchers could make improvements. First, the item concerning the justification of programs that 'have already been established' was based on descriptions of rebellious middle managers who risked all to support a pet project (Bower, 1970; Kanter, 1983). The fact that it shared so little variance with other items suggests that it is a very unique form of involvement. In contrast, the item on implementing plans 'to meet top management

[5] The negative association found here is consistent with the tendency to bureaucratize over time (Mintzberg, 1979) and may be problematic for organizations in maintaining adaptability.

objectives' had sizable loadings on three factors. This ambiguity reinforces the pervasiveness of loyalty in middle management's strategic role (Guth and MacMillan, 1986). Third, two of the final synthesizing items loaded on championing *as well as* synthesizing, and the other loaded on championing *rather than* synthesizing. This provides evidence of the synergy between providing information to top management and influencing the strategic agenda of the organization (Dutton and Duncan, 1987). Finally, two of the original items on facilitating were dropped and one became part of the implementation scale. Thus, in some ways this role was the most difficult role to measure, and it is noteworthy that reported levels for this role were the lowest of the four. While the remaining four-item scale suggests it is theoretically distinct, the role may be difficult for managers to recognize.

In general, the MANOVA results support the conclusion that links exist between middle management involvement and the content of strategy. Although all differences were not statistically significant, levels of championing, facilitating and synthesizing varied as hypothesized. There are, however, four areas where the results differed from expectations. First, while Prospectors differed significantly from the other groups, involvement in Analyzers and Defenders was not significantly different. Second, the hypothesis (H2) that there would be greater dispersion in Analyzer firms was only partially supported. Third, differences in levels of synthesizing across strategic types were not statistically significant. Finally, in contrast with H4, there were significant differences in the levels of implementation activity reported.

The first two of these likely stem from limitations regarding the study's sample. Each firm was classified within the context of its industry, but organizations in the sample were selected based on their accessibility. Representativeness issues arise, and a nonrepresentative group of Analyzers could explain the lack of significant differences between involvement in this group and Defenders. The study's ability to detect such differences may have been blunted further by the tendency of many Analyzers to behave more like Defenders than Prospectors (Miles and Snow, 1978). Indeed, the means values in Table 5 appear to reflect this tendency. The sampling problem is heightened by the theoretical diversity of individual responsibilities within Analyzer firms. In a more heterogeneous population, a small sample of middle managers is less likely to represent strategic behavior. In Analyzers, therefore, selection is more likely to bias true variability, and this may explain the mixed results for Hypothesis 2.

The remaining discrepancies likely reflect limitations in current conceptualizations of middle management. Specifically, differences in synthesizing were in the hypothesized direction, but the dispersion within groups prevented differences between groups from becoming statistically significant. This suggests that synthesizing may be explained by individual level factors, such as functional orientation, rather than organizational characteristics. Existing theory also did not anticipate the differences in implementation across strategic types, but their pattern matches closely the differences for championing and facilitating. These parallels suggest that the three roles reinforce one another and enhance overall strategic awareness. Broader middle management involvement, therefore, may influence the quality of strategy implementation.

CONCLUSION

Studies of top managers are limited in what they add to our knowledge concerning emergent influence on strategy. By viewing strategy formation as a process involving middle, as well as top managers, this study and future research can contribute to the understanding of how top management intent combines with middle management activity in the creation of realized strategy.

Towards this end, future research can build on this study in several ways. First, specific patterns in Reactors are hard to anticipate, but there is little doubt that involvement is a source of inconsistency. For example, in a Reactor aspiring to the Defender strategy, excessive efforts to facilitate adaptability may undermine the need for efficiency. Such inconsistencies may be the result of top management's failure to provide clear priorities (Miles and Snow, 1978). Thus, studies of involvement in Reactors could have practical significance.

Second, research should continue to investigate contingencies that affect how middle managers

contribute to strategy. In particular, future studies should examine involvement in various environmental and competitive settings. While recent theorizing (Nonaka, 1988) and research (Wooldridge and Floyd, 1990) suggest performance benefits, appropriate forms and levels of involvement are likely to vary across settings.

In sum, the main theme of this paper has been the elucidation of middle management roles in strategy. We have attempted to facilitate research that combines the rich description from clinical research with the rigor of statistical analysis. We hope future studies will use the typology and measures like those presented to develop and test hypotheses concerning contingencies affecting middle management's involvement in the strategy process.

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