

The Joint Influence of Control Strategies and Market Turbulence on Strategic Performance in Sales-Driven Organizations

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ABSTRACT

The effect of management control efforts on organizational actors' participation in the strategy process is investigated. Results from a survey of sales-driven organizations indicate that self, professional, activity, and output control systems have varying effects on participation in strategic activity. We also found that the influences of control systems on participation in strategic activity are moderated by market turbulence. Importantly, a direct relationship is established between participation in strategic activity and individual-level selling performance.

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With a growing emphasis on strategic renewal, organizations are faced with the challenge of balancing control with innovation (Ouchi, 1980; Floyd and Lane, 2000). Managers are urged to encourage the workforce to offer new ideas and initiatives to support renewal, but must also insist on efficient and accurate performance of ordinary work tasks. The result is often tension between the need to institutionalize existing behavior (i.e., perform ordinary work roles) and the need to support new behaviors (i.e., perform new roles) necessary for the development of new strategies (Floyd and Lane, 2000).

Organization control and coordination systems provide an avenue for resolving this tension. Through the use of administrative controls, managers are able to designate specific role expectations to subordinates and to monitor and evaluate the subordinate's performance against these standards (Marginson, 2002; Machin, 1979; Ouchi 1980). In general, management's expectations, communicated through control and coordination efforts, provide organizational members with the direction necessary to define their proper work roles (e.g., Ashforth and Saks, 1995; Floyd and Lane, 2000). Research suggests that organizational controls may align individuals' role expectations with

environmental pressures to reduce felt conflict (Floyd and Lane, 2000). Further, these controls allow management to identify skills that are unique to certain members of the organization as well as to identify members who exhibit management potential (Simons, 1991; Marginson 2002).

The predominant focus in the existing control literature has been on identifying antecedent conditions leading to the implementation of various control mechanisms (e.g., Ouchi, 1980; Eisenhardt, 1985). Some scholars, however, have suggested that to fully understand control greater attention must be directed toward understanding how MCS shape emerging strategies. Mintzberg and colleagues, for instance, have examined how informal controls including management style and culture influence emerging strategies (Mintzberg, 1987; Mintzberg and McHugh, 1985). Simons (1990, 1991, 1994) and Marginson (2002) have studied the relationship between management control systems, elements of the strategy process, and its outcomes.

In this article, we go beyond past research to explore the influence of management's formal and informal control systems on the responses of a particular group of organizational members, the salesforce. We focus on sales representatives because they span the boundary between the organization and its customers. They represent a key internal constituency. The ability of the organization to meet revenue objectives often hinges on the efforts of the sales force. Sales professionals connect the organization to the external environment, and in many ways hold the key to the development of successful relationships with customers. We argue that the control system will influence the strategic roles that sales professionals assume as well as their selling performance.

In the following sections we propose and empirically test a model that links management control systems to sales representatives' selling performance (refer to Figure 1). In particular, we suggest that the strategic roles the sales representative assumes is an important mediating construct connecting control to selling performance. Further, we examine the moderating influence of market turbulence in the relationship between control and the salesperson's participation in strategic roles. In essence, we suggest the managers' style of control will influence the sales representatives' role in the strategy process, which in turn will influence their selling performance.

THEORY AND HYPOTHESES

To derive our model, we rely on principles from transaction cost analysis and social exchange theory. Transaction cost analysis (TCA) suggests that opportunistic behavior in relationships occurs as a result of bounded rationality and information uncertainty. To prevent opportunistic behavior, the manager must employ control mechanisms (Williamson, 1985). Social exchange theory suggests that the actions of the manager and the employee are also influenced

by the social interaction, repeated exchanges, and the perception that either party will renege on obligations (Blau, 1964; Thibault and Kelley, 1959). Repeated exchanges and shared values determine the effectiveness of communication between the two parties (Doney, Cannon, and Mullen, 1998). Because strategic renewal requires both bottom-up learning and organizationally designed experimentation, it is typically considered to involve a non-linear, socially complex process (Levinthal and March, 1993). While transaction cost economics has been criticized as 'undersocialized' (Ghoshal and Moran, 1996), social exchange theory makes the exchange relationship the unit of analysis and provides us with an opportunity to better discern the sales professional's participation in strategic roles.

Strategic Roles

The management literature on strategic process provides a long list of strategic roles played by various levels of management (Floyd and Wooldridge, 1992; Floyd and Lane, 2000; Nonaka, 1994 Bartlett and Ghoshal, 1993). According to Floyd and Lane (2000), each of the roles involves processing information and taking action toward organizational change. The top management roles are considered decision-making activities. The middle management roles revolve around communication and transfer of information between the operating and top levels of management. Finally, the operating management roles focus on reacting to information and conforming to upper management. Middle-level strategic roles include championing, synthesizing, facilitating, and implementing (Floyd and Wooldridge, 1992). *Championing* is formally defined as the successful promotion of strategic initiatives to superiors, leading to the development of new organizational capabilities or to changes in the use of existing capabilities. *Synthesizing* is defined as the subjective process by which strategic meaning is combined with current operating information and an interpretation of this knowledge is communicated to others within the organization. *Facilitating* refers to the nurturing and development of experimental programs designed to encourage organizational learning and to expand strategy. Finally, *implementing* is defined as the redeployment of organizational capabilities that are often considered to be a top-driven activity.

Floyd and Lane's (2000) review of the literature on strategic roles provides a summary of how these activities operate at various hierarchical levels of management. However, past research involving the strategic process has not fully considered how managers' directives (or MCS) influence organizational members' participation in these roles. Furthermore, past research has not empirically considered the influence of such activity on individual-level outcomes such as selling performance, nor has it considered how a unit-level climate of participation in strategic roles influences performance.

Organizational Boundary Spanners

We argue that the most compelling vantage point to study this phenomenon is through the lens of the organizational boundary spanner. Boundary spanners are often considered to be 'linking pins' in that they perform roles involving management, suppliers, and customers (Likert, 1961; Dutton *et al*, 2001; Floyd and Wooldridge, 1992). As a result, boundary-spanning employees have access to the external environment and are more likely to understand the strategic problems associated with the firm's capability set (Floyd and Wooldridge, 1997). Furthermore, they have been shown to report higher levels of strategic influence behavior than their nonboundary-spanning counterparts (Astley and Sachdeva, 1984).

One important source of boundary spanning information comes from mid-level sales professionals (Slater and Olsen, 2000). Scholars have suggested that sales professionals engage in autonomous strategic behavior (Hutt, Reingen, and Ronchetto, 1988). Exposure to the demands of external constituents, including customers, has been shown to promote recognition of the potential value of divergent strategic initiatives (Floyd and Wooldridge, 1997). Not only do they have access to external information in their boundary spanning roles, but they can also shape strategy internally through their mid-level position (Slater and Olsen, 2000).

By focusing on boundary spanning sales professionals, we expect to better understand a) how management control systems influence the strategic roles that this group of mid-level professionals assumes, b) how management control systems interact with turbulent conditions to affect this process and c) how this strategic activity influences individual and firm performance.

Control Strategies and Participation in Strategic Roles

Management control systems (MCS) are defined as systems for influencing and coordinating human endeavor within the firm (Flamholtz, Das, and Tsui 1985; Langfield-Smith 1997). Examples include planning systems, budgeting systems, career planning systems, and project monitoring systems (Marginson 2002). Past research in MCS has focused on formal control systems including both process (activity or behavior-based) and output (direct or volume-based) control (Jaworski, 1988; Marginson, 2002; Robertson and Swan, 2004) as well as informal control mechanisms (Mintzberg and Waters, 1982; Ramaswami, 1996; Jaworski; Stathakopolous, and Krishnan, 1993). Informal controls do not impose strict procedures and rules to be followed. Instead, the control evolves from a clan culture supported by management and the firm (Ouchi, 1980). At least two distinct types of informal controls have been noted in the literature (e.g., Jaworski, Stathakopolous, and Krishnan, 1993; Ramaswami, 1996; Robertson and Swan, 2004; Sharma, 1997). These include 'self-control' (i.e., taking

responsibility for one's jobs, etc) and 'professional control' (i.e., control via professional norms).

Marginson (2002) notes that the effects of management control systems (MCS) on the strategic renewal process within a firm have been largely ignored by researchers. In the following sections, we develop hypotheses regarding the relationship between four specific types of control (self, professional, activity, and output) and the sales professionals' participation in strategic roles (i.e., championing, synthesizing, facilitating, and implementing).

Self Control

According to transaction cost economics, one expects that individuals exhibit self-interest and bounded rationality (Williamson, 1985). Other research (e.g., Ramaswami, 1996; Sharma, 1997) suggests that in addition some agents may be driven by altruism. The individual takes pride in their work and feels a sense of commitment to performing at a high level. In essence, there is a self control mechanism, representing the degree to which the employee takes pride in their work and takes responsibility for their job activities, at work. This type of informal control seeks to reduce opportunistic behavior by achieving greater similarity of norms and goals between organizational members and the organization. In essence, information is conveyed through traditions and a common culture (Ouchi, 1980). In the absence of formal control, a self control system relies on, or trusts, the individual to act in a manner that is beneficial for the organization (which is possible because the organizational members share norms and priorities). To the extent that management communicates a self control philosophy to the sales force, we argue that the sales professional will respond with positively directed altruistic behaviors toward the organization. Consistent with principles of exchange theory (cf. Blau, 1964), we suggest that the sales professional will reciprocate the organization's support or trust by going beyond general job duties actively participating in the strategic efforts of the firm.

H1: Self control will be positively related to the sales professional's participation in strategic roles.

Professional Control

Professional control represents the degree of interaction, feedback, and evaluation among peers. It stresses team unity and group decision-making in lieu of feelings of individual achievement. According to Williamson (1985), professional controls increase the likelihood of opportunism (e.g., shirking responsibilities). In sales settings, the sales professional is typically discouraged from deviating from the traditional sales role as those roles may dampen their effectiveness with regard to their primary role. Hence, the salesperson must carefully weigh the cost and benefit of participating in potentially risky behaviors (e.g., championing new ideas) that go beyond general job duties (i.e., those

directly related to selling). We argue that professional controls embracing group decision-making may mask the perceived benefits of emerging as a strategic leader in the eyes of individual sales professionals. Positive reciprocal and trusting relationships between the sales professional and management will be less likely to accrue if responsibilities and benefits are shared (Flaherty and Pappas, 2000). The benefits of participating in extended strategic roles are less likely to be perceived as outweighing the costs (burning chips with superiors as well as peers) of taking on a strategic role. Thus, to the degree that the sales professional recognizes managements' support of a team or group atmosphere, we argue she will be less likely to participate in strategic roles extending beyond traditional sales roles.

H2: Professional control will be negatively related to the sales professional's participation in strategic activity.

Activity Control

Activity control reflects the monitoring of specific activities a sales professional is expected to perform on a regular basis, and the administering of rewards and punishments on the basis of the performance of these specified activities (Challagalla and Shervani 1996). This type of control reduces the potential for opportunism by clearly specifying rules and detailing expected behaviors (Floyd and Lane, 2000). Activity control can encourage sales professionals to perform activities that enhance the long term interests of the organization (Challagalla and Shervani 1996). For example, participation in required inter-departmental training programs can facilitate the sales professionals' organizational learning and understanding of corporate strategy. Further, activity control can signal management's concern and support of organizational members (Oliver and Anderson, 1994; Atuahene-Gima and Li, 2002). We argue that activity control helps to create an environment that fosters the sales professional's willingness to take a chance and engage in strategic roles. Stated formally,

H3: Activity control will be positively related to the sales professional's participation in strategic activity.

Output Control

Output control places more performance risk on the shoulders of the sales professional. An output-oriented system does not hold management responsible for providing direction—even when things are not going well (Ramaswami, 1996). Thus, engaging in ex-role strategic activity would be seen as activities that detract from one's potential. Said differently, the sales representative is unlikely to subsume additional risk by taking on strategic roles. Further, output control sends a clear message that output performance is to be the focus of the sales professional. Under this system of control, less latitude is provided for behaviors outside of this role (Cravens et al., 1993). Output control fails to provide the

same type of supportive environment present under activity control. We argue that sales professionals will be less likely to engage in strategic roles.

H4: Output control will be negatively related to the sales professional's participation in strategic activity.

Control Strategies, Market Turbulence, and Strategic Activity

We have proposed that MCS influence sales professionals' level of participation in strategic activity. It is not clear, however, that these effects are equivalent under all conditions. We anticipate that the effects of self, professional, activity and output control on participation in strategic roles may be either enhanced or diminished depending on the degree of market stability or turbulence. Certain control systems tolerate ambiguity and uncertainty, while others mandate a clear specification of rules to be followed or roles to be undertaken. Coordination systems (or broad management imperatives) can be used to minimize or control uncertainty (Floyd and Lane, 2000). We suggest that, when the environment is more turbulent, managerial control that minimizes additional role uncertainty will enable the sales professional's likelihood to participate in autonomous strategic activity.

For instance, self control systems are based on ambiguous social arrangements. Rules and detailed behaviors are not clearly specified under such control systems. We argue that in a turbulent market individuals will seek to lower exposure to risk and avoid associated costs with behaviors that diverge from the prevailing wisdom of the organization. In stable market conditions, strategic information is to some extent specific and unambiguous; as turbulence increases and firms are faced with increasing instability and ambiguity (Floyd and Lane, 2000) greater uncertainty surrounding strategic decisions results. Turbulent markets may be viewed as uncertain, risky, or problematic to the individual sales professional. If management (i.e., the "role sender") has not conveyed a clear and detailed message regarding the roles that ought to be assumed by the organizational member, it is less likely that the member will take on extended strategic roles.

H5: When the market is turbulent, the use of self control will decrease the sales professional's participation in strategic activity.

Professional control suggests that performance is based on group, rather than individual, goals (Ramaswami, 1996). Here, the individual can avoid the costs often associated with dynamic environments by seeking opportunistic behavior shielded by the group (Williamson, 1985). Often cast as a 'free rider phenomenon,' transaction cost economics suggests that professional controls will mitigate the risk in turbulent markets. Market turbulence would also mitigate the negative influence between professional controls and strategic influence from a social exchange perspective. Stated formally,

H6: When the market is turbulent, the use of professional control will increase the sales professional's participation in strategic activity.

As mentioned earlier, activity control represents a bureaucratic coordination mechanism that relies on rules and clear specification of expected roles. Activity controls involve increased levels of activity information shared between the sales professional and management (Challagalla and Shervani, 1996), consequently reducing ambiguity of organizational members. We expect that an activity-based control system enables management to minimize additional role uncertainty felt by organizational members, which is likely to be particularly relevant in uncertain markets.

H7: When the market is turbulent, the use of activity control will increase the sales professional's participation in strategic activity.

It can be more difficult in highly turbulent markets to find the direct link between effort and performance. Sales professionals in a specific industry that is depressed or rapidly consolidating may be putting forth just as much effort or more than they did during more stable times, yet still seeing weakened personal and corporate sales results. Anderson and Oliver (1987) specifically suggest using output control only when sales professionals can see that direct link between effort and performance to avoid potential issues such as these. As sales professionals see results that are inconsistent with their effort during times of market turbulence, they may feel increased resentment towards output controls reducing their participation in strategic activities even further. Thus,

H8: When the market is turbulent, the use of output control will decrease the sales professional's participation in strategic activity.

Participation in Strategic Activity and Selling Performance

The strategy process literature, for the most part, explores the conditions that are likely to lead to participation in the strategic activities (e.g., Floyd and Wooldridge 1992, Floyd and Lane 2000). Less work considers the consequences of these activities. In the present study, we evaluate the association between the activities and individual-level sales performance. Consistent with past research,

we define sales performance as the salesperson's achievement of both quantity and quality sales objectives (e.g., Sujan, Weitz, and Kumar 1994).

The traditional model of strategic involvement suggests that employee involvement in strategy will result in greater strategic consensus, improved implementation of strategy, and ultimately enhanced organizational performance. Newer conceptualizations of strategic involvement suggest a more involved path for the strategically active employee. Floyd and Wooldridge (1992) propose that involvement in strategy leads to enhanced individual decision making rather than simply greater strategic consensus. Improved decision making on the part of the individual is expected to result in superior organizational strategies, but also superior 'individual strategies' as well. For instance, enhanced salesperson decision-making should result in better decisions regarding customer interactions, ultimately facilitating relationship development, enhanced customer service, etc. Furthermore, a general shift toward innovation and customer responsiveness among firms has led to a substantial change in the relevance of formal planning. The need for innovation must be balanced with planning and direction, in order to prevent confusion and inconsistency. A salesperson that shares and participates in the strategic understanding of the firm will best understand strategic priorities and as a result communicate this information to customers in a coherent and consistent manner.

Top managers also have begun to point out the performance-related benefits of an expanded strategic role for organizational members. When employees are empowered to make decisions they take ownership in the company and often become star performers. An executive at a company we spoke with directly further reiterated this point suggesting that more involved employees end up with an improved sense of customer needs and as a result are most successful. Thus, to the extent that the strategically active salesperson makes better decisions and shares the firms 'strategic understanding', we expect that participation in the strategy process is linked to increased individual sales performance. Salespeople who can create the best fit between the organization's offerings and customer needs are likely to sell more, and creating that fit stems from understanding evolving needs in the market and influencing firm strategy to respond.

H9: Participation in strategic activity will be positively related to the sales professional's selling performance.

METHODS

Sample and Data Collection

Data were obtained from sales organizations operating in the healthcare sector. Contact information for the organizations was obtained from a national (US) list. A sample of the firms was contacted via initial telephone calls. In the phone

conversations, we introduced the study to sales managers, determined whether participation was feasible and, when feasible, generated support from the sales managers. Sales managers of interested firms (one per firm) were mailed an instruction packet with the following materials:

Cover letter

Managers were asked to distribute questionnaires to three selected sales professionals. Also, managers were asked to complete a different questionnaire. All questionnaires were to be returned separately.

Manager questionnaire

The manager questionnaire included measures of the firm's market turbulence and a host of other background variables regarding the firm. In addition, managers completed a measure of each sales professional's performance rankings, and participation in strategic activities. These rankings were matched with the responses from the corresponding sales professional.

Three sales professional questionnaires

The sales professional questionnaire included measures of control as well as a host of demographic and background information including prior industry experience, level of education, etc. Business reply envelopes were attached to each questionnaire. Questionnaires were coded to allow for the matching of sales professional to manager, as well as back to the master list of companies. Follow-up packets were sent to the non-respondents two months after the initial mailing.

Of 450 firms initially expressing interest and pre-qualifying for participation, 65 returned questionnaires (14.4%). Thus, 195 sales representatives were given questionnaires by their managers and we received 147 matched dyads (75.4%). This includes 132 dyads from the first wave of data collection and 25 from the second wave representing 57 distinct firms (or managers). In many instances, two or three 'sales professional' questionnaires were returned per each 'manager' questionnaire. Of the 147 dyads, 94 were obtained from pharmaceutical sales companies, while the remaining 33 were from firms selling proprietaries/sundries within the healthcare industry. A test of differences between the groups across study variables exhibited no significant differences, thus warranting the pooling of these responses.

Given the possibility of a total of 1,350 possible dyads that we may have received, we calculate a response rate of approximately 11 percent. While efforts to collect data from both sides of the dyad resulted in a generally low

response rate, it was important to collect information from both managers and salesperson to exact information about the exchange relationship. Further, by taking this approach, we minimized the risk of a common method bias. A summary of salesperson characteristics follows: average total income = \$93,000, average age = 37, 58 percent male, average length of relationship with current manager = 4 years, and 75 percent hold a bachelor's degree or higher. To test for nonresponse bias we compared responses from the first wave against those from the second wave (Armstrong and Overton 1977). No significant differences were determined for the variables in the study. Additionally, comparisons of firm size across respondents and nonrespondents indicated no significant differences.

Measures Reported by Sales Professionals

Preexisting measures that have been found to be valid and reliable in past research were used for all constructs. Where necessary the measures were adapted slightly in wording to fit the context of the current study. Of the measures completed by the salespeople, most were 7-point Likert-type multi-item scales. These included Ramaswami's (1996) four-item measure of self control ($\alpha = .80$) and five-item measure of professional control ($\alpha = .94$). Activity control and output control were measured using Challagalla and Shervani's (1996) measures. Items regarding the provision of activity-oriented information, rewards, and punishments form the activity control construct ($\alpha = .91$). Likewise items regarding the provision of output-oriented information, rewards, and punishments form the output control construct ($\alpha = .94$). Level of education was measured via salesperson self-selection from the following: some high school, high school grad, some college, college graduate, some graduate work, and graduate degree. Industry experience was measured via self-selection from the following ranges in years of service: 0-5, 6-10, 11-15, 16-20, over 20. Other background variables, including age, sex, total income, percentage of income received in salary and commission, and length of time working with current manager, were collected as well.

Measures Reported by Managers

Managers reported on each sales professional's selling performance using the Sujan, Weitz, and Kumar (1994) six-item measure ($\alpha = .90$) and salesperson participation in strategic roles using Floyd and Wooldridge's (1992) measure. Items measuring four types of middle management strategic roles or activities (i.e., championing, synthesizing, facilitating, and implementing) were collapsed to create a higher order strategic activity construct ($\alpha = .94$). Market turbulence was measured using Slater and Olsen's (2000) five-item scale ($\alpha = .73$). These items were used to form one construct, labeled firm performance ($\alpha = .91$). We used the higher order construct for strategic activity as a result of generally poor loadings across the separate dimensions. Further Cronbach's alpha for the higher order construct exceeded acceptable standards.

Control Variables

Previous research suggests that firm size and level of experience of the employee may influence key dependent variables (e.g., Keats and Hitt, 1988). As a result, we control for the potential effects of these factors by entering the log of the number of employees with the firm as well as the level of experience reported by the individual sales professional in the regression equation.

To verify the psychometric properties of the study measures, we used confirmatory factor analyses (CFAs). We estimated several submodels due to the large number of items. This approach is consistent with past research (Doney and Cannon, 1997). The first two models included measures obtained from the salesperson (self and professional controls and activity and output controls). The remaining two models included individual performance, strategic activity, and market turbulence. Fit indices indicate adequate fit for all models. Standardized item loadings for all items were significant at the $p < 0.01$ level indicating support for the convergent validity of each construct (e.g., Montoya-Weiss, Massey, and Song, 2001). Further, none of the confidence intervals of the phi values were equivalent to one indicating support for the discriminant validity of the constructs (Bagozzi and Phillips, 1982). Again, Cronbach's alpha met or exceeded minimally acceptable standards for all constructs. Scale items are presented in the Appendix.

RESULTS

Correlations, means, and standard deviations of all variables are provided in Table 1. To test the main effects of control strategy on strategic activity (H1 through H4), we used ordinary least squares regression analysis. We regressed self control, professional control, activity control, and output control, as well as firm size and the professional's length of experience in the field on strategic activity. Results are shown in Table 2.

Control Strategy and Participation in Strategic Activities

Hypothesis 1 suggested a positive relationship between self control and strategic activity. Our results confirm this expectation ($\beta = .470, p < .01$). This finding supports our argument that a self control system creates an atmosphere wherein the sales professional is likely to engage in extended roles that influence the strategic process within the firm.

Hypothesis 2 suggested a negative relationship between professional control and strategic activity. Our results also support this expectation ($\beta = -.275, p < .01$). This finding supports the assertion that, in a group-oriented system, organizational members will be less likely to stick their necks out and risk potential failure to participate in the strategic efforts of the firm.

In hypothesis 3, we suggested that an increase in activity control would result in a positive influence on strategic activity. Our results support this notion. Activity control has a significant and positive influence on strategic activity ($\beta = .158$, $p = .05$). Finally, in hypothesis 4, we argued that increased output control would result in a decrease in strategic activity. Our results do not support this expectation. The relationship between output control and the professional's participation in strategic activity is not significant.

Table 1
Correlations, Means, and Standard Deviations

Variable	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9	10
Self	4.937	1.238	-	.653**	.359**	.275**	.049	.005	.188*	.369**	.356*	.095
Professional	4.907	1.608		-	.494**	.491**	.010	.122	.206*	.087	.106	.081
Activity	4.809	1.243			-	.544**	.095	.185*	.063	.150	.033	.039
Output	4.439	1.613				-	.085	.229**	.100	-.032	-.032	.163
Mkt. Turbulence	4.650	1.359					-	.110	.070	.279**	.241**	.191**
Size	674.08	2,486.37						-	-.077	.046	-.069	.221**
Length	2.792	1.543							-	.171*	.109	-.018
Strategic Activity	12.609	3.512								-	.670**	.146
Indiv. Performance	3.523	0.870									-	.028
Firm Performance	5.043	1.032										-

** $p < .01$, * $p < .05$

Control Strategy, Market Turbulence, and Participation in Strategic Activities

To test our hypotheses regarding the interactions between each control strategy and market turbulence (hypotheses 5 through 8), we used moderated hierarchical regression analysis (Aiken and West 1991). We estimated an initial regression equation including self control, professional control, activity control, professional control, and market turbulence as well as the two control variables. In the second model, the hypothesized interactions were added. Prior to doing so, the constituent variables were mean-centered in order to eliminate multicollinearity (Aiken and West 1991). Variance inflation factors were below the cutoff of 10, ranging from 1.0 to 2.2, suggesting that multicollinearity was not a problem. The results are presented in Table 3.

These results indicate support for many of the hypothesized interaction effects. The addition of the interaction terms to the main effects model increased R^2 significantly (see Table 3 for change in F-value statistics). The self control x market turbulence interaction term is significant and negative as expected ($\beta = -.180$, $p = .05$). Also, the professional control x market turbulence interaction term

is marginally significant and positive ($\beta = .159$, $p = .07$). These findings indicate that the influence of both self control and professional control on the professional's participation in strategic activity is impacted by market turbulence such that the direction of the relationships and not simply the strength of the relationships are altered. Also, as predicted, we found an interaction between output control and market turbulence ($\beta = -.192$, $p < .05$). In the face of increased turbulence, output control has an increased negative effect on participation in strategic activity. The interaction between activity control and market turbulence was not significant.

Table 2
Results of regression analysis of control strategies on strategic activity

Control Strategies	Strategic Activity	
	β	t-value
Self control	0.470	5.306***
Professional control	-0.275	-2.768**
Activity control	0.158	1.906*
Output control	-0.123	-1.497
<i>Control variables:</i>		
Length of experience	0.125	1.839
Size of the firm	0.047	0.702

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Finally, results indicate a significant relationship between participation in strategic activity and managers' reports of the individuals' selling performance. As expected, a sales professional that is strategically active in the organization is rated higher on selling performance dimensions.

DISCUSSION

Combining elements of renewal and role theory, Floyd and Lane (2000) suggested that a more normative theory of strategy process could emerge by shifting the unit of analysis to individuals. Recent research further contends that utilizing control systems ultimately determines how information is shared and how knowledge is transmitted in firms, suggesting that control system management is a vital element in the renewal process in firms (Turner and Makhija, 2005). Our study builds on this conceptualization by examining how actors coordinate disparate goals in an effort to build strategy and improve performance.

Our study also contributes to role theory as it pertains to management behavior. We suggest that control systems can empower employees to move beyond behavioral expectations and formal job descriptions. By doing so, important

issues may be raised and the status quo questioned (Dutton and Ashford, 1993; Dutton and Jackson, 1987). In essence, our study adds to this growing body of knowledge by considering the influence of the manager as “role sender” (Floyd and Lane, 2000) on sales professionals’ participation in strategic roles. In particular, we proposed that MCS affect the degree to which these professionals will go above and beyond selling responsibilities to engage in autonomous strategic behavior. Again, expanding roles and encouraging divergent opinions are vital in the renewal process (Floyd and Lane, 2000).

Table 3
Results of hierarchical regression analysis of control strategies, market turbulence, and strategic activity

Independent variables:	Participation in Strategic Activity			
	Step 1		Step 2	
	β	t-value	β	t-value
<i>Control and main effects</i>				
Size	0.050	0.657	0.070	0.964
Length of experience	0.097	1.280	0.071	0.952
Market turbulence	0.297	3.968***	0.279	3.743***
Self control	0.492	5.010***	0.416	4.351***
Professional control	-0.267	-2.407*	-0.213	-2.001*
Activity control	0.125	1.335	0.103	1.139
Output control	-0.136	-1.441	-0.105	-1.132
<i>Interaction effects</i>				
Self x Market turbulence			-0.180	-1.909*
Professional x Market turbulence			0.159	1.800^
Activity x Market turbulence			-0.081	-0.953
Output x Market turbulence			-0.192	-2.167*
ΔR^2			0.093	
R^2	0.542		0.622	
ΔF			4.877***	
F	7.838***		7.347***	

^ $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

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actors coordinate disparate goals in an effort to build strategy and improve performance.

Our study also contributes to role theory as it pertains to management behavior. We suggest that control systems can empower employees to move beyond behavioral expectations and formal job descriptions. By doing so, important issues may be raised and the status quo questioned (Dutton and Ashford, 1993; Dutton and Jackson, 1987). In essence, our study adds to this growing body of knowledge by considering the influence of the manager as “role sender” (Floyd and Lane, 2000) on sales professionals’ participation in strategic roles. In particular, we proposed that MCS affect the degree to which these professionals will go above and beyond selling responsibilities to engage in autonomous strategic behavior. Again, expanding roles and encouraging divergent opinions are vital in the renewal process (Floyd and Lane, 2000).

We also considered the structure of the MCS in conjunction with the stability of the market. We found that the interplay between MCS and market turbulence influences sales professionals’ participation in strategic roles. Self control and activity control exert a positive influence on participation in strategic roles, while professional control exerts a negative influence. However, when faced with additional uncertainty (in this case a more turbulent market), the more ambiguous self control system prevents the positive effect on strategic roles that is seen in a stable market. Also, when faced with a turbulent market, the shared responsibility of a professional control system results in a positive effect on strategic roles that was not seen in a stable market. Finally, with greater turbulence, output control exerts a negative effect on sales professionals’ participation in strategic roles.

Study Limitations and Directions for Future Research

While this study suggests some meaningful new ideas surrounding the sales professional’s participation in the strategic renewal process, several limitations must be noted. First, our study is limited in its cross-sectional approach. The possibility for the reversal of hypothesized relationships cannot be ruled out given the cross-sectional nature of the data. While causality cannot be established, the correlation between the activities and performance in and of itself provides an interesting finding. At the very least, the correlation between the two constructs indicates that managers think that the ‘best’ sales professionals engage in strategy. Second, the study’s focus is limited to one group of organizational members, the sales professional. Thus, we cannot generalize our findings to any other group. We also note that our sample was limited to sales professionals operating within the healthcare sector. While considerable variance exists within this group, we cannot completely rule out the possibility that results may differ across other sales groups. Future research addressing these limitations is needed.

CONCLUSION

This study empirically links management control systems to sales representatives' selling performance and suggests that strategic roles are an important mediating construct connecting control to selling performance. By utilizing control systems effectively, management can induce autonomous strategic behavior and enhance long-term competitive advantage. Building on existing literature, we also found that participation in strategic roles enhanced performance at the individual-level. This suggests that management should strive to encourage the sales force as a whole to engage in more autonomous behavior. In short, we suggest that managers as 'role senders' are likely to influence the strategic activity of organizational members, and this strategic activity increases performance. Future research exploring this phenomenon is warranted.

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APPENDIX

Questionnaire Items

OUTPUT CONTROL (higher order construct including information, rewards, and punishment dimensions):

My manager tells me about the level of achievement expected on sales volume or market share targets.

I receive feedback on whether I am meeting expectations on sales or market share targets.

My manager monitors my progress on achieving sales or market share targets.

My manager ensures I am aware of my sales or market share goals.

I would get bonuses if I exceed sales volume or market share targets.

Promotion opportunities depend on sales volume or market share targets.

I would be recognized by my company if I perform well on sales volume or market share targets.

There are pay increases if I do well on sales volume or market share targets.

I would receive an informal warning if sales volume or market share targets are not achieved.

I would be put on probation if sales volume or market share targets aren't achieved with some consistency.

My pay increases would suffer if sales volume or market share targets aren't met.

ACTIVITY CONTROL (higher order construct including information, rewards, and punishment dimensions):

My manager informs me about the sales activities I am expected to perform.

My manager monitors my sales activities.

My manager informs me on whether I meet his/her expectations.

If my manager feels I need to adjust my sales activities s/he tells me about it.

My manager evaluates my sales activities.

If I perform sales activities well my manager commends me.

I would be recognized by my manager if he is pleased with how well I perform sales activities.

When awarding bonuses/financial rewards my performance of specific sales activities is definitely considered.

I would receive an informal warning if my manager is not pleased with how I perform sales activities.

I would receive a formal reprimand if my manager were unhappy with how I perform sales activities.

I would be put on probation if my manager is unhappy with how I perform specified sales activities.

SELF CONTROL:

The major satisfaction in my life comes from my job.

The work I do on this job is very meaningful to me.

I feel that I should take credit or blame for the results of my work.

I like to do more than my share of the work at my job.

PROFESSIONAL CONTROL:

The department encourages cooperation between its members.

Most of the members in my department are familiar with each other's work.

The department fosters an environment where members respect others' work.

The department encourages job related discussions between members.

Most members in my dept. can provide accurate appraisals of others' work.

INDIVIDUAL SELLING PERFORMANCE (on a scale of much worse to much better comparing individual to others working for the company in the same capacity):

Contributing to your company's acquiring a good market share

Selling high profit-margin products

Generating a high level of dollar sales

Quickly generating a high level of dollar sales

Identifying major accounts in the territory and selling to them

Exceeding sales targets

MARKET TURBULENCE:

Competition in our industry is cutthroat.

There are many 'promotion wars' in our industry.

Anything that one competitor can offer, the others can readily match.

Price competition is a hallmark of our industry.

One hears of new competitive moves very frequently.

Most buyers say that we and our competitors sell a technically complex product.

Our major product is relatively simple for most buyers to understand.

STRATEGIC ACTIVITIES (higher order construct including championing, facilitating, synthesizing, and implementing dimensions):

Monitors and assesses the impact of changes in the firm's external environment.

Implements action plans designed to meet top management objectives.

Integrates information from a variety of sources to communicate its significance.

Evaluates and/or critiques the merits of new proposals.

Evaluates the merits of ideas initiated in their area.

Translates departmental goals into personal objectives.

Creates a safe haven to try experimental programs.

Assesses and communicates the implications of new information to managers.

Searches for new opportunities and brings them to the attention of upper mgrs.

Communicates and sells management initiatives to others.

Defines and justifies the role of new programs or processes to managers.

Supports the use of multi-disciplinary problem-solving teams.

Seeks information about business from customers, vendors, or competitors.

Monitors and communicates to managers the activities of competitors, customers, and/or other outside organizations.

Justifies the benefits of existing programs to managers.

Provides resources and develops objectives/strategies for projects.

Helps translates organizational goals into departmental action.

Relaxes policies and procedures in order to get new initiatives started.

Proposes new programs and projects to managers.

Monitors activities within their unit to ensure they support management objectives.