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STRATEGIC PLANNING AS A COMPLEX AND ENABLING MANAGERIAL TOOL

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Research summary: *The role of the strategic planning process in the ongoing generation of innovative knowledge is vital to the survival and growth of a firm, especially when technologies and market conditions are rapidly changing. We analyze data from a survey of firms in high-technology industries to determine whether it is possible to break the commonly experienced trade-off between strategic planning's positive influence on firm profitability and its negative influence on firm innovation. We draw on Adler and Borys's (1996) conceptualization of bureaucratic process types to identify several firm characteristics that have the potential to affect whether employees perceive strategic planning as enabling to their creative endeavors. We find that contingent effects between strategic planning and the identified firm characteristics exist that can break the trade-off.*

Managerial summary: *A tension exits in the literature about whether strategic planning hurts or helps innovative activity. Our analysis of data from 227 business units in high-technology industries indicates that strategic planning is a complex process that can be perceived by employees as enabling or coercive. Our results confirm that strategic planning negatively affects innovative activity but positively affects profitability for average firms. We find, however, controllable firm characteristics—risk-taking and knowledge-based reward systems—affect the trade-off. Given the higher levels of risk-taking and knowledge-based reward systems, firms can use strategic planning to achieve both high returns on investment and a high level of innovative activity.*

INTRODUCTION

A tension exists in the literature about whether strategic planning hurts or helps innovative activity (e.g., Cardinal, 2001; Craig, 1995; Damanpour, 1991; Tushman and Anderson, 1997). A common assertion is that a trade-off arises when a firm practices strategic planning: the firm gains performance-enhancing efficiencies but loses innovative activity due to the inflexibilities introduced. A counter assertion is that strategic planning increases flexibility in some contexts by making the firm more responsive through efficiencies created in related processes (e.g., in contingency plans, faster coordination, faster communication, greater awareness through planned scanning for changes, less internal conflict, etc.). Adler and Borys (1996) have proposed one explanation for the tension:

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that a bureaucratic process like strategic planning can have either a positive or a negative effect on innovation depending on whether employees interpret that process as *enabling* or *coercive*. We test that explanation through an empirical analysis of the relationships between strategic planning, new-product development (NPD) project activity, and firm performance. We consider how strategic planning may be contingent on several firm characteristics in terms of how it is perceived by employees (i.e., as a coercive or an enabling process) in order to gain insight into when strategic planning enhances rather than detracts from innovative activity in high-technology firms.

The purpose of this study is to add to our current understanding of the multiple effects of strategic planning[1] by exploring how they are contingent on certain firm characteristics that draw on Adler and Borys's (1996) conceptualization of bureaucracy types, which we refer to as 'ABC' hereafter. This approach allows us to determine whether the common downsides of strategic planning can be addressed through the use of organizational characteristics that provide a more enabling environment to employees. In doing so, we also contribute to the literature related to the structuring of bureaucratic processes, adding to the very few studies that have tested the ABC.

We find that firms *can* use strategic planning to achieve both high returns on investment (ROI) and NPD project proliferation. That said, some of our results do remain consistent with the assumed trade-off of strategic planning: we confirm the effects of strategic planning correlate negatively with innovative activity and positively with profitability for average firms. Our results also reveal, however, that the contingencies of controllable firm characteristics affect the trade-off. Once we control for contingencies like reward systems on the effects of strategic planning, then we can better explain the possibility of some firms having the kind of strategic planning that enables their employees to generate high levels of both innovative activity and profitability.

The remainder of this study is organized as follows. In the next section, we develop our research hypotheses. We then discuss the research methods and the data collection process before presenting our results. In the last sections, we discuss the implications of our empirical results, the limitations of our study, and directions for future research.

THEORETICAL BACKGROUND AND RESEARCH HYPOTHESES

We address the tension surrounding strategic planning by considering it as a *bureaucratic process* that affects new product development. As a bureaucratic process, strategic planning can be made to be, through organizational characteristics, less a set of rules that employees reluctantly follow and more a set of challenges in which employees creatively engage (Huntsman, 1994). In other words, contingent on firm-level factors, *strategic planning can be either coercive or enabling in nature* (Adler and Borys, 1996). Coercive strategic planning substitutes rules for employee motivation in order to increase efficiencies in the NPD process. Enabling strategic planning provides the structure, coordination, and communication mechanisms for motivated employees to add and share their knowledge, and to take risks, when pursuing NPD activities.

The ABC presents a typology of "… workflow formalization that helps reconcile the contrasting assessments of bureaucracy as alienating to employees or as enabling them to perform their tasks better" (Adler and Borys, 1996: 61). The ABC "… specifies the features that formal systems should possess if they are to foster both efficiency and flexibility" (Jorgensen and Messner, 2009: 100). These features are: *repair*—the extent to which employees can solve breakdowns to the process without interrupting other activities; *flexibility*—the freedoms granted to employees in terms of how they use the process; *internal transparency*—the local understanding of logic and best practices of the system; and, *global transparency*—an employee's understanding of the broader system implications of their local work. The first two features involve employee autonomy; the last two involve employee knowledge of the system. Below, after considering the main effects of strategic planning on performance and innovation, we focus on the moderating effects of a set of firm-level factors that work through changing employee autonomy, employee system knowledge, and system transparency.

[1] For this paper, strategic planning is a formal, administrative process that calls for an explicit procedure to determine specific, long-range objectives and generate alternative strategies, requiring both strict implementation and an explicit system to monitor results (Armstrong, 1982).

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Strategic planning and its effects on firm performance and innovative activity

Firms use strategic planning to focus activities and to increase efficiency; such planning prioritizes resource investments and optimizes resource use. Research has determined that subsequent outcomes include a net increase in financial performance and a filtering down of NPD projects to those that focus the firm's investments (Brown and Eisenhardt, 1995). Past studies have indicated that strategic planning enhances a firm's financial performance (Bracker and Pearson, 1986; Hopkins and Hopkins, 1997; Miller and Cardinal, 1994; Pearce, Robbins, and Robinson, 1987; Rhyne, 1986). Such planning reflects a strategically important organizational decision-making process that enhances firm performance because it establishes the ends of an organization, makes the means more efficient, clarifies competitive threats and opportunities, and effectively controls and implements actions (Ansoff, 1991). Firm performance is also enhanced because planning leads to more rationality in the decision processes and an increased possibility of sharing rich information (Salomo, Weise, and Gemünden, 2007). When companies institute strategic planning, their NPD cycles are faster (Griffin, 1997), their failure rates are lower (Brown and Eisenhardt, 1995; Montoya-Weiss and Calantone, 1994), and time-consuming mistakes are mitigated (Moorman and Miner, 1997), all of which provide performance-enhancing efficiencies.

The majority of the literature, however, also finds that strategic planning reduces the number of NPD ideas and subsequently the number of funded ideas—what we define as NPD projects—because it reduces the "acceptable scope" (e.g., Benner and Tushman, 2002; Jansen, Van Den Bosch, and Volberda, 2006; Song *et al.,* 2011). In high-technology settings, strategic planning can restrict creative flexibility that leads to innovation (Mintzberg, 1979; Schoonhoven, 1984). Strategic planning can limit opportunity recognition by constraining the search for problems (e.g., Nickerson and Zenger, 2004).[2] Strategic planning can also produce rigidities and routines that are structural impediments to updating knowledge of market trends (Leonard-Barton, 1992; Slotegraaf and Dickson, 2004)—knowledge that fuels new ideas. We thus hypothesize

Hypothesis 1: Strategic planning decreases the number of NPD projects but increases a firm's financial performance.

Contingency factors of the effect of strategic planning on innovative activity

We draw on the ABC to determine whether the influence of the strategic planning process on innovativeness is contingent on firm-level factors that affect the employees' perceptions of how enabling that process is. On the basis of the theoretical and empirical evidence (Adler and Borys, 1996; Barley and Tolbert, 1997; Galbraith, 1977; Oliver, 1997) we chose three firm-level factors. We chose one managerially controllable factor—risk taking—that is clearly associated with employee autonomy. That association is seen in the entrepreneurial orientation construct (Lumpkin and Dess, 1996). We also chose one managerially controllable factor—knowledge-based reward systems—that is clearly aligned with system transparency; this type of reward motivates employees to increase the firm's knowledge base in a way that requires increased system awareness and coordination. And, we chose one noncontrollable factor—firm age—that remains of substantial interest for its direct effects on innovation (e.g., Sorensen and Stuart, 2000).

Firm age. We argue that firm age negatively influences the impact of strategic planning on the number of NPD projects[3] by reducing employee autonomy. Age increases the structures, rules, and procedures that reduce the flexibility and repair features required to make a process enabling. Employees are coerced into avoiding the generation of NPD ideas that are risky and tangential (Moorman and Miner, 1998a; Scott, 1987) due to pressures toward conformity. Such pressures mold employee behavior over time (Oliver, 1997), reducing autonomy. The effect of firm age on

[2] We thank an anonymous reviewer for pointing out this further restriction.

[3] Research indicates firm age also has direct effects on innovative activity; results, however, have been mixed (Huergo and Jaumandreu, 2004; Kotha, Zheng, and George, 2011; Withers, Drnevich, and Marino, 2011). Regardless, strong arguments exist that knowledge generation for NPD projects is discouraged because age reinforces inertia by strengthening conformity to existing routines and practices (Zucker, 1987). As such, age increases a firm's core rigidities (Leonard-Barton, 1992) that reduce innovation, for example, by restricting the budget for new NPD projects because such rigidities involve sunk costs that encourage the continued investment in *old* ideas.

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transparency—the other feature that affects process coercion—is less clear. While senior employees may have gained a better understanding of the system from experience, the complexity of the system is also likely to have increased as rules were added over time (Hannan and Freeman, 1984), leading to reduced transparency. Given the expected reduction in employee flexibility at older firms seeking to exploit specialization efficiencies, and the unclear expectations about transparency effects, we hypothesize a more coercive process:

Hypothesis 2: As firm age increases, the negative effect of strategic planning on the number of NPD projects increases.

Risk taking. In a risk-promoting firm, we expect that the strategic planning process will entail less of a decrease, and possibly an increase, in innovative activity.[4] Tolerating risk provides the autonomy to break some rules (Morrison, 2006) and to pursue a wider range of NPD projects, which results in a firm's operational flexibility (Chang *et al.,* 2007). The promotion of risk taking addresses the repair feature in the strategic planning process: it provides employees with an increased motivation to try new routines to make the NPD system better. A firm that institutionalizes a high level of risk taking promotes the generation of NPD ideas—that turn into projects—by providing autonomy and by allocating resources necessary for risky NPD activities (Brown and Eisenhardt, 1995). Firms that pursue an entrepreneurial orientation link their risk taking to autonomy and innovation (e.g., Perez-Luno *et al.,* 2011). And, in order to pursue risk taking responsibly, employees need to be aware of the whole system. They need to understand how the possible upsides and downsides of risky activities affect that system locally and globally and to see clearly the whole system and its mechanics. In other words, risk taking implies a system that is more transparent to employees [e.g., as in a more "organic" firm (Miller, 1983)]—one where they know how to adjust their activities as the demand and technological uncertainties of their NPD projects are revealed over time. Greater employee autonomy and system transparency imply a more enabling process:

Hypothesis 3: An increase in risk taking decreases the negative relationship between strategic planning and the number of NPD projects.

Knowledge-based reward systems. In firms that apply knowledge-based reward systems, we expect that the strategic planning process will entail less of a decrease, and possibly an increase, in innovative activity.[5] These reward systems incentivize employee behaviors related to the initiation, adoption, and implementation of creative NPD activities (Abbey and Dickson, 1983; Burkhardt and Brass, 1990). Such reward systems motivate the gathering of knowledge necessary to generate creative and divergent NPD ideas that can then turn into a wider range of NPD projects (Matusik and Hill, 1998; Mueller and Dyerson, 1999). Organizational evaluation and reward systems are instrumental in shaping the behaviors and orientations of employees (Rajagopalan, 1997; Stonich, 1981). The result is a knowledge-based organization that promotes repair behavior (Garicano, 2000) and a knowledge inventory management that promotes flexibility (Miller, 1977). When the reward system synthesizes knowledge, for example into a modular form, firm flexibility—based on employee flexibility—results (Grawe, Daugherty, and Roath, 2011; Sanchez and Mahoney, 1996). In other words, these types of incentives maximize autonomy for an employee so she can gather the new and diverse innovation-related knowledge that earns her private rewards, and her firm NPD success. A knowledge-based reward system also benefits transparency. The employees who consistently generate and share market and technology intelligence with others to expand the understanding of the firm's processes are rewarded. Such formal reward systems incentivize knowledge utilization and openness (Sahraoui, 2002), which in turn increases

[4] We appreciate that the interaction between risk taking and strategic planning could be more complex than the moderating interaction we consider in this paper; however, the moderating relationship proposed is a step up from the direct relationship of risk taking on innovative activity that currently exists in the literature. That direct relationship is depicted as a positive one—a firm that encourages risk taking fosters the generation of creative NPD ideas (Amabile *et al.,* 1996; Andrews and Smith, 1996; Sethi, Smith, and Park, 2001) and accompanying innovation (Perez-Luno, Wiklund, and Cabrera, 2011).

[5] Knowledge-based reward systems have been shown to have direct effects on NPD project proliferation because they encourage employees to engage in entrepreneurial and innovative behaviors (Brown, Davidsson, and Wiklund, 2001; Cummings, 1965; Stevenson and Jarillo, 1990).

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both knowledge sharing and firm innovation (Kianto, 2011). Such rewards motivate employees to improve their skills in the identification, absorption, and broadcasting of new knowledge and to improve their understanding of all the firm's systems. This is because, in order to be effective in identifying what is new, useful knowledge to the firm and to then see it commercialized (outcomes that are rewarded), employees need to gain a solid understanding of the local and global process features, including best practices and interdepartmental linkages. Under these expected benefits to autonomy and transparency, we thus hypothesize

Hypothesis 4: Knowledge-based reward systems decrease the negative relationship between strategic planning and the number of NPD projects.

METHODS

Data collection procedures

Our sampling frame consisted of public companies listed in the *High-Technology Industries Directory.* We verified these listings by phone and determined that only 686 firms in the directory had valid contact information.[6] We targeted all of these firms in our survey.

We followed the total design method for survey research (Dillman, 1978) as we administered each of the mail surveys. To reduce potential common method biases, we collected the data for this study from multiple sources over two different waves of data collection, completed between 2000 and 2002. The first wave of data collection, in which we gathered information about the independent and control variables, included the first survey questionnaire, a personalized letter, and an express postage-paid, return-addressed envelope. In the second wave of data collection, one year after the first, we collected follow-up data on the dependent variables—the number of NPD projects initiated by the firm in the past 12 months and the firm's ROI. From the original sample of 686 firms, 318 firms responded to the first survey with complete data for the variables, but then 91 firms declined to participate and provide data in the second survey. That left us with 227 matched sets of data to analyze (i.e., a 33% response rate). To test for possible nonresponse bias, we followed the extrapolation method of Armstrong and Overton (1977) comparing early responses—those received within three weeks of the initial mailing—with late responses on the major constructs of the model. The results indicated *no* significant differences at a 95-percent confidence interval. All respondents had significant knowledge of the strategic planning, innovation, and performance issues at their firms.[7a,7b]

Measures

All measures were adopted from validated constructs (see Appendix S1 for details). To assess the appropriateness of the existing measures for the context of this research, we conducted in-depth interviews with 22 senior executives from seven organizations in the pretest stage. The strategic business unit (SBU)[8] was the unit of analysis. To answer the survey questions, we asked respondents to refer only to the NPD projects of the NPD teams within their own SBU.

Main dependent variables

We used two main dependent variables in our analyses. The variable *New product projects* indicates the number of NPD projects initiated during the previous 12 months at the SBU level; it captures the firm's innovative activity (as defined by Mellahi and Wilkinson, 2008). The variable *ROI* indicates the SBU's ROI as a percentage one year following the first survey; it measures the firm's financial performance.

Independent variable

The variable *Strategic planning* indicates how much the SBU's planning process is formalized, is strictly

[6] The final sample included companies in the following industries: telecommunications equipment; semiconductors and computer-related products; software-related products; Internet-related services and equipment; instruments and related products; electronic and electrical equipment; pharmaceuticals, drugs, and medicines; and industrial machinery and equipment.

[7a] The respondents in our final data were: 211 SBU/division managers; 7 R&D directors; 6 manager/directors of new product programs; and, 3 marketing managers.

[7b] Data collection and scale item details can also be found at Song *et al.*, 2011.

[8] The survey requested a "representative strategic business unit" from the respondents; in many cases, the SBU *was* the firm.

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implemented, and is explicit in terms of defining long-term objectives, generating alternatives, and monitoring results. We based this measure on a five-item scale from Armstrong (1982).

Main moderating variables

We used three main moderating variables. The variable *Firm age* indicates the number of years from the SBU's establishment to the year of the survey. The variable *Risk taking* indicates the degree to which a firm makes decisions with uncertain expected outcomes, with hard-to-achieve decision goals, and with potential outcomes that include some extreme consequences (Sitkin and Pablo, 1992)[9]; we measured it using a three-item scale adopted from Jaworski and Kohli (1993). The variable *Knowledge-based reward systems* is conceptualized as the extent to which evaluations and rewards of employees are based on the accumulation of new knowledge and its use in idea generation; we measured it using a three-item scale also adopted from Jaworski and Kohli (1993).

Control variables

We used eight control variables in the analysis; these are factors that are generally believed to influence NPD activities. The variable *Product innovativeness* indicates the degree to which the products are innovative to the firm, industry, and market; it has been related to the number of NPD projects initiated, as evidenced by meta-analyses (e.g., Im and Workman, 2004; Szymanski, Kroff, and Troy, 2007). The variable *Technological turbulence* indicates the rate of change of industry technologies; it has been found to be positively related to NPD outcomes (Calantone, Garcia, and Dröge, 2003). The variable *Market turbulence* indicates the rate of change of industry demand preferences; it has been found to be positively related to NPD outcomes (Baker and Sinkula, 2005). The variable *Market growth* indicates the rate of demand increase in the industry; it has been found to enhance NPD outcomes significantly (Brown and Eisenhardt, 1995; Miller and Friesen, 1977; Zirger and Maidique, 1990). The variable *Firm size* indicates the total number of full-time-equivalent employees at the SBU; it has been found to be negatively related to NPD activities (Rothaermel and Deeds, 2004). The variable *R&D intensity* indicates the SBU's research and development expenditures as a percentage of total revenue; it has been found to be positively related to innovative activity (e.g., Stock, Greis, and Fischer, 2001). The variable *Formalization* is conceptualized as the degree to which rules define the roles, authority relations, communications, norms, sanctions, and procedures of an organization (Hage and Aiken, 1967; Hall, Johnson, and Haas, 1967); it has been negatively associated with the generation of NPD ideas (e.g., Meyer and Rowan, 1977; Zaltman, Duncan, and Holbek, 1973). The variable *Goal congruity* indicates the extent to which different functional departments in an organization have similar objectives, decision criteria, and priorities; it has been positively associated with NPD idea generation (Xie, Song, and Stringfellow, 2003).

Measurement validity

We carried out confirmatory factor analyses to assess the construct unidimensionality, convergent validity, and discriminant validity of the measurement model.[10] We display the averages, standard deviations, minimums, maximums, and correlation coefficients of the variables in Table 1.

Empirical analysis

We used a of set of ordinary linear regressions to test the hypotheses. To facilitate interpretation and estimation of the interaction effects, we centered all independent variables.[11]

[9] Like other moderators, we consider this as a firm-level characteristic rather than a characteristic of the planning process per se because the survey questions relate to a scope greater than any one project. It is worthwhile to note that the firm-level characteristics that we consider apply to the *normal* course of business. For example, risk taking applies to decisions over products and markets, rather than, say, over decisions to partake in illegal activities or creative accounting.

[10] The measurement model demonstrates reasonable fit. The model fit indices are $\chi^2 = 397.29$ with 194 degrees of freedom, RMSEA = 0.065, nonnormed fit index = 0.96, CFI = 0.97, and SRMSR = 0.068. These indices support the model's acceptability (Hu and Bentler, 1999), and the establishment of construct unidimensionality and convergent validity.

[11] We centered the variables that were measured subjectively (i.e., *Strategic planning*, *Formalization*, *Risk taking*, *Knowledge-based reward systems*, *Goal congruity*) at the middle of the scales and the variables that were measured objectively (i.e., *Firm age*, *Firm size*, *R&D intensity*) at the means (Aiken and West, 1991; Belsley, Kuh, and Welsch, 1980). Collinearity diagnostic tests indicated no serious problems in the regression models.

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Table 1. Descriptive statistics and correlations

Variable	Ave.	Std. dev.	Min.	Max.	1	2	3	4	5	6	7	8	9	10	11	12	13
1. ROI	39.87	27.93	−26.31	125.87													
2. New product projects	40.30	9.98	0.00	74.00	0.415												
3. *Strategic planning*	4.42	1.32	1.00	7.00	0.331	−0.099											
4. *Firm age*	18.78	6.18	1.00	31.00	0.237	0.076	0.020										
5. *Firm size*	398.71	220.70	10.00	799.00	−0.086	0.018	−0.066	0.028									
6. *R&D intensity*	11.09	5.86	0.10	28.10	0.361	0.184	0.243	0.171	−0.002								
7. *Formalization*	4.44	1.23	1.00	7.00	0.370	−0.007	0.178	0.343	−0.016	0.243							
8. *Risk taking*	3.71	1.69	1.00	7.00	−0.048	0.045	−0.167	−0.031	−0.031	−0.021	−0.289						
9. *Knowledge-based reward systems*	4.52	1.80	1.00	7.00	0.289	0.039	0.096	0.380	−0.069	0.105	0.128	0.100					
10. *Goal congruity*	4.21	1.29	1.00	7.00	0.321	0.168	0.169	0.374	0.086	0.398	0.407	−0.066	0.260				
11. *Product innovativeness*	4.53	1.29	1.00	7.00	0.281	−0.075	0.348	0.169	−0.038	0.303	0.394	−0.108	0.137	0.285			
12. *Market turbulence*	4.42	1.30	1.00	7.00	0.219	−0.036	0.189	0.397	0.088	0.280	0.613	−0.176	0.150	0.307	0.325		
13. *Market growth*	3.68	1.55	1.00	6.67	0.339	0.161	0.190	0.363	−0.019	0.306	0.220	0.172	0.201	0.352	0.252	0.344	
14. *Technological turbulence*	4.54	1.70	1.00	7.00	0.266	0.113	0.179	0.250	−0.031	0.318	0.190	0.095	0.284	0.326	0.206	0.289	0.462

All correlations >0.13 are significant at $p < 0.05$ level (two-tailed tests).

Table 2 presents the estimates of the innovation activity and ROI regressions. Model 1 includes only the control variables. Model 2 adds the focal variable (strategic planning) and the three moderating firm-level attributes; it does not provide a significant fit over Model 1. Model 3 adds the interactions between strategic planning and firm-level attributes. Model 3 fits the data significantly better than Models 1 and 2. These results suggest that the impact of strategic planning on innovative activity should be examined in the context of the contingent effects of strategic planning. Similarly, a model that includes these contingent effects—Model 3p—provides the best regression fit on ROI. Therefore, we focus our discussion and draw conclusion from the results of Model 3 and Model 3p in the following sections.

RESULTS

We found support for three hypotheses. Strategic planning's effect on innovation was negative ($p < 0.05$) while its direct effect on performance was positive ($p < 0.001$) for "average" firms. Firm age did not moderate the effect of strategic planning on innovation while a firm's risk taking and knowledge-based reward systems positively moderated it ($p < 0.001$). More specifically, while strategic planning had a significant negative impact on innovative activity when the level of risk taking was low and also when the firm's knowledge-based reward system was low, the impact was significantly positive when risk taking was very high and when the firm's knowledge-based reward system was very high

DISCUSSION AND CONCLUSIONS

Our results indicate that strategic planning is a complex process, and one that may be perceived by employees as enabling or coercive, depending on firm characteristics (Adler and Borys, 1996). This outcome helps address the tension raised about how strategic planning affects innovation at different firms. Strategic planning has a negative effect on innovative activity but a positive effect on financial performance. However, a better model of the full impact of strategic planning includes contingencies with several firm-level, managerially controllable characteristics. We found that risk-taking and knowledge-based reward systems positively moderate the link between strategic planning and the

Table 2. Regression analysis

	New product projects						*ROI*	
	Model 1		Model 2		Model 3		Model 3p	
Variable	Coeft	Std error	Coeft	Std error	Coeft	Std error	Coeft	Std error
(constant)	41.357***	(0.802)	41.621***	(0.828)	42.054***	(0.690)	−0.151	(7.509)
log (firm size)	0.153	(0.750)	0.067	(0.757)	0.428	(0.628)	−0.388	(1.587)
R&D intensity	0.284*	(0.126)	0.312*	(0.127)	0.371**	(0.106)	0.738**	(0.274)
Product innovativeness	−1.255*	(0.566)	−0.970	(0.587)	−0.829	(0.503)	1.005	(1.278)
Market turbulence	−1.006	(0.665)	−0.999	(0.680)	−0.687	(0.573)	−3.127*	(1.451)
Technological turbulence	0.151	(0.446)	0.204	(0.455)	−0.147	(0.379)	−0.111	(0.958)
Market growth	0.885	(0.498)	0.958	(0.524)	0.349	(0.444)	2.277*	(1.123)
Formalization	0.079	(0.712)	−0.004	(0.733)	−0.062	(0.609)	7.122***	(1.536)
Goal congruity	0.968	(0.605)	0.956	(0.624)	1.261*	(0.518)	−0.300	(1.326)
Strategic planning			−1.023	(0.544)	−0.957*	(0.467)	4.570***	(1.189)
Firm age			0.018	(0.129)	0.075	(0.109)	0.179	(0.275)
Risk taking			−0.176	(0.423)	−0.444	(0.351)	−0.063	(0.890)
Knowledge-based reward systems			−0.015	(0.406)	−0.395	(0.347)	2.098*	(0.878)
Strategic planning × firm age					−0.094	(0.071)	−0.317	(0.180)
Strategic planning × risk taking					2.069***	(0.235)	0.986	(0.693)
Strategic planning × knowledge-based reward systems					0.986***	(0.234)	2.053***	(0.616)
New product projects							0.871***	(0.174)
N		227		227		227		227
F-stat		2.82**		2.19*		9.29***		13.84***
R^2		0.094		0.109		0.398		0.513
Adjusted R^2		0.061		0.059		0.355		0.476
F-stat for change in R^2				0.901		33.267***		

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

number of NPD projects. Given higher levels of these characteristics are consistent with increases in the employee autonomy and system transparency features of the ABC and, hence, the strategic planning process being more enabling, we also interpret the results as supportive of that conceptualization. Additionally, we found that both strategic planning and the number of NPD projects are positively correlated with financial performance for our sample of firms in high-technology industries.

The results provide some of the only evidence from a large-scale sample that conceptualizing a bureaucratic process as being "manipulatable," in terms of how enabling it is perceived to be, can have significant effects on important performance outcomes (e.g., innovation and profitability). Structural choices that affect employee incentives and empowerment matter for how employees interpret rules and plans and, thus, for what kinds of outcomes are generated.

The main conclusion from our study is that, in theory and in practice, managers can break strategic planning's usual trade-off between "better financial performance and decreased innovative activity." While for many firms the trade-off remains, we have shown that by exploiting contingencies with firm-level characteristics managers can and have used strategic planning *without* that trade-off—e.g., by encouraging high risk taking and knowledge sharing to motivate, build buy-in, and eventually earn the trust of the employees.[12]

[12] In supplementary analysis, we found that such synergies exist—the highest quintile of performers in ROI also enjoyed significantly higher innovative activity and strategic planning. These synergies were contingent on the factors we considered. For example, firms with higher levels of strategic planning enjoyed significantly higher ROI when they also had higher levels of knowledge-based reward systems (in a subsample means-difference two-tailed *t* test). We realize that not all managers can "pull the levers" we suggest; so, for the manager who is restricted in her ability to alter system features or is confronted

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Because this study revealed how one "strategic" tool could be managed in such a way as to avoid a costly trade-off, we propose investigating whether the same approach could be applied to other strategic tools. When those tools can be enhanced by enabling the firm's employees, our example shows that it may be possible to manage perceptions in order to decrease the costs and increase the benefits of a strategic tool in order to avoid its current trade-offs. The prescription is to identify and exploit the moderators involved—like those affecting employee autonomy—when applying complex strategic tools. Managers need to highlight caveats and note interactions to expose possible contingent effects rather than accept generalizations about the necessary existence of trade-offs. This is because it is likely that such generalizations were based on ex post empirical support where moderating effects were *not* controlled for. The implication for a theory supported heavily by ex post studies, like the resource-based view (e.g., Barney, 1991; Penrose, 1959; Wernerfelt, 1984), is that such theories may need to evolve so as to include more contingencies.[13] We advocate for further explorations to identify contingency effects in the empirical work in that view, especially when important results were based on *how much* of a capability existed rather than on *how* that capability was used—e.g., whether it was used in an enabling or coercive manner.

Limitations

Our results must be evaluated in light of certain limitations. This study is limited to the specific sample we chose. Testing our model in other industries (i.e., in consumer product or service industries) or on privately held firms will help generalize the findings. There are also potential limitations involving the data—for example, regarding the quality of the sources, the effects of the timing of data collection on generalizability, the representativeness of the sample, and the effects of survivor bias and other hidden biases in the sample and responses. Further, limitations arise due to the specific measures chosen for the variables, due to how we tested the ABC, due to the relative importance of our performance measures to the respondents, due to possible misinterpretations of variable definitions, and due to the methods we employed in general. However, we found no evidence that the survey data was biased or otherwise nonrepresentative or inaccurate. We believe the analysis method we chose was appropriate for testing our hypotheses and that we followed the design of each model's implementation.

Future work

Follow-on work could include studies involving different industries, more recent samples, a longer time-series, alternative performance measures, and additional controls and moderating variables—especially those related to the ABC. Our results leave several fundamental process issues to be explored in follow-on work, including issues that overlap with phenomena that are closely tied to innovation, like entrepreneurship. For example, it may be valuable to study the evolution of a new venture into a more mature one to see how a firm can keep enabling the "right" processes in order to remain innovative yet profitable over time. We strongly advocate continuing the research on how firms can learn to "plan creativity," especially in dynamic and technologically challenging industries, so that these firms may be better at adapting to and leveraging change, which will in turn benefit us all.

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with an older firm where inertia is significant, it may be wise to consider alternative approaches to generate creative NPD projects, such as improvisation (Eisenhardt and Tabrizi, 1995; Moorman and Miner, 1998a, 1998b). When managers do decide to use strategic planning, we caution against choosing to do so simply to increase short-term ROI. The indirect effects need to be considered when doing so.

[13] Given strategic planning has been considered a "strategic" factor in that view (e.g., Barney, 1991; Powell, 1992), the implication is all the more appropriate.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendix S1. Study construct measures.

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