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Accountability and Control as Catalysts for Strategic Exploration and Exploitation: Field Study Results

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<u>Abstract</u>

This paper reports the collective finding from 102 field studies that look at the relationship between two organization design variables: span of control and span of accountability. Clustering the data yields propositions suggesting that the relationship between these variables may be an important determinant of strategic exploitation and exploration activities.

Data from the field studies suggest that, in accordance with the controllability principle, accountability and control are tightly aligned for exploitation activities. However, this result was found in only a small number of tasks and functions. In the majority of situations, spans of accountability were wider than spans of control. This "Entrepreneurial Gap" is posited to be a result of management's desire for innovation and exploration—and used as a catalyst for changing strategy, creating high levels of customer satisfaction, or motivating people to navigate complex matrix organizations.

The need for organizations to both exploit current resources and explore new opportunities is a central and longstanding theme in the literature of organizations. As March (1991) acknowledges, interest in understanding the tension "between the exploration of new possibilities and the exploitation of old certainties" stretches back at least to Schumpeter (1934).

The reason for this interest is clear. On the one hand, firms must exploit the resources they currently control to generate adequate economic returns. Firms that fail to do so will be unable to attract capital to support continuing operations. But exploitation of current capabilities is not sufficient for long-term success. Organizations must also explore new ways of doing things as their environments change. Products, processes, and ways of creating value must evolve in response to changing circumstances. Failure to explore and adapt will lead to a firm's eventual demise.

The challenge, of course, is that these two imperatives require very different structures and skills. Exploitation demands a focus on efficiency and effectiveness in executing pre-set plans and procedures. Exploration requires the ability to step outside these routines by emphasizing experimentation, creativity, and novelty.

Strategic management researchers have attempted to reconcile these competing demands. Building on Lawrence and Lorsch's (1967) distinction between differentiation and integration, a variety of studies have proposed structural mechanisms that can foster either exploration or exploitation to support different competitive strategies (Gupta, Smith, and Shalley, 2006; Smith and Tushman, 2005; Benner and Tushman, 2003; Rivken and Siggelkow, 2003; and Katila and Ahuja, 2002).

Rejecting the notion that organizations must focus on one or the other, Duncan (1976) and Tushman and O'Reilly (1996, 2004) argue that organizations should strive to be ambidextrous: to build the capability to manage both of these imperatives simultaneously. To achieve this goal, a variety of mechanisms have been proposed such as cross-functional teams and independent units linked together by an overarching management hierarchy.

In summarizing the work on exploration and exploitation, Raisch et al (2009) suggest that further research is needed to probe the following questions: Should the relative balance between these two imperatives vary with specific tasks and activities? Can organizational context affect an individual's ability to engage in exploration versus exploitation? Does the balance between these two forces vary over time?

In this study, I attempt to shed light on these questions by focusing on the relationship between two organization design variables—span of control and span of accountability. Using data from 102 field studies, I illustrate how these variables can be manipulated by managers to tilt the balance toward either exploration or exploitation in response to different tasks, different organizational contexts, and changing competitive environments.

Control Systems for Exploiting and Exploring

Control systems are traditionally seen as tools for exploiting current resources. This perspective is evident in the first published definition of management control as, "the process of assuring that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives" (Anthony, 1965). Newer incarnations of management control systems, such as the balanced scorecard, adopt a similar perspective. Performance management systems are top-down tools for deploying resources in the execution of top management's intended goals, plans, and strategies (Kaplan and Norton, 1996).

But the use of control systems is not limited to exploitation of existing capabilities. They can also be used to motivate exploration and adaptation. In earlier work, for example, I illustrate how top managers use control systems *interactively* to focus organizational attention on strategic uncertainties, leading to the emergence of new strategies over time (Simons, 1991, 1994).

The research on management control systems to date has one notable omission: it has focused on the efficient and effective deployment of organizational resources without

regard to organizational context or design. Research has not yet addressed whether the structure of an organization—specifically the different ways that managers allocate resources to employees and units—makes a difference in the ability of managers to use control systems as tools for exploitation and exploration.

The only agreed-upon principle in this regard is the longstanding precept that authority over resources should equal, or align with, responsibility for performance. As a recent management textbook states, "An important principle of organization as well as management is that authority should equal responsibility. This principle is known as the parity of authority and responsibility and ensures that work will be performed with a minimum of frustration on the part of personnel. By not delegating authority equal to responsibility, a manager will create employee dissatisfaction and generally waste energy and resources." (Montana and Charnov, 2000, p. 195)

In the accounting and performance management literature, this is referred to as the "controllability principle," which states that a manager should be evaluated based on that which he or she controls. Or, stated in the negative, a manager should not be held accountable for unfavorable outcomes or credited with favorable ones if they are due to causes not under his or her control (Arrow, 1974: 284; Antle and Demski, 1988; Bouwens and Van Lent, 2007; Giraud, Langevin, and Mendoza, 2008).

The controllability principle is the underpinning of responsibility accounting—the creation of organization units such as revenue centers, cost centers, and profit centers for which individual mangers can be assigned responsibility for performance (Hawkins and Cohen, 2004).

In the remainder of this paper, I explore situations in which the controllability principle is violated. Moreover, I argue that, in an age of customer-driven innovation, the common-sense idea that a manager's responsibility for the performance of a unit should be commensurate with his or her ability to exercise authority over the people and assets employed by that unit may need revision.

Initial Interviews

To gain an initial understanding of the relationship between accountability, control, and organization design, I conducted interviews with managers in seven large companies—an international bank, two electronics manufacturers, a pharmaceutical company, a software development firm, a computer manufacturer, and a hotel company. In each firm, interviews with managers at various levels were supplemented with examination of documents related to control systems and organizational resources.

The interviews in each of these seven firms revealed a consistent anomaly. Contrary to the controllability principle, managers reported being responsible for performance measures that were broader than the resources they controlled. For example, a senior regional manager in the hotel business described how he was accountable for regional revenue, profit, customer satisfaction, and employee satisfaction. Yet, these measures were outside his direct control. To achieve his performance goals, he was forced to rely on people in other functions who did not report to him including finance, human resources, sales and marketing, engineering, and operations. In other words, this manager—and many others interviewed in the other six firms—reported that their responsibility was greater than their authority.

Beta, Inc.

To add some context to this observation, consider Beta, Inc. (disguised name), a successful high-technology software development company that specialized in the development of customer relationship management (CRM) software. As a stand-alone software developer, Beta did not install its products or train users. Instead, customers hired third-party consultants to implement their new systems, supply supporting context, and train their employees. At the time of the study, the company employed 8,000 people.

Seventy percent of Beta's worldwide revenue was generated by repeat orders from existing customers. As a result, Beta's strategy focused on building long-term

relationships with large, global customers through product excellence and dedicated customer service.

Structure

Beta did not have a formal organization chart, although everyone seemed to agree on what such a diagram would look like. Employees described their organization design as a series of concentric rings around the customer as illustrated in Figure 1. The regional sales function, which managed the overall relationship with the customer, represented the first ring. The second ring, product marketing, contained technical engineering groups for each major product category (horizontals) and specialized industry groups (verticals) that customized the product to suit the needs of different industries. The third ring contained corporate support functions and the external alliance partners.

Figure 1
Beta, Inc. Structure
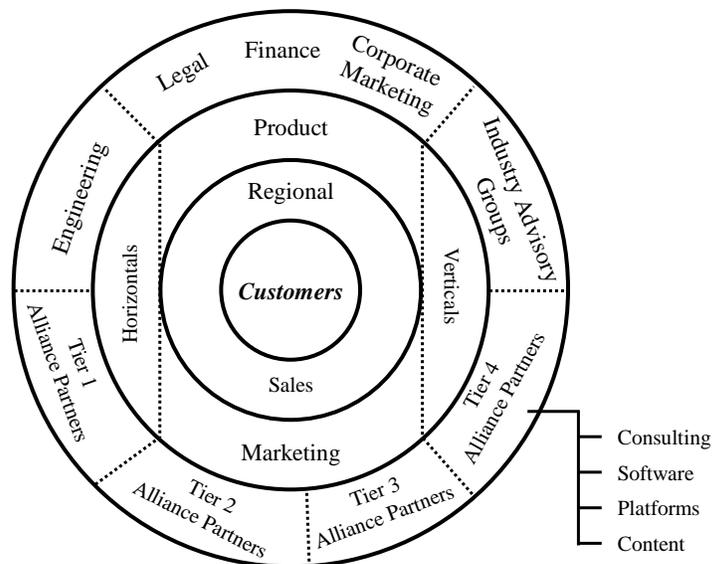
This diffuse structure—with customers in the center—had a pronounced effect on behavior. As the vice president of finance stated, "You can put up a red flag and say, 'I have a customer satisfaction problem.' Everyone drops everything to help you. Our goal of alignment around the customer makes it OK to cross boundaries."

Performance Measures

Beta, Inc. had very sophisticated performance measurement systems. In addition to financial performance measures such as revenue, account profit, and cash flow, senior managers tracked a variety of nonfinancial measures including customer satisfaction, product quality, employee satisfaction, and alliance partner satisfaction.

Because of the importance of repeat purchases from existing customers, customer satisfaction was the most important measure for everyone at Beta, Inc. For people involved in product development and delivery, bonus payments were contingent on achieving 100% customer satisfaction scores and bonuses were withheld until installation was complete and the customer was totally satisfied. Compensation of other people throughout the organization was also tied to customer-related measures and designed to be increasingly variable for employees working closest to customers.

Because of the diffuse organization structure illustrated in Figure 1, an individual manager's success against customer satisfaction targets involved gaining access to resources that were not under any one individual's control. A general manager of one of the business units described this tension:

> "To do my day-to-day job, I depend on sales, sales consulting, competency groups, alliances, technical support, corporate marketing, field marketing, and integrated marketing communications. None of these functions reports to me and most do not even report to my group."

To succeed in this environment—which contravened the controllability principle—managers had to be creative in navigating internal boundaries, building networks of support, and influencing others to help achieve shared goals that focused on service and customer satisfaction.

Theoretical Background

To understand the implications of this finding, I utilize two analytic concepts described in Simons (2005): span of control and span of accountability.

Span of control is typically defined as the number of people who report to a boss (Mintzberg, 1979, 134-35; Perrow, 1986, 30-33). Thus, span of control is often reported as a number such as 10 or 12. Following Simons (2005, p. 39), I adopt a different definition. *Span of control* in this study is defined more broadly as *the total resources under a manager's direct control*. Span of control includes not only people (the traditional definition), but also balance sheet assets and intangible assets such as information infrastructure. For any individual job, span of control can be either wide, indicating control of a wide range of resources, or narrow, indicating that a manager has direct control of relatively few resources.

The second span needed for our analysis is *span of accountability, representing the range of tradeoffs inherent in the measure(s) for which a manager is accountable* (Simons, 2005, pp. 88-89). Figure 2 illustrates the hierarchy of span of accountability for both financial and non-financial measures. At the bottom of the funnel, measures such as headcount and line item expense budgets allow few tradeoffs. Managers accountable for these measures have relatively few degrees of freedom and, therefore, a narrow span of accountability. The measures at the top of the funnel, such as competitive position and market value, allow many tradeoffs and create a wide span of accountability.

Figure 2
Span of Accountability

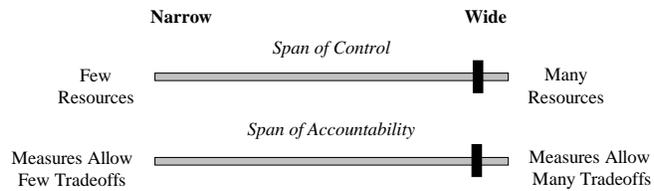*Range of Trade-Offs in Performance Measures*
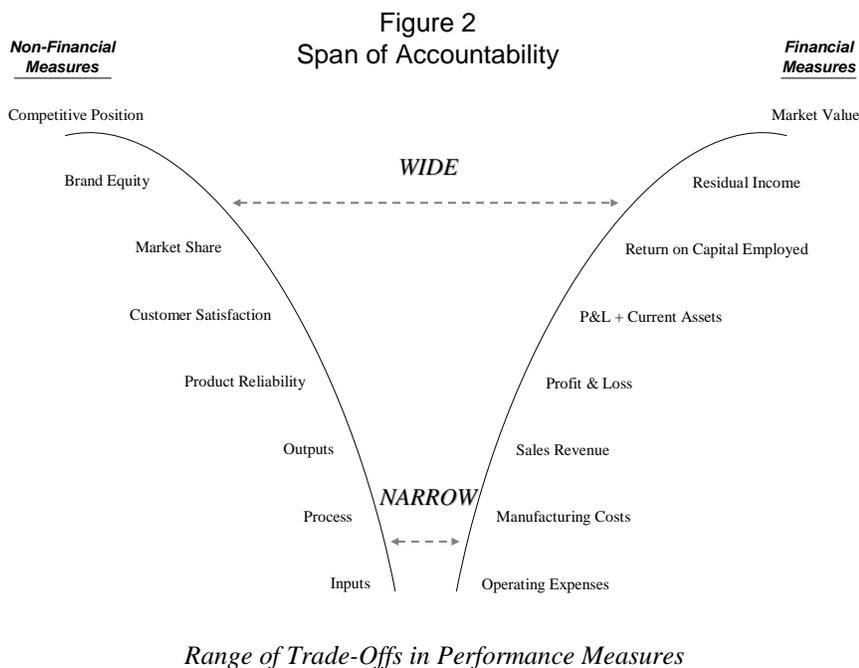
Following the controllability principle, span of control and span of accountability should align with an individual's position in the organizational hierarchy. For example, a CEO would have both wide span of control (responsibility for all the firm's resources) and wide span of accountability (accountability for broad measures such as stock price and competitive position). A shop floor supervisor, in contrast, would have narrow span of control and narrow span of accountability.
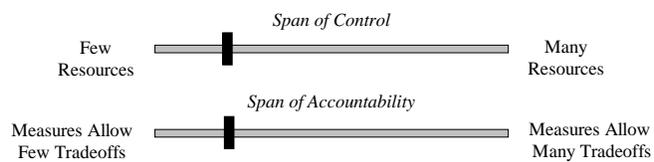
We can use two sliders—one for span of control and one for span of accountability—to depict what this relationship would look like (Figure 3). For the CEO with wide span of control and wide span of accountability, both sliders are pushed to the right and aligned. For the shop supervisor, the sliders are still aligned but pushed to the left.

Figure 3
Spans of Control and Accountability for Different Jobs

CEO

Narrow   **Wide**

Span of Control

Few   Many
Resources   Resources

Span of Accountability

Measures Allow   Measures Allow
Few Tradeoffs   Many Tradeoffs

Shop Floor Supervisor

Span of Control

Few   Many
Resources   Resources

Span of Accountability

Measures Allow   Measures Allow
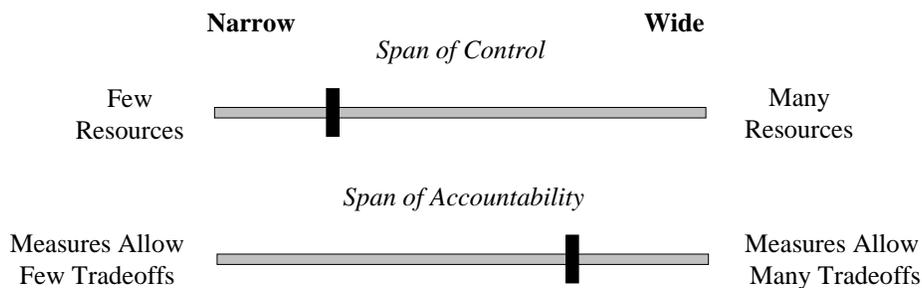Few Tradeoffs   Many Tradeoffs

But what happens in the case of Beta Inc.? In this situation, managers are accountable for resources they do not control. As illustrated in Figure 4, the sliders do not align. Span of control is narrow and its slider is pushed to the left while span of accountability is wide with its slider pushed to the right.

Figure 4
The Entrepreneurial Gap

Narrow   **Wide**
                    Span of Control

Few   Many
Resources   Resources

                  Span of Accountability

Measures Allow   Measures Allow
Few Tradeoffs   Many Tradeoffs

What are the consequences of this misalignment? One possibility is employee frustration and turnover (Montana and Charnov, 2000, 195; Merchant,1989: 25). There is, however, another possibility suggested by scholars of entrepreneurial behavior. Entrepreneurship, as defined by Stevenson and Jarillo (1990) is, "the process by which individuals—either on their own or inside organizations—pursue opportunity without regard to the resources they currently control."

This, in fact, is exactly the situation illustrated in Figure 4. With span of accountability wider than span of control, an individual is accountable for figuring out how to turn opportunities into results even though he or she does not control the resources to get the job done. Could it be that this gap, which represents a shortfall of resources relative to the task at hand, is a reflection of conditions conducive to entrepreneurship—and exploration—in complex organizations?

Following this logic, we label the gap illustrated in Figure 4 as the *Entrepreneurial Gap*, acknowledging that it is perhaps no accident that the majority of managers interviewed in the seven companies in the initial stage of this research consistently reported that their span of accountability was greater

than their span of control. There may, in fact, be good reason for managers to hold subordinates accountable for variables outside their control if they want them to act as entrepreneurs, exploring new possibilities for creating value for customers.

Additional Field Studies

To more fully understand the relationship between span of accountability and span of control in a wide range of settings, teams of researchers (second-year Harvard MBA students) collected data on the relationship between span of accountability and span of control in 102 different organizations.[1] For each field study, researchers interviewed employees and/or managers and collected company data that would allow them to determine the relationship between span of accountability and span of control.

The unit of analysis varied widely in the studies: in some cases, the focus was on senior managers; in other circumstances, the focus was on lower-level production workers. But in every instance, data was collected on (1) the resources that individuals controlled directly and (2) the nature of the measures for which those same individuals were accountable. In addition, data was collected on the business's strategy and key design variables including nature of the task and structural configuration adopted by the firm. From this information, research teams were able to quite easily determine for each group studied whether span of control was greater than, equal to, or less than span of accountability.

Conclusions regarding span of control and span of accountability in each of the separate field studies were double checked by two faculty researchers. Then, the 102 field studies were classified into groups according to the relationship between the two spans (span of control $<, =, >$ span of accountability). Each of these three groups was then analyzed for consistency in patterns of business strategy and/or design attributes. This clustering, which was

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[1] This work was completed as part of the course requirement for the second-year MBA seminar, Designing Organizations for Performance.

double checked by a second faculty researcher, yielded the eight separate clusters described below.

This research is, by nature, exploratory and results must remain tentative. Accordingly, the findings are presented in the form of propositions subject to further testing. Nevertheless, the analysis of a large number of firms in a variety of industries illuminates circumstances under which accountability and control may act as a catalyst for exploitation and exploration activities.

The eight clusters of field studies yielded four general propositions. The first—where span of accountability aligns with span of control—focuses on exploitation activities. Hypotheses two and three consider the entrepreneurial gap—situations where span of accountability is greater than span of control— thereby providing incentives for people to engage in exploratory activities. Hypothesis four considers the uncommon, and generally unhealthy, situation when span of control is greater than span of accountability.

Results

Proposition 1: Managers set span of accountability equal to span of control for routine work and functions.

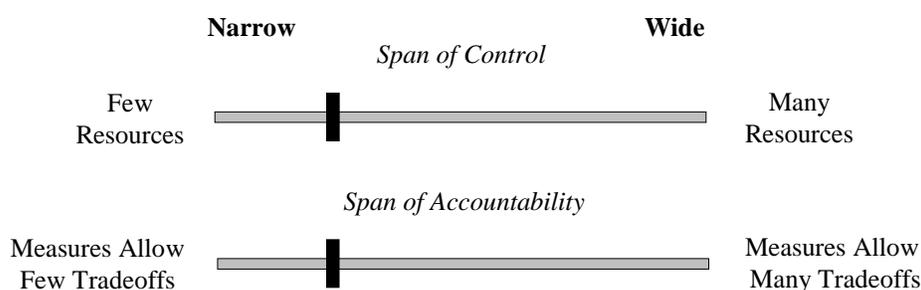"A monkey could run this thing."

-CEO referring to automated work process

A relatively small number of situations studied (15 firms, 15% of sample) were classified as having tight alignment between span of accountability and span of control as predicted by the controllability principle.

This group included a military team engaged in routine tactical operations, the work of an accounting department in a large packaged-goods consumer company, hourly workers in a food processing company, an HR benefits

department, and managers of a call center that focused on low cost and efficiency through standardization. The typical relationship between span of control and span of accountability is illustrated in Figure 5.

Figure 5
Routine Work: Span of Accountability = Span of Control

Narrow   **Wide**
Span of Control

Few   Many
Resources   Resources

Span of Accountability

Measures Allow   Measures Allow
Few Tradeoffs   Many Tradeoffs

The focus of tasks in this cluster was on exploiting existing resources. There was little desire by superiors for innovation. Individuals were given control over relatively limited resources needed to carry out their routine work functions. Goals in the form of short-term tactical objectives were clear and measurable. Although resource allocations were relatively limited, so was the range of decision trade-offs needed for the task. The objective was to get the job done as efficiently and effectively as possible.

Proposition 2: Managers create an entrepreneurial gap—setting span of accountability wider than span of control—to motivate independent employee initiative and innovation.

"Your mission is to win our war."

-U.S. Army General

For the bulk of the organizations in the sample (71 firms; 70% of sample), managers reported that span of accountability was wider than span of control. Moreover, the entrepreneurial gap widened with the degree of exploration and entrepreneurship that was required for each specific job or function.

Nine of the organizations showed only a modest widening of span of accountability relative to span of control. But the result of this gap was the same across all situations studied.

Consider the sales representatives of a national soft drink bottling company where logistics and routes were determined centrally by head office. Sales reps had a narrow span of control: they were given relatively few resources, told which routes to cover and which products to offer, and provided with defined pricing options.

Strict application of the controllability principle would suggest that sales reps should also have a narrow span of accountability. One might expect, for example, that they would be held accountable for measures such as daily delivery quotas. Instead, span of accountability was widened by holding them accountable for sales revenue thereby providing the freedom to make tradeoffs. Sales reps were encouraged to exercise initiative to enhance product mix, offer special arrangements to high potential customers, and build customer relationships to maximize volume and revenue.

For more senior jobs in this cluster, span of control was wider than the sales reps. But span of accountability was wider still. Field studies of several military units—a U.S. Army combat team, a U.S. Marine helicopter commander,

and the U.S. Marines in their race to Baghdad—illustrate the point. Under battle conditions, span of control shifted sharply to the right as unit leaders were put in charge of a full complement of resources to engage the enemy. Yet, span of accountability was widened even further. Instead of accountability for narrow and detailed tactical objectives (the norm during routine maneuvers), unit leaders were now accountable for mission success. This broad mandate demanded wide-ranging tradeoffs and entrepreneurial initiative in engaging the enemy and innovating in rapidly changing battle conditions.

These examples serve as an illustrative backdrop to the general phenomenon. The remaining 62 organizations in this group —all with large entrepreneurial gaps—can be split into five clusters to illustrate the different ways that managers used these levers of accountability and control as catalysts of strategic exploration.
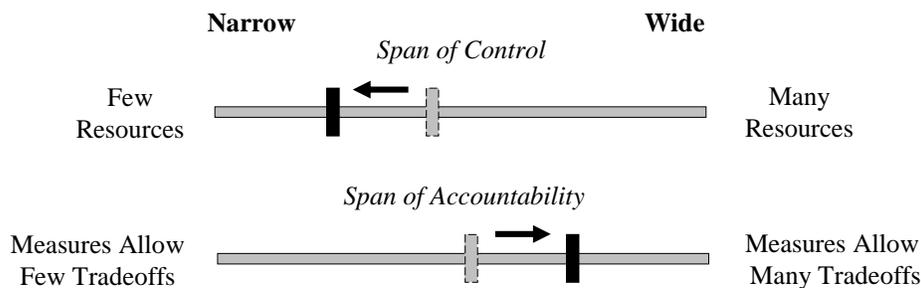
Proposition 2a: Managers widen the entrepreneurial gap to support new, more innovative strategies.

"This was the only way to unlock people and
make them more entrepreneurial."

-head, commercial pharma operations

Eleven organizations with an entrepreneurial gap (11% of sample) were in the midst of changing their strategy to promote more product/market innovation. Managers did the same thing in all of these situations: they widened the entrepreneurial gap by either widening span of accountability, narrowing span of control, or both (illustrated in Figure 6).

Figure 6
Widening the Entrepreneurial Gap to Stimulate Change

Narrow   **Wide**

Span of Control

Few   Many
Resources   Resources

Span of Accountability

Measures Allow   Measures Allow
Few Tradeoffs   Many Tradeoffs

Senior executives of a China-based computer company, for example, wanted to increase innovation in their R&D unit. To do so, they widened span of accountability. Managers of the R&D unit, who had previously been accountable only for meeting corporate funding allocations, were now accountable for the number of new models launched, the number of design awards won, successful market introduction of new software, and the number of models ranked as top sellers in the market. Success against these broad measures would require significant innovation as well as support from other units within the business.

A similar story was told at an investment bank where executives wanted to boost innovation. Group heads, who had previously been accountable for narrow measures related to transaction volume, were given full profit and loss accountability. The group heads were now accountable for bringing in their own business, deciding how to allocate resources, and managing costs to maximize profitability. With this wider span of accountability, they were expected to be more entrepreneurial in choosing between cost cutting and revenue generation in satisfying long-term client needs.

In another example in this cluster, executives of a biological pharmaceutical firm wanted more market-focused innovation to drive growth. They redesigned their organization from a pure functional structure to a market-based business-unit structure. Newly-appointed business heads, who had previously served as functional managers with tightly aligned accountabilities, were put in charge of customer-facing marketing units and made accountable for contribution margin and building a sustainable therapeutic franchise (dramatically widening their span of accountability). Since these managers controlled only the marketing groups of their business (narrow span of control), they were forced to act as entrepreneurs to acquire and coordinate the resources needed for competitive success. Not surprisingly, individuals with perceived entrepreneurial instincts were the ones chosen for these critical positions.

A similar approach was adopted by executives of a European investment firm who wanted to change their strategy to focus on innovation in the delivery of products and services to larger clients. To support the change in strategy, span of control for managing directors was narrowed by assigning each director access to only five client companies instead of the twenty or more clients they had served under the previous strategy. At the same time, their span of accountability was widened by adding both cross-selling and overall company performance to their previous accountability for revenue. Collectively, these changes widened the entrepreneurial gap substantially.

In another firm in this cluster—a national clothing retailer—the CEO wanted to execute a turnaround that would restore the brand to prominence. The CEO stimulated innovation by simultaneously narrowing span of control for market-facing units and widening their span of accountability.

In the past, the powerful retail units had controlled all aspects of their business with weak accountability for performance. He reduced their span of control by consolidating key support functions such as sourcing, IT, and HR to corporate headquarters. He also increased span of accountability by holding retail unit managers accountable for brand profit, merchandising success, and customer

satisfaction—forcing them to become both more accountable and more entrepreneurial. The result was an increase in new product introductions that appealed to target market customers and a reduction in markdowns for slow-moving merchandise.

Corollary to Proposition 2a: Managers narrow the entrepreneurial gap to reduce innovation and increase the focus on efficiency.

"When I arrived, I found people all over the organization
doing the same thing."

-CEO of computer company

In certain situations, managers may want to increase the focus on exploitation and efficiency. To do so, they narrow the entrepreneurial gap to reduce innovation. In one study, for example, the new CEO of a high technology computer company wanted to reign in a free-wheeling entrepreneurial culture to improve operating efficiency. The organization, which operated as a typical free-for-all entrepreneurial start-up, was redesigned as a functional organization. With this change, span of control increased for the new functional managers who were given formal control of newly-designated functions and departments. At the same time, span of accountability was narrowed. In the past, managers had been accountable for broad measures such as market share growth and technology development. Now, they were accountable for much narrower functional measures that allowed fewer tradeoffs. Some managers were accountable for sales; others for cost efficiencies. The effect was to narrow span of accountability, reduce the entrepreneurial gap, and focus attention on exploitating of existing resources.

Proposition 2b: Managers create an entrepreneurial gap to implement strategies that require high levels of customer satisfaction.

"Your number one goal is to provide outstanding customer service."

-retail CEO speaking to new employees

Like the Beta, Inc. field study described at the beginning of this paper, a significant number of firms in the broader sample (20 firms; 20% of sample) widened spans of accountability to drive consistently high levels of customer satisfaction.

Consider, for example, an automotive supplier that sold integrated parts such as exhaust systems to the big three U.S. auto manufacturers. Because of industry concentration, this firm could not afford to lose a single customer. Program managers within each division, with predictably narrow spans of control, were accountable for two broad measures: project profitability and customer satisfaction. To achieve these measures, they had to make a variety of tradeoffs affecting the revenue and cost of multi-year programs. Decisions to boost profit often worked against customer satisfaction. Program managers, who did not control all the relevant resources for a satisfied customer relationship, were forced to be entrepreneurs in finding creative ways of working with other managers and functions to make tradeoffs that could sustain long-term customer loyalty.

Nine firms in this cluster were retailers attempting to deliver a unique experience to generate customer loyalty and repeat sales. Firms in this group included several upscale clothing retailers, a direct sales cosmetics firm, and an innovative retail bank. In each case, employees were held accountable for customer satisfaction measures that were significantly wider than their span of control. At one apparel retailer, for example, sales associates who had little control over merchandising or other key variables were accountable for customer satisfaction through a sales-per-hour measure and were expected to make

tradeoffs that would build long-term customer loyalty. Similarly, a direct sales firm known for its entrepreneurial sales force held sales consultants accountable for sales volume and the number of active recruits but provided only a narrow set of company resources to assure success on these measures.

An additional nine firms in this cluster were professional service firms—consulting firms, accounting firms, and healthcare firms—attempting to build long-term partnerships with clients. Again, customer satisfaction was essential to long-term success. These firms used dedicated account teams to deliver customized sales and implementation services to customers. Although no single person on the team controlled all the resources needed to deliver results on these measures, each individual was accountable for customer satisfaction and repeat business. To succeed, they were required to act as entrepreneurs—building relationships, acquiring and borrowing resources, and working with customers to pull together project teams to ensure a fully satisfied customer.

Two studies in this cluster looked at the entrepreneurial gap in charter schools which are exempt from state or local regulations and governed under a contract or "charter" with the state. These schools, which operate as for-profit businesses, provide parents with the option of removing their children from state-regulated schools to a more performance-oriented environment. But the satisfaction of parents, who as customers can opt out at any time, is critical to ongoing success.

In both schools, teachers' span of accountability was unusually wide. In one charter school, for example, teacher performance was evaluated on three primary measures: parent satisfaction ratings, student achievement scores, and principal evaluation. Faced with a chronic shortage of resources (i.e., narrow span of control), teachers in these schools were forced to be entrepreneurial—shaping the curriculum to the needs of individual students, sharing best practice across classrooms, and introducing innovations into teaching methods whenever possible.

Another study of a progressive public school described the "performance agenda" and techniques used to stimulate entrepreneurial behavior at the principal level: in this system, fifty percent of each principal's evaluation was based on student test score improvement.

Proposition 2c: Managers create an entrepreneurial gap to stimulate work across silos in large, complex organizations.

"They have no choice but to figure out how to be accountable to both a product line boss and a regional boss."

-executive vice president of multinational engineering company

In a significant cluster of the 71 organizations with an entrepreneurial gap (21 firms; 21% of sample), senior managers were attempting to motivate people to work across the boundaries, functions, and business units that had been created by complex organization designs. By widening span of accountability in the face of relatively scarce resources, subordinates were forced to interact with people in other parts of the organization who controlled resources they needed to achieve their goals.

For example, executives in a worldwide real estate firm who wanted to increase coordination across geographic units created an entrepreneurial gap by narrowing the span of control of regional managers. Investment decisions, previously made in the regions, were centralized to corporate headquarters. But country managers were still held accountable for local project profitability. Without direct access to funding resources, country managers were now forced to be entrepreneurial in figuring out how to work across borders and with headquarters to gain acceptance for deals they wanted to initiate.

A similar situation was reported in a telephone communications company. To reduce local product variation, executives narrowed the span of control for managers in the regional sales departments by centralizing all product-related decisions. At the same time, they widened their span of accountability to encourage work across organizational boundaries. In the past, the regional sales managers had been measured primarily on the number of new customers added. New performance measures—handset upgrades (loyalty), portability, and value added services—increased both span of accountability and the entrepreneurial gap. The result: sales people began to work with marketing, corporate development, and the central sales function to achieve their new goals.

Two others firms used broad financial metrics such as ROCE and customer satisfaction to foster collaboration. In one firm, a functional supply chain manager, who did not control sales, production, or installation staff, was measured quarterly on net sales revenue. This made him accountable for everything that occurred between receiving an order until the cash was collected from the customer. The entrepreneurial gap caused by narrow span of control and wide span of accountability forced him to be innovative in building relationships with a variety of internal departments to ensure that products met customer specifications and customers paid on time.

In another firm, a medical products firm with two major product lines, managers were attempting to motivate cross-selling and new product development across the two separate product lines. Accordingly, span of accountability was widened by holding managers accountable for overall corporate performance and allocating 70% of their bonus to this measure.

The most common use of the entrepreneurial gap to stimulate work across silos was in firms with matrix or dotted line reporting relationships (13 firms, 13% of sample). Matrix reporting relationships reduce spans of control throughout an organization as individuals are forced to use their networks of influence to compete for shared resources. A computer services firm in China, for example, operated a three-dimensional matrix—industry, geography, and

product—so that no individual manager controlled all the resources needed for success. Yet, individual accountability for sales revenue required managers to seek out resources controlled by others to ensure success against performance targets.

Similarly, a consumer packaged-goods company reorganized from regional groups to worldwide product groups with a regional matrix overlay. At the same time, spans of accountability were widened to encompass performance measures for volume, sales revenue, earnings, and brand equity growth across global brands, geographic markets, and key retail partnerships. Success on these measures required inputs by many different groups within the company. For example, the global business units, which were accountable for brand P&L, relied on regional marketing organizations for market execution. The geographical marketing organizations, responsible for sales and sales growth, were forced to rely on the global business units for overall marketing strategy and product development. Managers in these various units had no choice but to figure out how to coordinate and innovate to meet their performance targets.

Many of the companies using matrix reporting structures adopted the same approach. In one computer company known as "a society of corporate entrepreneurs," product groups had full P&L accountability, but did not control manufacturing and sales. Similarly, in a large manufacturing firm with four industrial sectors, responsibility for central operating core functions such as sourcing, IT, and employee services was allocated to the operating divisions so that each division was accountable for at least one "Center of Excellence" over which it did not have direct control. This created a matrix where employees were asked to be "dual citizens"—with broad accountability for both the performance of their divisions and the functions they represented.

Proposition 3: Entrepreneurs within organizations can succeed only if sufficient resources exist to help and support them.

"It is possible that the broad level of accountability for crew members has been too great and counterproductive."

-small business owner

For the entrepreneurial gap to bear fruit, there must be sufficient resources in the organization—including the willingness of others to help—to allow individuals to find the resources and support that they need. Most of the organizations in the study appeared to benefit from the innovation and coordination created by the entrepreneurial gaps. But nine of the 71 firms (9% of sample) reported problems due to insufficient resources.

In one privately held firm (a logging operation), operators with little training or resources were held accountable for operating profit. This well-intentioned mismatch between span of accountability and span of control—designed to foster local initiative— led instead to frustration because the operators had little ability to influence the direction of the business.

In two organizations with wide entrepreneurial gaps (an investment bank subsidiary and a strategy consulting firm start-up) there were not enough resources to go around, and their strategies ultimately failed. The investment bank centralized operations to London, thereby diminishing resources for Latin America managers who were still accountable for revenue and new business development (wide span of accountability). With this narrowed span of control, managers were now forced to rely on deal specialists in London who did not allocate sufficient attention to make the strategy succeed. The Latin America office was subsequently closed.

Similarly, in a consulting firm acquired by a competitor, accountability was broadened from revenue growth to profitability—widening span of

accountability. But country units were too small to achieve critical scale, and other units from the acquiring firm were unwilling to help by lending needed resources. As a result, the business failed.

Other firms reported similar problems when (1) a gap existed between span of accountability and span of control and (2) there was little willingness inside the firm to help others secure resources or serve a customer.
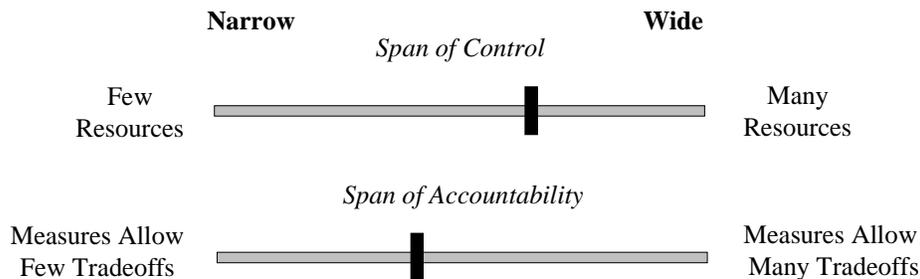
Proposition 4: When span of control is greater than span of accountability, organizations suffer from slack and inefficiencies in operations.

"Many of our managers do not know what they are accountable for."

-nonprofit director

In sixteen of the companies studied (16% of sample), span of control exceeded span of accountability as illustrated in Figure 7. In all but one of these organizations, this situation was due to inadequate performance controls and/or the availability of excess resources. All were underperforming, with some in crisis.

Figure 7
Organizational Slack Exists Where
Span of Control > Span of Accountability

Narrow *Span of Control* **Wide**

Few
Resources
Many
Resources

Span of Accountability

Measures Allow
Few Tradeoffs
Measures Allow
Many Tradeoffs

In six of the firms, excess resources and lack of accountability created inefficiencies that led to organizational slack. One organization was a not-for-profit that enjoyed bountiful resources because of volunteer activities but used these resources inefficiently because of weak accountability systems. A second example was a Japanese trading firm where there was no link between results and bonuses. Employees were given a bonus of two months' salary regardless of performance and, as a result, there was little concern about utilizing resources efficiently, eventually throwing the firm into crisis. Similarly, in a Thailand rice company, functional managers with full control of large departments were accountable only for simple volume measures with no accountability for profit and loss indicators. Inefficiency, organizational slack, and underperformance were the result.

In some of these firms, the narrowing of span of accountability was due to a dysfunctional top management style. One study focused on an entrepreneurial start-up where the operating norms demanded that all decisions be pushed up to senior managers. Although employees throughout the firm controlled the day-to-day resources, they were not allowed to make tradeoffs about how to utilize these

resources. Frustration, slow decision making, and underperformance were the results. A second study looked at an entertainment company where the CEO micromanaged the creative studios heads. Even though studio executives had wide ranging resources, the CEO inserted himself in all key decisions, usurping the ability of subordinates to make key tradeoffs. In this case, the resulting frustrations resulted in the defection of key employees. Ultimately, the CEO was forced out of the business.

Only one situation in this cluster seemed to offer justification for setting span of accountability narrower than span of control. This was a nuclear power plant where executives wanted no innovation or entrepreneurial initiative. In this situation, employees had wide spans of control as they operated this complex facility, but were accountable for detailed standard operating procedures and measures intended to reduce any ability to make tradeoffs. Redundancies and multiple levels of signoffs were required for all operating decisions—large and small. The effect was to assure safe operations, but at the cost of expensive redundancies (a tradeoff that any of us living near nuclear reactors would happily endorse!)

Discussion

Several caveats bear repeating before discussing the results of this study. First, the analysis relies on data provided in field studies conducted by second-year MBA students. Their work and conclusions were checked and rechecked by faculty researchers, and the clustering into the groups reported in this study was also independently verified, but the results must remain tentative. Second, the descriptive results reported in this analysis are not linked to any organizational performance variables. As a consequence, although there was a high degree of consistency within identified clusters, there is no evidence that the choices made by managers are optimal.

Notwithstanding these limitations, there was a high degree of consistency in the findings across multiple settings and industries, suggesting three tentative conclusions.

First, the structural design attributes that are typically associated with exploitation and exploration activity may tell only half of the story. The findings of this study suggest that it is the *tension* between the resources allocated by organizational architecture and accountability for those resources that provides a powerful catalyst for strategic exploitation and exploration.

In the 102 field studies reported here, span of control aligned with span of accountability in only a small percentage of situations—where work was routine and independent employee initiative and innovation was not required. For these tasks and functions, managers were clearly operating in exploitation mode.

The majority of field studies reported a significant gap between span of accountability and span of control. This "entrepreneurial gap" is posited to be a result of management's desire for innovation and exploration—and used as a catalyst for changing strategy, creating high levels of customer satisfaction, or motivating people to navigate complex matrix organizations. The consistency of this finding across a wide variety of organizations suggests that the gap between span of control and span of accountability is no accident: managers seem to deliberately hold subordinates accountable for measures that are wider than their span of control to foster exploration activities.

The second idea flows from the first. Most of the research on exploration and exploitation has focused on design architecture (centralization/decentralization, internal venture groups, alliances) and related organizational coordinating mechanisms. We must remember, however, that these structures are merely tools to affect the behavior of individuals. It is individuals, in the end, who must devote their energy and attention to either exploiting current resources or exploring for new opportunities.

There has been some recent interest in understanding how individual character traits can be linked to the propensity to engage in exploration and/or exploitation behaviors. For example, it has been suggested that individuals who are by nature creative

and curious may be ill-suited to the conformity required for exploitation. Conversely, people who are comfortable in predictable routines may be unable to shift to roles that require exploration, novely, and search for new ways of doing things. (Amabile, 1996; Mom, van den Bosch, and Volberda, 2009).

The findings reported here suggest that managers may not have to take individual character traits as a binding constraint. Instead, they may attempt to *shape behavior*— tilting people toward exploitation or exploration—through mechanisms of accountability and control. In concept at least, the same person could be motivated to tilt one way or the other depending on the alignment of these two design variables. In the field studies that reported significant change underway, for example, managers widened or narrowed the entrepreneurial gap with the expectation that whoever was in that job would respond appropriately.

The final idea relates to the concept of ambidexterity. Tushman and O'Reilly (1996, 2004) have argued that organizations can and should develop special structures and skills to simultaneously exploit and explore. This study refines their insight by suggesting that managers can *fine-tune* their organization along these two dimensions more easily than we may have suspected. Managers can choose to have some tasks, jobs, and units in exploit mode and adjust accountability and control to achieve efficiency, effectiveness, and compliance. At the same time, managers may choose other tasks, jobs, and units where creativity and exploration are needed. For these situations, accountability and control can be adjusted to create an entrepreneurial gap. Moreover, these two variables provide levers to change from one state to the other fairly easily: simply narrowing or widening either span of control or span of accountability (or both) has the potential to drive change in the desired direction.

Of course, the propositions offered in this paper must remain tentative pending further research. But I hope that they may generate interest among organization scholars in exploring the power of accountability and control in complex organizations.

References

Antle, R. and J. Demski. 1988. The Controllability Principle in Responsibility Accounting. *The Accounting Review* 63 (October) 1988: 700-718.

Amabile, T.M. 1996. *Creativity in Context*. Boulder, Co: Westview Press.

Anthony, R.N. 1965. *Planning and Control Systems: A Framework for Analysis*. Harvard Business School Division of Research.

Arrow, Kenneth J. 1974. Control in Large Organizations, in *Behavioral Aspects of Accounting*, ed. Michael Schiff and Arie Y. Lewin. Englewood Cliffs, N.J.: Prentice-Hall.

Benner, M.J. and M.L. Tushman. 2003. Exploitation, Exploration, and Process Management: The Productivity Dilemma Revisited. *Academy of Management Review* (28): 238-256.

Bouwens, J. and L. van Lent. 2007. Assessing the Performance of Business Unit Managers. *Journal of Accounting Research* (45): 667-697.

Bushman, R.M., R. J. Indjejikian, and A. Smith. 1995. Aggregate Performance Measures in Business Unit Manager Compensation: The Role of Intrafirm Interdependencies. *Journal of Accounting Research* 33 (Supplement): 101-128.

Duncan, R.B. 1976. The Ambidextrous Organization: Designing Dual Structures for Innovation, in *The Management of Organization Design*, ed. R.H. Kilmann, L.R. Pondy, and D. Slevin, New York: North-Holland.

Girud, F., P. Langevin, and C. Mendoza. 2008. Justice as a Rationale for the Controllability Principle: A Study of Managers' Opinions. *Journal of Accounting Research*, (19): 32-44.

Gupta, A.K., K.G. Smith, and C.E. Shalley. 2006. The Interplay Between Exploration and Exploitation, *Academy of Management Journal*, (49): 693-706.

Hawkins, D. and J. Cohen. 2004. Introduction to Responsibility Accounting Systems. Boston: Harvard Business School Publishing, Note 9-105-009.

Katila, R. and G. Ahuja. 2002. Something Old, Something New: A Longitudinal Study of Search Behavior and New Product Introduction. *Academy of Management Journal* (45): 1183-1194.

Kaplan, R.S. and D.P. Norton. 1996. *The Balanced Scorecard: Translating Strategy Into Action*. Boston: Harvard Business School Press.

Lambert, R. 2001. Contracting Theory and Accounting. *Journal of Accounting and Economics* (32): 3-87.

Lawrence, P. R. and J.W. Lorsch. 1967. *Organization and Environment: Managing Differentiation and Integration*. Boston: Harvard Business School.

March, J.G. 1991. Exploration and Exploitation in Organizational Learning. *Organization Science*, (2): 71-87.

Merchant, Kenneth A. 1989. *Rewarding Results*. Boston: Harvard Business School Press.

Mintzberg, H. 1979. *The Structuring of Organizations*. Englewood Cliffs, N.J.: Prentice-Hall.

Mon, T.J.M., F.A.J. van den Bosch, and H.W. Volberda. 2009. Understanding Variation in Managers' Ambidexterity: Investigating Direct and Interaction Effects of Formal Structural and Personal Coordination Mechanisms. *Organization Science* (20): 812-828.

Montana, P.J. and B.H. Charnov. 2000. *Management*. 3rd ed. Hauppauge, NY: Barron's Education.

O'Reilly, C.A. and M.L. Tushman. 2004. The Ambidextrous Organization. Harvard Business Review (82): 74-81.

Perrow, C. 1986.*Complex Organizations*. 3rd ed. New York: Random House.

Raisch, S., J. Birkinshaw, G. Probst, and M.L. Tushman. 2009. Organizational Ambidexterity: Balancing Exploitation and Exploration for Sustained Performance, *Organization Science* (20): 685-695.

Rivkin, J.W. and N. Siggeldow. 2003. Balancing Search and Stability: 'Interdependencies Among Elements of Organization Design. *Management Science* (49): 290-311.

Schumpeter, J.A. 1934. *The Theory of Economic Development*. Cambridge, MA: Harvard University Press.

Simons, R. 1991. Strategic Orientation and Top Management Attention to Control Systems. *Strategic Management Journal*: 49-62.

Simons, R., 1994. How Top Managers Use Control Systems as Levers of Strategic Renewal. *Strategic Management Journal:* 169-189.

Simons, R. 2005. *Levers of Organization Design*. Boston: Harvard Business School Press.

Smith, W.K., M.L. Tushman. 2005. Managing Strategic Contradictions: A Top Management Model for Managing Innovation Streams. *Organization Science*. (16): 522-536.

Stevenson, H. and J. Jarillo. 1990. A Paradigm of Entrepreneurship: Entrepreneurial Management. *Strategic Management Journal* 11 (Special Summer Issue): 17-27.

Tushman, M.L. and C.A. O'Reilly. 1996. Ambidextrous Organizations: Managing Evolutionary and Revolutionary Change. *California Management Review* (38): 8-30.