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Salesforce Automation: An Examination of Issues

BY

Robert Gene Mayberry

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree

Of

Doctor of Philosophy

In the Robinson College of Business

Of

Georgia State University

GEORGIA STATE UNIVERSITY
ROBINSON COLLEGE OF BUSINESS
2015

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ACCEPTANCE

This dissertation was prepared under the direction of the *Robert Mayberry* Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Business Administration in the J. Mack Robinson College of Business of Georgia State University.

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ABSTRACT

Salesforce Automation: An Examination of Issues

BY

Robert Gene Mayberry

December 2, 2015

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The diffusion of sales force automation (SFA) systems has enabled a far more systematic approach to sales force management. This opens new avenues for the academic study of the industrial selling process as well: new arenas for investigation, new windows into salesperson behavior, and new methodological pitfalls. The purpose of this dissertation is to develop a better understanding of SFA from an academic perspective, and then apply these insights to resolve gaps in our understanding of how sales forces behave and how they might be better managed. To do this, three areas of analysis are explored: methodological, behavioral, and theoretical.

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The diffusion of sales force automation (SFA) systems has enabled a far more systematic approach to sales force management. This opens new avenues for the academic study of the industrial selling process as well: new arenas for investigation, new windows into salesperson behavior, and new methodological pitfalls. The purpose of this dissertation is to develop a better understanding of SFA from an academic perspective, and then apply these insights to resolve gaps in our understanding of how sales forces behave and how they might be better managed. To do this, three areas of analysis are explored: methodological, behavioral, and theoretical.

Essay 1 examines SFA data from a research methods perspective. What is this data? What are the potential methodological challenges and opportunities inherent in SFA data? In doing so, the conceptualization of system utilization is advanced by introducing a new element to the simple use/non-use dichotomy: that of opportunistic utilization. Insights are developed to better understand the drivers of data quality in research and practice. Additionally, there is a discussion of the potential for opportunistic utilization to interact with naïve performance response models to create destructive interactions between the two.

In Essay 2, data from a salesforce automation system is used to explore an important question in pipeline management. The foundation of sales force management theory is the assumption of classical rationality on the part of the salesman; given that their incentives are aligned appropriately with those of the firm, the salesman is expected to perform optimally through self-management. This study applies work in cognitive biases to show that this assumption is inappropriate. As salesmen continually make investments in the uncertain industrial sales cycle,

their periodic go/no-go decisions create an escalation of commitment dynamic which causes them to over-invest in losing opportunities. Over time, prospects for which there is no clear endpoint accumulate in the salesman's pipeline, crowding out genuinely profitable opportunities. This sclerosis effect is tested empirically by examining a major industrial sales force's opportunity management practices as recorded in an SFA system.

Essay 3 shifts, obliquely, to the implications of SFA-driven management on organizational performance, by distinguishing between ordinary variation in commensurated variables (heterogeneity) and observed characteristics unique to a particular relational partner (idiosyncrasy). Idiosyncratic variations, by their nature as novel and unlikely-to-be-repeated events, represent fruitful potential opportunities for competitive advantage because their novelty provides the isolating mechanism that ensures inimitability. However, for this potential to be realized, the opportunity must be detected and exploited.

Sales managers have traditionally been forced to rely on outcome based controls and bottom-up management styles. SFA gives manager the capability to manage sales opportunities individually and systematically in a way that they have never been able to do before. But should they? To what extent are the bottom-up and top-down approaches effective in maximizing salesperson effectiveness? Under what conditions are managers to favor autonomy and adaptation, as opposed to consistency and centralization? We study the boundary conditions for different approaches to sales strategy, and conceptual issues related to the competing demands of centralization and autonomy.

Introduction

Prior work in sales force automation (SFA) has looked primarily at two important questions: the drivers of SFA adoption (Baker and Delpechitre 2013; Cascio, Mariadoss, and Mouri 2010), and the relationship between adoption and performance (Holloway, Deitz, and Hansen 2013; Rapp, Agnihotri and Forbes 2008; Sharma and Sheth 2010). The purpose of the current research is to explore a subtly different topic by introducing a new concept: that of “opportunistic utilization”. The study relaxes the assumption that all utilization of a salesforce automation system is “use as intended” (Jelinek 2013; Khazanchi 1995) and that system usage directly equates to system adoption. Instead, this research looks at the possibility that users of an IT system designed to manage their behavior will engage in deceptive reporting to either mislead or conceal activity from the system.

In the current research study, we explore the issue of misleading reports in an SFA context, proposing that salespeople may use the IS system to deceptively omit or mis-report their activities for the purpose of provoking a desired managerial response. For example, a firm may by policy restrict access to resources such as expensive product demonstrations to prospect accounts that exceed a threshold for the probability of winning. A salespeople who desires access to these resources anyway could simply reset this variable in the computer system for long enough to complete the requisition process.

This is the result of the adverse selection (Eisenhardt 1989) that occurs when salespeople have different goals from their employers and so take advantage of information asymmetries to acquire firm resources that suit their purposes (such as closing a short term transaction and

earning the resulting commission) but do not necessarily support the firm's overall goals (improving long-term forecasting and forging long-term, profitable relationships).

A second type of problem activity concerning SFA systems involves concealing selling activities from the firm. These actions consist of pursuing some or all of a sales opportunity "off the books" and away from scrutiny from the firm's computer system. For example, a salesperson who desired greater autonomy might simply refuse to enter an opportunity into the system until it is close to closing (Moutot and Bascoul 2008). Sales which never reach this point are therefore totally untracked by the system.

The purpose of this paper is to address the following issues. First, does sales force utilization of SFA necessarily equate to utilization as prescribed by the firm, and if not, in what ways might compliance be evaded, manipulated, or gamed? We then examine and discuss some criteria to use that allow a firm to evaluate the validity of particular pieces of data if there are concerns that non-compliance may be occurring. We conclude by discussing the possible consequences for an organization that is experiencing widespread gaming of the SFA system.

Literature Review and Hypotheses

Agency theory is concerned with addressing problems that occur in business relationships (Eisenhardt 1989). It is particularly suited for studying sales-related topics since it includes interdependent parties -- a firm and its agents -- where there is a division of labor, asymmetry of information, and the cooperating parties have different goals (Jensen and Meckling 1976; Jones and Butler 1992). More specifically, agency theory addresses the problems that may occur when these two cooperating parties are in conflict but the principal cannot easily observe or assess what their agent is doing (Eisenhardt 1989). Under an agency theoretic, information asymmetry permits one party to act opportunistically without being detected by the other.

Agency theory has a long history of application to salesforce management, especially in clarifying questions of incentive structures such as compensation (e.g. John and Weitz 1989, Coughlan and Sen 1989, and Albers 1996). The conditions under which the agency theoretic operates manifest very strongly in a sales context. Salespeople can often work independently with very little direct supervision on a daily or even weekly work cycle. They call on customers at the customer's location and engage in a number of activities simultaneously. The process of closing a sale is a socially complex, multidimensional phenomenon rich in social and psychological factors that are difficult to observe and measure independently. The difficulty in overseeing and controlling salesperson behaviors is one reason why some firms chose to use an outcome-based control system (Ouchi 1980, Anderson and Oliver 1989; Cravens, Ingram, LaForge and Young 1993) focusing on results rather than how those results are achieved.

An example of the opacity and social complexity of the selling process can be illustrated by looking at a single sales call. A single sales call can have multiple goals and potential outcomes. In a meeting with a customer, a salesperson may be trying to do any one or more of the following: gather information about the customer's needs, position their own offering as a viable selection, assess the nature and state of the customer's decision-making process, develop a personal relationship with the prospect, assess and manipulate competitive effects, identify the potential for other future sales opportunities for this client, qualify whether the customer is a viable prospect who is worth future meetings, secure meetings or references to other decision-makers in the customer's firm or other firms, or negotiate selling terms such as price, quality, delivery, or financing (Marshall et al. 1999, Moncrief 1986). All of these different tasks can occur during the same sales call; in some cases the salesperson does not know *ex ante* what their goals will be until they have assessed and classified the customer through dialog.

By choosing to utilize outcome-based controls to align salesperson incentives with the firm's goals, a firm attempts to forestall its agents using the opacity of their positions to pursue their own goals at the firm's expense (Ouchi 1980, Anderson and Oliver 1987). However, these alignments are often imprecise. While most firms attempt to be profit-maximizers, many firms (including the firm studied here), determine salesforce compensation by a commission on revenue, not gross profit (Zoltners et al. 2009). A salesperson operating under such a compensation regime could increase his or her commissions by accepting lower profit (for example, through discounting, or by means of changing their recommended product/service mix or allocation of effort across their portfolio of prospective customers) to maximize revenue.

Another way in which this effect can manifest is in relationship-building. In addition to its associated contractual, procedural, and substantive interconnections, an interorganizational relationship is a multi-dyadic construct composed of many individual relationships between boundary spanners in each organization. Both the salesperson and their firm cooperate to forge customer loyalty; however, they also compete for primacy as to which entity the customer orients his primary loyalty (Palmatier et al. 2007). In pursuit of this goal, salespeople are often resistant to adopt knowledge-sharing and management systems, believing (rightly) that these systems are intended in part to reduce the firm's dependency on their customer-specific knowledge and relationships (Kasper 2005).

In addition, selling firms and their agents (salespeople) may have different attitudes toward risk which can lead to front-line salespeople and their immediate managers preferring a different ordering of actions because of their risk preference and motivations (Eisenhardt 1989). These different actions can take the form of selection of accounts to call upon, data to enter into a SFA system, and commitments to customers. The decision about what is the ideal

manifestation, prioritization, and allocation of limited attentional and effort resources may differ depending on whether one examines the question from the point of view of the firm or its agent, the salesperson.

Depending on how salespeople are compensated, they may undertake behaviors that are potentially detrimental to a firm's long-term goals (Anderson and Oliver 1987). For example, if a salesperson is rewarded on sales volume, a very high-volume but low-profit sale may be very attractive even though the firm might prefer that effort be spent trying to close smaller deals with higher margins that allowed the selling firm to make increased profits (Cichelli 2010; Zoltners 2006). An extreme example is where a salesperson sells a product at a slight loss; this results in a net reduction in profits for the company but since revenue is positive the salesperson still receives a commission. Conversely, a salesperson compensated on profits might fail to pursue a deal with a customer that offered little in the way of current profits, but that had strategic potential to the firm over the long-run. In both instances the salesperson is engaging in behaviors that can conflict with their firm's best interests but further the individual's own agenda.

Salesforce Automation Usage

The technology acceptance model (Davis 1989) derives from the theory of reasoned action (Ajzen and Fishbein 1980). It posits that ease of use and perceived usefulness drive positive attitude towards a system, which in turn drives behavioral intent to use and therefore utilization behavior. Utilization is presumed to be dichotomous; either the system is used or it is not. If failure to utilize the system or failure to use a system enough is widespread, the entire implementation at the organizational level is threatened (Jones, et al. 2006). While organizations implement information systems for the benefit of the firm, the importance of perceived

usefulness in driving successful adoption means that companies must emphasize to employees the benefits to the individual user (Moutot and Bascoul 2008). Failure to implement successfully can result in the huge investments in technology required being wasted (Parthasarathy and Sohi 1997). Moreover, failed implementations can lead to reduced job satisfaction and organizational commitment by individual salespeople (Speier and Venkatesh 2002).

Salesforce automation systems are specialized CRM systems optimized to the management of organizations engaged in lengthy, complex-sale relationships. Such systems encompass elements of the sales cycle spanning from lead generation, to prospecting, qualification, organization of sales team, relationship tracking tools, recording of decision-making processes and customer-specific information, all the way to contract negotiation, fulfillment and post-sale account management (Bush, Moore and Rocco 2005; Holloway, Dietz, and Hansen 2013). Drivers to salesforce automation adoption include personal innovativeness, support services (Robinson et al. 2005), non-monetary costs, interpersonal links, previous company experience, and personal/demographic factors (Parthasarathy and Sohi,1997), which act through the usefulness / ease of use perceptions of the salesperson.

There is considerable interest in studying salesperson ethical and unethical behavior in business settings (Bellizzi and Hite 1989; Kaynak and Sert 2012; Jaramillo, Mulki and Boles 2013). On the other hand, there has not been a substantial amount of research examining the issue of deception in the use of Salesforce Automation Systems (SFA) to mask salesperson activities. Cicala et al. (2014) raise two important questions in this area: the use of SFA data in monitoring salesperson behavior, and the impact that this has on the decision by salespeople to engage in unethical behavior. However, they do not specifically address the question of one particular type of unethical behavior: the manipulation of data to provide a manager with an

incomplete or deceptive picture of a salesperson's behavior. Yet, given the importance of SFA in the current sales environment, the misuse of such a vital link between a firm and its customer base is a critical issue -- particularly if the system is being manipulated to the salesperson's financial advantage.

Due to the boundary spanning nature of most sales positions (Behrman and Perreault 1984; Boles et al. 2012) firms are continually seeking ways of having additional insight and control over their salespeople. One way additional control can be exerted on the firm's "agents" is through the compensation system and the sales management process (Anderson and Oliver 1989; Cravens, Ingram, LaForge, and Young 1993). Proper utilization of the electronic SFA technologies available today can provide sales managers and higher level executives within the organization a better understanding of what salespeople are doing and how their actions will affect the firm (Tanner, et al. 2005; Zablah, Bellenger and Johnston 2004).

In today's sales environment, companies often use SFA to accomplish a number of important activities. Within a firm's sales organization, SFA can be used to: monitor their salespeople's behavior' adjudicate managerial policies; enhance customer satisfaction, keep track of sales/service related activities within a given account; and derive insights about the drivers of profitability (Holloway, Deitz and Hansen 2013; Moutot and Bascoul 2008; Landry, Arnold, and Arndt 2005). Indeed, these are the *raison d'être* for an SFA system in the first place (Delvecchio 2014). Given the principal-agent dynamic between salespeople and their managers, it is inevitable that this behavior will also manifest through their interactions on information systems.

Selling behaviors are very hard to observe systematically in the field. Therefore, the lack of direct oversight on many sales activities means that, for many firms, the primary source of information about customer relationships and information related to the account is the SFA

system (Babu et al. 2014; Landry, Arnold and Arndt 2005). The system, in turn, receives much of its information from salespeople who directly enter reports concerning their actions and observations about the customer firm about which they are reporting.

The implications of what is entered in the system can have a significant effect on the salesperson's career (Deeter-Schmelz and Kennedy 2004; Speier and Venkatesh 2002; Cicala et al. 2014). Decisions about retention, compensation, and work environment are all potentially data-driven when an SFA system is in place. Opportunistic behavior in this situation manifests as entering or failing to enter data intended to manipulate these decisions, either through intentional deception, or more obliquely through biases in reporting and impression management.

In some cases, the data entered can be audited. For example, a salesperson who reports that they have closed a particular account at a specific dollar amount will report this in their SFA system, but it can be cross-checked to the customer purchase order, records in the accounting system, etc. In other cases, the sole source of information about the customer comes from the salesperson's representations in the system (Buttle, Ang, and Iriana 2006). A salesperson's intuition about a particular customer's readiness to buy based on a private meeting between the salesperson and the customer cannot be easily verified. There are no independent records of the meeting and the information being reported is laden in ambiguity. Thus, for some fields of information, a very high degree of information asymmetry exists between the principal (firm) and agent (salesperson). Deceptive reporting has already been identified as being a serious problem for information systems in terms of the proportion of data affected, the persistence of the deceptive data in the system, and the difficulty in detecting and correcting it (Biros et al. 2002). This leads to our first research question:

RQ1: In what ways might entries in an SFA system not reflect actual selling activity by the sales force?

Operationalizing Utilization as Intended

Utilization of information systems are measured in a variety of ways, and the best operationalization of utilization remains a subject of active research (Schillewaert et al. 2005). Straub, et al. (1995) stated that “there is widespread agreement among researchers that system usage is *the* primary variable through which IT affects white collar performance because it is a necessary, albeit insufficient, requisite for deriving the benefits of IT.” (emphasis in original), and found that while most self-report measures of utilization correlate strongly with one another, and most observed measures have strong intercorrelations, the correlations between observed and self-reported measures are comparatively weaker. Straub speculates that an unobserved latent factor exists which subtly distinguishes between objectively measured operation of the system and the user’s own beliefs about how much they use the system.

In this vein, SFA system utilization has been measured in a variety of ways; for example Ahearne et al. (2008) validated his measure of salesforce automation utilization using several observed and self-reported instruments and found substantial agreement among them. However, distinguishing between use of the system and use-as-intended requires a shift from aggregate measures of undifferentiated use to examining particular dimensions of user / SFA interaction. To identify misuse of the SFA system, it is first necessary to properly delineate use as intended. Use as intended is defined here to mean use of the SFA system in accordance with established policies and procedures, in support of the goals assigned to the salesperson by the firm.

The Focal Firm

Salesforce automation records for a large multinational corporation were analyzed for indicators of opportunistic utilization. The data itself is described in the Methodology section to follow; for the present it suffices to describe the company itself and its SFA utilization policies.

The focal firm is a major global vendor of information technology products. This paper focuses on operations in the company's North American region over a period of one year, selling hardware as well as associated software, system integration services, and consumables. One hundred fifty seven salespeople called on business customers in geographically determined territories. The salespeople had the authority to assemble sales teams as needed on an ad hoc basis from a pool of available team members. Turnover was approximately 15% in the period studied. Typical opportunities took about eight months to close and produced revenue in the six to seven figure range (see table 1 in the Methodology section).

Management of the sales team follows two concurrent processes. On one hand, salespeople are given outcome-based controls, with advice and supervision from regional and divisional sales managers. On the other hand, a dedicated analytics group manages the salesforce automation system and issues benchmarks, goals, and policies and other behavior-based controls. These two systems co-exist.

All sales opportunities being pursued were required to be logged in the salesforce automation system. Sales representatives received some prospects forwarded to them from Marketing's lead generation efforts (7%). These opportunities were forwarded to salespeople automatically as part of their lead-generation system; salespeople had discretion to pursue these leads or not, but not to delete or otherwise retroactively edit them. Most opportunities (93%) stemmed from their own prospecting activities and had to be entered by the salespeople themselves. Sales which were won had to be entered into the system for fulfillment to occur and

for revenue to be received. Open opportunities were subject to monitor and review by sales managers. Salespersons have broad latitude to pursue prospects in the manner they deem best, with periodic review from a sales manager. The the firm's policy was:

Policy: All opportunities are required to be entered into the SFA system.

The company's policy was for sales executives to follow a seven step sales process. Opportunities which were lost or qualified out were truncated when it became apparent that they were not viable; however, winning sales were typically expected to follow all seven steps. From this, the firm's policy was:

Policy: All opportunities must follow the progression of sales steps.

Sales in the first two steps (Suspect and Qualifying) were expected to meet a 30% probability of success estimate. Opportunities permitted into the Needs Analysis, Solution Development, Demonstration, and Proposal phases were required to meet a 60% probability of success threshold, in part due to the expense required to set up a demonstration of this large, unwieldy, and expensive equipment. Sales could only be marked Closing if in the salesperson's opinion they had a 90% chance of being won. None of these benchmarks were measured empirically. Approximately 15% of successfully closed sales were later cancelled due to insufficient customer funds. This resulted in a policy indicating:

Policy: An opportunity's sales step should correspond to its probability of eventually being won.

Misleading Reports

Salespeople are often called on to make estimations of the success of individual opportunities and aggregate forecasts of customer demand (Kumar, Venkatesan, and Reinartz

2006). Information gained from salesperson estimations can be of use for making finance, capacity, and strategic forecasting decisions (Dickie 2013). They can also be of use in evaluating a retention decision for an under-performing sales representative. A manager with a marginal salesperson faces a difficult decision: retain an underperforming employee or suffer the disruption and cost of employee turnover by replacing them (Boles et al. 2012; Darmon 2004). Even if replacement is the decision, there is no guarantee that the newly hired replacement will be more effective. In such a circumstance, when it is believed that a salesperson will generate higher customer equity in the future, their perceived value is comparatively higher and may counterbalance low customer equity in the present. Lacking a quantitative approach to forecasting new business, managers may be forced to rely on their intuition (Kumar et al. 2014).

For a salesperson under review, misrepresenting their salesforce activity by providing overly-optimistic forecasts inflates their value as perceived by their employers. This can serve to delay an otherwise likely termination.

Bluebirds and evading managerial oversight

In addition to providing information useful for making immediate HR decisions regarding employees, SFA systems also provide useful information about customers and can assist in forecasting future sales. Firms and salespeople behave interdependently in their attempts to forge strong customer relationships and working cooperatively to strengthen the overall relationship quality -- while at the same time competing to establish the customer's primary loyalty to themselves (Palmatier 2007). Salespeople are often selected based on the pre-existing industry contacts they bring to the firm, but companies will use a variety of techniques to protect its portfolio of customers so a departing salesperson cannot take those contacts from the firm when they leave. Similarly, since a salesperson's bargaining position vis a vis its employer

derives in part from the exclusivity of their contacts and selling techniques, they have a vested interest in preventing this knowledge from diffusing into the firm (Bush, Moore, and Rocco 2005; Buttle, Ang and Iriana 2006). Indeed, some salespeople even store their contact lists in a separate program or even on a separate computer from the one issued by the company.

As part of the general process of interacting with an SFA system, employees are obligated to enter information about a potential customer as they are being pursued. Where this requires divulging exclusive customer information to the firm, there will be resistance to compliance. In Orlikowski's (1992) study on adoption of Lotus Notes in "Alpha" corporation, issues of competing incentives between the firm and its employees were rife. Employees were resistant to training on or using the system because they perceived time spent entering the system as "non-billable hours" that were discouraged by the firm. Employees were also concerned that entering client-specific information into the system would make that information available to other salespeople and even managers, who could then take the information with them to competitors if they were poached. Finally, the consultants in this company were resistant to placing their forecasts, estimates, and commitments to customers, noting that they constituted a "paper trail" through which blame might be assigned later if these proved to be in error.

In some cases, divulging the customer information is either harmless or unavoidable. For example, prospects developed from third-party lead generation do not use a salesperson's personal network of contacts and are in any event reported into the system by a third party rewarded for entering these contacts. In other cases, such as where a salesperson pursues a prospect that they know from their own social network, there may be a strong temptation to hide that privileged information from the employer for as long as possible. Thus, a customer may be

pursued “off the books” to protect information which gives a salesperson value and negotiating leverage with their firm.

Ultimately, a successful pursuit results in a business transaction. This transaction requires fulfillment from other actors in a firm, a monetary record of the sale in an accounting system, and compensation for the salesperson in the form of outcome-based controls such as commissions. All of these events require reference to documentation in the SFA system to process. So successful transactions with prospects generated by their salesperson’s own lead-generating activities must be reported in the SFA system. How, then, might a salesperson square the sudden appearance of a fully-consummated customer opportunity with the requirement that they report every step of the pursuit of their opportunities? Fortunately for the opportunistic utilizer of an SFA system, there is an escape.

A “bluebird” is a sales opportunity that requires minimal pursuit. In the archetypal bluebird, a customer contacts the salesperson, having already selected their firm as the vendor and is prepared to buy immediately. With little selling effort, the salesperson need only perform perfunctory order-taking functions for the firm to achieve a transaction and for the salesperson to receive their commission (Zoltners et al. 2006).

When a salesperson enters a new customer opportunity into the system and then immediately closes the transaction successfully, this might be a genuine bluebird. On the other hand, it might also represent a salesperson fulfilling the minimum possible record-keeping requirements prior to closing business with a customer. Such a customer might have been pursued for a long time “off the books” and thus without the knowledge of the firm. If the opportunity closes successfully they can be entered as a simulated bluebird, but until then, the salesperson retains exclusive control over valuable information related to the customer contact.

Distinguishing between exceptional customer events and salesperson obfuscation can be difficult. Indeed, if it were easy to detect, salespeople would not be tempted to engage in the behavior. However, the exogenous nature of bluebirds allows us to detect opportunistic utilization of the SFA system. Closure rates for bluebirds should not vary based on selling ability, because a genuine bluebird is an entirely exogenous event. Where no selling activities occur, we should see no systematic differences in closure rates between salespeople based on selling ability. Where these differences do exist, it suggests that selling activities are occurring but have been omitted from the system.

Misuse of Resources

Another example of deception tactics in opportunistic utilization involves manipulating managerial commitments of resources (Goldman 2010). Sales support resources include travel and entertainment budgets, the addition of subject matter experts to the selling team, non-selling resources such as R&D for customized development, or the application of hardware, support, and logistical resources for demonstrations are limited. Managers are charged with applying these resources in ways that maximize the profitability of the organization.

However, even as salespeople work together in teams, they must also compete for access to these resources. In organizations where these selling costs are not assessed on a per-opportunity or per-salesperson basis, they represent a “free” resource from the perspective of a commission-maximizing salesperson. In such a scenario, given their willingness to maximize commissions at the expense of his or her firm’s (principals) profitability, a salespeople (agent) could misrepresent the probability of closure, timing, or forecast revenue of a prospect to encourage their manager to apply these limited resources to that salesperson’s opportunities, as opposed to those of his or her colleagues. This scenario is an example of a lie of commission,

deception intended to provoke a desired managerial response, whereas avoiding managerial scrutiny is a lie of omission. Both are forms of deception meant to insulate the salesperson from organizational discipline.

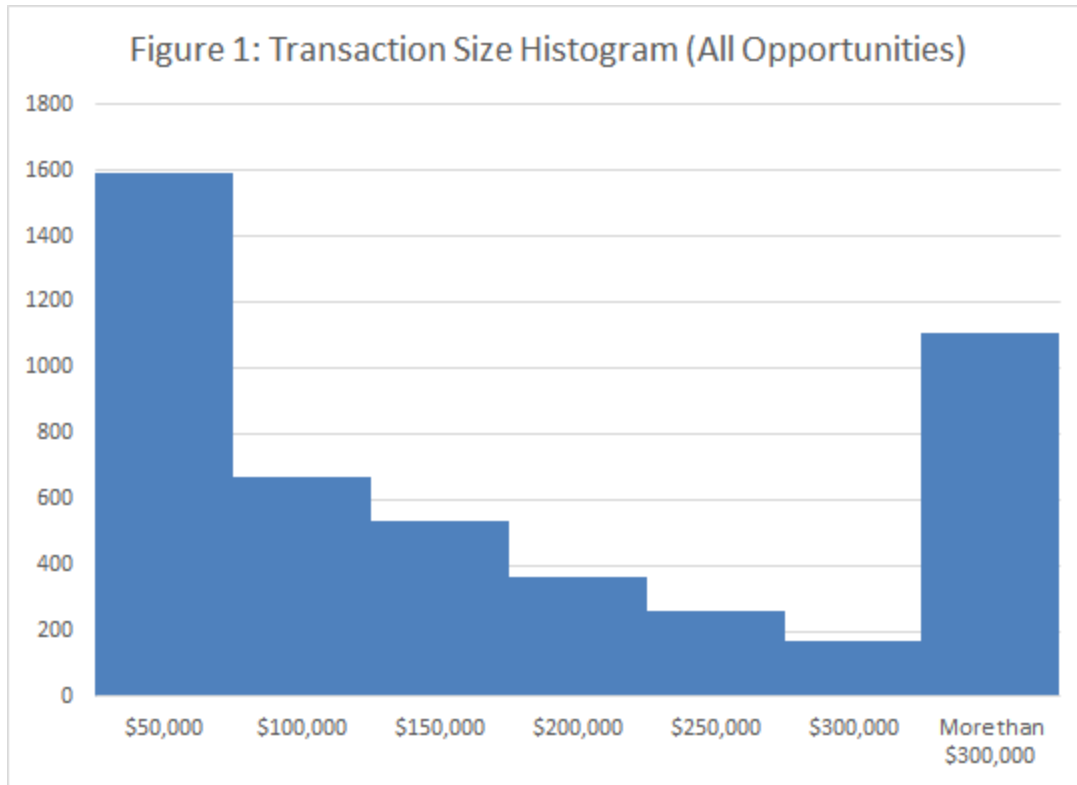
Methodology

Data

The focal firm's salesforce automation records were analyzed for indicators of opportunistic utilization. The data reflects selling efforts in the company's North American region over a period of one year: hardware as well as associated software, system integration services, and consumables. A linear transformation was applied to the data to ensure the company's confidentiality; the company received an advance copy of this paper but had no power of prior restraint. One hundred fifty seven salespeople called on business customers in over six thousand sales opportunities; more than 2,400 were successful. As mentioned above, turnover was approximately 15% in the period studied. Typical opportunities took about eight months to close and produced revenue in the six to seven figure range (See Figure 1).

Interestingly, a large proportion of sales opportunities were "bluebirds"; that is, successfully closed within a few days with little or no reported sales effort. Legitimate bluebirds occur when a customer has an immediate need for a product, has already made the decision to buy, and selected a vendor. In this scenario, the salesperson functions as an order-taker only; little or no selling effort is expended. In this study, according to data available from the SFA system, bluebirds make up 9.4% of successful sales (approx. 230). Approximately one third of bluebirds come from clients with whom the firm had no prior relationship (35%).

Figure 1 About Here



Results

Policy: All opportunities are required to be entered into the SFA system.

Bluebirds

Comparing alternative definitions of a bluebird demonstrated that while most opportunities follow a long sales cycle before resulting in a sale, many closed successfully within a day or two of being opened. For this study, a bluebird was defined as a deal that was won within 48 hours of being opened. Alternative thresholds of 24 and 168 hours were also tested; results remain substantially the same (See Table 1).

(Table 1 about here.)

Table 1: Variables of Interest

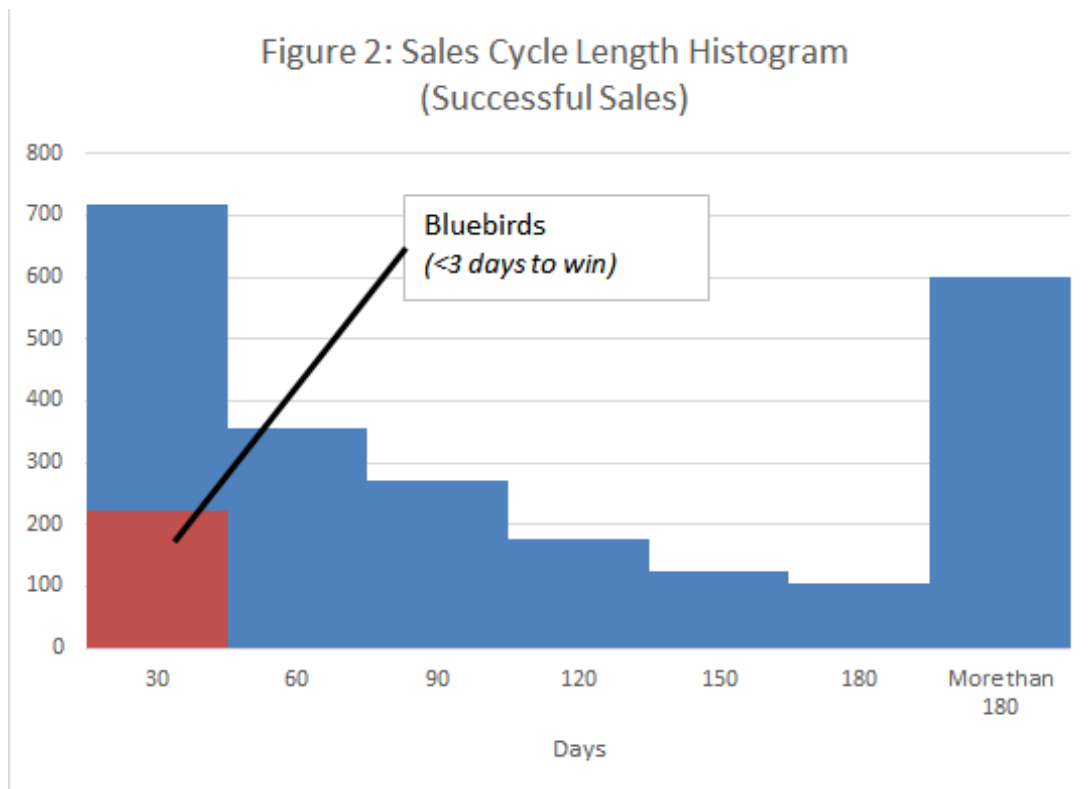
Variable	Min	Max	Mean	St Dev	Median	Skew	Kurt
Sales Cycle Length (days)	0	2058	307	315	183	1.51	2.44
Transaction Size (USD)	*	12,913,000	189,631	394,763	87,500	11.30	241.22

n = 6,201

* Negative transactions (refunds) comprised less than 0.2% of the sample.

While a typical sale closed after an approximately eight month evaluation period, more than 10.1% of successful opportunities (approx. 240), comprising 7.6% of the organization's revenue, were alleged in the system to have been closed with two days or less of selling effort (See Figure 2).

(Figure 2 about here.)



While we cannot rule out that one customer in ten simply chooses not to evaluate their purchasing option in this competitive and highly complex market, this result is consistent with the pursuit of sales opportunities “off the books” and outside the scrutiny of management.

We can also contrast conversion rates for bluebirds generated by the salespeople themselves with those generated by the marketing team as part of its lead generation efforts. When marketing identifies a prospective customer through its lead generation activities, it enters the prospect into the system before handing off this opportunity to the salesperson. Unlike opportunities entered by the salesperson, the salespeople has no control over the initiation of the opportunity within the SFA system.

Twenty four percent of the opportunities pursued in the period under scrutiny were generated by marketing, but these marketing-originated leads resulted in only about 10% of

successful sales. Bluebirds that appear among opportunities initiated by the salesperson make up 9.4% of successfully closed sales. Marketing leads that resulted in bluebirds (i.e. closed in less than two days or less) comprised 0.7% of successful sales. Put another way, sales-generated leads convert to bluebirds at a rate of 4.35%, as opposed to 1.14% for marketing-generated leads. These conversion rates differ significantly (evaluated via Chi-square test, $p < .01$) (See Table 2).

(Table 2 about here.)

Table 2: Bluebird Conversion Rates

	Marketing-generated	Sales-generated
Bluebirds	17	205
All opportunities	1492	4709
% conversion*	1.14%	4.35%

* Significantly different ($p < .01$)

Bluebirds and Selling Teams

As a complex, high technology product, a team selling approach is often required to provide a customer with expertise related to different product mixes and capabilities. Selling teams consist of channel representatives, strategic account representatives, technical salespeople, and product line representatives, in addition to the sales executives themselves. Salespeople are empowered to select and assemble sales teams on an ad-hoc basis to meet customer-specific buying processes and requirements. Of the 6,201 sales opportunities studied in the relevant range

during the time frame being examined, more than 42% were pursued using sales teams.

Opportunities pursued using teams comprised 40% of the successful sales.

Such teams require time to assess customer needs, assemble the skills and personnel relevant to the customer situation, and then deploy these skills to close the business (Ahearne, Mackenzie, Podsakoff, Mathieu and Lam 2010; Menguc, Auh, and Uslu 2013). Yet, seventy sales opportunities, comprising 2.8% of successful opportunities and 7.1% of bluebirds, were closed using sales teams that allegedly assembled, deployed, and completed their tasks in two days or less.

Policy: All opportunities must follow the progression of sales steps.

The focal firm imposes a seven step sales process (see Figure 3). Leads that have been generated are marked as “Suspects”. Once a salesperson has contacted the customer, the sales opportunity is moved to the second or “Qualifying” stage, at which point the salesperson evaluates the prospect’s viability as a potential customer. During the third phase, “Needs Analysis”, the salesperson evaluates the prospect’s needs, whereupon the prospect moves to “Solution Development” which is the fourth phase in the required sales process, where the sales executive determines the optimum mix of products and services to offer to the prospect and produces a business case to cost-justify them. A fifth phase, “Demonstration”, calls for the salesperson to make a case for their offering versus competition and to offer product demonstrations or make available subject matter experts who can validate their claims and overcome product-based objections. In the “Proposal/Negotiation” phase (sixth phase), contractual terms are negotiated. Once the contract has been signed by both parties, the account enters the seventh and final phase where the sale is marked “Closing” until revenue is realized.

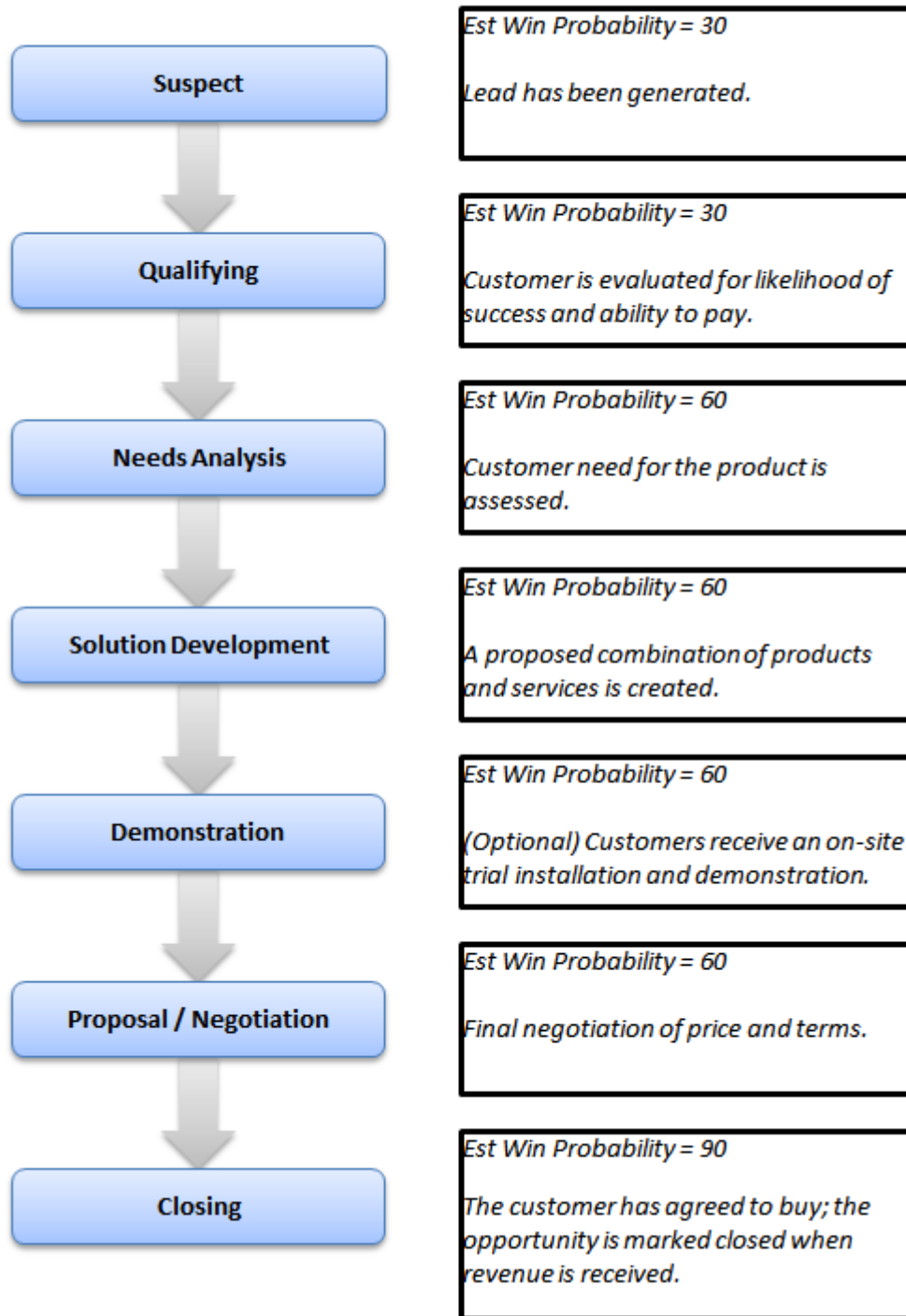
The firm reported that typically 15% of signed customers would have insufficient funds to make payment, and the sales would be cancelled. Unsuccessful opportunities may end at any prior step, being moved straight to “Closed” status. An account is moved to the “Closed” status once either the revenue has been realized or the opportunity is deemed to have been lost.

By company mandate, all or most successful sales opportunities should pass through each of these steps. The company’s sales analytics group often reviews the number, naming, and behavioral requirements of each step in the sales cycle in an attempt to optimize selling behaviors. However, in the period studied, *none* of the more than 2,400 successful sales opportunities completely and fully followed the mandated process. Only three opportunities followed five or more of the steps.

While opportunities which had been unsuccessful can be expected to have passed through fewer steps, 88.4% of the opportunities which were successful had one or even zero steps reported in the SFA system. Fully 42.1% of successful sales opportunities were created at the “closed” step (See Table 3).

(Figure 3 about here.)

Figure 3: Steps in the SFA System



(Table 3 about here.)

Table 3: Sales Funnel

Step		Total	Wins	Started There
Suspect (30)		1492	248	1492
Qualifying (30)		135	5	81
Needs Analysis (60)		1441	427	1115
Solution Dev. and ROI (60)		37	6	4
Demonstration / Benchmark (60)		25	2	4
Proposal and Negotiation (60)		29	9	3
Closing (90)		1431	1018	1010

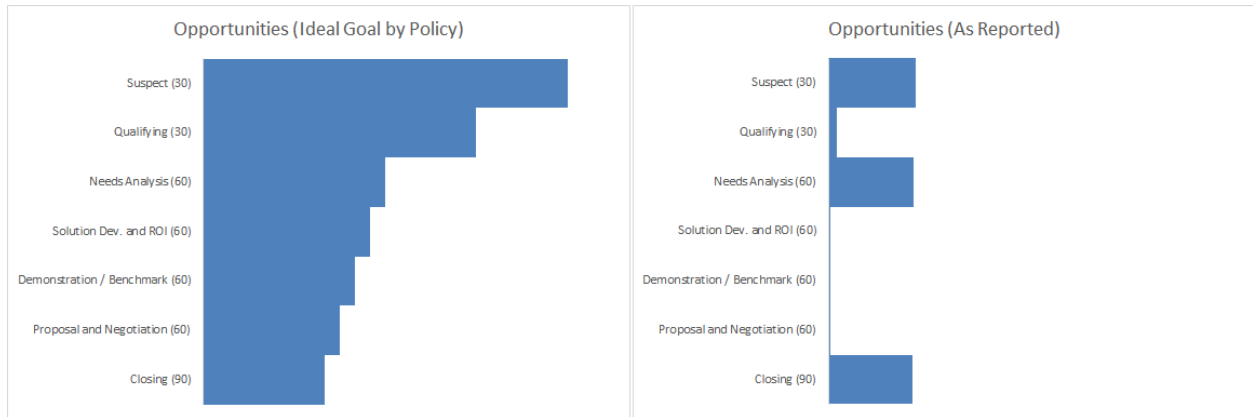
Further research revealed that in the the six year period since the SFA system had been implemented, no sales opportunity in the system had ever fully followed the mandated procedure. Despite great attention being given to the number, nomenclature, and policies associated with each sales step by the analytics team, it appears that the entire sales force had ignored policy from the beginning.

In the face of rampant non-compliance, it is useful to see which sales steps were entered in the system. By interviewing individual salespersons, a picture of the tacit norms used for sales cycle documentation began to emerge. Salespeople did not use the “Suspect” phase at all; this was purely used by marketers generating leads prior to hand-off. The “Qualifying”, “Solution Development”, and “Proposal/Negotiation” phases were used rarely and inconsistently depending on the sales executives’ personal preference. “Needs analysis” was the earliest step used by sales executives to “park” sales opportunities which they had reported pursuing but which were not ready to be forecast for immediate closure. “Demonstration” was used purely for product demonstrations. According to company policy equipment could not be allocated or shipped to a prospect for an opportunity that had not reached this phase. “Closing” represents

opportunities which were deemed very likely to close in the immediate future and therefore had been forecast on the sales executive’s pipeline (71% of these deals did in fact close successfully).

(Figure 4 about here.)

Figure 4: The Sales Funnel Illustrated



Thus, a de facto sales process emerged, consisting of three steps, that describes most of the sales cycles in the period studied (See Table 3 and Figure 4). One step was reserved for marketing-generated leads. The second was for deals that were “in-process” but which the salesperson did not forecast for immediate closure. The final was for deals that were considered likely to close in the immediate future. Conformance to this tacit norm was consistent across all sales regions.

Policy: An opportunity’s sales step should correspond to its probability of eventually being won.

As part of the firm’s prescribed stepwise approach, salespeople are expected to provide an estimated probability of success for each opportunity. This serves two purposes. First, it

provides both short- and long-term forecasting capability for the sales team. Second, it is designed to enforce disciplined qualification of potential customer relationships. Therefore, a sales opportunity at the Demonstration step is evaluated as having a 60% probability of closure, and also means that opportunities are not allowed to reach this step (and the attendant allocation of personnel and hardware for a product demonstration) without meeting a 60% win probability threshold.

As noted in Table 3, the de facto behavior followed by the firm's sales professionals diverges significantly from the de jure mandates specified in the company's sales process policy, to the point that no successful sale has ever been recorded to have followed the entire sales process. Nevertheless, the probabilities of success are important to the functioning of the firm because they are still used in organizational planning and sales forecasting.

Planning in the focal firm was concentrated in a single individual, a member of the finance team who had been seconded long before to the sales organization. In interviews, he described two major work tasks related to the industrial sales team. First was approval of sales team requests to authorize discounts. Beneath the list prices was a price floor specified by policy, and customers could only be offered a price lower than this minimum with approval from sales support (which is to say, from this individual). As with other companies (e.g. in Mantrala et al. 1994), the firm did not have per-opportunity data on cost and so utilized revenue instead as the primary measure of performance. The employee reported that since deep discounts were the norm in the industry, and salespeople considered the price floor to be unreasonably high, in practice nearly every deal that closed went across his desk for pricing approval. Lacking per-opportunity data on cost, such decisions were made primarily based on intuition and experience.

The financial analyst was also required to generate short- and mid-term forecasts, as a supplement to those submitted by district and regional managers. Collectively, these forecasts formed the basis for corporate planning. Due to the proliferation of product lines and the short product lifecycles, production planning was limited to immediate needs and long-term planning was used for sales territory allocation and financial planning.

Sales steps fell into three broad categories (See Figure 4). Early stages (Suspect and Qualifying) collectively were ostensibly supposed to convert at a rate of approximately 30%; however, in practice this goal was deemed unrealistic by managers, analysts, and salespeople alike and so was ignored. The middle phases (Needs Analysis, Solution Development, Demonstration, and Proposal) were collectively intended to have a 60% win rate. Deals which had reached the “Closing” phase, were expected to convert at approximately 90%. In theory, this last group should have included deals which were listed as having been won, to reflect the fact that some customers would later cancel their contracts for lack of funds; however, in practice this group was treated separately.

However, forecasts proved to be wildly inaccurate. Salesmen pursued more than three hundred million dollars in overall revenue at the 30% probability tier, for an expected anticipated revenue of ninety three million. Of this, they achieved less than twenty eight million dollars, an overall forecast accuracy of just under 30% (see Table 4). Results were similar at the 60% tier, and applied whether the forecast was expressed in dollars or number of transactions. Forecast accuracy was higher at the 90% tier, but these were supposed to have been deals already all but finalized, and yet accuracy was still only 70%.

(Table 4 about here.)

Table 4: Aggregate sales forecasts and accuracy

	\$ Forecast	\$ Actual	Accuracy	# Forecast	# Actual	Accuracy
30%	96,332,375	28,250,388	29.4%	1573	252	16.0%
60%	203,721,037	70,797,889	34.8%	1475	437	29.6%
90%	222,079,689	153,664,445	69.2%	1431	1018	71.1%

Salespeople engage in opportunistic utilization, reporting (or failing to report) their business activities in ways geared to advance their own agendas -- possibly at the expense of those of their companies. These actions may come as a result of a downturn in the economy, an unrealistic compensation or control system, or simply unethical individuals seeking personal gain. Acting in their own interests, it is no surprise that the data these salespeople produce will be heavily biased unless carefully audited and tracked, a process that induces costs of its own. Such a finding aligns directly with what one might expect given the agency theory framework.

Sales managers were quite open that at times it was necessary to game the system to pursue leads in ways that bypass what were perceived as overly restrictive or self-defeating policies from the analytics group. The analytics team recognized that data integrity was an issue, but did not consider addressing this a high priority.

This is significant for three reasons. First, of course, it demonstrates that as a driver of salesperson behavior, the SFA system has been unsuccessful in this firm. This despite an ostensible 100% utilization rate; salespeople interacted with the system, but not according to policy.

Second, it is revealing that the analytics group, charged with analyzing and tweaking the sales process, had done so little to measure compliance with policies already in place. Later conversations with analysts indicated that compliance was known to be a problem but one that was considered a long-term issue to be examined at some point in the future, in favor of the more immediate problems of optimizing the number and nature of steps in the sales process. This myopic approach illustrates that an analytics group can be a constituency in their own right, with its own interests, influences, and role in organizational politics. Individual analysts are subject to their own agency dilemmas as they act on behalf of the firm to control the sales force.

The third problem was that despite severe data-quality and compliance issues, the SFA tool was nevertheless still used to evaluate and manage sales personnel. In the face of tacit norms for behavior that ignored or circumvented policies for SFA tool use, the analytics group continued to analyze SFA data and issue policy guidelines as if the data was reliable and as though its guidelines were being followed.

What are the consequences of this for the firm when opportunistic utilization becomes accepted as a tacit norm for the salesforce? Consider the case where monitoring does not occur and where managers make decisions based on uncritically accepted SFA data. The de facto process is an emergent one where the sales team operates largely autonomously. The analytics group receives inaccurate data and based on this issues periodic dictates, which are largely ignored by the sales team. They wield considerable organizational power but this is almost entirely directed inward, towards salespeople in their activity within the organization and their reporting patterns to the company.

In such a situation, salespeople practicing opportunistic utilization affect their colleagues' behavior, the quality of results produced by analysts attempting to interpret the data they

produce, and the integrity and acceptance of the IS system itself. Each of these will be considered in turn.

Ethical Climate

The immediate effect of opportunistic utilization is on individual salespeople. Salespeople who practice opportunistic utilization in their data reporting are likely to benefit from doing so, unless they are not observed and disciplined. In this study, we see evidence that salespeople failed to report ongoing sales activities, thus protecting their valuable network of contacts from being appropriated by their employer and preserving their relative bargaining position vis a vis their employer. Keeping the contact information secure is one way that salespeople have traditionally protected their position even before the advent of CRM systems (Bush, Moore, and Rocco 2005; Buttle, Ang and Iriana 2006). Similarly, salespeople who were relatively low performing and therefore whose jobs were endangered often reported larger and more robust pipelines than their actual portfolio of sales prospects justified. As with protection of contacts, this practice antedates the appearance of SFA systems. Whereas in the past these misrepresentations were made in person or via written report to their managers, sales professionals may now do so by entering data into an information system. The fact that the reporting is done over a computer does not stop salespeople from entering false or overly-optimistic data projections. In doing so, they increased the perceived risk associated with firing them. Over time, employees in this situation may be more likely to be retained than others in the same situation who choose not to overstate their prospects.

Absent a set of data integrity policies to ensure that data are reported accurately, salespeople are unlikely to be detected in their deceptive activities. Such a system selects for and rewards salespeople who engage in opportunistic utilization. Given this incentive structure, it is

likely that widespread misreporting of data becomes common practice and an accepted norm within the sales force. Indeed, this follows the logic and patterns of other kinds of ethical decision-making behaviors in a company that collectively manifest as an ethical climate. Although not examined in this study, it is even possible that opportunistic utilization might contribute to the propensity of salespeople to engage in other kinds of unethical behavior.

In the company studied, the researchers interviewed mid-tier sales managers and discovered that, indeed, misreporting was widespread and considered a “white lie” that had become a tacitly acceptable business practice. Salespeople felt that it was occasionally necessary to enter the data the system asked for to get the managerial response they felt was required, regardless of whether it was actually necessary.

Evaluating SFA Systems for Data Integrity

RQ2: What criteria can be used to allow a firm to evaluate the validity of particular pieces of data if there are concerns that non-compliance may be occurring?

Data from information systems can be treated with inappropriate reverence because it is perceived as being from a computer, with managers forgetting that the data itself are self-reports from employees with a vested interest in the perceptions and decisions that flow from that data. To detect opportunistic utilization, one can draw from validity concepts associated with both data derived from observation, and data derived from self-report. These fall into three broad categories (see Figure 5).

When evaluating an extant data set to diagnose possible cases of opportunistic utilization, it is necessary to look first at the data in the context of the process that produces it. This is analogous to using techniques that establish external validity, such as a nomological net (e.g. Straub et al. 2004). In the case of bluebirds, an entirely exogenous event was seen to behave very

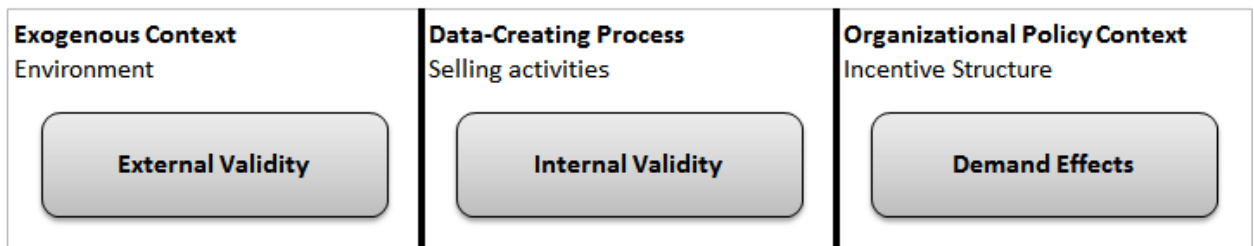
differently in the data depending on which agency within the organization happened to have recorded it in the SFA system.

Second, one must look at the internal process that produced the data. Here, a sales executive is expected to assemble and manage a sales team so as to assist in winning the deal. If a deal is closed successfully within seventy two hours, there simply is no time to assemble and deploy these resources. A bluebird by definition simply doesn't require this level of selling investment. Again, this is a sign that the salesperson's reported behavior may not correspond to his or her actual behavior in the field.

Finally, one can look at the organizational outcomes expected from the contents of one's self-reports of their behavior. Reports that invite unwanted scrutiny, appropriation of information a salesperson would prefer remains exclusive, or which have strong implications for the salesperson's retention or compensation can be expected to increase the temptation to utilize the SFA system opportunistically.

(Figure 5 about here)

Figure 5: Detecting and Mitigating Opportunistic Utilization



Potemkin Village Effect

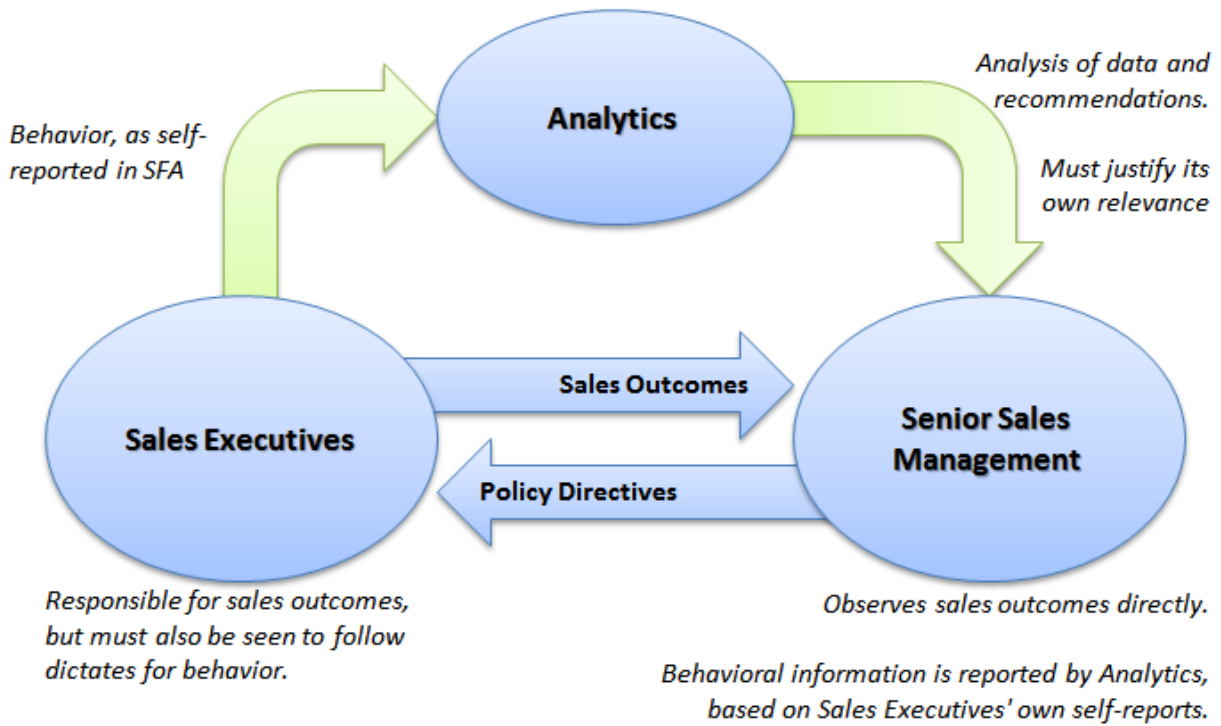
RQ3: What possible consequences might ensue for an organization that is experiencing widespread gaming of the SFA system?

Information from the system is virtually useless for any long-range sale forecast since few, if any, sales follow the prescribed sales process and many are opened and closed within a matter of days (bluebird sales). The desire, on the part of the firm, to project an accurate sales forecast from the SFA data was one reason this study was undertaken. Results from the study suggest that this is not feasible given current utilization practices by the sales force.

Writ large, inaccurate decisions can lead to a dangerous feedback loop. As bad data drives bad data inferences and, in turn, bad decision-making, salespeople become even more likely to disregard insights developed from this data as out of touch and an obstacle to “real” selling (Speier and Venkatesh 2002). Under the Technology Acceptance Model and its variants, reductions in perceived usefulness are likely to result in reduced behavioral intent to use and then less actual use (Avlonitis and Panagopoulos 2005, Davis 1986, Davis and Venkatesh 2000). However, where use of the system is required by managerial practice but accuracy is not audited, we suggest that salespeople may substitute increased opportunistic utilization for declines in overall hard measures of usage.

(Figure 6 about here.)

Figure 6: Interactions Between SFA User Constituencies



Over an entire sales force, it is possible that this may spiral out of control. As the picture formed by the data in the SFA system bears less and less resemblance to the actual “truth on the ground”, the insights and managerial decisions that spring from them become less relevant to actual conditions in the field and less likely to make a positive difference. In this situation, if analysts continue to ignore issues of data integrity, accuracy of data will decline still further.

This is reminiscent of the (possibly apocryphal) story of Gregory Potemkin (Sully 2007). Appointed by Catherine the Great to administer Russia’s Crimean territories, the story goes that Potemkin proved to be an incompetent administrator. To protect his position he sent glowing reports of his successes to her. When the Empress decided to visit the region, Potemkin supposedly erected a vast deception along her travel route: fake villages populated with paid

servants posing as happy, productive peasants. The successful deception entrenched Potemkin's power and position, ensuring that his failed management policies would be perpetuated.

Similarly, each wave of managerial decision-making, tainted by its basis in bad data, creates a perverse incentive for employees subjected to these decisions to taint the data still further. Thus opportunistic utilization has both a direct and an indirect negative effect on the quality of insights derived from the SFA system.

This was observed in the firm studied. While the VP in the focal firm had the theoretical authority to resolve this conflict, frequent reshuffling of the top management team limited the executive's ability to mediate between organizational functions. The senior VPs of Sales relied on the analytics team for advice and internal intelligence; this gave the analytics team strong internal influence over official policy. However, ultimately the success of management was grounded in objective sales outcomes and in turn measured the sales team primarily on their ability to achieve these outcomes.

Over time, the sales organization became divided between data analysts and the sales force they analyzed. Analysts were perceived as intrusive and out of touch, periodically issuing policies and processes for selling which were perceived as having little to do with the real issues salespeople faced and which were either given pro forma acceptance or outright ignored. Salespeople, for their part, were perceived as not seeing the "big picture", and being unruly and unwilling to follow policy. The central tension in the analysis role stemmed from the fact that on one hand, their positions relied on their ability to justify the value of their insights to management. On the other hand, analysts recognized that data integrity was a problem. Ultimately efforts to enforce data integrity or even measure it were deferred into an indefinite future.

Instead, analysts focused on decisions that could be measured and implemented within the context of the IS system itself, with the fewest possible disruptions to organizational politics. For example, analysts were highly interested in determining the optimum number of steps to include in their sales process to maximize revenue; however, from the tens of thousands of sales opportunities over the six years since the SFA system was implemented, analysts were unable to produce even a single example of a sales opportunity that had been pursued to completion according to their process.

This became especially true given the perception by salespeople that the analytics group was aloof and naive about the day to day realities of the salespeople. That is, salespeople justified their opportunistic utilization by pointing to perceived poor decision-making that stemmed from the system, when those decisions were based on bad data resulting from earlier opportunistic utilization.

Systems Acceptance

Under the TAM, perceived utility is a critical driver of overall behavior intent to use as well as actual utilization of the system (Ahearne, Hughes, and Schillewaert 2007). When widespread cynicism about the value of the SFA system becomes entrenched in a firm, it is likely that the system will be misused or not used at all. The consequences for the overall acceptance of the system itself are likely to be negative (Avlonitis and Panagopoulos 2004). In turn, this can also have the effect of degrading their individual sales performance (Ahearne et al. 2007).

Thus one can have a seemingly paradoxical situation where there is heavy utilization of a system which is not accepted by its users. The users consider the system a forum to fulfilling procedural requirements and conducting impression management. While systems acceptance was

not measured in this study, the view has strong precedent in the literature on technology acceptance in general and adoption of salesforce automation in particular (Davis 1989, Moutot and Bascoul 2008). What makes opportunistic utilization different is the stark contrast between a firm's employees *using* a system and the firm itself *deriving benefit from* the system.

Limitations and Further Research

There are a myriad of ways in which data can be presented opportunistically. This study demonstrates two particular cases of demand effects in SFA quantitatively-- one each of misreporting of data and failure to report data. It also examines reports from within a focal firm qualitatively to elucidate the process by which opportunistic utilization occurs, is justified, and even becomes systematized.

However, there is no reason to conclude that these two examples are the limits of possibility for lies of omission and commission in IS utilization, even in just the context of salesforce automation. SFA tools are designed to manage and record activity pertaining to lead generation, prospecting, qualification, customer relationships, pre-sales support, RFP and other formal documentation, contract negotiation, and fulfillment. Events at any of these points might potentially be impactful on a salesperson's career, and thus provide an incentive for opportunistic behavior in their reporting, especially considering the general opacity of salesperson behavior to direct observation by managers. Further research is necessary to identify and determine the relative importance of different ways in which opportunistic utilization can manifest.

Additionally, quantifying the magnitude of opportunistic utilization in a sales force, mapping the manner in which this behavior spreads through the sales force, and determining its impact on profitability are all avenues for further exploration of this area. In particular, since governing and monitoring mechanisms are not without costs of their own-- direct and indirect--

measuring its impact on profitability will help frame the cost-benefit tradeoff more clearly.

Finally, there is a need to determine what governance mechanisms are best suited to ensuring that use of an information system remains use-as-intended.

One challenge in conducting a study of deceptive data entry practices is that the principal data source -- the IS system -- is itself suspect. This has been supplemented with interviews with various members of the organization. The findings in this study are grounded primarily in qualitatively assessed inconsistencies between policy and reported results. In particular, detecting unreported selling activities is challenging; our findings very strongly impugn the plausibility of the salesperson reports as a whole without definitively falsifying any report in particular. Regarding the third policy, that of forecast fulfillment, one must also distinguish between intentional deception and the normal over-optimism that is natural and even productive in a salesperson.

Further research can help address this. For example, a company with several overlapping but unconnected IS systems might provide the opportunity to contrast salesperson representations of their activity in different contexts. For example, reconciling customer opportunity records in the SFA database with expense reports submitted for reimbursement might illuminate cases where customers were being pursued offline. Attempts were made to secure this data; however, they proved unsuccessful.

Additionally, while this study identifies the phenomenon of opportunistic utilization, it does not determine the boundary conditions under which it operates. A better understanding of the drivers of opportunistic utilization and its relationship to use-as-intended and other variables in the technology acceptance model would help practitioners to minimize its effects. While this paper explores the potential outcomes associated with it, more detailed investigation of its

consequences to the salespeople, the sales force, other organizational constituencies, and the organization as a whole would help elucidate the consequences of opportunistic utilization of the IS system on the operation of the organization. In particular, interviews suggested a tense power dynamic between the sales force and the analytics group-- one not present between the sales force and the sales/finance planning manager. A multi-firm study would permit contrasts to be drawn between different sets of tacit norms regarding system use.

Implications for Research Methods

From a research perspective, these results indicate that secondary data -- even from a firm's own SFA systems must be viewed with at least some degree of healthy skepticism when there appears to be widespread missing data or salesperson gaming of the system. Too often, it is assumed that secondary data is accurate and complete when that may not be the case.

Unfortunately, our findings indicate that data may be entered in an SFA or CRM system in a manner that is less than accurate or fails to be forthcoming with all details. In cases such as this there is very limited value in the information for either management or researchers.

Researchers seeking to derive insights from salesforce automation system data must be especially sensitive to the possibility of opportunistic utilization. Where this data is audited externally (through connections to other systems, directly measured from behavior, or subject to after-the-fact review), the potential for opportunistic utilization is comparatively low. Where the opportunity for deception is high, or where the incentive structure rewards opportunistic utilization, the reliability of the data should be called into serious question. Absent effective data integrity measures, salesforce automation data fields are self-report records presented in the context of very strong demand effects by informants trained in impression management tactics.

Conclusion

Salesforce automation systems offer a useful window into salesperson behavior and are a crucial tool in modern salesforce management. However, this research suggests that not all use of a system is use-as-intended, and data from such a system should not necessarily be taken at face value. Salespeople can and will be selective in what they choose to disclose to their managers via the system. Researchers and sales managers alike should be alert to the incentive structure that SFA users operate within to ensure that the system reflects actual realities in the field. Failure to do so has potential implications for the sales force, the success of the information system, and the organization itself.

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An Escalation of Commitment Perspective on Allocation-of-Effort Decisions in Professional Selling

Abstract

Sales force compensation theory assumes that, given proper design of the incentive structure, a professional salesperson will rationally allocate effort to maximize returns to their firm and to themselves. Some sales opportunities however may never reach a definitive end. Faced with a large sunk investment in long selling cycles and prior qualification decisions, salespeople escalate their commitment to these “zombie” opportunities, to the exclusion of pursuing viable leads. This over-investment effect regarding prospects who may never be closed is explored on a theoretical level, and then tested empirically using three distinct types of sales effort investment. The effect is tested in a study of a large multinational corporation’s industrial sales force, for both a product and a service. Results indicate that an escalation effect does occur when the investment is not subject to prior managerial consent. Results suggest that without targeted managerial intervention, sales executives will over-invest precious selling resources into unprofitable, unwinnable “zombie” opportunities.

Introduction

Few jobs present more governance challenges to a manager than managing a sales force. Outside salespeople in an industrial setting operate remotely, usually unobserved by their managers, and in a fluid and highly idiosyncratic environment (Albers 1995; Anderson and Oliver 1987). Sales research has prescribed that salespeople employ behaviors that are highly adaptive to a customer's unique needs and requirements (Jones et al. 2005a; Spiro and Weitz 1990; Sujan et al. 1994; Weitz 1981; Weitz 1986). This leaves managers, attempting to maximize the performance of their employees, dependent on aligning their employees' incentives with those of the firm and trusting that, whatever the salesperson actually does will rationally pursue firm objectives (Ouchi 1979). In service of this objective, sales scholars have supplied ever more sophisticated compensation structures, designed to more precisely marry the salesperson's goals to the firm's. Given that alignment, we assume managers and salespeople will work rationally, perform optimally, and accomplish firm objectives (Ouchi 1979).

The question is, does this assumption hold? Behavioral research demonstrates repeatedly that decision-makers are subject to systematic biases, which can cause them to sub-optimize, despite their best efforts. One such bias is escalation of commitment. Given a long-term, risky venture in which significant and unrecoverable prior investments have been made, the natural human tendency is to over-estimate the project's value to the organization and the need to continue investing when rationally they should abandon it (Staw 1981; Staw and Ross 1978).

Escalation of commitment bias is highly relevant for industrial salespeople. Facing long sales cycles, significant investments of time and firm resources to win each customer, and highly risky outcomes, the common assumption in sales scholarship that the effort-outcome relationship is

always positive cannot be sustained. Instead, we must adopt a richer view of salesperson cognitions regarding the selling process.

This study explores and tests the effort-outcome relationship in two different industrial categories: a high tech, high-dollar industrial capital equipment product and a suite of customized IT services. Using observational data gleaned from archival records of selling activities, we hypothesize that the effort-outcome relationship is more complex than previously suspected, and is subject to a continuance bias that causes salespeople to over-invest in deals that should have been qualified out much earlier. We also suspect, however, that the nature of this over-investment is contingent on both governance of the resource and the product/service context.

Our research examines the possibility that while opportunities can be won or lost, a third, far more pernicious type of outcome exists: the sales cycle which never reaches a definitive end. Like the mindless, shambling zombie hordes of cinema, these deals are neither alive nor dead. Though they are unlikely to ever be won, yet, somehow in the salesperson's cognition still are seen as somehow viable. These "zombie" sales opportunities persist in the pipeline as a constant drag on effort and attention. Our results suggest that without periodic managerial review, salesperson will sub-optimally allocate their own and their firm's limited selling resources, that this result persists regardless of the salesperson's actual ability, and that this bias afflicts both sales executives and their managers.

This research contributes to the sales management literature by demonstrating that the decision-making process driving effort allocation is far richer and more complex than heretofore realized in the sales force literature. It suggest that how a salesperson perceives and processes information from their environment is as important as the alignment of their motivations in their

decision-making. Further findings from this study may help drive additional research efforts on the effectiveness of management oversight of salesperson behavior in outside sales settings. ON a practical level, this research reinforces the importance of qualification of customers in general. However, since escalation of commitment strikes salespeople, their managers, and even disinterested observers who have not been specifically primed to incorporate these effects into the decision-making, it also raises the need for selling organizations to craft oversight strategies that deal specifically with escalation. In some organizations that may be incorporated into practice in the form of a review by an outside manager regarding the use of demonstrations and/or the inclusion of a technical sales-team into the sales effort for a specific account.

[Account.Background](#)

Sales Force Compensation

Sales compensation theory revolves around the insight that, in a B2B context, the sales task is both idiosyncratic across opportunities and largely unobservable. Therefore, behavior-based organizational controls alone are inappropriate for maximizing performance. Instead, the conclusion of the sales compensation literature is that outcome-based controls can be crafted to align the salesperson's motivations with those of his organization (Anderson and Oliver 1987; Bergen et al. 1992). Drawing on agency theory, the idea is that the salesperson will rationally pursue her/his self-interest. Given proper motivation, the salesperson's motives can be aligned with those of their firm, and they can, therefore, be given great autonomy in deciding which prospects to pursue and what selling activities to employ (Coughlan and Sen 1989; Misra et al. 2005). This assumption forms the foundation not just for traditional salary/commission decisions, but also for the decision to insource/outsources the sales function (e.g. Anderson

1985), shifting of compensation structures during a new product release cycle , and employing motivational events such as sales contests (Lim et al. 2009).

The effort-to-outcome relationship is a foundational assumption of the sales performance literature. Yet, research exploring the nature of this relationship is actually relatively sparse. Exceptions largely consist of studies of pharmaceutical detailing such as those by Parsons and Abeele (1981), Manchanda and Chintagunta (2004), and Mizik and Jacobson (2004). Brown and Peterson (1994) examine the linear aspect of the link meta-analytically as part of a larger exploration of both variables' relationships to Job Satisfaction. However, in the main, the literature has primarily focused on how to align incentives to best influence motivation rather than behavior. Studies of effort expenditure mainly apply expectancy theory (e.g. Simintiras et al. 1996; Teas and McElroy 1986) and agency theory (e.g. Coughlan and Sen 1989; Misra et al. 2005). Effort itself is typically expressed as having two key dimensions: working hard and working smart (Sujan et al. 1994). The latter concept concedes that the elasticity of outcome with respect to effort varies across salespeople. This is considered tantamount to an “effectiveness coefficient”—one conceptualization of ability. Working smart is usually treated as a salesperson-level construct rather than a contingent factor (e.g. the use of self-efficacy by Sujan et al. (1994)). Coughlan and Sen (1989) suggest developing models which support within-salesperson variation across product lines and time, but supply no theoretical conditions that might govern such variability.

A positive but decreasing marginal return on effort perspective makes perfect sense. On the other hand, a negative marginal return on effort has never been contemplated. After all, what employee, appropriately motivated, would expend personal and firm resources to *reduce* their

return? And yet the notion of escalating commitment suggests that in practice this is precisely what may happen in some situations.

Escalation of commitment

Escalation of commitment refers to the tendency of decision-makers, when faced with a continue / abandon decision, to incorporate sunk costs into the project calculation (Staw 1981). Rational economic reasoning argues that unrecoverable sunk costs should not be considered—they are spent and now gone, whether the project is successful or not (Whyte 1986). However, in practice, these sunk costs often are considered, causing the decision-maker to “throw good money after bad” and continue with projects which are likely to fail. The decision-maker becomes trapped by their prior commitments and unable to escape a losing situation.

As an empirical regularity, escalation of commitment is extremely well-supported; see Brockner (1992), or more recent reviews as part of Schmidt and Calatone (2002) and Kadous and Sedor (2004). Over nearly four decades of application across a wide variety of academic disciplines, the principle has proven to be a robust statement of an inherent cognitive bias. However, while the behavioral regularity itself is not in doubt, the underlying mechanism by which it operates remains controversial. A number of potential theoretical explanations have been proposed; these tend to fall into two broad categories: psychological and behavioral economics approaches.

Psychological approaches attribute biases in the assessment of sunk costs and continuation decisions to a variety of affective processes, and date back to pioneering work by Staw (Staw 1981; Staw and Ross 1978). These relate to how the mind selectively processes information. A continuance decision is not made in a vacuum. At the time of a decision, prior decisions to continue have already been made based on a belief that continuance is justified. When presented with new information, the decision-maker examines these in light of this positive prior belief,

and focuses their attention on belief-consistent information to the exclusion of belief inconsistent information (Frey 1986; Sanbonmatsu et al. 1998). Several underlying causal factors have been proposed to explain this behavior. These include attempts at self-justification, social norms enforcing consistency, negative affect (Wong et al. 2006) and avoidance of negative emotions associated with regret (Wong and Kwong 2007). The behavioral economics approach, proposed by Whyte (1986), draws on prospect theory (Kahneman and Tversky 1979) and cognitive framing as the driver of the escalation effect. Attuned to the pre-existing investment already made in a project, the decision-maker sets a reference point at their pre-project status, framing the invest/abandon decision as a choice between a sure loss (that is, the abandonment of the unrecoverable and already-invested sunk cost) and a risky bet (continuation of the investment, with a low probability of success). In this case, the prospect theory interpretation suggests that risk-seeking behavior will result and the decision-maker will sustain investment long beyond the point of rationality (Whyte 1986).

In pursuit of a better understanding of these theoretical questions, researchers have devoted considerable effort to attempting to establish the effect's boundary conditions (e.g. Arkes and Hutzel 2000; Beeler and Hunton 1997; Fox et al. 2009). In his seminal review of the extant literature at the time, Brockner (1992) suggested that the escalation effect was the result of a confluence of multiple simultaneous effects that are mutually reinforcing and lead to an effect that is robust across many decision-making contexts. Subsequent inquiry seems to support Brockner's proposal, and demonstrates that the escalation effect is both robust and pervasive in decision-making. In particular, subsequent experimental research has shown that escalation effects are present even when the decision-maker is not personally vested in the outcome of the decision, must explain a rational justification for their decision, or is reviewing the decisions of

others (Kadous and Sedor 2004). Indeed, simply priming the decision-maker with the goal of dispassionately analyzing the continuance decision may actually exacerbate the escalation effect (Wong et al. 2008). On the bright side, Kadous and Sedor (2004) have found that sunk cost biases can be minimized when a third party reviewer is primed with the task objective of evaluating continuance against losses due to escalation.

This study does not attempt to resolve the controversy surrounding causal mechanisms. Instead, it applies the *effect*, as has it been established in the prior literature, to propose that our understanding of the sales force is incomplete without incorporating the biases of salespeople and sales managers in pipeline management, while being agnostic as to the underlying mechanism driving these behavioral biases. The results have implications for the routines and processes of sales managers, extending from compensation to periodic pipeline reviews and IT policy.

Hypotheses

A salesperson is tasked with establishing profitable relationships with customers, which manifest as a series of transactions. (Anderson and Narus 1990; Palmatier et al. 2006). The sales person does not know, *ex ante*, whether a given potential customer relationship will be consummated; hence the need for prospecting (selecting customers to pursue) and qualifying (determining which opportunities justify continued investment of effort in pursuing). This is required because salespeople are continually evaluated on a number of fronts relative to their performance (Jackson, Schlacter, and Wolfe 1995)

The continuance decision-making process is a case of portfolio management. A salesperson maintains a pipeline (or funnel) of sales opportunities at varying levels of completion. Advancing the customer through the sales process requires an investment of effort. “Effort” may manifest as

personal investments by a salesperson such as emails, teleconferences, in-person dialogues and presentations (Marshall et al. 1999). This investment might manifest as team-level investments of additional personnel to the selling effort (Hutt et al. 1985; Johnston and Bonoma 1981). Or it may take the form of an organization-level investment such as: product demonstrations, customized pre-sale services, pilot programs, or customer-specific product development.

Viewed as a portfolio, the problem seems straightforward enough. Given alignment of the salesperson's motives with that of the selling organization, the sales person simply estimates the optimum allocation of selling resources required to maximize the return on their pipeline.

Alternatively, this can be expressed as a disutility-for-utility exchange, as with Coughlan and Sen (1989). Where the net present value of expected future cash flows for a customer after accounting for cost of sale is negative, the customer is qualified out (analogous to being divested from the portfolio).

Whether substantive or perceptual, only information which affects the NPV of the customer will influence the anticipated benefit of applying a particular selling activity to a particular customer in this neat and tidy view of selling effort. However, another perspective for the salesperson is to view each sales opportunity independently, as a series of multistage, long-term projects with uncertain outcomes, which require continuing investment of personal, team, and organizational resources. In this context, the sales opportunity is ripe for problems of escalation of commitment. The invest/abandon decision for sales prospects rests on the anticipated likelihood of winning the sale, the benefits (compensation) that will accrue from winning, and the cost in time and resources required to win. The cost of a sale can be effectively reduced on a per-opportunity basis in cases where the same effort advances multiple opportunities. One example of this is making a substantial customer acquisition effort that can be costed out longitudinally over a

multiple transaction relationship, as in Mizik and Jacobsen (2004), where detailing visits by pharmaceutical reps provided same-period and subsequent benefits in prescriptions.

Holding all other factors constant, according to this NPV-based decision-making process:

1. Opportunities with a high probability of closing are more valuable than those with a lower probability of closing.
2. Higher-revenue opportunities are more valuable than lower-revenue opportunities.
3. Low cost-of-sale opportunities are more valuable than high cost-of-sale opportunities.
4. Opportunities which are anticipated to require fewer time periods to close are more valuable than those which will require more time to close.

At every time period, the salesperson has a chance to make an invest-or-abandon decision, based on their revised estimate of the probability of closing the deal. According to escalation of commitment theory, in cases where this information is negative, that is the information suggests that the transaction will not be consummated, the salesperson will have a bias towards discounting the negative information and continuing to invest in a losing sales cycle (Staw and Ross 1978).

The actual, latent win probabilities remain unobservable, even to disinterested third parties and the prospects themselves. However, across a portfolio, this effect manifests as a tendency to over-invest in low-value sales opportunities. Since selling effort requires investment of finite resources, this over-investment comes at the expense of under-investment in higher value sales opportunities. This misallocation of resources can be examined through an *ex post* analysis of opportunities which are subsequently won or lost (and whose latent state has been revealed). In general, we can expect salespeople suffering from an escalation effect to over-invest in accounts which are subsequently lost.

Investments of time

The selling cycle requires continuing investment of the salesperson's most elemental and scarce resource – time. For B2B account executives, this decision is made autonomously by the salesperson (Albers 1995). Salespeople must decide between continuing to meet with a given customer to pursue a sale with them, or to discontinuing pursuit of that customer entirely. A middle ground, maintaining infrequent “maintenance” contact, requires a continuing investment as well, albeit much lower than for a customer being aggressively pursued. For the purposes of this study, the go/no-go decision is dichotomized because even customers in maintenance mode require continuing investment of salesperson time and attention resources. Sales cycles which push closure further out into the future are not merely more expensive on the front-end, they are less lucrative on the back end due to the time value of money.

However, opposing this tendency is the nature of the escalation effect. When a large prior investment of time into the sales process has been made, a salesperson develops relationships and empathy with the prospect (Palmatier et al. 2006). As they qualify the customer, their knowledge of the customer's likelihood to buy might become more calibrated (Jolson 1988), but it also becomes less salient in the face of the large sunk cost made to earn the customer's business. Attention is disproportionately awarded to information which supports their prior belief that a customer is winnable (Jonas et al. 2001), and which enables them to defer the anticipated cognitive dissonance associated with abandoning the effort. Salespeople also customarily participate in regular pipeline review meetings with their managers—often in conjunction with their peers in the same sales district. As they publicly defend their own decision-making, their own sense of self-efficacy becomes bound to the success of an account based on the investment made in pursuing it, regardless of its actual likelihood to close (Arkes and Hutzel 2000). Finally,

the salesperson frames the invest/abandon decision as a sure loss versus a chance for either loss or gain -- treating the unrecoverable time investment as still relevant to the continuance decision (Whyte 1986).

The result is that the salesperson will be more likely to continue to make investments of time in a sales cycle, even when the customer is unlikely to buy. Up to a certain point, the effort-outcome relationship should be positive, per extant theory (Brown and Peterson 1994). Salespeople should, rationally, discontinue investing effort when this relationship becomes negative.

However, in practice, salespeople may escalate their commitment long after the marginal return on their effort is negative.

It is worth examining the customer's role in this process. Sometimes, the customer will assist the salesperson in this pruning process by simply telling the salesperson that the sales opportunity has been lost. Often, this is when a competitor has been selected, or when the customer definitively decides not to buy. While the possibility of earning revenue has been eliminated, the certainty at least allows the salesperson to re-allocate his effort towards other customers.

However, customers are not always this forthcoming. Customers often employ deception towards salespeople from whom they have decided not to buy. In addition, customers themselves sometimes lose control of their buying cycle due to organizational procrastination, analysis paralysis, or "escalation of indecision" (Denis et al. 2011). Whatever the cause in a particular case, sales which cannot be won but are not definitively lost are candidates to become zombie sales opportunities—opportunities which continue to be pursued and so become a chronic, persistent drag on the salesperson's selling resources. Thus, the greatest time investments go not to the sales opportunities with the highest probability of success or the highest potential revenue, but to these open-ended zombie sales cycles, which will, in all likelihood, not be won.

H_{1A} *Ceteris paribus*, time investment by the sales person should have an inverted U-shaped relationship with the likelihood of winning the sales opportunity.

Note that this is not simply a story about diminishing marginal returns on effort, already well-known (Coughlan and Sen 1989). The point where the marginal effectiveness of an additional month's time investment is expected to drop below zero should be well within the range of actual sales cycle times observed in a salesperson's pipeline.

One factor which could potentially moderate this effect is that of salesperson ability. Ability to recognize and abandon selling efforts towards customers who are unlikely to buy is a part of the qualification process competency (Jolson 1988). While sales ability is highly complex and derives from many different competencies, superior salespeople should be better equipped to optimally allocate their efforts, if for no other reason because less effective salespeople will underperform and be selected out of the work pool. Moreover, highly-able salespeople can be expected to have larger, richer pipelines; with more lucrative prospects in the offing, there should be less resistance to abandoning a suspect and long-simmering deal (Fox et al. 2009). Therefore,

H_{1B} Salesperson ability moderates the time investment to win probability relationship, such that higher-ability salespeople have stronger positive time-to-win probability relationships and weaker sales atrophy effects.

The consequence of this effect is the pipeline sclerosis effect. Opportunities are posited to attrite out of the salesperson's pipeline unevenly: while customers who impose a buy or no buy decision in effect qualify themselves, customers which do not reach a decision must be qualified by the salesperson, who can fail to do so due to escalation of commitment. Certain victories and defeats attrite out, but zombie opportunities persist. In this way, a pipeline gradually accumulates a collection of these opportunities. Therefore, the effectiveness (that is, return on time

investment) across the entire portfolio of prospective customers should decline and eventually become negative. Hence,

H1c Salespeople with highly sclerotic pipelines will have lower performance than those with lower levels of pipeline sclerosis.

Investments of Personnel

Time is not the only resource that a B2B salesperson has at his command. In a team selling environment, salespeople have the capability to call on additional personnel resources from the company. One such investment is the technical salesperson. Technical salespeople (also called pre-sales technical support, sales engineers, or subject-matter experts) are product experts who are trained in selling techniques (Bellizzi and Cline 1985). Under the direction of the account executive, they liaise with the prospect's technical team, answer specialized questions, develop customer-specific prototypes and proofs of concept, and (in the case of customized services) conduct pre-sale requirements gathering. This adds significantly to the cost of sale (in the form of costs such as time, travel and entertainment expenses). (Johnston and Marshall 2013; Jones et al. 2005b)

Investments of Operations Resources

A final type of escalating investment by a salesperson is the on-site product demonstration. The actual cost of a product demo in high-dollar B2B markets can be very high, involving the creation of custom product development, professional services, customer-specific integration work, as well as the shipping, maintenance and configuration of hardware.

Costly investments such as manpower and prototypes/demonstrations should rationally occur in cases where the sale will convert a losing opportunity into a winning one (Dubinsky and Ingram 1984). Where an opportunity would be won or lost regardless of the support personnel added to

the effort, the marginal benefit is zero and the technical salesperson is not employed/demonstration not scheduled. Following this logic, one would expect to see a strong positive relationship between these investments and likelihood of winning. However, the logic of escalation of commitment suggests the opposite. Salespeople facing a losing deal will begin escalating their commitment, diverting selling resources to losing propositions to “rescue” them (and therefore, their own self-image, social standing, and the sunk costs already invested).

H₂ Sales opportunities that have had sales engineers engaged for the sales team are less likely to be won than sales opportunities for which a sales engineer has not been added due to the escalation of commitment effect.

H₃ Sales opportunities that have had an on-site demonstration are less likely to be won than sales opportunities for which such a demo has not been conducted due to the escalation of commitment effect.

Method

Data

The data analyzed came from over 5000 sales opportunities pursued across the United States by a high tech industrial products manufacturer. The data follows a cohort of sales opportunities opened within a one year period and studied over a period of three years. As this kind of data is relatively rare in a study of this nature, an extended description is merited.

Salespeople working for this company pursue sales opportunities within their regionally-assigned territories. Sales teams are used to supplement sales representatives’ own skills with subject matter expertise, specialist knowledge in particular product lines, and as general supplements in national accounts—all under the direction of the account executive, who manages the

opportunity and makes resource allocation decisions. Deal sizes examined in the data range from over a hundred thousand US dollars to contracts of several millions of dollars; revenue is distributed approximately log-normally. Turnover of sales personnel is approximately 15% during the study period.

Sales cycle length varies significantly, following an approximate log-normal distribution. A typical sales cycle is completed (win or lose) within a year. Opportunities have been pursued by this company for as long as six years or more; however, only six percent of those studied had not reached some resolution by the end of the study.

Business-to-business transactions often occur within the context of a continuing relationship. Indeed, forty-seven percent of sales opportunities for the firm are with an existing customer. The typical transaction frequency is approximately five years. As an industrial product with a very long service lifetime, this should not be surprising.

Leads are generated in two ways. The marketing department develops leads from web site inquiries, trade shows, and purchased lists. The salespeople also develop and pursue their own leads. Salespeople have broad latitude to interact with the prospect as they see fit. In addition to their own time, travel, and expenses, salespeople can also add a technical salesman to the team. This role conducts technical presentations, collects technical requirements, and performs pre-sale technical support. The vast majority of the opportunities which utilize technical sales people are in the services category (75%); comparatively few product sales opportunities use them (7%). Sales persons can also choose to arrange a demonstration. Demonstrations require thousands of dollars to ship and install equipment, and to develop software prototypes. These are used much less frequently than are technical salespeople.

SFA systems

The data itself comes from a sales force automation system (SFA) (Erffmeyer and Johnson 2001; Hunter and Perreault Jr 2007). These programs are used by the firm supplying the data to manage global sales representatives operating autonomously in pursuit of long-term, highly complex sales opportunities. The SFA system tracks a variety of data relating to a salesperson's activities in relation to their account base. The system tracks the individual opportunity, the account it is associated with, and all activities reported by the salesperson in pursuit of the opportunity. Fields reported are the date when the opportunity is opened (and, if applicable, closed), the forecast revenue, product category, sales cycle length, selling activities pursued, current stage in the sales cycle, whether or not the sale was closed, and unique identifiers for members of the sales team associated with the account. Cost and margin data were not available. To study the applicability of the model in product versus service contexts, opportunities in two product categories were studied. One is industrial machinery (typical cost ranges from around \$100,000 to over \$1,000,000), and the other is professional IT services delivered by the same organization (average cost approximately \$400,000 though it can run to over \$1,000,000). Sales people are assigned to work in teams on an ad-hoc basis for each opportunity. That is, rather than using a standing sales team for multiple opportunities, personnel such as technical salespeople are assigned on an as-needed basis to individual opportunities. Technical salespeople are drawn from a regional pool; any technical salesperson might be assigned to work with any account executive in his region.

demand effects

Nearly all the data in the system is recorded by members of the sales team, typically the account executive himself. This kind of data is self-reported, rather than behavioral data, despite the fact

that it is derived from a managerial control system. As noted above, salespeople tend to operate with a high degree of autonomy (and the focal firm is no exception). Sales managers have only a few windows available to them to monitor their employees, and the SFA system is an important one.

Such a system necessarily has strong demand effects; researchers, like managers, must apply a critical eye to the salesperson's representations of their pipeline and its progress. For example, salespeople often withhold information from their employer to protect their own unique knowledge and maintain their intra-organizational power (Wang et al. 2009). Similarly, salespeople may attempt to maintain an information monopoly in an attempt to secure salesperson- rather than firm-directed loyalty from customers (Palmatier et al. 2007). For this reason, the variables used were selected to minimize this bias.

The data was analyzed using binary logistic regression. The dependent variable was the log odds ratio of Win -- the successful or unsuccessful close of a sales opportunity. A dichotomous variable was chosen because the quantity of interest is the likelihood that a selling investment will pay off, which in turn drives the continuation decision, rather than the magnitude of the payoff (the size of the opportunity is controlled for below).

The overall model is as follows:

$$\ln\left(\frac{p(Win)}{p(1 - Win)}\right) = \beta_0 + \beta_{MainEffects} \mathbf{X}_{MainEffects} + \beta_{Controls} \mathbf{X}_{Controls} + \varepsilon$$

Where $\mathbf{X}_{MainEffects}$ is an nx5 matrix of the five predictors and the $\beta_{MainEffects}$ vector of coefficients corresponding to the four hypothesized relationships posited. $\mathbf{X}_{Controls}$ is the nx10 matrix of control variables, with a vector $\beta_{Controls}$ of coefficients.

There are four independent variables, representing the three hypotheses tested. SE: Represents whether (1) or not (0) a Sales Engineer was added to the sales team. Inclusion of this role is the

only personnel decision which is largely at the discretion of the account executive. Of the sales opportunities in this data set, 40.6 percent included a sales engineer.

Demo: Represents whether (1) or not (0) a product demonstration was conducted. In this industry, onsite demonstrations of hardware and customer-specific prototypes of software are extremely expensive and logistically complex. This therefore represents a significant investment in the selling process. Only 1.5 percent of the opportunities studied used a demo.

SalesCycle: The length of the sales cycle (in days). The distribution of sales cycle length is approximately log-normal; one is added to the sales cycle to avoid problems associated with taking the log of zero. A quadratic term is also included to test the hypothesized curvilinear relationship.

Perform*LN(SalesCycle): Salesperson ability may moderate the relationship between sales cycle length and win rate. A positive significant coefficient for this control reflects the fact that more effective salespeople should be able to counteract their natural tendency towards bias stemming from escalation of commitment.

In addition, it is necessary to control for several potentially confounding effects. The first of these is opportunity size which has two components. These two components are revenue and revenue*sales cycle,

Revenue is the anticipated transaction size in dollars, as forecast by the salesperson prior to closure of the sale. A larger opportunity has a higher present value, despite a longer sales cycle length or higher risk factor. Salespeople will endure a higher risk of losing if the revenue payout is higher. The second of these opportunity size constructs is

- Revenue*LN(SalesCycle): This interaction term encompasses the possibility that a rational salesperson will elect to invest more time in a riskier account simply because it is worth so much.

Marketing-Produced Leads are another form of potential confounding effects. As in most companies, the sales pipeline is generated by a combination of marketing-developed sales leads (1) and the salesperson's own prospecting activity (0). The quality of the former is a perennial source of complaint from sales organizations (Kotler et al. 2006) and might affect the *ex ante* probability of a win directly, and/or indirectly through negative attributions by the account executive.

The third type of confounding effects involve the breadth of the opportunity. A salesperson might over-invest in a sales cycle if he/she believes that the effort can be amortized over several transactions (concurrent or future). There are four possible types of confounds in this area. First, the past value of the customer (that is, the total prior realized revenue in dollars from that customer over the previous five years) is also controlled. A salesperson might logically consider an account with a high PAV to be part of a continuing relationship and make sales effort investments based on the value of the relationship rather than the immediate transaction. The second of these involves PAV*LN(SalesCycle): Past account value may also indirectly affect the odds of winning an opportunity by moderating the relationship between sales cycle and outcome. Salespeople can be expected to have greater idiosyncratic knowledge of accounts with a high PAV, enabling them to better calibrate their estimate of their chances of success. Another issue that must be considered is whether or not the selling firm views the account as a strategic account. This is coded as a dummy variable representing whether (1) or not (0) the customer has been identified by the company as a strategic account. While the nature of

key/national/strategic account management remains somewhat hazy for practitioners, strategic accounts are identified by the sales leadership as being high-priority accounts deserving of additional attention for reasons external to a particular transaction. 15.6 percent of opportunities included in this study are considered strategic accounts by the firm. Finally, the issue of whether the account was pursued in concert. Accounts pursued in concert with channel partners (1) or not (0). A salesperson might over-invest in a channel opportunity as a way to strengthen the manufacturer/distributor partnership. This represents 39.6 percent of all sales opportunities examined in the current research.

The final potential confounding effect involves the degree of salesperson ability. A highly skilled salesperson can reasonably be expected to be able to better identify winnable accounts. Indeed, by process of attrition, salespeople with the best-calibrated sense of the appropriate investment of effort to make in a sale should be selected for. We assessed this construct in two ways. First, was the salesperson employed by the firm in the prior year? If so, they are coded a (1) if not (0). This would appear to be a reasonable proxy for experience with the focal firm. Second, we control for the account executive's standardized prior-year performance. Since all salespeople in the focal firm have the same quota and market potential for their territories, this is used as a proxy for absolute performance. Finally, we examine an interaction term, WasEmployed*Perform: An interaction term, to account for the fact that the performance variable does not capture salesperson ability for new hires.

(Insert Table 1 About Here)

The overall fit of the model against both data sets was highly significant ($p < .001$). For the product category, the Nagelkerke R^2 is .246 (78.6% of cases assigned correctly), and for the service category, it is .228 (75.1% of cases assigned correctly).

Results

(Insert Table 2 About Here.)

Consistent with H_{1A} , the coefficient for the quadratic time investment term was negative for both the product and service category, and positive for the linear term. After an initial period where greater investment of time has a positive effect on sales outcomes (that is, where rational application of sales effort improves the odds of a positive outcome), the sales atrophy effect dominates and greater investments of effort are associated with lower win rates.

This is not merely a case of diminishing returns on time investment. For both the product and the service categories, the point at which the return on additional sales effort becomes negative occurs well within the scope of a typical sales cycle (108 days for the product and 180 days for the service). In the figure, the dotted line indicates the breakeven point; to the left, the net effort-outcome relationship is positive, while to the right it is negative. After the point represented by the dotted line, increased time investment in winning a customer actually reduces the marginal probability that the customer will be won.

The interaction term that represents the moderating effect of salesperson ability on the effort-outcome relationship was non-significant for both categories. The moderating effect of salesperson ability on the effort/outcome relationship proposed by H_{1B} is not supported. This means that both high- and low-performing salespeople are subject to this escalation effect.

For the next form of investment, the assignment of personnel to the opportunity (H_2), results were mixed. Addition of a sales engineer to the sales team had no significant impact, positive or negative, for the product category. Evidently for product sales, the technical salesperson is sometimes used effectively and other times not – but with no clear pattern of over-investment in trying to save the account.

For the services category, though, bringing in the additional sales team member had a highly significant negative effect on win rate (significant both statistically and in terms of effect size).

It appears that in many cases involving service sales, technical salespeople were being brought in as a last ditch effort to rescue failing opportunities. This is in contrast to their supposed function of providing additional skilled/technical support as needed to provide better service to the potential customer and resolve any questions the client firm has regarding the product or service prior to sealing the deal.

The final form of investment involves demonstrations. For both the product and the service, the coefficient is positive and highly significant. This falsifies H₃. Demonstrations are high-investment activities that are relatively infrequent and tightly controlled by the selling company to ensure that the sales opportunity justifies the significant costs associated with a demo. It appears that this monitoring overcomes any bias on the part of the account executive. Further, it indicates that utilizing demonstrations where sales are significant and in doubt is effective.

None of the moderators proposed proved to be significant. In particular, the sales atrophy effect was consistent regardless of job tenure or ability, and was not moderated by current or past transaction value. This is consistent with Sleesman, et al. (Sleesman et al. 2012), who found preliminary evidence for the proposition that escalation of commitment is driven primarily by goal substitution rather than sunk costs (Conlon and Garland 1993)

Discussion

Managing an outside sales force is a challenging task. Salespeople operate largely autonomously, and most of the available information on the status of pending opportunities is self-generated and self-reported. For this reason, sales compensation research prescribes aligning the motives of salespeople and their organization using outcome-based controls (commissions, sales contests,

etc.) (Anderson and Oliver 1987; Kalra and Shi 2001; Lim et al. 2009). However, this presupposes that the salesperson will rationally pursue the optimum level of investment to maximize their returns.

Results suggest that a salesperson's cognitive biases have a considerable impact on their decision-making with regard to allocation of effort. The traits of optimism, confidence and aggressiveness which are usually associated with a high-performing salesperson may actually hinder their strategic choices. Surprisingly, this appears to be true regardless of the salesperson's ability and experience.

The mixed effect for H₂ raises interesting questions. First, since the high statistical power available to study the effects makes it unlikely that this is a statistical artifact, differences in the way technical salespeople are employed for the two categories may help explain the contradictory results. In the product category studied, the flow of information is strictly one-way; customer-specific technical adaptations are not made. So a technical salesperson is employed purely as a subject matter expert in these opportunities. However, for the technical salesperson working on service opportunities, the selling process requires a more interactive approach.

Technical salespeople engaged in the service sales potentially are called on to perform a wide range of activities such as: assisting in requirements-gathering, development of mockups and prototypes, and other persuasive activities which go far beyond the role of "information resource" (Bellizzi and Cline 1985). As a pure subject matter expert, the ability of a technical salesperson to actually sway a product-category customer is limited, and therefore the temptation to employ them to rescue failing deals is low whereas in a service setting there is more latitude involved in the sales effort.

H₃ was clearly falsified in both product categories. Demonstrations in this industry are expensive affairs, requiring shipment of expensive equipment, not to mention installation, configuration and support for this equipment in the product category. For customized IT services, the costs are even higher, as working mockups and prototypes require significant development resources. For this reason, demos are employed sparingly and with significant managerial oversight. Thus, managerial controls appear to override salesperson desires to continue to escalate the sales investment in these accounts. In these very high investment decisions, the propensity to escalate finally meets resistance due to the high level of expense involved. With this high-investment decision, escalation effects are salient, and managers therefore resist escalation, an effect they are otherwise subject to with regard to other decisions.

Results suggest an avenue to improve managerial practices in the face of escalation of commitment-driven misapplication of resources. In many cases in outside sales, the sales field is dominated by an emphasis on outcome-based controls because the selling process proceeds almost entirely unobserved. However, alignment of incentives only goes so far in the face of irrational tendencies on the part of the account executive. In this case, raising the stakes does nothing to ameliorate the tendency to double down on a losing prospect. Sleesman et al. 2012 found a similar result for making opportunity costs salient by increasing the negative impact of personal investment in the decision. However, sales force automation systems provide a new opportunity to monitor and manage investments in the selling process. Indeed, the H_{1B} results suggest that a sense of reality is not a skill that can be trained or selected for; it requires an outsider's dispassionate review for sunk cost bias to be bypassed.

Few companies directly track the cost of sale on a per-opportunity basis. However, these results strongly suggest that salespeople will not effectively self-manage their allocation of selling

resources. By exercising independent, critical judgment on their subordinates' pipelines, managers can resolve these sclerotic pipelines by pruning dysfunctional opportunities and helping their salespeople apply a dispassionate eye towards losing efforts. Managers should also be skeptical towards proposed investments in opportunities which are dragging out—and must explicitly build this process of review and counter-escalation into their pipeline review process lest they themselves succumb to escalation effects (Kadous and Sedor 2004; McNamara et al. 2002). One way of accomplishing this is to determine the normal sales cycle and apply more stringent guidelines for allocating resources to potential deals that have lingered much longer than the normal time length for a sale to close. In order to keep an account open past the typical time required for closing, salespeople should be required to “build a case” for why this account should continue to be pursued. The longer the time past a “normal” closing date, the tougher the test should be for justifying continued pursuit of the specific opportunity in the account.

Limitations and Future Research

This study opens the conversation regarding escalation of commitment and serves as a departure point for further exploration of the subject. As such, it probably creates more questions than it answers. A key limitation is that this study lacks profitability data on the opportunity, looking only at its magnitude as measured by revenue. Prior research strongly suggests that there is no reason to expect an association between revenue and profitability of relationships (Rangan et al. 1992); however, in this case the use of profitability data would have defeated the purpose of diagnosing bias in the face of incentives because the sales force being examined is compensated based on revenue, not profit.

Another limitation is the fact that time investments in an opportunity are proxied using the length of the sales cycle. A superior method would be to directly measure salesperson investments

through measurements of customer contacts (visits, emails, phone calls) as with Manchanda and Chintagunta (2004). Such data was unavailable for this study; indeed, the company in question does not track this information on a per-opportunity or per-account basis at all. The authors' experience suggests that this is typical of many sales organizations. Tracking costs of sales directly opens the door for a much more nuanced view of the sales cycle and superior management of the salesperson's pipeline.

After time investments, another major investment on the salesperson's part is in the form of discounts and price concessions (Hansen et al. 2009; Mantrala et al. 2010). The company studied does not systematically track discounting behavior by salespeople. Nevertheless, interviews with key informants in the firm's finance group suggests that discounts are commonly used to rescue failing opportunities, or to "pull forward" opportunities likely to close in future periods to rescue a quota likely to be missed in the current period. While discounting behavior can be tracked by the accounting system for deals which have been won, it is more difficult to track unobserved offers made to prospects who subsequently decline. The escalation-of-commitment model described in this paper suggests that the discount-to-win likelihood relationship is much weaker than one might expect from a strict utility maximization perspective.

The mixed results for H₂ and H₃ indicates that managerial involvement in the pipeline management process, especially for significant investments, can have a positive impact on the allocation of resources. A logical next step would be to conduct an experiment testing the efficacy of tracking cost of sale data on a per-opportunity basis, and on training sales managers in pipeline pruning policies to estimate what, if any, lift can be derived from a more optimal allocation of selling investment. Lab-based experimentation can also help to isolate specific factors which contribute to or ameliorate sunk cost biases in the sales context.

It is one thing to determine that salespeople are subject to cognitive biases and over-invest in losing sales. However, this begs the question: how does one diagnose these losing sales *ex ante*? Identifying the customer- and opportunity-specific characteristics that distinguish winners from losers is, of course, exactly what qualification is intended to accomplish; and yet the results of this study suggest great potential to advance the state of the art. In particular, the proliferation of sales force automation applications is a sea change in sales management that provides an opportunity for academics to revisit the tools, routines and best practices used in the qualification process.

Finally, future research can clarify other key sales outcomes. This study analyzed sales performance on an opportunity-level, win/lose basis due to the nature of the hypotheses being tested and the characteristics of the focal firm. However, the authors are not blind to the other key outcomes that are used to measure salespeople: revenue and profitability on the opportunity, relationship, and salesperson levels. This paper does not examine these factors, or organizational citizenship behaviors—focusing entirely on immediate opportunity-specific sales outcomes. Studies which look at these outcomes can help elucidate the drivers of performance.

Conclusion

The performance of the industrial salesperson is critical to the performance of the B2B organization as a whole, and yet they operate autonomously, largely unobserved by managers. Sales managers, driven by the associated compensation theory, have relied on salespeople to self-manage by aligning their incentives with those of the company as a whole. This study demonstrates that this alignment of incentives is not enough—the salesperson’s cognitive biases are a strong obstacle standing in the way of optimum behavior even for the most experienced and high-ability salespeople. Managerial involvement in the selling process may potentially help

salespeople to identify and curtail escalating investments into losing opportunities. Our work suggests that new information technologies provide both the data that illustrates this effect and a possible avenue to greatly magnify the potential of the sales force.

Table 1 Study Constructs and Measures

Continuous Variables

<i>Name</i>	<i>Units</i>	<i>Mean</i>	<i>StDev</i>	<i>Max</i>	<i>Min</i>	<i>Skew</i>	<i>Kurt</i>
Product							
SalesCyle	Days	201	264	1647	0	1.755	3.507
Revenue	Dollars	191698	279059	3600000	-43875	4.519	33.80
PAV	Dollars	187291	569902	10091610	-22680	8.062	92.70
Perform	Standardized	0.089	0.872	3.005	-1.095	1.117	1.145
Service							
SalesCyle	Days	190	262	1647	0	1.858	3.988
Revenue	Dollars	143281	224063	3000000	-100000	5.500	51.90
PAV	Dollars	224981	1281566	43790357	-22680	28.11	935.6
Perform	Standardized	0.171	0.905	4.059	-1.095	1.185	1.286

Dichotomous Variables

<i>Name</i>	<i>Product</i>	<i>Service</i>
Won (DV)		
SalesEng	6.68%	74.58%
Demo	2.61%	3.41%
Marketing	7.52%	7.38%
Strategic	11.16%	16.09%
Channel	39.48%	50.90%
WasEmployed	36.80%	42.90%

Table 2: Regression Results

Regression Results							
Variable	Hypothesis	Product			Service		
		Coefficient	exp(B)	Sig	Coefficient	exp(B)	Sig
<i>Main Effects</i>							
Ln(SalesCycle)	H _{1A} : +	0.859 **	2.361	0.000	1.009 **	2.743	0.000
Ln(SalesCycle) ²	H _{1A} : ?	-0.183 **	0.833	0.000	-0.194 **	0.824	0.000
Ln(SalesCycle) * Perform	H _{1B} : +	-0.012	0.988	0.717	0.017	1.017	0.589
SalesEng	H ₂ : ?	-0.004	0.996	0.975	-0.552 **	0.576	0.000
Demo	H ₃ : ?	2.426 **	11.314	0.000	1.707 **	5.512	0.000
<i>Controls</i>							
Revenue		0.000 **	1.000	0.000	0.000 **	1.000	0.001
Ln(SalesCycle) * Revenue		0.000 **	1.000	0.000	0.000	1.000	0.147
Marketing		-2.071 **	0.126	0.001	-0.890 **	0.411	0.018
PAV		0.000 **	1.000	0.002	0.000 **	1.000	0.005
Ln(SalesCycle) * PAV		0.000	1.000	0.416	0.000	1.000	0.176
Strategic		0.774 **	2.168	0.000	0.386 *	1.471	0.020
Channel		0.259	1.296	0.066	0.297 *	1.346	0.026
WasEmployed		0.271	1.311	0.219	0.083	1.087	0.696
Perform		0.232	1.261	0.373	0.209	1.232	0.478
WasEmployed * Perform		-0.196	0.822	0.484	-0.380	0.684	0.208
<i>Diagnostics</i>							
(Constant)		-1.072	0.342	0.000	-0.572	0.564	0.007
# Observations		1568			1436		
X ² ₁₅		278.803		0.000	249.521		0.000
Nagelkerke R ²		0.246			0.228		
Cases Correctly Assigned		78.60%			75.10%		
<i>p < 0.05 * p < 0.01 **</i>							

Figure 1: Product Sales Cycle

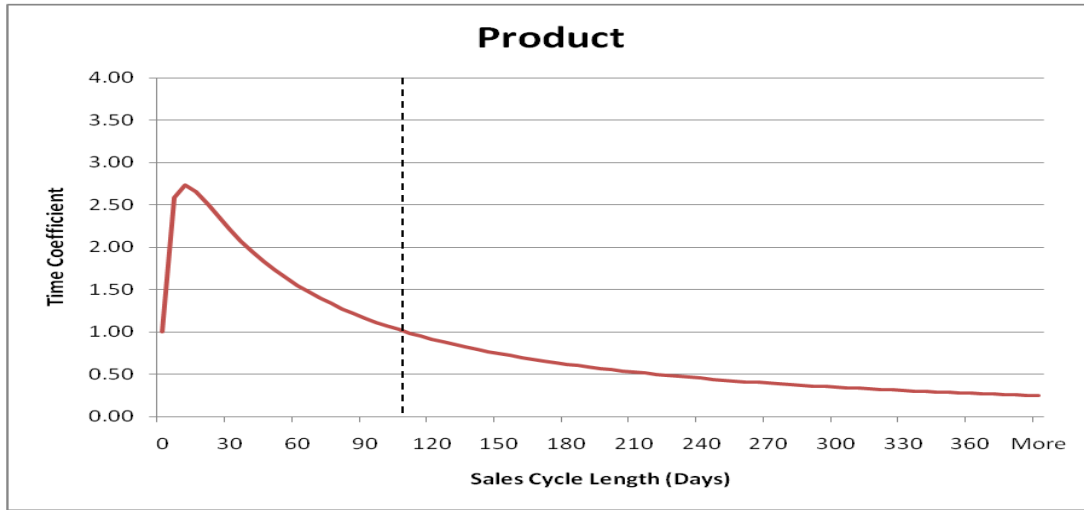
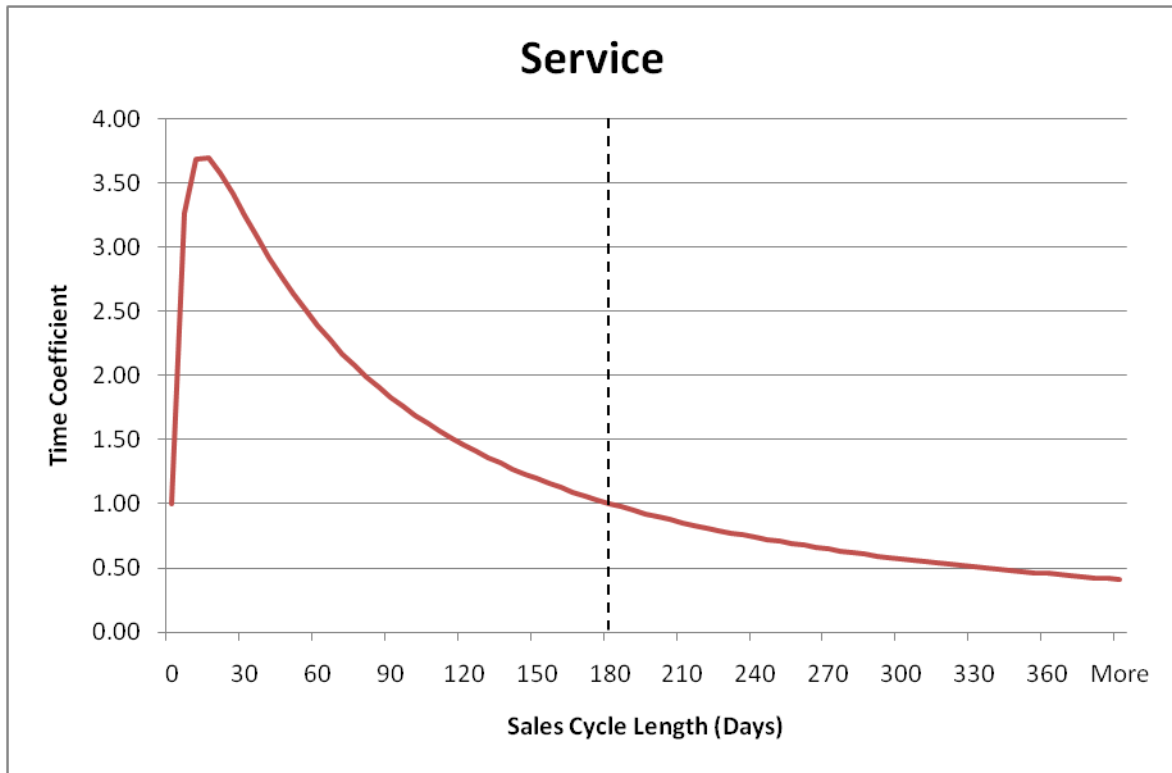


Figure 2: Service Sales Cycle



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Idiosyncrasy and Regularity: A Study of Profitability in Relationships

Abstract

This paper examines the value of idiosyncratic characteristics among a firm's relationship partners as a means to develop advantages that cannot be easily copied or replicated by competing firms. While idiosyncratic characteristics are often ignored by businesses as they attempt to develop models of customer behavior, this may be a mistake because consideration of these differences among customers and a supplier's adaptation to those irregularities may result in advantages that are very valuable to both the supplying firm doing the adaptation and the buying organization for whom the adaptations are made. Ways to identify and utilize the hidden value in these idiosyncratic behaviors are examined. Propositions are developed to guide research in addressing this often-overlooked business opportunity.

Introduction

The study of interorganizational relationships traditionally looks to regularities among observations to understand the drivers of profitability (e.g. Crosby, Evans and Cowles 1990; Samaha, Beck and Palmatier 2014). In these studies, it is customary to ignore the non-repeatable aspects of business relationships—they are dismissed as outliers and singular events which cannot be generalized and therefore from which no valuable insights can be garnered (Cohen, Cohen, West and Aiken 2003). The purpose of this study is to challenge this idea, identifying idiosyncrasy, as a class, as a fruitful subject of research, and a powerful potential driver of sustainable competitive advantage.

Several steps must be accomplished in order to clarify the role of idiosyncrasy in generating sustainable competitive advantage for a firm. The first of these is to define idiosyncrasy so that it is easily distinguished from other related concepts such as heterogeneity. In particular the concept of relational rents as advanced by Dyer and Singh (1998) is very important in making the distinction between idiosyncrasy and heterogeneity. Once the relationship between idiosyncrasy and heterogeneity has been established, previous research examining the different schools of thought on the drivers of profitability shall be reviewed.

After these concepts have been contrasted, they will then be connected, showing that transaction specificity, as a driver of profitability, implies an idiosyncratic condition to which the organizations are mutually adapting. Identifying these idiosyncratic sources of advantage requires a process of knowledge acquisition at the individual level by boundary-spanning personnel (Gonzalez, Claro, and Palmatier 2014). The key step of knowledge acquisition is followed by diffusion of that information into various levels of the organization by the firms themselves -- a process necessarily laden in uncertainty (Tsai 2001; Flaherty et al. 2012).

Strategies to optimize the effectiveness of the acquisition and diffusion of knowledge processes and the means of mitigating risks forms the basis of the perspective that idiosyncratic events are potentially valuable sources of profitability for a firm and may form the basis for enduring competitive advantage (Nissen, Evald, and Clarke 2014).

Boundary Conditions

In considering the impact of idiosyncrasy in relational partners, it is important to recognize the boundary conditions of this article. The theory of idiosyncrasy-derived relational rents centers on the formation of a sustainable competitive advantage, housed in an inter-organizational relationship, and based upon mutual partner-specific adaptation (Dyer and Singh 1998). This

theory does not attempt to address the larger questions of strategic competitive advantage in general, or other consequences of idiosyncrasy for the firm. Nor does it address individual-level considerations such as salesperson performance, or general measures of relationship quality other than profitability.

Idiosyncrasy

An idiosyncrasy is a situation containing characteristics or objects of importance that are unique to a particular context (Liu 2007; Lohtia et al. 2005). For a situation to be idiosyncratic, the unique characteristic must not have been experienced before, and there should be no expectation that it will be experienced again in the future. Such observations are typically aggregated into an error term in statistical models (Cohen et al. 2003). Case studies and even theoretical treatments reject these as unrepresentative of the essential (that is, generalizable) characteristics under study (Eisenhardt 1989). In most cases, when an idiosyncratic situation has a strong impact on a parameter of interest, it is often excluded from the study altogether as an outlier because including it will distort the results (Donthu et al. 2005). In positivist research, where conclusions are to be drawn between comparable cases or to generalize to other cases, this is entirely appropriate.

When looking for idiosyncrasy, a researcher must focus on characteristics which are unique to a particular circumstance or object of interest, and which fall outside the normal scope of variation between entities, analogous to the definition of an outlier as “a data point which is very different from the rest of the data based on some measure” (Bakar et al. 2006). For example, a researcher observes that the number of employees varies between companies. Looking across companies, one can see variation in this number, and indeed some organizations might well be unique in the

precise number at some point in time, but all organizations do have some number of employees that can be measured. This is an example of heterogeneity.

In contrast, Bigelow Aerospace is unique in that it is an aerospace habitat company whose senior leadership has extensive expertise in real estate and hospitality, as opposed to such a firm being led by someone with experience in aerospace, engineering, or some kind of high tech discipline (Sim 2015). Variation such as this could be plotted as a unique variable for which the outlier has one value and all other observations have another; but these data points are typically thrown out because by definition they are resistant to generalization (Eisenhardt 1989). This applies even when the possibility of a measurement error can be definitively ruled out (Cohen et al. 2003). However, while idiosyncratic characteristics are difficult to study individually, they can be examined as a class. Further, these unusual features may be a point of differentiation that can lead to competitive advantage in a particular business setting. Failing to study and/or understand such characteristics may result in a firm missing out on a sustainable source of advantage that will be difficult and/or costly for competitors to copy.

The very factors that make insights related to idiosyncratic variation difficult to generalize provide the foundation of the isolating mechanisms that make these adaptations difficult for competitors to imitate. The resource-based view of the firm posits four preconditions for sustainable competitive advantage: that it be valuable, rare, inimitable, and non-substitutable (Barney 1991). Idiosyncrasy is by definition rare. Sustainment of an advantage also depends in part on its resistance to imitation by competitors. Adaptation to idiosyncratic factors resists imitation for two reasons related to generalizability. First, as a given type of idiosyncratic event is unlikely, a competitor seeking to imitate a firm's success is unlikely to encounter a similar idiosyncrasy in an alternative partner, ensuring a form of path dependence. Second, because the

idiosyncrasy has not been encountered and recognized in the past, a potential competitor has limited visibility into the details and mechanism of the adaptation, providing for causal ambiguity. While every relationship is rife with unique characteristics (MacNeil 1980; Dwyer, Shurr, and Oh 1987), the challenge for the frontline employee spanning the boundary between firms is to identify those idiosyncrasies in its partners which will be valuable and non-substitutable, should the firm adapt to them successfully.

Commensuration

Commensuration is a cognitive and social process whereupon a quality of interest is identified, operationalized, and then measured, “a way to reduce and simplify disparate information into numbers that can easily be compared” (Espeland and Stevens 1998). Commensuration is a critical part of sense-making, where standardization is used to make the abstract concrete. Commensuration regularizes insights into a form that can be communicated, as a preliminary step to coordination of firm activities, exertion of authority, or management of risk (Ring and Van de Ven 1994). In particular, the association of several observed phenomena, discarding some, selecting others for quantification, and then grouping them with one another through an underlying construct (Tuomi 1999).

The choice of variable representing the underlying construct can be extremely important, because once selected it can guide subsequent decision-making and knowledge gathering (Tuomi 1999). Once a variable has been operationalized and associated with a construct, this operationalization will help drive subsequent understanding of that construct. Espeland and Stevens (1998) provide an example of commensuration with the case of decision-making regarding whether or not to build a dam, based on its anticipated effects on water quality.

Water quality has many dimensions (e.g. temperature, the amount and nature of dissolved solids, turbidity, pH), and even though these dimensions are already quantified, they are measured with different scales. Aggregating these attributes according to some broader metric creates “water quality” (Espeland and Stevens 1998, p. 317).

Similarly, in an organizational context, when measuring a construct such as relationship quality rather than water quality, one can employ the same process to identify and operationalize the concept. Considerations such as the subjective evaluations of different actors across the organizations, financial measures of outcomes, forecasts for the relationship’s future value, estimates of risk, relative attractiveness of alternative relationship partners, and contractual constraints on behavior, are all at least potentially important aspects of the quality of a relationship between firms (e.g. Cannon and Perreault 1999; Palmatier et al. 2006; Friend et al. 2014). As this latent construct is commensurated, these and other variables are selected or rejected, operationalized, measured, and weighed against one another so as to fully capture the concept of relationship quality. This may occur formally in an academic setting or intuitively among practitioners, but regardless it is a necessary part of operationalization. Once the variable is operationalized, it can be utilized by the firm to assess the overall relationship as well as specific aspects of the firm’s relationship with the partner organization.

Heterogeneity vs. Idiosyncrasy

While all variables are by definition subject to variation, not all variation is created equal. When an observer has commensurated a phenomenon, they have distilled it into a construct that can be quantified and measured (Bearden, Netemeyer, and Hawes 2011) . For some variables, a sufficient number of observations permits the user to (implicitly or explicitly) model its variation and develop hypotheses regarding the relationship between that variable and other quantities of

interest. This variation indicates heterogeneity across observations. From these observations, a distribution can be found that fits its variation. Once commensurated, a variable can be marked for collection by management, with procedures set in place to formulate a response. In other words, commensurate information can be processed organizationally.

While both heterogeneity and idiosyncrasy are used frequently in academic literature, it is useful to define them formally. Merriam Webster defines heterogenous as “consisting of dissimilar or diverse ingredients or constituents”, and idiosyncrasy as “a peculiarity of constitution or temperament: an individualizing characteristic or quality” (Merriam Webster 2015). For the purposes of this paper, heterogeneity refers to variation in an attribute among observations in a data set. Idiosyncrasy, in turn, refers to a characteristic that is unique to a particular observation, one without prior precedent.

One thing that distinguishes heterogeneity from idiosyncrasy is the concept of commensuration. A variable that is merely heterogenous may have already been defined, measured, and observed in the past. It has already been commensurated. An idiosyncratic variation, however, is intrinsically novel and must be commensurated by the observer. It is, *ex ante*, uncommensurated. For a variable featuring heterogeneity, a hypothesis can be developed that creates a conceptual model to link these related observations, especially drawing on prior experience and objective and subjective information. Because idiosyncratic variation is uncommensurated, it cannot be plotted in a distribution. Links to related quantities of interest cannot be identified or divined from prior experience since by definition the event is novel; that is, prior experience with such an event does not exist. Such a situation is a classic case of an “unknown unknown”; where exploratory rather than exploitative learning is required to identify the broad outlines and general parameters of an unknown, novel situation (March 1991). A similar concept to idiosyncrasy can

be found in Eisenhardt's (1989) use of "serendipity" in case research. She recommends that "theory building from case study research is particularly appropriate because theory building from case studies does not rely on previous literature or prior empirical evidence." For similar reasons, an employee on the front line can benefit from serendipitous insights from specific customers to discover opportunities unique to that particular case.

The determination of which constructs are of interest and how they will be measured is an important one (Bearden, Netemeyer, and Hawes 2011; Hair et al. 2010). Normally, one uses prior experience to drive the decisions of what variables are of interest. One might also consider the expertise of others, or look at published material that may yield insights about what characteristics of a situation could be important. For example, a meta-analysis on salesperson performance might be used to determine the drivers of salesperson performance (Churchill et al. 1985; Verbeke, Dietz and Verwaal 2011). However, prior experience always traces back to some prior, original moment of commensuration. Experience in the form of a library of prior analogous situations assists in truncating commensuration (Gavetti et al 2004), but in a truly idiosyncratic situation, mindfulness on the part of an individual is required to identify those variables that are important in a specific instance but which had not been important in prior analogous situations (Langer 1989). Once the individual has commensurated the relevant variables of interest, they may redirect organizational attention to the process, and then apply organizational procedures and capabilities to evaluate potential implications to the organization. The nature of the commensuration and the shape it takes can have a profound impact on the organization's interpretation of the observation and response to it (Kaplan 2008, Tuomi 1999, Alavi and Leidner 2001). This insight must necessarily start with a single individual operating at the organizational front line. Only then can it diffuse into the organization.

Organizational researchers examining attitudes, behaviors, and their outcomes are often in the position of identifying and quantifying new constructs of interest (Boudreau et al 2001, Bearden et al 2011). But exploration of the “unknown unknowns” as a class represents a unique challenge. For researchers, it is tempting to explore and explicate the particulars of the situation’s idiosyncrasy. However, an essential quality in such a situation is its very novelty. Idiosyncrasy is therefore a marriage of both the event’s unique characteristics themselves and the fact of their uniqueness. For example, a company in the 1980’s might encounter a customer who demands an online inventory and fulfillment system. A state-owned enterprise might suddenly be privatized and forced to operate in an entirely different economic system. These two situations have nothing in common-- except that they are entirely novel and outside the experience of the firm encountering them. Their novelty is the common element. Many seemingly unrelated novel situations share one characteristic in common: the lack of available prior experience to guide the organization’s reaction to the situation.

When a situation is encountered for the first time, there may be a number of unique aspects of the event, but not all of these are going to be of value in explaining and predicting behavior (Eisenhardt 1989). The goal of the firm is to determine which novel factors will be decisive in furthering the relationship or partnership, and which are merely distracting and irrelevant factors (Levinthal and Rerup 2006). Too-detailed an examination of the particulars of a novel event yields insights about the substance of the event at the expense of understanding the impact of its novelty. The very value of knowledge about the idiosyncratic characteristic can be its novelty, as opposed to its potential for generalization.

Theoretical Models of Profitability

Economic theories of profitability carry two common assumptions: there are differences between firms, and isolating mechanisms exist that prevent less-profitable firms from imitating more-profitable firms (Dierickx and Cool 1989). A monopolist, for example, enjoys a market position that a potential entrant cannot profitably imitate due to barriers to entry. In the Resource-Based View of the Firm (RBV), some firms have qualities that are valuable (that is, contribute to profitability), rare (that is, other firms do not possess them), inimitable and non-substitutable (other firms cannot profitably achieve the more profitable firm's market position) (Barney 1991). Dynamic capabilities perspectives on profitability assume that a firm's adaptability enables it to seize either a long term advantage in the RBV sense, or iterate over a series of short term advantages (Teece, et al. 1997). In each case, an idiosyncratic and advantageous attribute (market position, a valuable resource, adaptability) is protected for a firm by an isolating mechanism of some kind.

What unites these three perspectives is that of an emphasis on the distinctiveness of the vendor. However, it is not just vendors but also customers in a marketplace who can feature distinctiveness. A firm which has the distinctive ability to adapt to idiosyncratic features in their customer pool has an advantage as well, though this capability must itself be inimitable and non-substitutable as different strains of adaptability are themselves equifinal even if they are inimitable (Eisenhardt and Martin 2000).

To these "macro perspectives", Dyer and Singh (1991) add another—that of "relational rents" derived from organizational relationships. This occurs when two organizations have resources which, while not in themselves capable of generating sustainable competitive advantage, can do so when integrated together. Following the logic of the RBV, such integrations require the

creation of relationship-specific assets as the two partners mutually exploit the synergy (Crawford 1990; Williamson 1981). Once again, idiosyncrasy is a necessary (but not sufficient) condition for extra-normal profitability.

Thus, a competitive advantage deriving from relational rents requires that boundary-spanning individuals detect, communicate, and structure the relationship around exploitation of idiosyncrasy. Managing to this goal is problematic. The idiosyncratic nature of sources of advantage resists systematic programs of investigation developed *ex ante*, in the same way that policy-makers cannot know the fruitfulness of a given line of scientific research until it has been pursued (Bush 1945).

Transaction Specificity and Idiosyncrasy

Dyer and Singh (1991) point out that a competitive advantage, when housed in the relationship between two organizations as opposed to either party on their own, has its genesis in synergies between sources of uniqueness found in each organization. This uniqueness is expressed as transaction- and relationship-specific assets. The idiosyncratic characteristics of a relationship are of particular concern to strategy theorists because idiosyncrasy is by definition rare, inimitable, and peculiar to a particular organization (Williamson 1981). Mutual adaptations between organizations then allow the mutual exploitation of synergies between each partner's unique characteristics.

By the same token, it is important to distinguish between idiosyncrasy and transaction specificity. Adaptations to idiosyncratic conditions are necessarily specific (because the condition being adapted to is unique). However, not all transaction specific assets are idiosyncratic. The classic example in transaction cost economics of an oil pipeline (Barney 1999), for example, is specific to a particular source and destination, but hardly idiosyncratic.

Other oil pipelines have been built before and will be built again, connecting other locations. The routines, procedures, and processes involved in the construction and operation of the pipeline can be reused on other pipelines, as can the knowledge skills used to create the pipeline. Similarly, any organization will have a variety of idiosyncratic characteristics which have no impact on profitability. It is the intersection between these two that is of interest in this article: the case where idiosyncrasy is present and impactful on the relationship between organizations.

Idiosyncrasy becomes especially important where the harmonization of social or knowledge assets take place. An organization adapts to its relationship partner by changing its routines, systems, and procedures to fit these unique, uncommensurated characteristics (Teece 2007). For example, a firm may adapt their normal RFP response to include unusual customizations or services that meet the specific needs of a particular organization but which may not be of any value to other firms in that particular industry (Friend et al 2014). In another situation, for example, a supplier may need to eliminate certain standard features that the customer does not want because it has no benefit in that customer's situation but still imposes technical trade-offs, costs, or other limitations to support the unused feature.

As discussed earlier, commensuration takes place at the individual level. Once defined, the conceptual model that has been created must be diffused through the organization (Ye et al. 2012). When a novel situation is encountered, agents of an organization must make sense of the situation individually in order to communicate and achieve agreement on the nature of the situation and the appropriate response (Ring and van de Ven 1994). When two organizations come into contact to form a relationship, an iterative process of mutual discovery and sense-making about the nature of the relationship ensues. Organizations must decide what issues and qualities they will attend to, and which they will dismiss (Ocasio 1997).

Variation Among Relationship Partners

Knightsian Uncertainty (as opposed to risk) and commensuration

In his landmark work, Knight (1921) discusses the distinction between idiosyncrasy and heterogeneity, with some differences in nomenclature and a focus on its statistical characteristics. He distinguishes between risk (commensurate events whose stochastic structure is well-known) and uncertainty (uncommensurated events whose nature and likelihood are not known to those involved), pointing out that uncertain events contribute to aggregated downstream variables which have been commensurated, such as overall profitability (Trigeorgis 1996). For the shareholder, innumerable uncertain events are aggregated into a single risk estimate for the value of their shares. For the manager, these uncertain events must be dealt with individually and idiosyncratically. The economics literature has subsequently applied these insights by exploring distribution-agnostic stochastic models to commensurated variables. This is appropriate considering the nature of the discipline.

From an operational perspective, however, at the point at which the event can be acted upon by a decision-maker within the firm, the event has not yet aggregated into a well-commensurated downstream variable. The variable is still uncertain rather than merely risky, which we might call “upstream uncertainty”. Of course, risky events can be managed with “insurance” measures such as contract terms (Cannon and Perreault 1999). Or, they can be aggregated into a portfolio, for example, or a third party can be found to manage the risk at some cost (Knight 1921, Kogut and Kulatilaka 2001). However, because the structure and often the nature of an uncertain event is unknown, uncertainty cannot be managed with traditional practices. That is, idiosyncratic situations cannot be treated as if they were synonymous with risks.

Commensuration, Organizational Knowledge, and Attention

Knowledge and uncertainty are two sides of the same coin (Knight 1921). The actual cost to manufacture a good, for example, comes laden with uncertainty over whether alternative production processes identified in the future might reduce this cost, what their hypothetical costs might be, when they might be identified, and what competencies might be required to implement these alternatives. The acquisition of organizational knowledge (in the form of discovery of a new manufacturing technique) resolves this uncertainty—less the lingering uncertainty regarding whether still other, even more efficient, techniques might someday emerge. Therefore, knowledge represents the resolution of uncertainty (March 1991; Bierman and Hausmen 1972, Trigeorgis 1996, Davenport and Prusak 1998).

Caution is advised regarding the use of the term “uncertainty” rather than “risk”, and for good reason. The acquisition of knowledge is the exploration of the unknown. In Vannevar Bush’s (1945) seminal paper on technology policy, he points out that science advances according to its own intrinsic logic. The results of scientific inquiry cannot be programmed in advance, nor dictated by the needs of policy-makers. Scientists work to discover knowledge that already exists in the environment, and a policy-maker’s quest to ensure that the most important questions are answered is hobbled by the fact that the potential benefits of an answer is not known *ex ante*—answering the question is the purpose of research. An anomaly stemming from a methodological refinement in some established field might upend that field if fully explored, while other more seemingly productive lines of work may yield only marginal returns. To paraphrase Sun Tzu (1993), victory in research can be discerned, but not manufactured. Bush concludes that the most effective avenue for technology policy is to avoid micromanaging or overly-specific research

priorities, and instead to fund science broadly and allow it to proceed largely according to its own logic.

Later work confirms this insight. The concept of bounded rationality demonstrates that search and cognition require an investment of limited attentional (Ocasio 1997) and cognitive resources (March and Simon 1958, Cyert and March 1963). Every possible variable cannot be measured because there are a nigh-infinite number of such variables, each of which can be measured in a variety of ways. The value of acquiring knowledge can only be known definitively once that knowledge has been acquired.

Just as scientists, closest to the problems they work on, are at their most effective when they are given the widest possible latitude to explore research problems as they see fit (Bush 1945), boundary-spanners should be given similar latitude (Agnihotri et al. 2014, Ye et al 2012). This allows them to explore and understand possible idiosyncratic features of their firm's relationships partners. These relational idiosyncrasies cannot be specified in advance; they can only be found *in situ*, leading some to refer to it as "manna from heaven". (Fagerberg 2004, p.6)

Boundary Spanners and the Diffusion of Organizational Knowledge

Although the specifics of researching the idiosyncratic details inherent in inter-organizational relationships are different from advancing basic knowledge in biology or physics, the core line of logic still applies. In both cases, *ex ante* investments must be made to resolve uncertainty. The specialists conducting the research then explore idiosyncratically varying details of a phenomenon (in the latter case, the routines and procedures of the transaction partner), to identify variables of interest, their values, whether they might return profits to the organization, and how this might be accomplished. This is the process of commensuration (Espeland and Stevens 1998). As with basic research, these are relationship-specific and often transaction-

specific investments whose returns cannot be mapped stochastically in advance. Of course, in both science and inter-organizational relationship-building, there is also a good deal of incremental work to measure variables already known and to refine estimates of relationships between these variables. While important, in the current research we focus on the resolution of uncertainty of idiosyncrasies in the partner firm that is intrinsic to the sense-making process of relationship formation .

These investments are made manifest through the activities of boundary-spanning individuals (Moncrief, Marshall and Laask 2006). It is their role to investigate a relationship partner and map its essential features (Palmatier et al. 2007). This consists of a process of mutual sense-making (Ring and van de Ven 1994), where the commensuration of variables that are anticipated to be of interest and elaboration of the mental model of the relationship partner's characteristics takes place. While the latter process of elaboration (that is, measuring and exploiting variables of interest) can be attacked systematically, the process of commensuration is an exploratory process meant to detect variables that might be of interest. Bush's (1945) logic of basic research limits the fruitfulness of specifying each variable *ex ante* by policy-makers. Instead, exploration requires an informed investment of limited attentional resources by the boundary-spanning individual.

The resources must be committed by the boundary-spanning individual because they are the point of contact between organizations (Singh 2000). That is, the exposure to the new knowledge must be made at the interface between organizations, after which it can diffuse through the organization—assuming the boundary-spanner has attended to the information and considers it worth communicating to his organization (Ye et al. 2007, Ye et al. 2012). As an illustration of this principle, consider a potential scenario. A company makes large, regular purchases of a

technology product from a major manufacturer. This manufacturer, realizing that the product is difficult to substitute, attempts to use its leverage to raise prices. However, an alert warehouse employee at the customer's firm recalls that, several years before, pallets of this product had been marked as having been shipped by another manufacturer. The warehouse employee alerts the account manager, who investigates and determines that indeed, the manufacturer had long since outsourced production of this product to a third party, and depended on secrecy rather than contractual terms to protect their position in the relationship. The customer arranges favorable terms with the upstream supplier, to both firms' advantage, and dis-intermediates the manufacturer entirely. Successfully navigating this (non-idiosyncratic) situation by the firm depended on an insight from a single boundary-spanning individual, the warehouse employee.

Thus, while relational knowledge is diffused and processed organizationally, the creation of that knowledge and the commensuration process that underlies it can only occur at the individual level, by the employee on the organizational frontline. Stimuli are collected and commensurated by individuals into knowledge, then processed and diffused through the collective. Indeed, it is the process of commensuration that permits this individual-to-collective transition to occur.

Managing Idiosyncrasy

The derivation of organizational benefits from idiosyncrasies in its relational partners comes in two distinct phases that span two levels of analysis. First, the idiosyncratic feature must be identified and commensurated. This occurs at the point of contact -- an observation made by a single boundary-spanning individual acting at the individual level. This individual must engage in exploratory learning (March 1991) if they are to encounter truly novel features of the relational partner. The individual then must evaluate each feature to determine if the feature has

profit potential, regardless of whether that profit potential is housed in the organization or the relational dyad. Finally, the boundary-spanner must commensurate and describe the nature of the opportunity to others in the firm. These activities will be referred to as "detection competencies". Should a potentially fruitful idiosyncrasy be detected, it must then be communicated inward to the rest of the organization. At this point, we see a process whereby knowledge diffuses into the organization (Barr, et al. 1992). The organization then must evaluate the nature of the opportunity, assign appropriate resources to exploit the opportunity, and engage in adaptive behavior to fit the unique characteristics of the opportunity. These activities, taken at the organizational level, constitute "exploitation competencies", and is the expression of organizational learning and strategic change.

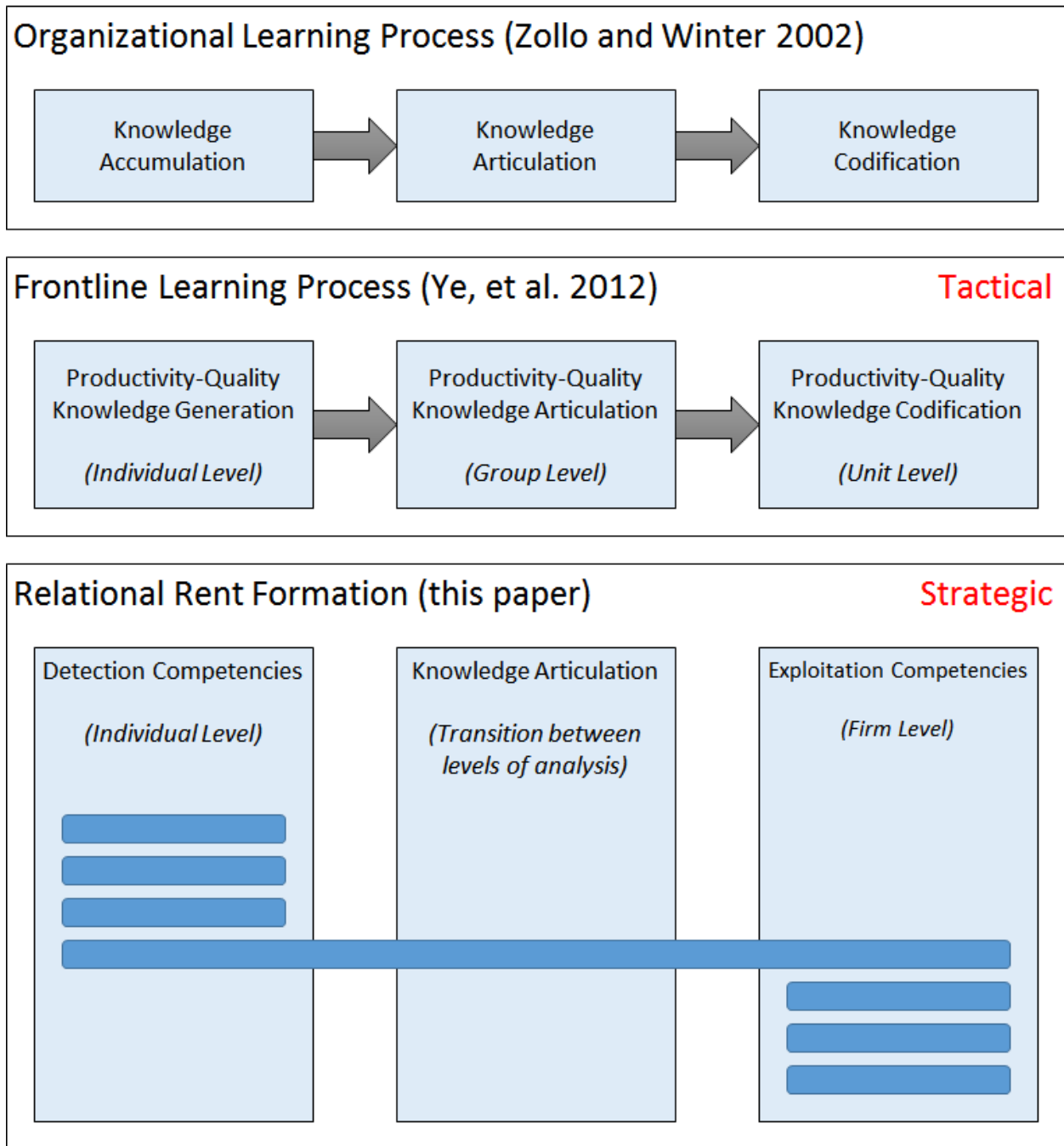
Zollo and Winter (2002) describe this process as having three distinct components. Knowledge must be accumulated by the firm based on existing organizational routines and procedures. Knowledge is then articulated into a form that can be shared through and processed by the organization's members. Finally, knowledge is codified into a form that is actionable: documents, artifacts, and new routines and procedures. Ye and Singh (2012) then apply and extend this model in the domain of generating customer satisfaction at the organizational frontline. Customer-specific knowledge is generated (accumulation) at the individual level, then articulated through the work group. Finally, this knowledge is codified into specific customer-facing actions meant to improved productivity and quality.

This paper applies the insights of Zollo and Winter (2002), and Ye et al. (2012) to the domain of relationally-based sustainable competitive advantage. Specifically, we propose a process model whereby idiosyncrasies detected and recognized as opportunities by individuals operating at the organizational frontline are then commensurated and diffused into the

organization. At that point, the organization must evaluate the opportunity, and reconfigure its resource portfolio to adapt to the customer idiosyncrasy, thereby achieving dyadic rents and a sustainable competitive advantage. Following Ye et al. (2012), we place the knowledge accumulation task at the individual level in the hands of the organizational frontline, and the codification task at the firm level. However, we present the knowledge articulation phase as a two-level process of knowledge diffusion from individual to organization (see Figures 1 and 2).

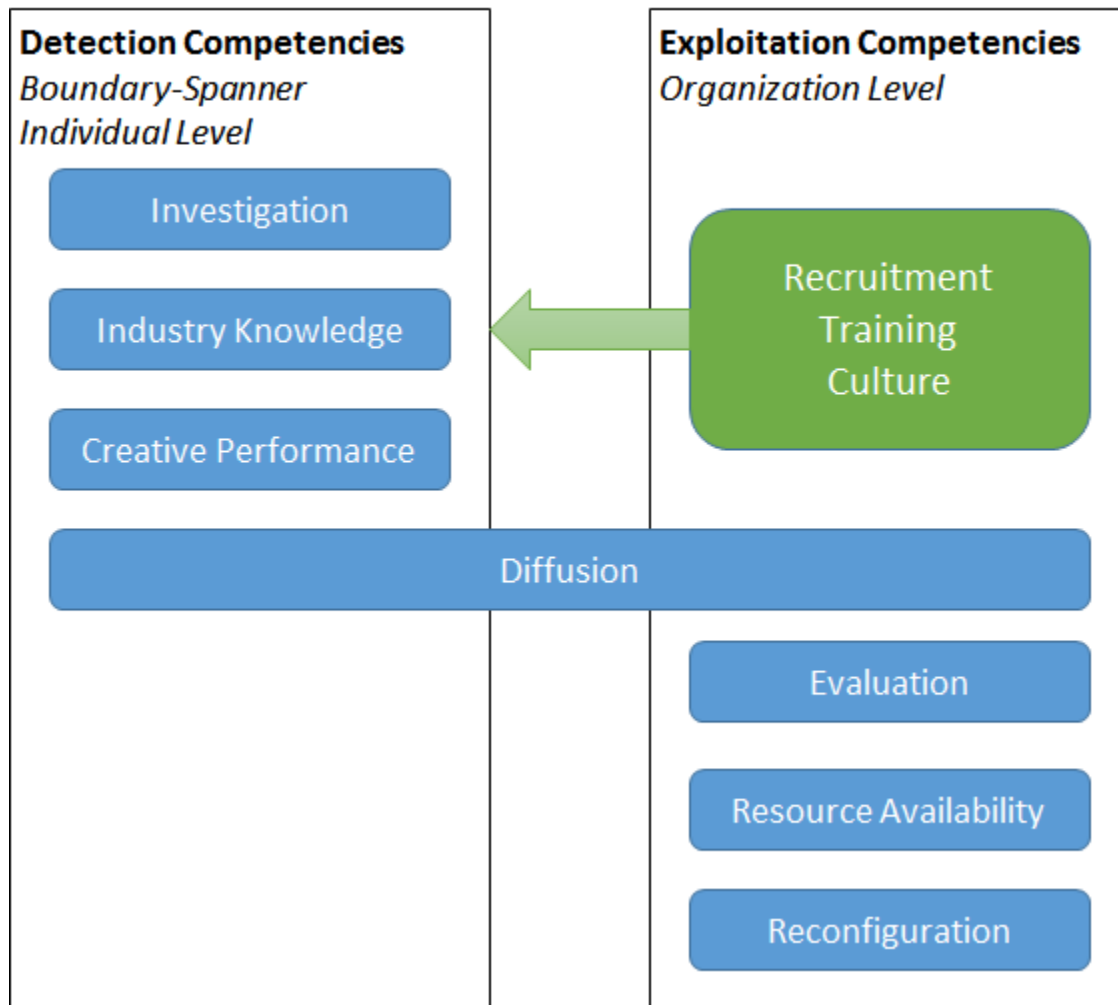
(FIGURE 1 ABOUT HERE)

Figure 1: Perspectives on Organizational Learning



(FIGURE 2 ABOUT HERE)

Figure 2: Relational Rent Formation Process



Detection Competencies

Detection occurs at the individual level (Ye et al. 2012). It is practiced by boundary-spanners who, through practice of their normal organizational functions, are situated such that they are in a position to observe unique partner attributes. These idiosyncratic features cannot be specified in advance because by definition they are novel and outside the prior experience of the firm. While many within the firm have the capability to generate insights about generalizable

market characteristics; it is the employee operating on the organizational frontline alone who has the access and incentive to observe *customer-specific* idiosyncratic characteristics.

Within these restrictions, a framework for detecting potential sources of advantage becomes apparent. Fostering detection competencies at the organizational level emerges as primarily a function of selecting, training, and enabling individuals to engage in exploratory learning behaviors, recognize unique and valuable opportunities when they see them, and then package and communicate knowledge about these opportunities for use by the firm (Abratt and Kelly 2002; Sengupta et al. 2000). That is, the manager's role is that of an encourager and facilitator, rather than as a conductor or administrator. In this way, he or she can maximize the probability that employees will discover the exploitable idiosyncrasies in their partner base and report them back to the firm.

Investigation

Boundary-spanners must have training in intelligence-gathering activities, both whether or not to engage in them and how to go about doing so (Hughes, et al. 2013). Indeed, the sales literature has established a strong link between learning orientation (Sujan et al. 1994) and individual performance. This echoes calls from the most influential clinical literature in the same field, which exhorts salespeople to maximize their investigation skills and, by doing so, enhance their ability to gain actionable intelligence about a firm (Rackham 1988). Mindfulness, investigation ability, and learning orientation are all individual-level characteristics and constructs that bear on a salesperson's ability to detect an idiosyncratic opportunity in a client firm. The practice of intelligence-gathering by boundary-spanners individually equates to marketing intelligence as an organization-wide construct (Hughes, et al. 2013).

Intelligence-gathering activities span beyond the domain of business activities, of course. In addition to the classic intelligence-gathering activities of traditional business functions such as salespeople (Hughes et al. 2013), it is fruitful to look at the traits that are encouraged in professional intelligence officers. The KGB, intelligence arm of the former Soviet Union and widely considered the largest and most effective intelligence agency of its time, preferred officers who were highly extroverted, intelligent, and alert, with an eye for detail (Dulles 1963, Andrews and Mitrokhin 1999, Andrews and Gordievsky 1992). Emphasis was placed primarily on agent recruitment; however, officers were also expected to maintain wide networks that were both social and professional in nature. *Rezidents* stressed the importance of gathering information from multiple sources, not just to verify accuracy but also to gain a complete picture of the target; a policy shared by other intelligence agencies (Eftimiades 1994). Finally, an important policy guiding agent recruitment decisions is the “targeting principle”: a form of directed research where the intelligence officer undergoes a process of formally planning the development of his or her social network to fulfill specific information needs (Andrews and Gordievsky 1994). The targeting principle is not unlike the strategic planning used to target key members of an organizational buying center in a complex sales environment (Johnston and Bonoma 1981).

Many of these insights can be applied to legitimate employees operating on the organizational frontline. Boundary spanners who engage in frequent, rich sharing of information with multiple informants, and then process their observations in light of multiple sources, have more opportunities to observe the idiosyncratic characteristics of their relational partners. Doing this requires the boundary spanner to be gregarious, but also to focus as much on observation and information-gathering as on persuasion and satisfaction of partner needs.

In addition to the active search for and acquisition of information, frontline employees must also be able to recognize idiosyncratic opportunities when they see them. Langer (1989, p. 138) defines mindfulness as “a state of alertness and lively awareness [...] expressed in active information processing, characterized by cognitive differentiation”. A similar view frames mindfulness as “attentiveness to one’s context and the capacity to respond to unanticipated cues or signals from one’s context” (Levinthal and Rerup 2006, p. 504). What both of these perspectives capture is the notion that an exogenous feature catches the attention of an observer not specifically primed to look for it. In particular, Langer’s concept of cognitive differentiation deals with identifying distinctive features and commonalities of phenomena, quite similar in spirit to that of commensuration. Just as the intelligence-gathering component of detection exposes the boundary-spanner to unique characteristics of a partner firm, mindfulness brings that unique feature’s significance to mind.

P1: Frontline employees who have a high degree of competence in investigation of customer idiosyncrasies will be more likely to identify potentially fruitful sources of dyadic competitive advantage.

Industry Knowledge

A second component of detection competencies requires not just expertise related to the relationship itself (such as knowledge of persuasion tactics, the personalities and organizational roles of the partner firm, etc) (Menguc, et al. 2013), but also knowledge related to the substance of the operations engaged in by both partner firms (Grant 1996; Ingram et al. 2015). Substantive knowledge, while not a traditional “selling” skill, provides the necessary foundation for a boundary spanner to identify, evaluate, and position potential avenues of advance for the partners. One manifestation of substantive knowledge is industry knowledge. This enables the boundary spanner to contextualize his partner-specific knowledge in terms of industry-level

norms. Close customer relationships can improve their ability to gain information necessary to identify these situations within an account (Mullins et al. 2014).

Knowledge in the strategic literature has primarily been studied at the organizational level. There are different routines for information search (March 1992), differing capacities for firms to absorb knowledge (Cohen and Levinthal 1990), and the potential for sustainable competitive advantage to firms with the right knowledge (Grant 1996). Strategic conceptions of knowledge suffuse this study; however, in this section we look specifically at the domain knowledge of an individual employee operating at the organizational front line. For this employee, knowledge can be a critical driver of overall performance (Sharma et al. 2007, Leigh et al. 2014). Among the work functions on the organization frontline, personal selling has extensively researched the link between knowledge, knowledge structures, and performance (e.g. Weitz et al. 1986, Sujan et al. 1994, Rapp et al. 2006). However, these studies primarily focus on knowledge related to persuasive communications such as customer knowledge or competitive intelligence. Substantive knowledge that can be related to firm-level adaptations to particular customer requirements, that is, value-creating as opposed to deal-winning has taken a secondary position in the selling literature.

Having become aware of an idiosyncratic characteristic of a partner firm, the boundary-spanning employee must be able to contextualize this characteristic in terms of its relationship to the business processes and operations of each organization in the relational dyad. Industry knowledge serves the purpose of providing this context. This general understanding of the business at hand has previously been suggested to be an important characteristic in sales managers (Deeter-Schmeltz et al. 2008) and service representatives (Coulter and Coulter 2003).

P2: Frontline employees who have a high degree of substantive knowledge relating to both partner firms will be more likely to identify potentially fruitful sources of dyadic competitive advantage.

Creative Performance

Frontline employees seeking to detect idiosyncrasy operate in an environment where the fruits of their search will be as-yet uncommensurated. These are vague, unstructured, novel, and impossible to define *ex ante*. Such problems require not merely operational skill, but also creativity (Amabile 1988). Creativity is “the production of novel and useful ideas by an individual or small group of individuals working together” (ibid, p. 126). It is a characteristic that is a combination of “found art” (a personal trait that can be selected for) and something that can be fostered in an individual through training, the elusive “something else”.

Wang and Netemeyer (2004) identify creative performance as an important antecedent of salesperson performance, stressing that creativity’s role weakly relates to the sales “pitch” but has a broader role in boundary-spanning relational functions such as self-defining their sales tasks, satisfying customer demands, and (most critically for our purposes) effort to improve one’s personal skill and domain-specific knowledge. Wang and Netemeyer go on to demonstrate that for this type of frontline employee, creative performance is linked to overall salesperson performance. The value of creativity may be even greater in the turbulent environment of major sales where innovation, speed, and flexibility are essential (Chonko and Jones 2005). Creativity has been recognized as an important aspect of superior performance in business as well as non-business arenas (Kanter 1983; Amabile 1988).

It is in these non-pitch-related substantive areas where creativity can be most useful. By breaking with old preconceptions and pre-existing mental models, frontline employees high in creativity are capable of seeing situations where those preconceptions no longer apply, and can in turn start

the organization on the long road to organizational change (Barr et al. 1992). Given access to partner-specific information through investigation, contextualized in a broader understanding of the business domain in which that partner-specific information can be understood, creativity is the final ingredient required for these facts to re-crystallize into new insights and recognition of new opportunities.

P3: Frontline employees who have a high level of creative performance will be more likely to identify potentially fruitful sources of dyadic competitive advantage.

Firm-level Cultivation of Detection Competencies

Recruitment

Finding and recruiting individuals with the requisite skill set to be successful in the workplace is never easy (Breugh 2009; Zoltners, Sinha, and Lorimer 2009). In boundary-spanning positions such as key account sales, the difficulty of that task is magnified (Ingram et al. 2009; Jaramillo, Mulki and Boles 2011; Johnson and Sohi 2013) when one realizes that the skills needed to successfully manage a key account and fend off competitors are added to general selling ability and work ethic (Brown and Peterson 1994; Verbeke et al. 2011; Boles et al. 2012). When filling sales positions, the intuition of successful salespeople who have demonstrated success in finding exploitable idiosyncrasies in customer organizations may play a role in the hiring process when a firm seeking account managers who can detect areas of unique need within a customer's organization (Miles and Sadler-Smith 2014). Ideally, intuition is used in conjunction with other selection tools that are less subjective.

Research suggests that individuals with a learning orientation tend to be more effective in sales positions than those with performance orientations (Spiro and Weitz 1990; Chonko, et al. 2002; Ahearne, et al. 2010). By applying their efforts towards developing knowledge about customers,

they can increase the efficacy of their work (Sujaan et al. 1994). This selling knowledge encompasses a variety of different areas, but most especially customer-specific intelligence gathering, which in turn facilitates the salesman adapting his behaviors to the specific needs and decision-making processes of a specific customer (Spiro and Weitz 1990, Weitz 1978). Much of this research has been grounded in studies of non-strategic accounts. We propose that the dynamics of gathering customer-specific knowledge applies equally in the specific case of creating strategic advantage through customer idiosyncrasy.

While there is little research on determining the best “type” of hire to find idiosyncrasy in customers, several traits appear to hold some promise. In the strategic account setting, having the patience to ask questions of many individuals within an organization may be one of the most important traits in “fitting” the job which helps the salesperson find areas of unique value (Abratt and Kelly 2002). Innovative salespeople who are high in creative performance are already known to be stronger overall performers (Wang and Netemeyer 2004), they are also likely to be more adept at discovering idiosyncratic opportunities. Likewise, salespeople who exhibit a high level of customer orientation may have a better chance of uncovering specific needs that are not being met which hold promise as a method of securing an advantage over the competition (Saxe and Weitz 1982; Guenzi, De Luca Troilo 2011; Terho et al. 2015). While some of these behaviors can be the subject of training, hiring those individuals who are already oriented toward these behaviors may enhance effectiveness.

Training

The process for a given boundary-spanner to successfully execute detection competencies is to first know to look and how to look for idiosyncratic variation in a relationship partner. These and other selling skills are primarily gained through training (e.g. Ohanian 2007; Skiera and

Albers 2008). Given that the boundary spanner has, or acquires, these investigative skills he must then employ industry knowledge, as well as creativity, to recognize an idiosyncratic feature as potentially valuable. Finally, given a potential for sustainable relational competitive advantage, skill in strategy communication is required to diffuse this knowledge into his firm.

It is critically important that training be structured around these key competencies that frontline personnel need in order to be successful (Zoltners et al. 2009). In the absence of extant academic literature on detection and commensuration processes, firms must develop and refine their own organizational routines. For example, a firm may observe current salespeople who exhibit the ability to uncover idiosyncratic characteristics within an account that may be exploitable for unique value. Finding out what these individuals do differently from less successful salespeople can then be used to determine what skills to include in a firm's training process.

Organizational Culture

Behaviors required to detect partner-specific idiosyncrasies requires an investment of firm resources (time, attention, monetary) (Menguc, et al. 2013). For these reasons, detection is not a free activity, as it requires resources and time that could be used elsewhere or with other partners. There is also the risk that an identified opportunity cannot return value sufficient to justify the costs of its explication. Due to the cost involved to the firm, organizations vary in the degree of discretion granted to make decisions autonomously as they expend firm resources (Barrutia et al. 2009; Leach et al. 2003; Sallee and Flaherty 2003).

Organizations with a high level of empowerment for their frontline give them broad latitude to engage in self-directed intelligence-gathering activities (Ahearne et al. 2005). Those with comparably lower levels of empowerment restrict or regulate the process and degree of customer engagement so as to conserve resources or conform to a centrally established relational process.

The level of empowerment of a firm varies based on the internal control system used (Anderson and Oliver 1987; Cravens et al. 1993; Zoltners et al. 2006); this can manifest as specific policies and procedures, or as tacit expectations imposed by organizational culture (Ouchi 1980). The degree of empowerment a firm grants to its boundary-spanners is also linked to the level of training and hiring standards employed by the firm.

For detection of idiosyncrasy to occur, the boundary-spanner must engage actively with the relationship partner (Friend et al. 2014). The boundary-spanner employs dialog and observation, potentially spanning multiple dyads and different functional areas within the firm (Johnston and Bonoma 1981). As these activities must be performed by the boundary-spanner at the individual level, the decision to make the required investments must also be taken at this level. This requires that boundary-spanners be empowered with authority to employ these actions at their own discretion (Ye et al. 2012).

P4: Firms configured to foster the detection competencies of its boundary-spanning personnel will be more likely to detect potentially fruitful sources of dyadic competitive advantage from its partners.

Diffusion

The act of gathering idiosyncratic information is necessarily conducted by a single person operating at the organizational front line. Having found a potentially fruitful customer idiosyncrasy, the individual must commensurate this knowledge into a form that lends itself to cognition by both that individual and his or her colleagues, a cognitive frame that can be communicated and is “portable” across operating groups and through the firm (Kaplan 2008). The organization’s role is to be attuned to partner-specific knowledge generated by the boundary-spanner. This approach suggests a bottom-up organization. It presents a generalized case of the logic of adaptive selling used in the sales literature (Spiro and Weitz 1990, Franke

and Park 2006) driving an emergent corporate strategy around exploitation of knowledge derived at the frontline.

Marshalling and organizing organizational resources to adapt to an opportunity, which is central to the process of exploiting an idiosyncrasy (below), requires leadership and coordination. The knowledge diffusion process occurs at the organizational level (Barr et al. 1992), but finds its genesis with insights commensurated by the individual. As an individual commensurates the idiosyncratic opportunity, they generate a cognitive frame through which to make sense of the unique characteristic of interest. These frames then diffuse through the organization as a part of the overall political process of evaluating options and priorities (Kaplan 2008). This is an elaboration of the general, continuous process of mutual sense-making that is a component of any interorganizational relationship (Ring and van de Ven 1994).

Organizational learning represents the firm-level component of the interface between an organizational frontline and the firm as a whole (Ye et al. 2012). Just as different individuals have differing abilities to elucidate their discoveries about partner firms, different organizations have different propensities for knowledge to propagate within them. Thus, the capacity for and propensity to engage in organizational learning -- absorptive capacity -- represents the ease with which knowledge generated by boundary spanners diffuses through the organization to crucial organizational decision-makers and stakeholders (Cohen and Levinthal 1990).

P5: Relationships mediated by a frontline employee with a high level of competence in knowledge articulation, in a firm high in absorptive capacity, will be more likely to successfully convert potentially fruitful partner idiosyncrasies into dyadic competitive advantage for the firm.

Exploitation Competencies Organization-level variable

While the detection of potentially fruitful idiosyncrasy is made by an individual, the subsequent exploitation of partner-level novelty requires coordinated activity by the firm as a whole.

Exploitation competencies require evaluation of the opportunity, availability of resources to exploit the opportunity (either from organizational slack or re-purposed from other activities), and the capability to quickly and effectively reconfigure the structure of the firm to fit the new situation.

Evaluation

Once information has been developed by the boundary spanner and diffused into the firm as a whole, it must be interpreted and acted upon by decision-makers (Nadkarni and Barr 2008).

Decision-makers within a firm have limited cognitive resources and must invest them parsimoniously. In particular, top managers are charged with collating, integrating, and interpreting information for the firm (Child 1972; McDonald et al. 1997).

Ocasio (1997) argues that given the vast importance of information to both a firm's structure and its behavior, and the limited attentional and cognitive resources of its decision-makers, that the quantity and distribution of a firm's limited attentional resources must take a central role in understanding firm behavior and performance. As senior managers become aware of idiosyncratic characteristics in their partner firms, they must decide first whether to attend to this information, and then determine whether it is potentially fruitful as a source of sustainable competitive advantage. Finally, the decision-makers must decide if the firm should enact the organizational changes required to exploit this opportunity (Ryals and Davies 2013).

In addition to the cognitive barriers to managerial acceptance of an opportunity, there are also affective and cultural barriers as well (March and Simon 1958, Cyert and March 1963). Studies of organizations facing the need for organizational change show the importance of challenging and revising mental models. Given information about critical opportunities and challenges in the environment, some organizations will utilize this information while others do not recognize the link between information and attendant strategic adaptations (Barr et al. 1992). Thus evaluation and willingness to act on a strategic opportunity requires attentive focus on the part of the manager, analytical capabilities to evaluate the information on a substantive level, and finally a propensity to challenge a status quo and approve organizational changes.

P6: Firms with a high degree of evaluative competence will be more likely to convert potentially fruitful partner idiosyncrasies into dyadic competitive advantage for the firm.

Available Resources

Essential to the exploitation of opportunities that have been identified is having organizational resources available to apply. This is the essence of real options logic (Kogut and Kulatilaka 1994). Decision-making can be enhanced by the availability of a choice to defer the decision-making, and therefore leave resources available to avoid foreclosing unforeseen future opportunities. Where the opportunity is to forge a sustainable competitive advantage that is housed in the relationship between the firm and one or more of its partners, these investments take the form of relationship-specific adaptations (Dyer and Singh 1998). The real options approach lends itself strongly to the idiosyncrasy/commensuration dynamic. In this case, reservation and allocation of slack organizational resources to enable deferred future decision-making is a powerful tool that allows a firm to retain preferential access.

The interaction between the timing of a decision and the availability of knowledge that helps optimize the decision can be complex. In some cases, the simple NPV analysis is sufficient: a decision can be made at t_0 that adapts to an uncertain event which might occur at t_1 . In other cases, a “wait and learn” approach is called for: the decision-maker defers a decision until t_1 and then reacts to the uncertain event once it has or has not manifested. Real options posits a third situation, where facing an uncertain event at t_1 , the decision-maker makes a partial investment in t_0 to retain preferential access to the potential benefits, benefits not available if he simply defers any investment at all (Trigeorgis 1996). This initial investment is analogous to a trader buying a financial option. In finance, such investments are monetary; however, the fundamental logic can be applied to other scarce organizational resources: time, attention, production capacity, and relationship-maintaining capabilities (Kogut and Kulatilaka 1994, Kogut and Kulatilaka 2001). Real options are the managerial parallel to financial options. Firms deploy intelligence-gathering resources (boundary spanners employing detection competencies) just as a financier buys a financial option. Then, based on partner idiosyncrasies that have been identified as potential sources for relationally-housed sustainable competitive advantage, the firm evaluates the new information and makes the decision to employ a partner-specific adaptation (exercise the option) or not (allow the option to expire). Doing so represents the use of the firm’s exploitation competencies.

Thus, real options provides a theoretical lens through which to evaluate the reservation of unallocated resources. Empirical research appears to support the value of organizational slack as a strategic reserve that can drive increased profitability (e.g. Tan and Peng 2003, Marlin and Geiger 2015); this model suggests that relational adaptations benefit particularly from these available resources.

P7: Firms with a high level of organizational slack will be more likely to convert potentially fruitful partner idiosyncrasies into dyadic competitive advantage for the firm.

Reconfiguration

Given a strategic opportunity, the available resources to exploit the opportunity, and the managerial decision to execute on it, the final step is reconfiguration of the firm to enact the adaptation. Organizations vary in their capability to enact such changes, and strategy scholars have long recognized the importance of dynamic capabilities to improve strategic fit between the firm and its environment (including its relational partners) (Teece et al. 1997). The degree to which this capability exists determines whether and how quickly the firm adapts to exogenous change.

With regard to idiosyncratic competitive advantage, it is especially important to focus on one aspect of this process: the ability of a company to alter its configuration to adapt to new opportunities. Grant's (2003) concept of planned emergence illustrates this process in action in the oil industry. Rather than follow an entirely planned or emergent strategy, Grant found that oil companies set in place procedures and resources in anticipation of opportunities which had not yet manifested. Put another way, planned emergence borrows from emergent strategy the recognition that opportunities cannot always be foreseen and are often exogenous to agency by the firm, but from the strategic planning perspective the idea that the fact that there will be opportunities can be predicted in general, even if their specific nature cannot be anticipated, and sets about preparations to take them when they appear.

While dynamic capabilities have been criticized as being equifinal (Eisenhardt and Martin 2000; Marlin and Geiger 2015), when combined with detection competencies that identify pairings between unique features of both relationship partners, these capabilities can now enable creation

of a subsequent competitive advantage. Eisenhardt and Martin's critique is that dynamic capabilities lack an isolation mechanism to secure exclusivity; in this model that exclusivity is housed in the unique nature of the partner idiosyncrasy. It is the idiosyncratic nature of the customer adaptation rather than the fact of adaptability itself that makes one set of dynamic capabilities unsubstitutable for another.

In addition to the cognitive and cultural obstacles to change and resource availability discussed above, there are also structural differences between firms which enable some to change more readily than others. This can be due to semi-structures (limited points of wide articulation interspersed among more broadly predictable routines) (Brown and Eisenhardt 1997), superior capabilities in knowledge management (Grant 1996, March 1992), innovative human resources practices (Jantunen 2005), organizational slack (March and Simon 1958, Cyert and March 1963), or planned emergence (processes designed to address opportunities as they appear) (Grant 2003).

Whatever the particular manifestation of dynamic capabilities, in the final analysis, it is crucial that a firm seeking to exploit opportunities that emerge in partner idiosyncrasies have them in some form. Teece (2007) suggests four microfoundations for these combination/reconfiguration competencies: decomposability, governance, cospecialization, and knowledge management.

Only once resources have been appropriately re-allocated and deployed to address the opportunity can the organization expect to establish the competitive advantage-- and thus supernormal profits-- that these difficult-to-imitate opportunities offer.

P8: Firms with a high level of dynamic capabilities will be more likely to convert potentially fruitful partner idiosyncrasies into dyadic competitive advantage for the firm.

Discussion

When developing a strategy for interorganizational relationships, and especially for the management of boundary-spanners, there is a tendency to frame the issue as top-down

management through analytics and process on one hand (Anderson and Oliver 1987; Cravens, et al. 1993), versus bottom-up management through outcome-based controls and empowerment on the other (e.g. Mantrala et al. 1994, Albers 1996, Mantrala et al. 2010). Attempts to impose strategic opportunities from on high, or for single “lone ranger” key account managers to attempt to exploit opportunities by themselves, may be equally ill-advised. This paper suggests that developing dyadic sources of sustainable competitive advantage requires an integrative approach that stresses cooperation and coordination between boundary-spanners and the top management team.

The frontline, as the organization’s intelligence-gathering arm, require the authority to gather partner intelligence reactively in response to organizational requests for structured, commensurated information (Singh 2000, Ye et al. 2012). They also need to be able to proactively determine the “unknown unknowns”-- undirected exploratory learning (March 1991) to determine the idiosyncratic characteristics of a partner that cannot be predicted ex ante but from which the potential exists for relationship-specific adaptations to derive long term mutual advantage for the partners. Meanwhile, the frontline on its own is ill-suited to making commitments and strategic resource allocations that impact the organization as a whole. It is the top-level management team that must evaluate and exploit the opportunities, setting priorities at the operational level based on the environmental intelligence gathered by the boundary spanners. This suggests a bottom-up process for intelligence gathering, married to a top-down process for opportunity evaluation and exploitation. Frontline employees are given broad latitude to collect information and probe for opportunities. The information thus gathered drives a structured, top-down process of implementation, where insights can be quickly made actionable for the particular customer relationship. The need for a hybrid approach to organizational distribution of

authority is similar in principle to the notion of semi-structures, which are clearly delineated points of articulation and rigidity within a firm (Eisenhardt 1989). Once an actionable event is identified, executive action is necessary in order to effectively marshal needed resources to address the point of advantage identified by the boundary-spanner.

For example, a salesperson discovers an idiosyncratic characteristic in one of its customers that might be fruitful; he reports this fact to others in the firm. That is, the relationship-specific knowledge diffuses through the organization. At that point, the firm analyzes the opportunity and, if it is likely to produce sustainable competitive advantage, exerts its dynamic capabilities to adapt to the new information. Had the investments in relationship-building and dynamic capabilities not occurred, the firm would have been able to identify or exploit the opportunity in a timely fashion. Thus, these investments provide preferential access to a future return based on not-yet-resolved uncertainty-- a classic real option. These relationship-specific investments, which derive unique and inimitable value from the partnership, result in mutual advantage for both partners in the dyad (Dyer and Singh 1998).

Future Research

In addition to the propositions developed above, there are many avenues for further exploration of the concept and application of idiosyncrasy in an organizational context. Each of the steps given in the general process model paints with a broad brush a series of highly complex discrete steps and competencies. A more precise understanding of how these steps are impacted when the subject is partner-specific idiosyncrasy would help clarify whether an organization must be engineered with relational rents in mind, at the expense of other competencies or whether these are more universal in their application.

The process of commensuration is an important part of the sociology literature (Espeland and Stevens 1998), but applying and adapting this concept in the domain of the for-profit firm is another avenue of exploration. What is the process of commensuration in a for-profit firm? How are idiosyncrasies identified, framed and communicated to other actors? How does this fit into the larger problem of organizational sense-making? A given phenomenon can be framed in many ways, each of which might drive a different conclusion (Kaplan 2008). How does the choice of frames or the use of analogical reasoning impact the downstream processing, diffusion, and exploitation of that phenomenon?

Similarly, commensuration and diffusion can occur in two directions. Even as the new knowledge diffuses from the boundary spanner into a partner firm, that same knowledge (and the attendant processing and exploitation) can cross the gap between organizations to its partner firm. Does the point of origination matter? For example, does it matter whether the idea originates from a salesman or the project champion of the buying firm? Can a strong competency at communications and top-level management sensitivity to opportunities allow a firm to free-ride on the opportunity-identification capabilities of its partners?

In this vein, while the general process of opportunity identification and exploitation can follow a consistent pattern, how might this pattern be applied in different boundary-spanning contexts? Might the differing norms and role concepts of sales executives, customer service managers, purchasing agents, business development executives, operations managers, logistics managers, or R&D engineers cause systemic variation in the process or efficacy of detection and exploitation competencies? To what extent might these differences stem from variation in individual characteristics, role characteristics, or organizational culture, routines, and processes? These

questions are among those that need to be answered if we are to fully understand the role of idiosyncratic information discovery and transmittance between and within organizations. Not all idiosyncratic attributes of partner firms represent opportunities for dyadic advantage. Many if not most such distinguishing characteristics have no impact on overall performance. Is it possible that adaptations to some characteristics actually impede the joint productivity of the partners? If so, in what instances does that drag on firm effectiveness occur? The literature in transaction cost economics is quite robust in answering these questions. Indeed, the concept of relational rents answers the question of why companies create relationship-specific investments in the first place. Once these investments are made, they follow the logic of transaction cost economics (Williamson 1981). Attention must be made not just to joint value creation but the related question of how the parties divide the rents generated jointly (Jap 2001). In addition, there are relational questions that stem from relationship-specific investments that impact relationship quality by affecting the relational orientation of the partners, their relative negotiating leverage, mutual trust, and overall relationship quality (Cannon and Perreault 1999; Palmatier et al 2007).

Conclusion

A firm can create and sustain competitive advantage over time through its relationships with other firms by discovering fruitful idiosyncrasies and adapting to them. These unique and novel points of differentiation make them challenging to detect but also difficult for competitors to diagnose and imitate.

Translating the potential for supernormal performance into actuality requires action by both the firm as a whole and individuals acting on the organizational frontline. Individuals must recognize the opportunities inherent in the idiosyncratic characteristics of its partners and then successfully

commensurate, codify, and diffuse them into the organization's knowledge base. For its part, the organization acts to absorb, evaluate, and exploit opportunities that are generated by its partner-facing employees.

Although firms and academics recognize the operational value of strong relationships, in the race to operate and optimize it is often tempting to treat adaptation as a customer-winning rather than market-leading strategy. Idiosyncrasies, all too often overlooked as outliers and or buried in error terms, represent a rich source of untapped potential for organizations seeking to harness the power of their relationships.

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