AN ATTENTION-BASED THEORY OF STRATEGY FORMULATION: LINKING MICRO- AND MACROPERSPECTIVES IN STRATEGY PROCESSES

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INTRODUCTION

and Ghoshal who view strategic intent as the objective function that guides evolution, we view strategy formulation processes as more fragmented and contested, with multiple foci of attention, rather than an explicit objective function, and both top-down and bottom-up processes capable of generating changes in the strategic direction of the firm.

Top-down perspectives on strategy formulation from Andrews (1971), Prahalad and Bettis (1986), Hamel and Prahalad (1989), and Lovas and Ghoshal (2000) focus on how strategy formulation is guided by policies and plans, dominant logic, or strategic intent of the top management of the firm. While attention is not an explicit focus of any of these perspectives, each can be interpreted as showing how the top management of the firm shapes the organization's agenda and focus, identifying issues and goals that guide organizational attention. In their retrospective account on dominant logics, Bettis and Prahalad (1995) make the connection with attention more explicit, positing that dominant logics provide a perceptual filter that channels managerial attention and choice-making behavior. In this paper, we will make the connection between organizational attention and the managed evolution of strategy more explicit. But rather than positing an exclusive role for top management in shaping organizational attention, we argue that attention is guided by distributed processes and the channels of decision making through which information flows and by which people engage in dialog. It is through these channels that the organizational managers communicate and make critical and discrete decisions that involve organizational resources. Channels allow actors to conjecture the future state of the environment, guide operations, establish rewards, and utilize feedback on key initiatives given a particular set of organizational and individual capabilities and priorities. Given the significance of these mechanisms, it is appropriate that the processes and their conduits become central to our investigation. It is, therefore, the form and characteristics of the firm's operational and governance channels— the vehicles for corporate decision-making processes—that are our focus.

We propose that strategy formulation emerges from the pattern of organizational attention embedded in the interacting network of concrete operational and governance channels at both the corporate and business unit level. These operational and governance channels include formal decision-making channels, such as board of directors meetings, board committee meetings, Executive Committee meetings, operating committee meetings, capital and operating budgeting requests, financial performance reviews, strategic planning reviews, and employee evaluations. They also include ad-hoc channels for mergers and acquisitions, changes in organizational structure, joint venture activity, and informal interactions, not a regular part of formal processes.

The objective of this paper is to explain the dynamics of corporate strategy formulation through the lens of an attention-based view and through a focus on channels. The paper explains how the firm's two types of channels—operational and governance channels—and its economic and social structures regulate the attention of its decision-makers and thus impact the micro processes of strategy formulation. It further links decision making in channels to the macro processes of strategy evolution. We posit that strategy formulation is ultimately about the selective retention of strategic initiatives made in corporate decision-making channels in which actors are embedded, and that through this network, retained initiatives become enduring activities of the firm and strategy finds practical expression. We extend existing theory by exploring how decision-making channels may be tightly or loosely coupled from each other and how that results in an overall pattern of corporate strategy.

**FIVE PROPOSITIONS**

In developing an attention-based theory of strategy formulation, we propose five orienting propositions. These propositions are designed to guide further theoretical development and empirical research and to link a theory of strategy formulation as attentional processing (Ocasio, 1997) with a theory of strategy process as guided evolution (Lovas & Ghoshal, 2000). These propositions are as follows:

1. Decision making is guided by selective attention to organizational issues and initiatives.
2. Selective attention to organizational issues and initiatives is situated in a dynamic network of operational and governance channels.
3. Formal channels guide the creation of informal channels.
4. Tight and loose coupling of the network of channels guides strategy formulation through the selective retention of strategic initiatives.
5. Selective retention of initiatives in channels is a source of competitive advantage.

In the following sections of our paper, we will elaborate on each of these five propositions.
1. Decision Making is Guided by Selective Attention to Organizational Issues and Initiatives. According to the attention perspective, organizational members have limited attentional capacity (Simon, 1947), a constraint which has implications for how they address the issues facing the organization. Attentional capacity is limited because of decision makers’ general receptivity to stimuli and their ability to focus on competing sensory inputs. Decision makers are most receptive to what is consistent with their current frame of reference (March & Simon, 1958). They vary in their assumptions, values, and cognitive styles (Hambrick & Mason, 1984) and knowledge of alternatives and consequences (March & Simon, 1958) and, as a result, are selective in the issues and initiatives they consider (Ocasio, 1997). Decision makers are also limited by their activity load or how much they can attend to at a given point in time. When inputs fall outside the scope of normal business activity and require greater mindfulness, attention to details or steps in the process is required (Shiffrin & Schneider, 1977; Ocasio, 1997). Higher cognitive demands require the selective focusing of attention on a limited set of issues and initiatives and a limited number of combinations of those issues and initiatives.

We focus on issues—the organization’s problems and opportunities—because they are the primary impetus of organizational action. Dutton and Dukerich (1991, p. 518) observe that organizations “respond to their environments by interpreting and acting on issues. Patterns in actions in response to issues over time create patterns of organizational action...”. Shared perceptions of these patterns are what ultimately guide the allocation of attention in organizations and the formulation of strategy. Langley, Mintzberg, Pitcher, Posada, and Saint-Macary (1995) also suggest that decision processes are best viewed through the lens of issues. The authors advocate a focus on issues because of the difficulty of putting boundaries around decisions and because issues more accurately reflect the content of discourse within organizations. Decision makers constantly evaluate issues against both specialized performance metrics and personal objectives. Issues, which may affect the entire firm or may be unique to each channel, are considered in terms of their degree of routine and importance to the business unit and organization.

Issues may arise as a result of the failure to meet aspiration levels (Cyert & March, 1963) or from external events in the environment (Hoffman & Ocasio, 2001) and selective attention to events shift the formation of organizational issues. Thus, organizational attention can be focused on both internal organizational issues and concerns or external environmental opportunities. Organizational attention is both backward and forward looking, seeking to solve organizational problems and failures (Cyert & March, 1963), and to provide links with perceived opportunities and threats in the environment (Andrews, 1971; Gavetti & Levinthal, 2000).

Initiatives are action alternatives for addressing issues and the fundamental source of variation in firm activities. For Burgelman (1991) autonomous strategic initiatives occur as a result of new combinations of existing individual and organizational capabilities. Individuals that engage in autonomous behavior are triggered by external stimuli, are in positions which allow them access to technological and market changes, and have the ability to commit financial resources. Bower (1970) notes that new projects arise as a result of a perceived gap between what is expected and what is required to accomplish the job. Mintzberg and Waters (1985) suggest that the source of such behavior is most likely found in the intentions of individuals. Inspired insights, informed by intuition and judgment that restructure thinking have implications for enterprise-level strategy formulation. Chandler (1962, p. 304) vests the innovation process in the personalities and experience of executives “closest to the problem”. In all, the literature suggests that the source of variation of strategic proposals lies with political decision makers, directed by finite resources, who are seeking to simultaneously manage their business units and careers. A common thread throughout this literature is the idea that variation in strategy does not simply emerge from fortuitous timing of problems and opportunities (March & Olsen, 1976) nor does it result exclusively from serendipitous autonomous initiatives (Burgelman, 1984) developed independently of formal processes. Variation in the evolution of firm activities are subject to a variety of forces including “errors” or random variations, learning from experience (Argote, 1999), top-down organizational commitments (Carter, 1971), and attempts by managers to influence the process of variation in response to administrative (Burgelman, 1983, 1984) or cultural (Ouchi, 1980) mechanisms or what they see as forces of selection and retention (Volberda & Baden-Fuller, 2003, p. 5) of initiatives.

Building on theory of ambiguity and choice (March, 1978; March & Olsen, 1976), decision making is ultimately guided by the matching of issues and initiatives in channels. Kogut’s (1984) theory of agenda setting suggests that for a new initiative to be adopted, issues and initiatives must be linked in decision making. Following Kogut, we posit that for the adoption of strategic initiatives to occur, organizational members must either engage in issue selling (Dutton & Duncan, 1987), or match their strategic proposals to existing organizational issues. Initiatives compete for limited attention in the firm’s decision-making channels. Decisions are made when
an initiative (or initiatives) meets an issue (or issues), as the combination serves to respond to an organizational problem or opportunity. Consequently, decisions will be guided by which strategic issues and initiatives receive the most attention and by how strategic issues and initiatives come together in time and place (March, 1978; Ocasio, 1997, 2001).

While a large number of issue-initiative combinations will be proposed by players within an organization, only a limited number will receive substantial attention and serve to establish the multiple, but limited foci of attention that will guide the variation and selection of activities within the firm. Thus, attention is necessary for both issues and initiatives to persist within an organization's multiple and interacting channels of decision making.

2. Selective Attention to Organizational Issues and Initiatives is Situated in a Dynamic Network of Operational and Governance Channels. According to the attention perspective, the attention of organizational members is situated in the firm's network of tightly and loosely coupled decision-making and communication channels defined as "the formal and informal concrete activities, interactions, and communications set up by the firm to induce organizational decision makers to take action on a selected set of issues" (Ocasio, 1997, p. 194). These channels exist materially in time and space and may take the form of face-to-face meetings, telephone conversations, e-mail exchanges and other types of decision making and communication conduits linked together through dynamic networks. The networks we refer to here are not social networks between individuals but event networks between channels. Each channel is a node in the network and it is coupled to other channels to the extent that it transmits issues and initiatives from one channel to another. The ties hence are common issues and initiatives that flow from one channel to the next over time. Thus channel B has a tie to channel A if the issue and/or initiative attended to in B was also attended to in A.

The importance of the dynamic network between channels is exemplified at General Electric (GE). A highly simplified depiction of major channels at GE is depicted in Exhibit 1. The nodes in the GE networks of channels include the board of directors, Corporate Executive Office (including the CEO and vice chairmen), Corporate Executive Council meetings (where the top 35 executives meet quarterly), the annual leadership and organizational reviews, Session 1, Session 2, and Session C, the management development institute at Crotonville, and Boca, an annual meeting in Boca Raton, where operating managers meet to plan the coming year's activities (Bottsydi & Charan, 2002). The links between channels in Exhibit 1 characterize the information and decision linkages as the output of a particular communication and decision-making channel become inputs into other communication and decision-making channels. This process is denoted by directional arrows. Single-headed arrows indicate that output (i.e. issues and/or initiatives) of one channel serves as inputs (i.e. issues and/or initiatives) to another (from A to B). Double-headed arrows indicate that the flows of issues and/or initiatives go both ways (from A to B and B to A). Note that in the case of two-way flow, the issues and initiatives going from A to B may be different from those going from B to A. The strength of the coupling is...
crucial here as the stronger the overlap between issues and initiatives the greater the strength of the network.

**Operational and Governance Channels**

In this paper, we distinguish between two types of channels: operational channels and governance channels. Operational channels are those in which the technical tasks of the organization are carried out (Thompson, 2003[1967])—where workers and front-line (or first-line) supervisors deal with production, sales, marketing, research, and other technical issues, occasionally with input from governance channels. Governance channels are those where middle- and senior-level managers attend to the allocation of resources, the formulation, monitoring, and control of both business and corporate strategies and policies. In the Williamsonian sense, governance refers to those organizational mechanisms, which are integrated in the firm hierarchy to effectively provide information to distribute rent-seeking capital and to allocate resources within the firm (Williamson, 1985). Governance channels are characterized by a greater level of abstraction of information which on one hand allows senior-level organizational actors to understand the essence of output from operational channels and make important decisions without knowing unnecessary details (March & Simon, 1958). However, it also restricts their competence of decision making.

It is not our intention to defend discrete boundaries between operational and governance channels since this will vary greatly across organizations. Rather we prefer to draw attention to the general interface between channels employed in the day-to-day running of the business at the operational/technical level and channels utilized for managerial processing of issues and initiatives. Although not explicitly discussed, Berger (2002) captures the interface between channels in his description of front-line members, at the product/market level of the organization, who conceive of new business opportunities (through local operational channels) and then engage in efforts to champion them among middle managers for their further development. Middle managers then attempt to rationalize new business activity and formulate broader strategies across products or businesses and try to convince top management to support them (through governance channels). Bower (1970) also notes this interface when he describes the facility-oriented manager who, through the course of routine operational activity, may submit capital appropriation requests, which make their way up the chain of command through governance channels. Although in both of these examples, the flow of issues and initiatives is from bottom to top, as noted above, the flow of issues and initiatives goes both ways. That is, the issues and initiatives conceived through operational processes may serve as inputs into governance channels and vice versa. At GE, for example, after the CEO introduces key strategic initiatives at the annual meeting in Boca (governance channel), what often follows are a series of local work-out sessions throughout the organization (operational channels) to openly debate opportunities associated with the initiatives.

The form and context of the firm’s operating and governance channels are what help us understand how managers process issues and initiatives. The channel form is characterized by spatial, temporal, and procedural dimensions (Stinchcombe, 1968) which are consequential for embedded actors. Meetings, for example, occur in particular locations (e.g., at headquarters or an off-site location), have a particular frequency (e.g., quarterly and duration (e.g., hours, days) and typically have a purpose, though not always. As a result of these factors, channels are the substance of the communication. Dialog may come in the form of verbal or written interaction, face-to-face, or via another communication vehicle. Also the nature of the communication may be synchronous or asynchronous (temporally separated) and be formal and highly politicized or informal and candid.

An actor’s ability to recognize problems and opportunities and value initiatives is a function of his location within the dynamic network of operational and governance channels of the firm. Channels are themselves embedded in the social and economic structures of the organization, which include structural factors such as organizational policies (rules), human, physical and financial resources, work roles, and people and their relationships. Forms of communicative exchange will reflect the differences in these structural variables and come to shape the perceptions of managers. At any particular meeting, for example, the participants, the size of the group, the nature of the information discussed, the structure of the agenda, and the order of alternatives considered (Hastie, 1985) will all be consequential for decision maker attention. The time of the meeting, its geographic location, what precedes it and what follows it, and the dynamics that unfold during the meeting will additionally have an impact on the focus of attention. The socially structured pattern of attention that emerges ultimately determines the problems and opportunities which are addressed and initiatives which are enacted by organizational members.

GE’s Operating System (Slater, 2000) is an exemplar of a dynamic network of channels. According to the GE (1999) Annual Report,
This operating system is based on an informal but intense, regular schedule of reviews designed to create momentum for the initiative. It progresses with a drumbeat regularly throughout our business year – year after year.

Typical initiatives are launched at the annual meeting in Boca, which brings together the firm’s 600 top global leaders. During each quarter, the CEO and executives from the firm’s businesses attend the Corporate Executive Council, where they share what each of them has done to implement initiatives. The primary HR governance channel linking the business units with headquarters, called Session Cs, are full-day personnel reviews at each location, where the people leading and practicing the initiatives present their progress, and assessments are made on the people involved with the initiatives. Classes taught at Crotonville, the firm’s management development institute, often provide the tools necessary to roll out the initiatives and simultaneously reward high-potential candidates for their success in current and previous initiatives. Note that each of the channels focuses attention on the firm’s primary top-down initiatives yet, provides business units the opportunity to share knowledge. The linkages between channels ensure that decision-making processes are coupled and respond to the demands and needs of localized constituents while simultaneously focusing attention on a subset of corporate-driven initiatives.

3. Formal Channels Guide the Creation of Informal Channels. Observers of organizational decision making have highlighted the importance of informal channels in strategy formulation processes (Allison & Zelikow, 1999; Mintzberg, Raisingham, & Theoret, 1976; Pascale, 1984). Formal decision-making channels often serve to ratify decisions that have been made by political insiders in informal decision-making channels. Off-line meetings are frequently where the action takes place, and informal networks may take precedence over formal strategic decision-making processes.

While the importance of informal channels and informal networks is undeniable, one aspect that is often missing from accounts that highlight the criticality of the informal channels is how the establishment of informal channels is itself shaped by formal channels. Organizational participants hold off-line discussions, make phone calls, and send e-mails to problem solve, mobilize political support, brainstorm, and negotiate among participants in formal channels. This process continues until decisions are made and resources are allocated to initiatives in formal channels. After formal strategic decisions are made (or not made) in formal channels, informal channels serve as mechanisms for retrospective rationalizing and sense making. They may also be used to maintain and restore political networks that may have been affected by decisions made and to plan for subsequent participation in the organization’s formal decision-making channels. Consequently, when evaluating the impact of informal channels and networks, we must consider how these channels are themselves shaped by the organization’s formal decision-making processes. We should note that sometimes the informal can be just as stable as the formal – sometimes even more so.

4. Tight and Loose Coupling of the Network of Channels Guides’ Strategy Formulation Through the Selective Retention of Strategic Initiatives. Organizational strategy originates from the pattern of initiatives that emerges from a network of tightly and loosely coupled decision-making channels (Ocasio & Joseph, 2004). As we have outlined above, each operational and governance channel serves as a unique context for decision-making processes. Variations in corporate strategy arise from the fact that decision-making processes and the channels through which they flow may be tightly coupled, but just as often they have only occasional, negligible and indirect effects on one another (Ocasio & Joseph, 2004; Weick, 1979). More specifically, processes at the individual channel level may be decoupled with one another and from corporate activity and uniquely focus individual and group attention on particular initiatives.

Organizations retain only a limited set of initiatives (Lovas & Ghoshal, 2000). Often, directives from top management begin with the exhortation of their benefits but because organizational members are preoccupied with other efforts, they are quickly forgotten throughout the organization. Initiatives subsides (i.e., fail to be retained) and everybody goes back to work. Sometimes initiatives generated deep inside the organization bubble up and subsequently become a meaningful and enduring activity of the firm. Just as often, however, great ideas never move out of a nascent stage, despite unambiguous market demand. When silos are prevalent, critical market information that is discovered in one business unit never makes it to another business unit where the information is needed most. Yet existing research on top-down planning does not account for the mechanisms by which particular (although not necessarily the best) initiatives gain altitude. Bottom-up emergent strategy fails to account for the mechanisms that enable top management to enact key initiatives and get the organization moving in roughly the same direction. Neither view accurately addresses the common problem of silos nor why critical issues and initiatives fail to move laterally across the organization. Our emphasis on the governance channel network bridges the gap in top-down and bottoms-up explanations of strategy formulation and
reinterprets the problem of “silos” as one of a decoupling of processes. What follows is a review of the treatment of decoupling in the strategy process literature, after which we examine more closely the causes and consequences of the decoupling of processes via channels.

The literature is currently split on the degree of decoupling found in organizations vis-à-vis strategy formulation processes. At one extreme, Bower (1970) suggests that organizational structure separates those that allocate resources with those that identify issues and opportunities. The resource allocation process is therefore decoupled from explicit strategy formulation since top managers allocating resources have little appropriate knowledge to evaluate initiatives and rely on the credibility of middle managers. Mintzberg and Waters (1985, p. 270) posit that unconnected strategies emerge as a result of loosely coupled actors each within different subunits of the organization. Localized strategic initiatives are fashioned which are “in absence of, or in direct contradiction to, central or common intentions.” Burgelman (1991) moves down the continuum of coupling and suggests that different forms of structural context provide more or less tight coupling between the organizational strategy and strategic initiatives of managers at various levels. At the far end, lie proponents of formal strategic planning processes (Andresen, 1971; Ansoff, 1965; Hofst & Schendel, 1976), those that favor control systems (Simons, 1991, 1994) and those that tightly link structural factors to strategy and initiatives (Chandler, 1962), who implicitly assume tight coupling.

The source of this confusion and controversy comes from the lack of attention to the factors that are decoupled and the conditions under which loose versus tight coupling occurs. Both theoretical and empirical works in the strategy process domain use the term frequently, but rarely provide a concrete definition and when it is defined, it is inconsistently applied (Orton & Weick, 1980). Here we define the strength of coupling between channels in terms of the flow of issues and initiatives. Specifically, in this paper, tight and loose coupling refers to the responsiveness of individual processes within a channel to issues and initiatives of other channels. For example, in organizations with tightly coupled channels for strategic planning, budgeting, and leadership development, all three processes take each other’s issues into account. In organizations where these channels are loosely coupled, strategic planning, budgeting, and leadership development are independent processes with little direct influence on each other.

Driving the degree of coupling between channels are structural elements such as the resources allocated to organizational members, hierarchical reporting arrangements, policy guidelines, and social relations among individuals. When channels are bounded by redundant structural elements, it is more likely that the processes carried out through the channels will be tightly coupled. For example, decision-making processes are typically arranged into “periods.” Periods might be arbitrary in nature, or more likely correspond to monthly, quarterly, or end-of-year cycles circumscribed by the firm. This arrangement influences the behavior of people and interunit information flows consistently across business units and hierarchical levels. At GE, monthly financial reports are required from all business groups. A demarcation of month’s end, the report becomes a variant that, in some way, shapes all actors consistently (i.e., everyone has to “get their numbers in”).

Tight and loose coupling among channels creates distinctions among them in the degree to which they are central or peripheral to an organization’s attentional field. Since channels are coupled to the extent that they share issues and initiatives with other channels, more tightly coupled channels are likely to be central in the network. Central channels constitute the core of an organization’s attentional field and focus and sustain an actor’s attention on the most commonly attended issues and initiatives in the organization. Loosely coupled channels may be more peripheral to the firm and impose idiosyncratic feet of attention that may be decoupled from the priorities of the senior management.

In addition to providing focus, linked channels create and sustain working relationships between individuals, groups, and units. They serve as the context for interaction, shared dialogue, and information exchange. Social relationships situated within tightly coupled channels enable individuals to create, retain, and transfer knowledge and provide them with the incentives to do so (Argote, McEvily, & Reagans, 2003). However, tightly coupled channels result in more than simply conversations among organizational members. Tightly coupled channels also provide a greater degree of awareness as to where among other members to find information (Wenger, 1987). As a result, members within tightly coupled channels more capably interrelate their decisions and actions with other members and units within the organization (Weick, 1993). Thus, a tightly coupled network of channels generates a greater transparency for organizational members as to what is going on (i.e., perceptions), how things are done elsewhere in the organization (i.e., cause and effect relationships), what decisions and actions are possible (i.e., norms and beliefs) (Moorman & Miner, 1998), and how well others are doing their job (i.e., social comparison) (Festinger, 1954). Tightly coupled networks of channels are also more fertile ground for organizational learning. Operational channels are aimed at elaborating and refining existing products and services, and it is within these channels that
organizational members' architectural knowledge of linkages between components is created and retained (Henderson & Clark, 1990). Linked tightly to governance channels, the operational channels forward this architectural knowledge up the chain of command and inform senior-level managers as they reconfigure and commit resources to activities. At the middle and senior manager levels, tight coupling in governance channels is thus critical for agenda management, a vehicle for top-down control of the corporate strategic agenda and focusing attention on corporate strategy initiatives. Strategic planning processes will more readily permeate the organization and link to other important processes such as operations, compensation, budgeting, and financial reporting.

An additional layer of complexity, which we have not directly addressed, is the consideration of firms with a global footprint. Diversified multinational firms are faced with difficulty in strategy formulation and implementation because of the vast differences in decision contexts of the various geographic subunits (Doz & Prahalad, 1991). Receptivity to ideas varies greatly as a result of different cultural expectations and norms. When governance channels at the corporate level and within geographically dispersed business units differ widely in their focus of attention, idiosyncratic words are created. Issues may be independent and contested, and initiatives are more likely to conflict and struggle for funding.

Although the addition of cross-cultural heterogeneity presents a challenge to process approaches to strategy, the attention perspective offers some potential insights. Ambiguity derived from greater separation of units from headquarters creates loose coupling between information activities at the geographic unit and decision activities at the corporate center, and this loose coupling creates autonomy for information gatherers. In this environment, more discretion is bestowed upon decision makers in disparate geographic locations who perceive or construct idiosyncratic meanings of external stimuli. However, despite the geographic dispersion, behavior is not random. The interpretation of the stimuli by individual decision makers will vary based not only on the distinctive localized issues, but also the shared enterprise-wide initiatives, which essentially serve as an external selection mechanism for country-level managers. Loose coupling ensures that although actions and attitudes of international managers get anchored on the contextual factors within local operational channels, they are adjusted vis-à-vis the attentional field created through corporate governance channels. Thus, although the ensemble of conditions is much greater and centralized control efforts are less efficacious (Doz & Prahalad, 1991) when considering diversified multinational corporations, loosely coupled channels result in initiatives which will find common support locally yet at the same time articulate firm strategy.

5. Selective Retention of Initiatives in Channels as a Source of Competitive Advantage. While our analysis of strategy process so far has been primarily descriptive, rather than normative, strategy-formulation processes are themselves a source of competitive advantage. When granted tangible resources, the subset of initiatives, which persists in the network of operational and governance channels, can result in the adoption of new activities, changes in existing activities, expansion (or contraction) of activities, and the abandonment of activities. That is, retained initiatives become enduring and routine activities (Nelson & Winter, 1982) within the firm. Internal business venturing, for example, may lead to new business activity and the establishment of new divisions or new departments in existing divisions (Burgelman, 1983).

Rents will flow to those organizations, which can successfully select and retain appropriate strategic initiatives. Identification of the "right" initiatives requires that organizations effectively and efficiently focus managerial attention, through channels, on both internal autonomous behavior and external stimuli in the form of market opportunities. Organizations that are able to capably utilize these channels to optimize attentional processing will be better positioned to take advantage of emerging capabilities inside the organization and address changes in the external environment.

The existing literature has typically observed the negative implications of the limited attention of managers as emphasizing the limits of rational decision making (Simon, 1947). Yet this negative bias has obscured the potential advantages that may accrue to organizations that effectively direct managerial attention to key emerging competences of the organization and existing or future customer needs. Managers may adapt a firm's activities to the environment if competence-building initiatives are identified and exploited and shifts in the environment are matched by firm moves. The only way for activities to evolve in such a way requires that organizational actors attend to key issues and respond to them by adding, abandoning, or altering strategic activities. Thus, the ability of senior managers to focus the attention of lower-level managers on appropriate issues and activities ensures the accuracy, facilitation, and integration of information processed (Ocasio, 1997), choices made and the concept of strategy realized. The benefits of focused attention are experienced in both operational channels through mechanisms such as learning by doing (Argote, 1993) and in governance channels through the superior capability to adapt to changes in the environment (Teece, Pisano, & Shuen, 1997).
The network of channels provides the discipline through which critical issues are articulated, added to the management's agenda and matched to congruent initiatives. While many such issues are important, only a few are generally critical in the sense that they make the difference between success and failure or between superior or mediocre performance. Matching issues and initiatives is important because it is the impetus for the commitment of resources and thus consequential for activities that reconfigure resources (Dutton & Duncan, 1987). It is thus not resource combinations per se that bestow competitive advantage, but the variation, selection, and retention processes (and the channels in which they flow) that result in activities that enable new resource configurations. Tight coupling of the network of channels, especially those pertaining to feedback and knowledge transfer (Zollo & Winter, 2002) increases the probability that the firm will select and retain activities that generate new resource configurations that will lead to competitive advantage.

For this adaptation to lead to competitive advantage, part of managerial attention must be directed outward to the external environment. Emerging internal capabilities are only useful if there is a concomitant market opportunity. Much of the work on competitive forces or resource endowments do not directly address the simultaneous mechanisms of internal and external selection of firm capabilities and the role of managers in attending to viable autonomous initiatives, matching them with customer needs and ultimately shifting the pattern of activities within the firm (Surprenant, 1984, 1991). Yet, firms may only achieve competitive advantage if they can successfully identify difficult-to-imitate internal activities most likely to yield valued products and services which is, itself, a major challenge for firms (Teoe et al., 1997). For example, channels which enable environmental scanning must be linked to channels that involve product development. The firm must also have sufficient absorptive capacity (Cohen & Levinthal, 1990) to be able to incorporate this information into existing activities.

**Attention-Based Model of Strategy Formulation**

Exhibit 2 explains the relationship between selective organizational attention and the network of operational and governance channels and the implications for organizational strategy formulation. As discussed above, organizational attention is situated in the firm's network of operational and governance channels. Governance channels are particularly relevant for strategy formulation as they provide opportunities for focusing manager's attention of the firm's issues (its problems and opportunities), and the set of strategic initiatives available to respond to issues facing the firm. Formal and informal channels filter information and guide decision making (Allison & Zelikow, 1999). Through the process of selective attention the number of issues and variation of initiatives being considered becomes reduced. As the issues and initiatives flow through the firm's channels, the channels filter and reduce the issues and initiatives considered by managers. Decisions are made through the system as initiatives are linked with relevant issues. The degree of coupling of the channels regulates the initiatives that persist and the new activities selected and retained in the organization.

**DISCUSSION AND CONCLUSIONS**

This paper outlines a set of orienting propositions for linking attentional theories of decision making with theories of guided evolution to explain the formulation of strategy within the firm. A key contribution of the paper is highlighting the importance of governance channels for guiding strategy.
formulation. While attention in operational channels is primarily inward looking and guided by the firm's operations for manufacturing, marketing, sales, and distribution, governance channels are distinct in that they provide opportunities for organizations to anticipate the opportunities and threats in the market and non-market environments through performance and environmental feedback. Given the complexity of organizational environments, organizations selectively attend to the environment with a limited set of issues. The firm's governance channels serve to link the available set of strategic initiatives with the available set of strategic issues and guide the evolution of a firm's strategy.

The emphasis on governance channels provides a process counterpoint to more common focus on organizational demography and managerial structures. For example, much work on the top management in strategy focuses on top management teams (Hambrick & Mason, 1984) and their demographic structure. The governance channels perspective emphasizes instead how decision-making processes of the top management team are situated in a network of channels, including the board of directors, corporate executive committees, operational, and budgeting reviews, and strategic planning processes. While not denying the influence of demographic composition, an attentional perspective focuses instead on communication and decision-making processes.

Our emphasis on channels and processes also suggests a contribution to the burgeoning literature on dynamic capabilities. While other streams of strategy research have focused on either market opportunities and constraints or internal efficiency, the notion of dynamic capabilities is consistent with the attention-based theory. Dynamic capabilities are "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (Teece et al., 1997, p. 516) and are, themselves, processes (Eisenhardt & Martin, 2000). These processes allow for attention to both internal and external stimulus, which enables the firm to adapt its activities to the requirements of a changing environment.

We add to this perspective and posit that decision processes cannot be considered independent of the governance channels through which information flows, managers engage in dialog, and strategic decisions are formulated. It is through these tightly and loosely coupled channels that attention is directed and people come together, consider problems and opportunities, and make critical decisions about initiatives that address organizational change.

In our view, dynamic capabilities are derived from the attentional processing of issues and initiatives within governance channels. Through their vigorous attention to particular issues and initiatives within governance channels of the firm, decision makers are able to bring about improved understanding of the enterprise and its environment, and to select from and adjust behavior occurring in the firm's operations and administration. Based on new identifiable patterns of issues and initiatives, they may adjust strategic decision behavior. Attention to the most critical issues and the most promising initiatives -- particularly those having long-range impact on the ability of the enterprise to adapt to the environment -- is a primary output of the attentional processing of the firm and provide the seeds of dynamic capabilities.

Much empirical research is needed on both the anatomy and operations of governance channels in corporations. While boards of directors have been heavily studied, the emphasis has been primarily from a structural perspective, with limited emphasis on decision-making processes. Very little research has been conducted on other governance channels in the corporation, such as Executive Committees, weekly staff meetings, capital budgeting, and for those channels and processes that have been studied such as board of directors and strategic planning, the links between channels and the extent of coupling and decoupling of strategic issues and initiatives remains mostly unexplored.

Another important issue for research is the coupling and decoupling of governance channels at different levels of the organization and between different functions. The attentional perspective suggests that in each subunit of the organization, decision makers are shaped and constrained by the forces of social and economic structures, information availability, performance evaluations, and the cues provided as a result of his or her organizational role. Individuals are situated contextually in particular zones of the organization and their attention is guided by the network of channels within which they interact. This distributed attention accounts for the vast number of issues and initiatives considered by the organization at any point in time. Overlapping issues result in stronger ties between channels. Since tightly coupled channels share issues, they provide a coherence of priorities from the top to the bottom and across units of a hierarchical structure. People at different levels and in different parts of the organization will have a focus on common issues.

Finally, while governance channels are central for strategy formulation, the issues and initiatives generated within governance channels must be coupled with the firm's operational channels for strategy implementation to take place. Linkages between operational and governance channels are also critical for feedback from operations to affect the accurate identification of strategic issues and the generation of appropriate strategic initiatives to address these issues.
NOTES

1. The form of channels inside a large multi-business corporation are too numerous to mention, but include meetings at all levels including a board of directors and their committee meetings, executive committee meetings, capital budgeting meetings, strategic planning sessions, brainstorming sessions, human resource planning, performance reviews, financial performance reviews, budget meetings, sales meetings, operational planning and performance reviews off-site retreats, lunches, conventions, and other things. They also include written communications such as annual reports, proxy statements, 10-Ks and other SEC filings, capital appropriation requests, business plans, marketing plans, public relations plans, press releases, operations manuals, project plans, calendars, policy manuals, surveys, meeting agendas and minutes, speeches, action plans, reports, requests for proposals, contracts, e-mails, spreadsheets, presentations, organizational charts, personnel evaluations/reviews, databases, and budgets.

2. The links between channels in Exhibit 1 are generalized from a reference to processes within the following sources: Bosidy and Charan (2002), Lawe (2001), Slater (1993, 2000) and Welch and Byttas (2001). This approach allows us to provide a stylized example to illustrate our theoretical rationale, and it is meant to be illustrative of the concepts, rather than a detailed description of the actual managerial channels. A more fully developed analysis of GE's governance channels is contained in Oscao and Joseph (2004), which also compares channels under four CEO regimes at GE: Cordis, Becton, Jones, and Welch.

3. It is important to note that organizations have numerous formal and informal channels and it is not our intent to provide an exhaustive list of channels at GE. Rather, our focus is on the channels central to strategy formulation and implementation and the "strong" ties between them.

4. Our conception of governance channels is similar to (Thompson's (1967)) notion of the administrative process. For Thompson, "the basic function of administration appears to be co-alignment, not merely of people in coalitions but of institutionalized action - of technology and task environment into a viable domain, and of organizational design and structure appropriate to it." (1967), p. 147). Interestingly, Thompson draws an explicit link between administrative hierarchy and channels (1967), p. 148). We use the term governance instead of administration because in more recent parlance, administration has taken on a connotation of the support functions of the firm, including human resources, accounting, budgeting, purchasing, etc., which may be more of an operational level, rather than that of resource allocation, policy formulation, and control.


REFERENCES


Attention and Strategy Formulation