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The Functions of Middle and Top Management in the Dynamic Capabilities Framework[1)]

Sunyoung Lee
University of California, Berkeley, USA
David J. Teece
Institute for Business Innovation, Haas School of Business, University of California, Berkeley, USA

Abstract
This paper examines the roles played by middle- and top-level managers in the dynamic capabilities framework. The key entrepreneurial capabilities needed for asset orchestration and realignment of the enterprise often reside in the skills and knowledge of top managers. Although dynamic capabilities favor shallow hierarchies, middle managers will always fulfill vital functions that complement those of top management within the framework. They play a variety of roles, including oversight of the "ordinary capabilities" that underpin the firm's technical fitness, leadership of product development teams, and direct (or indirect) involvement with the development of routine-based dynamic capabilities. Empirical research on the interaction between levels of management will most likely need to be based on in-depth case studies because of the context-dependent nature of the relationship between management and performance.

Keywords: *middle management, top management, ordinary capabilities, M-form, dynamic capabilities, entrepreneurial management, organizational change, routines*

1. INTRODUCTION

An increasing amount of attention has been given to the entrepreneurial role of the top management team. At the same time, there has been a growing recognition of the roles that middle managers play in entrepreneurship, knowledge creation, and strategic change (Nonaka, 1988a; Bartlett & Ghoshal, 1993; Kanter, 1983). However, middle managers do not appear to be advancing in the current corporate environment. The gap in earnings between middle and top management has increased, while the ongoing delayering of managerial hierarchies has reduced the number of middle managers (Floyd & Wooldridge, 1994).

The rise of the middle manager began in the early decades of the twentieth century and increased as firms grew in size and the 'M-form model' of multidivisional business management became widespread. The impacts of multidivisional structures have been studied by business historians (e.g., Chandler, 1962) and economists (e.g., Williamson, 1975).

To many, including Chandler (1962), top management is seen as providing strategic direction and integration, especially when rapid decisions are required (Eisenmann & Bower, 2000). Indeed, Drucker (1988) compares CEOs to the conductor of an orchestra in which every one of the highly-specialized musicians plays directly to the conductor without an intermediary. The metaphor suggests that only top management can focus on broad objectives and guide the actions of middle managers. Bottom-up planning processes are dismissed as slow and bureaucratic (Mintzberg, 1994).

Less focus on top management (and divisional heads) is reflected in other versions of the classic M-form, such as the "N-form" and "middle-up-down" organizational structures. In these models top management is viewed as less critical since middle managers play a key part in identifying and seizing strategic opportunities (Ghoshal & Bartlett, 1994; Burgelman, 1983; Hedlund, 1994) and in creating knowledge (Nonaka, 1988). The central premise of these studies is that top management may suffer from cognitive limits and biases, and the involvement of other organizational members in the process of decision making can help bring better management.

While these perspectives are insightful, they are largely silent about how various managerial styles relate to firm performance. In contrast, the dynamic capabilities framework outlined below describes sets of capabilities that enhance a firm's performance in fast-moving environments. In general, 'capabilities-based' approaches see managers at all levels as having the potential to build enterprise value and stockholder wealth through the creation and orchestration of intangible assets. This is at odds with more cynical views of management such as that of agency theory, in which the organizational problem is viewed as constraining or blocking managers' proclivities to extort value from shareholders, and the challenge of good governance and incentive design is to prevent this. While we do not deny the presence of such issues and concerns, they should not, in our view, be the primary factor animating a theory of management and theories of organizational design.

The article begins by summarizing past research on theories of corporate management, then discusses gaps in the literature. Next, we briefly recap the dynamic capabilities framework and detail what it says about the role of management. The following sections discuss the entrepreneurial role of top managers, the multifunctional roles of middle managers, and then some of their overlaps and interactions. In the final section, we summarize our propositions and discuss areas for future research.

2. THREE PERSPECTIVES ON MANAGERIAL ROLES

There is an extensive literature on managerial decision making and cognition. The review presented here briefly explores this literature with respect to the specific tasks and roles that middle and top managers play, as discussed in different theoretical models.

The literature on managerial roles can be broken down into three categories (Bartlett and Ghoshal, 1993). The first is structural, in which hierarchical roles are prescribed by the mode of organization; the second is process-based, with more give-and-take between top and middle managers; and the third model is behavioral, with an emphasis on the idiosyncratic influence of individual personalities and decision making styles.

Structural Perspective

Many theorists have investigated the implications for management of organizational structure. A multidivisional structure allows top managers supported by an elite planning staff to concentrate on longer-term strategic direction, with divisional managers being responsible for operational decisions (Chandler, 1962). Williamson (1975) argued that this division of labor allows enterprise growth without compromising efficiency. Semi-autonomous divisions can reduce coordination costs. Top management can minimize decision making errors in the divisions by monitoring divisional management and measuring divisional performance (Williamson, 1981). Williamson contrasts this with "corrupted" M-form firms, in which top managers are actively involved in operating decisions. He argues that the involvement of top managers in such decisions decreases the efficiency of M-form firms (Williamson and Bhargava, 1972) because it envelops them in short run operational decisions when they should be focused in longer run strategic issues.

The literature on M-form organizations insists that separation of decision responsibility between strategy and operations is required to economize on the limited information-processing capacities of top management. Mintzberg and Waters (1982) and Ghoshal and Bartlett (1994) agree that, due to asymmetries between divisional and top management over information access, top management (who often have insufficient division-specific operating knowledge) should limit their involvement in division-level decisions. As an M-form firm increases its scope (through product diversification) and span of control (number of operating divisions), top management's understanding of strategy at the business unit level is further diminished (Hoskisson and Hitt, 1988). Empirical work (e.g. Armour & Teece, 1978; Teece, 1981) showed that the M-form did provide a measurable temporary advantage to large integrated and diversified enterprises.

Some authors, however, have identified conditions in which the involvement of top management in operating decisions is beneficial. In vertically integrated and coherently-diversified firms, interdependencies between divisions make it necessary for top management to retain some control over functional departments to ensure coordination (Mintzberg, 1983). While operational integration, such as a shared sales force, can often be handled among divisional management teams, Eisenmann and Bower (2000) argue that activist CEOs must take responsibility for driving strategy and strategic integration, in which the resources and activities of existing divisions are combined to create new businesses.

Process Models

Other scholars have taken a process approach that models the interaction of managers at multiple levels. This contrasts with the decision making authorities and mandates in the ideal-type M-form.

In the early work of Bower (1970), top management is somewhat less 'heroic' than in Chandler's view. In Bower's model, strategic initiatives and investment proposals are initiated by front-line managers. Middle-level managers can make certain resource commitments. The power of top management lies in its control over what Bower terms the structural context, "the set of organizational forces that influence the processes of definition and impetus" (p. 71). In other words, as organizations grow and become more complex, middle managers must focus more of their time and effort on managing business planning and resource allocation including the selection, screening, and interpretation of information.

In a similar vein, Burgelman (1983, 1984) describes the influence of middle management on the strategic processes associated with entrepreneurial activities. Much of his analysis centers around the processes of experimentation and selection spread over multiple levels of management in the firm. The approach views activity selection not as a top-down exercise but rather as patterns of strategic action embedded in the firm. He examines resource allocation at large firms and describes the process by which middle managers, as opportunity seekers, engage in "autonomous strategic behaviors" (p. 1350) or even entrepreneurial activities, which may or may not be in line with top management's stated strategy. Top management determines a structural context (incentives, organizational structure, personnel choices, etc.) that is intended to guide the activity of managers toward the strategic goals that have been set. The middle managers engage in political activity to bend the corporate notion of strategy in ways that will accommodate their quasi-autonomous activities. The strategy that is ultimately followed results from a blend of these top-down and middle-up influences.

Dutton and Ashford (1993) argue that the "issue selling" of middle managers helps to set the agenda of top management and has implications for organizational performance. Issue selling is also linked to enhancing individual visibility, perceptions of personal competence, and individual power (Burgelman, 1983; Dean, 1987).

Behavioral Theory

The behavioral perspective, as set forth by Cyert and March (1963), conceives of the firm as a collective of individuals negotiating to realize their different goals, adding still more dimensions to the multi-level process model. In the behavioral approach, top management is often unable to make rational decisions because of their cognitive limitations. Moreover, they must act in a social context endowed with multiple and often conflicting goals. In this 'Carnegie School view,' managerial decisions are largely the outcome of behavioral factors rather than of rational analysis based on perfect information (Cyert and March, 1963; March and Simon, 1958).

The behavioral perspective addresses firms in a dynamic environment (March, 1978). How managers respond and how they define what is important depends upon their interpretation of the situation. Cognitively-limited managers view a complex world and formulate understandings that simplify potential response sets (March and Simon, 1958: p.139). Similarly, in an attention-based view of the firm (Ocasio, 1997), an organization can influence and shape the roles and behaviors of managers by channeling their attention to the issues it wants them to focus on.

Studies have identified a number of personal factors that shape the actions and choices of managers. In the case of top executives, upper echelon theory develops the idea that each executive views the enterprise through a highly personal lens (Hambrick and Mason, 1984), although the business environment permits more discretion in some industries than in others (Hambrick and Finkelstein, 1987). Personalities and the locus of control of managers can influence the degree to which managers perceive themselves as having discretion for decision making, which can, in turn, lead to real differences in their influence within the organization (Carpenter & Golden, 1997).

In short, behavioral theory says that the characteristics of the specific individuals involved place the constraints on the process of decision making (Simon, 1964). For example, differences in the goals of middle managers can lead to differences in their perceptions of the desirability of the strategy being selected, which can determine the efficiency and completeness with which it is implemented. On balance, behavioral theory downplays leadership. Top management is challenged when orchestrating internal resources because of the uncertainty of coalition goals and the unpredictability of individual behavior.

Limitations

The three perspectives outlined above represent important advances in our understanding of some of the factors that affect the formulation and implementation of strategy and structure. But these perspectives are not without their critics. The limitations of this literature for explaining the activities of middle and top managers are threefold.

First, the structure of modern firms is complex and cannot easily be summarized by reference to just decentralization or centralization. Modern firms are often structured around product and geography domains rather than following a traditional multidivisional form (Bartlett & Ghoshal, 1993). In fact, a wide variety of non-M-form organizational structures exist, such as modular organizations, virtual corporations, spinout corporations, cluster organizations, network organizations, and perpetual matrix organizations (Miles & Snow, 1986; Bartlett & Ghoshal, 1989; Quinn, 1992; Teece, 1992).

Indeed, many organizations have flattened their structures and dispersed employees geographically and organizationally. The degree of decentralization may differ across locations and functional areas. Furthermore, organizations create networks of hybrid groups and individuals from different companies—such as customers, competitors, and suppliers—who have the right skills for executing a particular project within a given market window. Network structures blur the boundaries among managers with respect to decision making and autonomy.

Second, the activities of managers—such as information processing, planning, and decision making—that are considered in this literature are largely inward-looking. Models such as Nonaka's (1988) middle-up-down approach leave little room for the external (outside the organization) activities of managers, such as sensing new business opportunities and threats. External networks are nevertheless increasingly important to innovation and growth.

Thirdly, previous research has provided at best weak linkages between managerial roles and firm performance. Although there has been some research on the role of top management on performance (e.g. Crossland and Hambrick, 2011) and of middle managers on performance (e.g. Burgelman, 1983; Floyd & Wooldridge, 1994), efforts to simultaneously illustrate the relative impact of middle and top managers on firm performance are still lacking. Recent studies find that heterogeneity amongst managers has a significant impact on explaining differences in firm performance (e.g., Mollick, 2012). A theoretical framework linking different levels of management to firm performance is needed. The dynamic capabilities framework can provide a more comprehensive approach for integrating the various theoretical elements that populate the literature.

3. ORDINARY AND DYNAMIC CAPABILITIES

Ordinary capabilities involve operations, administration, and governance. They are rooted more firmly in routines than are dynamic capabilities. A routine is a repeated action sequence, which may have its roots in algorithms and heuristics about how the enterprise is to get things done. Organizational routines transcend the individuals involved.

A firm's ordinary capabilities, if well honed, enable the firm to perform efficiently its current activities with technical efficiency. If a firm has strong ordinary capabilities it will perform basic business functions—like order entry, invoicing, inventory management, operations, incentive designs—quite well, possibly even superbly. Such skills are relatively easy to acquire or build. That's not to say they are ubiquitously distributed (see Bloom et al., 2012). But they are capabilities that are relatively well understood in the developed world and in much of the less developed world.

In contrast, dynamic capabilities are higher-level competences that determine a firm's ability to integrate, build, and reconfigure internal and external resources/competences in order to address, and possibly shape, rapidly changing business environments (Teece et al., 1990, 1997; Teece, 2007, 2010). They determine the speed at which, and degree to which, the firm's particular resources can be aligned and realigned to match the requirements and opportunities of the business environment in order to generate sustained positive returns. The alignment of resources both inside and outside the firm includes assessing when and how the enterprise ought to form alliances and joint ventures with other organizations.

Dynamic capabilities have grown in importance as the expansion of international trade has led to both greater specialization and the need for more rapid competitive responses. To make the global system of vertical specialization and cospecialization work, there is an enhanced need for the business enterprise to develop and maintain asset alignment capabilities that enable collaborating firms to combine assets so as to deliver value to customers.

Dynamic capabilities can usefully be thought of as falling in three clusters of activities: (1) identification and assessment of an opportunity (*sensing*), (2) mobilization of resources to address an opportunity and to capture value from doing so (*seizing*) and (3) continued renewal (*transforming*). These activities must be performed expertly if the firm is to sustain itself as markets and technologies change, although some firms will be stronger than others in performing some or all of these tasks.

Dynamic capabilities are more "strategic" and distinct from ordinary capabilities. Firms can maintain and extend competitive advantage by exercising dynamic capabilities on top of ordinary capabilities. Dynamic capabilities are about selecting the right things to do (more or less) and getting them done, while ordinary capabilities are about doing things right. The former implicates dynamic efficiency, the latter static efficiency.

Dynamic capabilities determine whether the enterprise is able to create and implement good strategies—i.e., making the right investments and products and addressing the right market segments—and whether its future plans are reasonably well matched to consumer needs and technological and competitive opportunities. They determine dynamic efficiency. These capabilities help the organization (especially its top management) to develop conjectures about value propositions that will be attractive to customers, to validate or reject such propositions, and to realign assets as required. Top management in the dynamic capabilities framework obtains authority not only from position, but from knowledge, and from the ability to get the right things done most of the time.

Strong dynamic capabilities are critical to long-run financial success, especially when an innovating firm needs to pioneer a market, or a new product category. Dynamic capabilities, particularly those resting on entrepreneurial competences, are also important to the market creating (and co-creating) processes associated with capitalist economic development. The creation and co-creation of markets is often required to enable the generation and capture of returns from innovation (Pitelis and Teece, 2009).

Management in the Dynamic Capabilities Framework

Markets do an excellent job of allocating resources when assets are priced. But many assets attached to firms and other entities are unpriced. Quite simply, there is no market in which they are bought and sold. The utilization of such assets therefore requires managerial action. Managers in the dynamic capabilities framework perform that role. They orchestrate, and sometimes even call into being, the (non-priced) assets that are vital to firm performance.

The capabilities perspective views the enterprise as clusters of complementary assets that must be combined and coordinated to create value. Capabilities generate asset clusters that tend to be hard to imitate and as such can provide a promising foundation for durable competitive advantage. Building organizational capabilities, achieving continual renewal, and orchestrating specialized and cospecialized assets are vital processes and activities in the dynamic capabilities framework.

Management also formulates and implements strategy and related investment decisions. It is strategy and capabilities together that codetermine firm-level performance in the dynamic capabilities framework. While the framework views the management team as not without self-interest, their critical function is less to guard against and design around opportunism in the supply chain or elsewhere, and more to perform the essential entrepreneurial and management functions needed to produce a tight "fit" with the marketplace's needs and technological opportunities. Strong dynamic capabilities require firms to be very good at sensing opportunities, seizing them, protecting profit streams against appropriation by competitors, and transforming the organization as circumstances require.

In the dynamic capabilities framework, the design of the organization is considered to be an important strategic choice variable. Managers are at the frontier of finding new ways to create flexible organizational architectures that accommodate rapid changes. Such architectures would likely feature permeable internal and external boundaries and a built-in capacity for renewal. The expansion of trade has enabled, and demands, collaboration and integration across a global system of vertical specialization. Managers need to constantly develop, align, and integrate assets with other externally-owned elements of the global value chain.

This entails more than just the decentralization of authority. Dynamic capabilities require an organizational form that leverages the knowledge and capabilities of managers throughout the organization. The M-form organization relies on decentralization to achieve agility, but high level strategy is still driven from headquarters. In business firms with strong dynamic capabilities, the key tasks of managers, especially those in the top management team, are entrepreneurial. It's not just a planning role; it's also strategic. It involves planning along with engagement and enactment.

The dynamic capabilities framework helps explain why the capabilities of managers at multiple levels in the organization might be valued differently. In other words, under conditions of uncertainty and turbulence, firms gain considerable competitive advantage if top management is able to rapidly propagate (and execute) a strategic vision at all levels of the organization. This necessarily requires exceptional leadership. The payoff to the enterprise from great leadership and entrepreneurial management is higher than it used to be because of changes in the global economy. [2)]

Dynamic Capabilities and Top Managers

Top management, as defined here, includes C-level executives and heads of major divisions. More generally, they control the resource allocation decisions, including capital expenditure and budgets.

While most capabilities, including some dynamic capabilities, are underpinned by organizational routines, many of the activities of top managers are non-routine by nature. It is in fact unlikely that all dynamic capabilities are embedded in routines, despite what some have suggested (e.g., Eisenhardt and Martin, 2000; Feldman and Pentland, 2003; Zollo and Winter, 2002). For example, asset orchestration (identifying complementarities, buying or building missing assets, and then aligning them) can be made routine only to a limited degree. The same is true of creative entrepreneurial acts such as identifying new market opportunities. Similarly, many strategic actions and transformations require decisions that one may never need (or have the occasion) to replicate. The ability to rapidly effectuate (non-routine) transformation in large organizations puts a premium on leadership to manage internal frictions that arise.

As discussed earlier, the literature on top management provides somewhat conflicting visions of its role. One view stresses the importance of the active involvement of top management in designing strategies and structures, while other researchers (e.g., Ghoshal and Bartlett, 1994) are skeptical about the 'superhuman' role assigned to top management. Top managers in the dynamic capabilities framework tend toward the heroic, but only if they have strong entrepreneurial as well as managerial and team building instincts. They bear the ultimate responsibility (along with the board of directors) for selecting the 'right' activities and investments for the organization, conditional on its business environment, and then structuring the organization and its business model accordingly.[3)] The activities of top management allow an organization to change in a manner that supports strategic fit, which is essential not only to the creation but also the sustainability of competitive advantage (Porter, 1996).

Dynamic capabilities, which can be strong or weak, also govern how new products and services are developed and positioned, and how new business models are created and implemented. Recognizing when top management is in fact making poor decisions with respect to the firm's changing environment is vital (Teece, 2007). When a problem of this nature appears, it is up to management itself and the board of directors or, when applicable, major shareholders, to intervene.

The thesis here is that top management's entrepreneurial and leadership skills around sensing, seizing, and transforming are required in order to develop and maintain strong dynamic capabilities. Put differently, an important managerial function—perhaps the most important—is to achieve semi-continuous asset orchestration and renewal, including the redesign of routines. Periodic, if not continuous, asset orchestration (i.e., asset alignment, co-alignment, realignment, and redeployment) is necessary to minimize internal conflict and to maximize complementarities inside and outside the enterprise. Major turnarounds are needed less often, and are used either to avoid an anticipated strategic challenge or to transform when a problem has suddenly become all too apparent.

Transformation is hard and requires special skills. It is not by accident that in the marketplace for executive services there are turnaround CEOs and other turnaround specialists. On the demand side, this reflects either that some companies have failed to build change routines, perhaps rational, if they are perceived as being needed only occasionally. On the supply side, this provides evidence that there are individuals who, by temperament and/or experience, are well-suited to the task of leading transformations.

Entrepreneurial managerial capitalism, as described in the dynamic capabilities framework, is what today's relatively open global economy requires for the business firm to acquire and maintain competitive advantage and concomitant superior financial performance. Top management is responsible for calibrating opportunities and diagnosing threats, directing (and redirecting) resources according to a policy or plan of action, and reshaping organizational structures and systems so that they create and address technological opportunities and competitive threats.

Capabilities and Middle Managers

Middle managers are those who head sub-units and departments in the corporate hierarchy, situated two or three levels below the CEO. A key characteristic, according to Dutton and Ashford (1993), is that they "supervise supervisors and are supervised by others" (p. 398).

Because the dynamic capabilities framework emphasizes agility, it tends to favor shallow hierarchies. Organizations with deep hierarchies are more likely to demonstrate bureaucratic rigidity. Business history is replete with examples of companies that faced major problems after becoming trapped in their deeply ingrained assumptions, information filters, and problem solving strategies, including General Motors and Digital Equipment (Henderson, 1994) and Kodak. Their legacy routines and assumptions became maladapted over time.

Because of the need for flexibility, middle management ranks will be lean in organizations with strong dynamic capabilities, but the work of middle managers is nonetheless vital. Middle managers administer the technical work of the organization, serve as a bridge between top management and lower levels of the organization, and mediate between the enterprise and its customers, allies, and suppliers (Floyd & Wooldridge, 1997). Some management scholars bring out the more strategic significance of middle managers, labeling them as "manager champions" or "product champions" (Burgelman, 1983) or "agents for change" (Nonaka, 1988b). Nonaka (1988b) highlights the capability of middle managers to combine strategic macro information and hands-on micro (context-specific) information, which helps to facilitate a high quality of information creation within organizations.

The purpose of middle management in the dynamic capabilities framework is to ensure technical excellence with respect to the ordinary capabilities for which they have oversight and responsibility. However, they are also key elements of the routinized aspects of sensing, seizing, and transforming: sourcing knowledge inside and outside the organization, developing new ideas and insights, sharing them laterally (and, when appropriate, vertically), interpreting the company's strategy for the employees in their charge, and facilitating rapid implementation of transformation when needed.

Much of what middle managers do is relatively operational and even mundane in nature, especially in comparison with the entrepreneurial role of top management.[4] But their activities, such as accessing the tacit knowledge of customers and making it available to others in the enterprise (Rouleau, 2005), remain crucial to maintaining fit with the environment.

The ordinary capabilities of middle managers help create and support the firm's technical efficiency. With superior ordinary capabilities, firms may be able to increase revenue as well as reduce the costs associated with providing services (e.g., Brush and Artz, 1999). Improved process and product quality can positively influence a firm's performance (Porter, 1985; Barney 1991). However, good financial results also require that the firm has strong dynamic capabilities and good strategy. Ordinary capabilities alone are insufficient to yield superior financial results, except possibly in the short run and in business environments where economic development is low.

Managers and Experts

As global specialization increases and more operations are outsourced, there is a growing role for middle managers in leading new product development teams. In cases when the stakes are high, or the deadlines too close, an organization may assemble a team that includes its most able experts. Many members of such "virtuoso teams" (Fischer and Boynton, 2005) will be managers of their own departments, and others may not even be employees at all. The team leader role places greater emphasis than ever on the soft skills of the middle manager. There must be mutual respect between and amongst experts and the leader. In practice, this means that the team leader will need to be able to massage large egos without seeming patronizing. However, the goal in virtuoso teams is not accommodation and harmony; rather, the aim is to achieve excellence by unleashing individual creativity, drawing on talent both inside and outside the firm. If managed poorly, teams of specialists will become dysfunctional and this can impede innovation (Ancona and Caldwell, 1992).

The manager of a team of experts must walk a fine line between providing direction and encouraging self-organizing activity while not constraining the team too much. Takeuchi and Nonaka (1986) call this "subtle control." It involves monitoring in a way that leads to intervention only when absolutely necessary.

In his study of the development of the transistor at Bell Labs, Richard Nelson (1962) observed that

> the type of interaction we have noted in the transistor project requires that individuals be free to help each other as they see fit. If all allocation decisions were made by a centrally situated executive, the changing allocation of research effort called for as perceived alternatives and knowledge change would place an impossible information processing and decision making burden on top manage-

> ment. Clearly the research scientists must be given a great deal of freedom. (p. 569)

The challenge of course is to figure out just how much freedom to provide. The key roles of management are to enunciate a vision, motivate team members, allow experimentation and search, and support promising paths while closing down foolish ones. Upon his return in 1997, Steve Jobs brought focus to engineering at Apple by winnowing out R&D projects that were unlikely to have relevance for the product strategy he envisaged.

Just as top managers can fail to provide vision and leadership, middle managers can fail not only in their operational roles, but in their contributions to the dynamic capabilities of the enterprise. This can occur when they are, quite simply, not well trained. Failures can also occur more insidiously when the middle manager disagrees with or fails to grasp the strategic direction of the firm. Strategies with little commitment from middle management are fraught with serious implementation problems (Guth & McMillan, 1986). A middle manager who underperforms for any reason can slow the process of growth and renewal, potentially endangering the competitive position of the organization for a long time to come.

Capabilities, Routinization, and the Roles of Managers

In our view, the roles of top and middle managers are complementary. Efficient operations, informed and controlled by middle managers, enable ordinary capabilities. They assist with dynamic capabilities too because, without enactment, dynamic capabilities are unlikely to be valuable. Without adequate 'translation' by middle managers, the strategic vision of top management will not be correctly communicated and enacted at the lower levels of the organization. Organizational success requires strength in both ordinary and dynamic capabilities.

Ordinary capabilities by themselves can provide some level of advantage over rivals in static environments. Even in dynamic environments, superiority in operations has been an important part of the success of companies like Wal-Mart and Federal Express. Operational know-how (one component of ordinary capabilities) tends to include much knowledge that has been codified, such as in task books and manuals that are widely distributed inside the firm. The transfer and replication of this knowledge can be performed with relative ease, at least by firms in developed and emerging nations. While this transfer process has a logic and learning curve of its own (Teece, 1976)—which sometimes makes it challenging even between different parts of a single firm—rivals will, over time, replicate operational routines with relative ease.

Indeed, because operations are generally imitable by competitors, they are unlikely to be the source of enduring competitive advantage. As Porter (1996) once noted, operational efficiency is necessary, but insufficient, for long-run (durable) competitive advantages. Strong dynamic capabilities and strategy, which depend heavily on top management, are required if a firm is to remain at the forefront of its industry for long periods of time.

The impact of managerial capabilities is partly contingent on the specific business environment that a company faces. Coltman et al. (2012) found that the value of dynamic capabilities is superior in a highly differentiated market while the value of operational capabilities is stronger in a commoditized market where managers can rely on technical efficiency. Using a sample of Chilean firms, Drnevich and Kriauciunas (2011) found that environmental dynamism negatively influences the contribution of ordinary capabilities and positively affects that of dynamic capabilities to a firm's performance.

High-tech sectors are fast paced, and this puts a premium on dynamic capabilities. As noted, for example, former Apple CEO Steve Jobs was legendary for focusing his engineers on a narrow range of likely viable products, and driving them to high achievement (Kahney, 2008). Jobs' importance to the enterprise is suggested by Apple's declining performance after he was ousted as CEO in 1985, and with the firm's stellar performance since his return in 1997. There are, of course, risks in relying on a particular talented individual, especially if those talents don't translate into a set of replicable internal routines. Jobs himself was aware of this. In 2008, before his second medical leave, he established an internal business school at Apple in which academics were brought in to prepare cases about how key past decisions, such as the creation of the Apple Store, were made in the organization (Lashinsky, 2011). By having executives teach these cases to the company's managers, Apple's approaches and its top management processes are propagated among, and hopefully embedded in the culture and understanding of its current and future leaders. Some individual talents, or 'traits,' can, over time, be embedded in corporate culture and organizational routines either formally (Apple University) or by repeated demonstration and communication. In the case of sensing capabilities, for example, the more desirable approach in many cases is to embed scanning and interpretive processes throughout the organization, while providing the necessary feedback channels to top management.

With careful preparation, a dynamic capability can be embedded, at least in part, in a formal process. IBM has, for example, successfully routinized its selection, evaluation, and exploitation of "emerging business opportunities" in a process that has resulted in billions of dollars in additional revenue from new businesses launched under the leadership of IBM middle managers with experience in how to grow a business (O'Reilly et al., 2009). Similarly, Cisco has routinized its selection and integration of acquisition targets (Mayer and Kenney, 2004).

Routine-based methods such as those at IBM and Cisco can move some dynamic capabilities beyond the personal talents of the top management team into the more process-oriented realm of the middle manager.

4. SUMMARY AND CONCLUSIONS

In essence, the role of management is to stimulate and guide the development and orchestration of capabilities, activities in which both top and middle managers must play a part. The capacity of an organization to conduct its activities in accordance with defined objectives that reflect an ever-shifting business environment is an essential means by which its competitiveness and sustainability may be ensured.

Our understanding of dynamic capabilities and how they work is still highly incomplete. Previous scholarly works have aimed at deepening our understanding of how management's role has developed. However, such works are still largely based on a narrow and static view of management and fail to explore the roles of creativity and of relationships with external domains. Previous work is also limited partly because managerial roles are context-specific and most researchers underrate the influence of contingencies in the business environment on the relative performance of managerial capabilities. Hambrick and Abrahamson (1995) researched the scope for managerial action across industries and found that high discretion (where capabilities matter most) occurs in industries with high R&D and advertising intensity (indicators of differentiability), low capital intensity (less long-term commitment to investment plans), and high market growth (more room for experimentation with less severe consequences for miscalculations).

To better explain the role of management, this paper outlined a capabilities-based analysis of middle and top managers. The distinguishing feature of the capabilities perspective is the attention paid to the link between managerial capabilities and performance (conditional on strategy). Top managers are linked most closely with dynamic capabilities (and strategy); however, middle managers, while responsible for ordinary capabilities, can also play important roles in dynamic capabilities. As in Eisenmann and Bower (2000), entrepreneurial senior management is necessary in fast-paced environments where the business requires significant investment in (and orchestration of) cospecialized assets.

Nevertheless, the relationship between top and middle management merits closer scrutiny. It is an empirical question whether performance is strengthened when the actions of middle managers conform more closely to the strategy developed by top management. It is also an open question whether firms perform better when the channels for middle-up influence on the formation of strategy are relatively open.

The study of dynamic capabilities is challenging because they are often tied to complex corporate histories. Although dynamic capabilities can to some extent be traced by using large data sets (e.g., Adner and Helfat, 2003), they can also be analyzed through in-depth qualitative research (e.g., Danneels, 2011). This empirical literature is still at an early stage and opportunities abound to dig deeper into the linkages between individual or small-group managerial actions, dynamic capabilities, and long-run firm performance. The research paradigm of dynamic capabilities is still relatively new. Accordingly, illuminating case studies are likely to yield powerful insights at this early stage of theory development.

NOTE

1) The authors would like to thank Greg Linden for many helpful comments and his considerable assistance with this manuscript.
2) Firms facing less dynamic environments may value dynamic capabilities differently. For example, firms operating in a regulated environment might place a relatively higher value on the operational know-how and capabilities of middle managers to help build a sustainable competitive advantage. This is because change is slow in regulated environments, and regulators tend to use technical criteria to assess the performance of regulated firms.
3) We recognize that optimization is possible; hence, by the "right" activities and investments we mean selections that are very good, even if they are not the very best. Implicitly, we recognize the latter is a hypothetical ideal.
4) With case data in the media and entertainment industries, Eisenmann & Bower (2000) found that the role of top management is crucial in managing strategic integration, especially when high risks and internal conflicts are involved. They argue that middle managers tend to be focused on the narrow objectives of their own areas, even if they recognize corporate opportunities, the associated risks are such that they do little with them (p. 353).

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Sunyoung Lee is Post Doctoral Fellow, University of California, Berkeley, USA. sunyoung_lee@haas.berkeley.edu
David J. Teece is Director of the Institute for Business Innovation, University of California, Berkeley USA.