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COMPETENCE PERSPECTIVES ON LEARNING AND DYNAMIC CAPABILITIES

AIMÉ HEENE
RUDY MARTENS
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Editors

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INTRODUCTION

Aimé Heene, Rudy Martens and Ron Sanchez

The competence-based perspective on strategy and management emerged in the beginning of the 1990s. This perspective aims to offer a new approach to developing strategy and management theory, research, and practice. The emergence of the competence approach has been partly a response to identified limitations in theory bases prevailing in the strategy and general management field and partly an aspiration to conceptually re-orient management theory and research in ways that lead to more useful recommendations for managers facing dynamics and complexity in their firm's internal and external environment. The competence-based perspective started from a new focus on organizational competences – and the coordinated resources, capabilities, and processes that enable an organization to act coherently – as the fundamental units of analysis. Nearly two decades of research, theory development, and application in practice have demonstrated the significant potential of this fundamental focus on competence. The competence-based perspective is now providing a productive "broad church" for advancing theory development, research, and practice in both strategic and general management.

Since 2000 a growing stream of competence-based theory development, research, and practice directly relevant to current management issues has appeared in the *Advances in Applied Business Strategy* series. A first set of three volumes published in 2000 (Sanchez & Heene, 2000a, 2000b, 2000c) was followed by a second set of three volumes in 2005 (Sanchez & Heene, 2005a, 2005b, 2005c).[1] Given both the fruitful development of the competence-based perspective and its direct relevance to applied business strategy, we are pleased

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to present here two new volumes in the competence-based stream. The present volume (Volume 10 in the series) provides papers that further develop the competence perspective on learning and dynamic capabilities development. These papers extend the important focus on learning and knowledge management that have been recurring themes in several prior volumes in the series. Volume 11 is a companion volume that focuses on interorganizational processes for competence building and competence leveraging. Taken together, these two new volumes provide theoretically provocative and managerially useful investigations into the ways in which an organization's learning processes, capability development, and other internal processes affect its competence building, leveraging, maintenance, defense, and renewal.

In keeping with the "four cornerstones" of competence-based theory's representation of organizations and their management processes, the papers here explore the *dynamic*, *systemic*, *cognitive*, and *holistic* aspects of learning and capabilities development. The papers present both important theoretical developments and empirical research based on a variety of case studies and diverse industrial and geographical contexts, demonstrating the practical relevance as well as the conceptual richness of the competence perspective.

The papers in this volume can thematically be categorized into three groups. The first two papers explicitly link the concepts of competence and dynamic capabilities to the competitive position of a firm. Essential perspectives developed in these papers are:

1. Directly integrating learning about customers and ways of creating customer value into a firm's investment decisions is an essential basis for sustainable competitive advantage (Hubbard, Zubac, & Johnson).
2. Products that leverage modular design capabilities help firms to achieve competitive positions in their product markets (Asan & Polat).

The next two papers are devoted to strategic, organizational, and behavioral perspectives on processes of competence development. These papers elaborate how:

3. Different strategies and organizational structures and processes give rise to different processes of knowledge creation and capabilities development (Tarondeau).
4. Leadership styles affect the development of organizational capabilities (Black, Oliver, & King).

The final four papers explore the intellectual challenges that managers face in striking a "strategic" balance between processes of competence building and competence leveraging. These papers contribute the following insights:

5. The intellectual challenge of balancing processes of competence building and competence leveraging in resource allocation decisions can benefit from a better understanding of ambidexterity and ways of managing paradoxes in organizations (Jansen).
6. Deliberately managing "social capital" can help firms cope with simultaneous competence building and competence leveraging in their day-to-day operations and contribute to their competitive edge (De Wever).
7. Interfirm knowledge transfers help to overcome cognitive limitations in managing a firm's dynamic capabilities through maintaining a better balance between exploration and exploitation (Quynh & Martens).
8. A broad set of management concepts can be interrelated to reflect the systemic nature of an organization as it adapts and learns while mediating between resource markets and product markets (Huovinen).

Taken together, the papers in this volume bridge between "traditional" concepts, frameworks, and theoretical perspectives in strategy and the central concept of organizational competences in the competence-based approach. In this way, the papers contribute to the development of both traditional approaches to strategy and management and the competence-based perspective.

LINKING COMPETENCE AND COMPETITIVE ADVANTAGE

The paper "Linking learning, customer value, and resource investment decisions: Developing dynamic capabilities" by Graham Hubbard, Angelina Zubac, and Lester Johnson suggests that strategic capabilities are developed when market learning processes are directly integrated into a firm's investment processes. Explicitly linking market learning processes and resource investment decisions is essential in building and maintaining competitive advantage. Based on a broad theoretical exploration, this paper presents six derived hypotheses about learning and dynamic capabilities development:

H1. Successful firms have higher levels of dynamic capabilities than less successful firms.

H2. Dynamic capabilities are more important and better developed in successful firms in dynamic markets than in mature markets.

H3. Successful firms learn more about customer value than do less successful firms.

H4. Managerial perceptions of how customer value can be created are more aligned in successful firms than less successful firms.

H5. Resource investment decision making is more aligned with market learning processes in successful firms than less successful firms.

H6. Firms in dynamic markets are more oriented to customer learning than those in mature markets.

The paper argues that previous work on analyzing capabilities of organizations has not been directly linked to how firms actually learn, specifically about customers and about ways of creating customer value. Yet it is the process of learning about customers that is critical for creating value for customers and for targeting investments in resources that support the activities and processes necessary to create and deliver that value. The integration of learning about customers into resource investment decision processes is thus argued to be critical to the creation of firm value and to the development of dynamic capability in an organization.

In their paper "Modular design capability and product positioning: An integrative view," Umut Asan and Seçkin Polat investigate the relationship between a firm's "modular design capability" and the advantages of the market positions that products resulting from this capability can enable. A market positioning analysis of the mobile phone market reveals that modular product variants are perceived as differentiated in the market place and that skillfully exercising modular design capability may enable a firm to improve its competitive position. The authors also argue that modular product variants may even achieve a unique place in the customer's mind. The paper demonstrates the strategic advantages of building and leveraging modular design capabilities in achieving improved competitive positions, while also reflecting on the potential limitations of this capability in alternative strategies for competitive positioning.

DETERMINANTS OF COMPETENCE DEVELOPMENT

In his paper "Strategy and organization for organizational learning: A case analysis of large opera houses," Jean-Claude Tarondeau explores the development of knowledge and capabilities in four different types of opera houses, each type distinguished by distinctive strategies, organizational structures, and processes. Three broad propositions emerge from this research. The first proposal is that cultural institutions like opera houses, theaters, and orchestras are especially appropriate settings for empirical research on learning and knowledge development. The nature and context of cultural institutions facilitates definition and measurement of a "quantity of learning" variable that helps to reveal the role of learning in different strategies and organizations. The second proposal suggests that processes of innovation – which in opera houses consists of changes in the organization's repertoires of performances – can be explained by differences in the ways organizations "learn by doing" as they use their capabilities. The third proposal is that most strategic differences between the opera houses can be explained by their relative effectiveness in the ways they deploy their competences.

Using virtual experiments and an agent-based model, Janice Black, Richard Oliver, and J. Phillip King in their paper "Leadership style matters: The deployment of leadership skills in developing an organizational context-for-learning capability" investigate the effect of leadership styles on an organization's capacity for developing skills and organizational capability. In effect, different leadership styles create different organizational "Contexts-for-Learning." The authors find that an organization's composition and its leader's leadership style have different effects on the organization's developmental path. Both the nature of the followers in an organization and the leader's leadership style determine the developmental path an organization will pursue in building capabilities and thereby jointly define a "Context-for-Learning." The simulations performed by the authors indicate that if organization members personal skills are collectively high, leadership style has little impact on capability development. However, in an organization which is currently either not competent or barely competent, both the leader's style and the leader's skill level matters. These findings provide some important insights into contemporary issues in organizational learning behaviors, while also demonstrating the value of using agent-based simulations as a research methodology in exploring competence-based perspectives on organizations, management, and learning.

BALANCING COMPETENCE BUILDING AND COMPETENCE LEVERAGING

The competence-based perspective has stressed the managerial challenge inherent in finding the correct "strategic balance" in processes of competence building and competence leveraging in making resource allocation decisions (Sanchez & Heene, 1996). Justin Jansen explores this challenge in his paper "Combining competence building and leveraging: Managing paradoxes in ambidextrous organizations." This paper starts with the observation that although the management literature has stressed the importance of balancing and synchronizing exploration (competence building) and exploitation (competence leveraging) simultaneously, much less discussion has been devoted to understanding how an organization may become "ambidextrous" in reconciling conflicting demands for exploration and exploitation. Accordingly, this paper suggests multiple ways to balance and synchronize competence building and leveraging. The in-depth exploration of previous theories on ambidextrous organizations and on managing paradoxes in organizations allows the author to identify several ways to balance and synchronize competence building and leveraging: (1) accept the paradox of exploration and exploitation and learn to live with it; (2) resolve the paradox of exploration and exploitation by clarifying levels of reference and connections among them or by separating exploration and exploitation over time; and (3) solve the paradox of exploration and exploitation by introducing new concepts or a new perspective. This paper reflects on opportunities to balance competence building and competence leveraging using these strategies to cope with paradoxical situations in management.

Applying the concept of "social capital" (the sum of an organization's structural, relational, and cognitive resources) as a theoretical lens, the paper "Learning and capability development: The impact of social capital" by Sigrid De Wever explores the question: "How can firms cope with the simultaneity of competence building and competence leveraging in day-to-day operations?" A case study of a highly diversified firm in a B-2-B context suggests that firms can face the challenge of developing capabilities even during their day-to-day activities. By identifying and paying attention to social capital in their networks and in the networks of their employees, firms may increase their chances to outperform competitors. More precisely, De Wever argues that social capital can:

- enhance the ability to convert resources that people are *able* to exchange into resources that people are *willing* to exchange;
- create willingness and avoid reluctance to share resources or their use;
- avoid hindering the transfer of resources or their use; and,
- facilitate the institutionalization of learning and capability development.

The research leads to important managerial lessons, such as: (1) important sources of performance differences with competitors can be formed during day-to-day activities, and (2) the management of a firm's social capital is a critical success factor in outperforming competitors. Therefore, managers should be(come) aware of the potential social capital value to be derived from their organization's day-to-day activities and in relationships based on economic transactions. Moreover, the research suggests that managers should pay attention to the social capital built in the firm's networks and in their employees networks.

In the competence-based perspective, capabilities, when properly coordinated, can be important sources of sustainable competitive advantage. Because internal and external environments change, however, a given set of capabilities cannot sustain competitive advantages indefinitely. To maintain its competitive advantage, a firm needs to understand how its capabilities become vulnerable and how those vulnerabilities can be reduced. Bui Tue Quynh and Rudy Martens argue in their paper "Reducing the vulnerability of capabilities through interfirm knowledge transfer" that addressing the vulnerabilities of capabilities begins with understanding the limits of managerial cognition. The authors argue that the bounded rationality of managers can lead to imbalances between the exploration and the exploitation of capabilities. Timing, success, and current beliefs can become cognitive obstacles that result in inferior strategic choices. Interfirm knowledge transfer is suggested as a way firms can overcome bounded awareness, recognize the vulnerabilities of current capabilities, and strike a better balance in the exploration and exploitation of a firm's capabilities.

A systemic view of organizations and their processes is fundamental to the competence-based perspective. In his paper "Moderate systemic inference in organizational learning: A 'semi-Beerian' perspective," Pekka Huovinen extends Stafford Beer's systems perspective on organizations by surveying and synthesizing concepts from eight schools of thought in management. Huovinen interprets a large set of management concepts and suggests how those concepts can be interrelated to illuminate the systemic nature of organizations as they undertake to mediate between resource markets and product markets. He proposes that the concepts surveyed characterize four "semi-Beerian subsystems" that comprise an organization's "boundaries, models, designs, and actions" and suggests how those subsystems can be related to both competence building and competence leveraging processes through which firms may adapt and learn.

NOTE

1. Starting in 2005, more theoretical and empirical contributions to the competence perspective are now published in the peer-reviewed academic journal *Research in Competence-Based Management* (Sanchez & Freiling, 2005; Sanchez & Heene, 2005d, 2005e).

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LINKING LEARNING, CUSTOMER VALUE, AND RESOURCE INVESTMENT DECISIONS: DEVELOPING DYNAMIC CAPABILITIES

Graham Hubbard, Angelina Zubac and Lester Johnson

ABSTRACT

This paper suggests that firm strategic capabilities are developed through accumulated learning and associated investment processes and that it is these learning processes, and the resource investments that follow from decisions about them, rather than the activities or resources of the firm per se, that provide a basis of sustainable competitive advantage. Specifically, we suggest that gathering information about customer behavior, the managerial perceptions that come from learning about customer behavior, and the investment decisions that follow from those perceptions provide the basis for the development, or for the failure to develop, of firm capabilities. We further argue that such learning processes will differ with market environments, and that firm performance will reflect such learning processes actually develop in different market environments.

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INTRODUCTION

To perform well, organizations need to develop the capabilities needed to meet customer expectations and thereby create value for targeted customers. In the process of creating value for customers, organizations must make investments in creating capabilities. Yet the theoretical and empirical connections between what customers value, the investments which an organization makes, and the capabilities it creates through investing are far from clear.

This paper suggests that firm strategic capabilities are developed through accumulating learning that results from a firm's investment processes – and thus that it is learning processes supported by decisions to invest in learning that create capabilities that can be the basis for sustainable competitive advantage. Specifically, we suggest that gathering information about customer behavior, the forming of managerial perceptions that come from learning about customer behavior, and the investment decisions that are driven by those perceptions provide the basis for the development, or otherwise, of firm capabilities. Further, we argue that such learning processes will differ in different market environments, and that firm performance will reflect whether such learning processes are working in a firm or not.

The first section of the paper elaborates the need for firms to constantly learn. It explains how learning helps to improve processes and capabilities that make it possible to recognize and respond to customer needs. The second section explores the operationalization of the concept of customer value. Starting with Woodruff's (1997) definition of customer value, we develop a framework for identifying and closing gaps between what managers think customers want and what a firm actually delivers to them. The emphasis here is on understanding how managers align their resource investment decisions and other processes with their perceptions of potential customer value creation strategies. Managers and customers do not necessarily have the same view about customers' desired and received value. Our focus is on how managers develop their perceptions of how customer value may be created using the firm's resources. In the third section, we explain how a firm might use what it learns about customer value to make decisions to strategically invest in creating resources (including capabilities) that enable the firm to create specific forms of customer value. Finally, the last section discusses the implications when customer learning and resource investments are carried out in different types of environments. We suggest that a firm that can learn about customers and develop its resource investments around that learning may create capabilities that are superior to those of its competitors, but that the learning and investment processes will be different in dynamic versus mature markets. The paper concludes with an overview of the significance of these ideas for further development of competence theory and some proposals for how to investigate them in practice.

LEARNING AS A DYNAMIC CAPABILITY

Capabilities can be defined as a firm's capacity to combine, assemble, and deploy its various resources using pre-determined activities, routines, processes, systems and the skills of its employees to make products and services that are a source of potential profits to the firm available to its customers. In effect, capabilities are *repeatable patterns of action* that enable a firm to create and deliver products to customers (Sanchez & Heene, 1996, 2004). They include a firm's day-to-day managerial, technical, and marketing capabilities (Spanos & Lioukas, 2001). A firm's *dynamic capabilities* can be defined as the firm's capacity to combine and recombine the firm's operational capabilities in ways that enable the firm to respond to changes in the marketplace (Collis, 1994; Teece, Pisano, & Shuen, 1997; Eisenhardt & Martin, 2000; Denrell, Fang, & Winter, 2003). A firm's dynamic capabilities are especially important because they ''operate to extend, modify, or create ordinary capabilities'' (Winter, 2003, p. 991).

The dynamic capability perspective focuses on investigating processes developed by high-performing firms that assist them in coping with changes in environmental conditions. Researchers interested in understanding dynamic capabilities seek to identify how firms develop new kinds of combinations of capabilities through learning processes, and how such combinatorial capabilities may sustain competitive advantages. An essential aspect of dynamic capabilities is firm-level processes that help a firm's managers recognize how a marketplace is changing (Schulze, 1994; Barney 2001a, 2001b). Indeed, numerous researchers have suggested that a firm's ability to learn and develop processes that promote continual learning and new flows of knowledge may be the only real source of sustainable competitive advantage (Collis, 1994; Teece et al., 1997; Crossan, Lane, & White, 1999; Crossan & Berdrow, 2003).

At any particular time in a market, some firms will possess resources that help to create an advantage in the marketplace. However two questions arise. First, how did a firm's managers decide to invest in creating or acquiring those resources, and second, how should the firm continue to make future resource investment decisions to maintain or increase its sustainable competitive advantages? Concepts of learning that recognize the differences between single-loop and double-loop forms of learning are essential in researching these questions.

Learning can be single-loop or double-loop. Single-loop learning results in changes in behavior rather than fundamental changes in understanding, while double-loop learning involves both unlearning of old ideas and adoption of new ideas. Double-loop learning is the form of organizational learning in which managers adopt new mental models to represent and solve problems, change how they perceive the broader environment, and form their view of what should be included in a firm's strategy. While single-loop learning is often critical in mature markets, double-loop learning is essential to maintaining a firm's value-creation competence in dynamic markets (Sanchez, 1996). During a firm's lifetime, it must constantly acquire new knowledge, learn from it, and use it (Cyert, Kumar, & Williams, 1993), because as industries evolve, the advantages associated with a given set of resources or capabilities will eventually be eroded away.

Firms cannot innovate new responses to changing markets unless they have an ability to recognize when new information about the environment is strategically important. However, some firms will be better able to detect, absorb, and apply strategically important information than others. Generally, managers will find it difficult to gauge if they have been able to develop an appropriate or adequate learning capability in their firms (Cohen & Levinthal, 1990). As a result, learning needs to be thought of as a phenomenon in which a firm's ability to renew itself as an organization and develop processes that bring about radical change will be dependent on the firm's learning processes and the extent to which the firm's top managers can change their mental models that give direction to action across the whole organization (Sanchez, 1995).

To enable a firm's strategies to be both planned and emergent, a firm will need to develop a combination of planned and flexible learning processes. In mature and stable environments, more planned (and less flexible) learning may be appropriate, while in more dynamic markets, more flexible learning processes are likely to be necessary to make timely adjustments to a firm's strategic plans. In both kinds of market environments, managers also need to know when the results of effective learning are being realized (Brews & Hunt, 1999).

Sanchez (2001) found that learning can occur at the individual, group, and organizational levels, as well as at the interfaces between these levels, and the goal of managers is said to create self-perpetuating learning cycles at all levels.

Further, Miner, Bassoff, and Moorman (2001) found that improvisation is a special type of short-term or real-time learning, which under certain circumstances can enhance other forms of learning. For example, firms may develop processes that enable their people to interact in ways that help to identify useful solutions to problems by improvising. In rapidly changing markets, firms will need dynamic capabilities that match the nature and pace of the market environment. In effect, a firm must be able to constantly learn and rapidly evolve its capabilities if it is to compete successfully in dynamic markets. As a result, in moderately changing markets, a firm's dynamic capabilities may consist of clearly-defined and settled routines, but in rapidly changing markets less routine processes that allow for more emergent learning will be required (Eisenhardt & Martin, 2000).

OPERATIONALIZING CUSTOMER VALUE

Possession of resources does not alone create value for a firm or its customers (Sanchez, forthcoming). Only the appropriate use of resources can create value (Penrose, 1959). Yet, strategic management research has not paid much attention to the specific processes by which a firm's managers use resources to create value for customers (Srivastava, Fahey, & Christensen, 2001). This is curious, given that using resources to create high levels of customer value is essential to create competitive advantage and shareholder value (Srivastava, Shervani, & Fahey, 1999), that in order to succeed firms generally need to use resources in ways that reflect a high level of customer orientation (Slater & Narver, 1998; Danneels, 2003), and that marketing is integral to a firm's business strategy processes (Srivastava et al., 2001; Sanchez & Heene, 2004). This theoretical and empirical inattention has created an evident gap in our understanding of how a firm's managers might go about defining customer value and how they might operationalize customer value in their strategic decision making, including decisions about investments in creating new resources and capabilities.

Very little research has been reported in the strategic management literature on customer value (exceptions are Porter, 1985; Slater & Narver, 1994; Woodruff, 1997; Ramirez, 1999; Sanchez, 1999; Bowman & Ambrosini, 2000; Afuah, 2002), or how a firm might relate customer value to its budgeting and investment processes (Maritan, 2001). As a result, few definitions of customer value in the strategic management literature are sufficiently developed to serve as a basis for operationalizing business strategy with a clear focus on creating customer value (Srivastava et al., 2001).[1] Many definitions of customer value