

## RESEARCH NOTE

DYNAMIC CAPABILITIES VIEW:  
FOUNDATIONS AND RESEARCH AGENDA

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The evolution of scholarly thought on the sources of firm-specific advantage has had a relatively long history. A contemporary view of how competitive advantage is sustained in dynamic markets is offered by the dynamic capabilities (DC) view. The DC view is treated as an offshoot of the resource-based view. Based on a review of the empirical and conceptual works that have utilized the DC view, the paper articulates the merits of this theoretical perspective for marketing scholars. Contributions of the DC perspective to theory building, empirical research, and the practice of marketing are clarified. Conclusions are presented as well as directions for future research.

Scholarly work on how firms gain and sustain competitive advantage has come a long way. Neoclassical economics investigated broader aggregates—that is, industry or economy-wide performance (Nelson 1991, p. 62). The behavior and performance of the individual firm were not the focus of attention because the unit of analysis has been the nation or the industry.

It was not until the late 1950s when a group of pioneer management or business scholars began to shift the unit of analysis to the firm and the manager. These scholars, recognizing that not all firms are alike, sought to peer into the nature, objectives, and market performance of the business organization. The works of Penrose (1959) and Cyert and March (1963) are exemplary in this context. Penrose pointed out the heterogeneity of the resources possessed by firms, while Cyert and March developed an eloquent thesis of the behavioral nature of the organization—that managers cannot be assumed to be rational decision makers.

These early scholars also brought, for the first time, the term *strategy* to the fore. This came about because of the realization that the firm is not just a passive observer to

market forces but can actually influence its destiny (growth, profits, market dominance, etc.). Chandler defined strategy as “the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and the allocation of resources necessary for carrying out these goals” (1962, p. 42). In other words, the firm, for these management scholars, was an active participant in the economic system, and worth investigating as the central focus.

The fundamental question common to both the early and the contemporary management literature is: “How does a firm gain and sustain competitive advantage?” The characterization of the advantage has evolved over time—*comparative, monopolistic, and differential*. Yet the inquiry over the competitive advantage has been a resilient one.

This paper attempts to briefly trace the evolution of scholarly thought on the sources of firm-specific advantage. Of special interest is the dynamic capabilities (DC) view, recently advanced by Eisenhardt and Martin (2000), Teece, Pisano, and Shuen (1997), and others. Here, the DC view is treated as an offshoot of the resource-based view (RBV); therefore, a brief exposition of the RBV is also offered. The DC view is compared and contrasted to resource advantage (RA) theory, which also shares similarities with RBV. These reviews further emphasize the similarities as well as differences between RBV, RA theory, and the DC view.

Three contemporary paradigms shed light on the issue of how firms achieve and sustain competitive advantage (Teece, Pisano, and Shuen 1997). The first dominant paradigm, the

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*competitive forces* approach, was popularized by Porter (1980) but is really rooted in the structure-conduct-performance paradigm of industrial organization (Bain 1959). The second, the *strategic conflict* approach, employs game theory tools and implicitly views "competitive outcomes as a function of the effectiveness with which firms keep rivals off balance through strategic investments, pricing strategies, signaling, and the control of information" (Teece, Pisano, and Shuen 1997, p. 510). The third approach is referred to as the *resource-based perspective*. The rationale behind this perspective is that firm-level efficiency advantages create entrepreneurial rents for the owners.

### RESOURCE-BASED VIEW: THE PARENT THEORETICAL FOUNDATION

Unlike earlier explanations offered for firm superiority, such as erection of entry barriers, monopoly power, or raising prices above long-run costs, the RBV focuses on scarce resources owned by the firm that enable it to earn above-normal rents. Often, these resources are idiosyncratic and difficult to imitate by rivals. Put another way, the RBV sees firms as essentially heterogeneous with respect to their resource and capability endowments. Resource differences among firms tend to persist over time. Nevertheless, the RBV allows for proactive development of new capabilities (Wernerfelt 1984). Skill acquisition, learning, and accumulation of organizational and intangible assets are fundamental to strategic management.

While the RBV flourished in the 1980s, the origins of the argument can be traced back to Penrose (1959), who characterized the firm both as an administrative organization as well as a collection of "productive resources." She included both physical (plant, equipment, land, materials, etc.) and human resources (labor, managerial staff, engineers, etc.). The RBV's conception of the firm as a collection of resources and capabilities gained widespread acceptance with a multitude of writings beginning in the 1980s (Barney 1986, 1989, 1991; Connor 1991; Nelson and Winter 1982; Peteraf 1993; Rumelt 1984; Teece 1982; Wernerfelt 1984). These scholars advanced the argument that the type, magnitude, and nature of a firm's resources and capabilities are critical to its profitability.

These scholars, beginning with Penrose, also made a distinction between *resources* and *capabilities*. *Resources* refer to stocks of available factors that are owned or controlled by the firm (Amit and Schoemaker 1993). Resources are deployed by the firm by using a wide range of other firm assets and bonding mechanisms such as technology, know-how, information systems, and trust between management

and labor. *Capabilities*, on the other hand, refer to a firm's capacity to deploy resources to achieve specific goals. Amit and Schoemaker define capabilities as "information-based, tangible or intangible processes that are firm specific and are developed over time through complex interactions among the firm's resources" (1993, p. 35). Capabilities, unlike resources, are based on developing, carrying, and exchanging information through the firm's human capital. Information-based capabilities are what Itami and Roehl (1987) call "invisible assets." Finally, capabilities are best exemplified by functional area expertise. Examples include reliable service, product innovativeness, manufacturing flexibility, customer responsiveness, and order fulfillment speed.

The RBV scholars also developed the conditions under which firm-specific resources and capabilities can lead to sustainable competitive advantage. These are the so-called *VRIN* attributes (Eisenhardt and Martin 2000). Resources must be valuable, rare, inimitable, and nonsubstitutable so that they can endow their owners competitive advantage. Just as economic theory employs the concept of entry barriers in explaining competition, the resource-based framework has put forth the notion of isolating mechanisms to explain a stable stream of rents (Mahoney and Pandian 1992; Rumelt 1984). The argument is that isolating mechanisms (both efficiency and market power) serve as barriers to imitation and ensure the sustainability of rents.

### Resource Advantage Theory

In the marketing literature, the RBV has led to the development of new theoretical perspectives, most notably the RA theory of Hunt and Morgan (1995). RA shares several underlying principles with RBV, such as resource heterogeneity and immobility. However, RA theory has a slightly broader perspective. RA theory acknowledges that industry demand is heterogeneous and dynamic. Moreover, while the individual firm is still of central focus, it is recognized that firms may form relationships with other firms. RA theory also makes the distinction that individual resources produce comparative advantage for only certain firms. Unsurprisingly, the DC view shares commonalities and differences with both the RBV and RA perspectives.

### DYNAMIC CAPABILITIES VIEW: BUILDING COMPETITIVE ADVANTAGE IN REGIMES OF RAPID CHANGE

Although the resource-based perspective encourages managers to focus on strategies for exploiting firm-specific assets,

it does not adequately address several aspects of how firms should create sustainable competitive advantage.

First, the RBV does not dwell upon how and why certain firms can build competitive advantage in rapidly changing, turbulent industry environments. Teece, Pisano, and Shuen describe these circumstances as “regimes of rapid change” (1997, p. 509). High-technology industries such as semiconductors, information technology, and software are examples. The RBV breaks down in “high-velocity environments” where maintaining competitive advantage is especially challenging because “the duration of advantage is inherently unpredictable, where time is an essential aspect of strategy, and the DCs that drive competitive advantage are themselves unstable processes that are challenging to sustain” (Eisenhardt and Martin 2000, p. 1106).

Second, the RBV provides little elaboration of how firms can add to the stock of internal and external competences and build *new* capabilities. Whereas the RBV sees resources and capabilities as idiosyncratic, the DC view states that these may have some common features among firms with idiosyncratic details. The DC framework argues that competitive advantage is not necessarily derived from the firm resources, but how they are configured by managers. DCs are also essential in building new resource configurations.

The DC framework was first proposed by Teece and Pisano (1994) and was later elaborated by Teece, Pisano, and Shuen (1997) to overcome the limitations of the RBV. These scholars defined DC as “the firm’s ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments” (1997, p. 516). Eisenhardt and Martin conceptualize them as “a set of specific and identifiable processes such as product development, strategic decision making, and alliancing” (2000, p. 1116). These strategic processes help firms operating in dynamic markets to manipulate resources into new value-creating strategies. DCs are not vague or abstract; rather, they have extensive research streams associated with them, and they exhibit commonalities across leading-edge firms, putting best practices in place.

Teece, Pisano, and Shuen use the term *dynamic* to refer to the “capacity to renew competences so as to achieve congruence with the changing business environment” (1997, p. 515). When technological change is rapid, for example, managers need to be innovative in the way they deal with new challenges, and do so in a responsive and timely manner. The term *capabilities*, according to Teece, Pisano, and Shuen, “emphasizes the key role of strategic management in appropriately adapting, integrating, and reconfiguring

internal and external organizational skills, resources, and functional competences to match the requirements of a changing environment” (1997, p. 515).

Effective patterns of DCs are different for low- and high-velocity environments (Eisenhardt and Martin 2000). When markets are moderately dynamic, they resemble the *routines* described by Cyert and March (1963): they are complicated, detailed, analytical processes that rely on existing knowledge. When markets are highly dynamic, however, “dynamic capabilities are simple, experiential, unstable processes that rely on quickly created new knowledge and iterative execution to produce adaptive, but unpredictable outcomes” (Cyert and March 1963, p. 1106).

Many examples of DC can be conceived. These include new product development, alliance formation, strategic decision making, and knowledge brokering (Eisenhardt and Martin 2000). Long-term competitive advantage results from using DCs sooner, and in an improved fashion, than the competition to create resource configurations that have that advantage. In this paper, we highlight some key features of the DC view as well as describe contributions to theory, research, and the practice of marketing.

### Key Features of Dynamic Capabilities

Table 1 provides an overview of some of the differences between the RBV, RA theory, and the DC view. The main distinction between these perspectives lies in the origin of competitive advantage. The RBV suggests that competitive advantage stems from the possession of VRIN resources. RA theory contends that comparative advantage exists when a firm’s resource assortment produces a market offering that, relative to competitors, is perceived to have superior value or can be produced at a lower cost. Within the DC view, competitive advantage stems not just from the possession of a firm’s unique resources but also in the resource configurations built from DCs.

### Organizational and Strategic Routines

It is argued that DCs are organizational and strategic routines (also called processes) by which new resource configurations are created in response to market changes. These routines are focused on integrating, reconfiguring, gaining, or releasing resources to match or even create market change (Eisenhardt and Martin 2000). Kogut and Zander (1992) have used the term *combinative capabilities* to refer to organizational processes designed to synthesize and acquire knowledge resources, and generate new applications from those resources.

**Table 1**  
**Comparing and Contrasting the Views of RBV, RA Theory, and DC**

	<b>Resource-Based View</b>	<b>Resource Advantage Theory</b>	<b>Dynamic Capabilities</b>
Conceptualization	Bundle of heterogeneous resources	Bundle of heterogeneous resources	Specific organizational processes by which managers alter their resource base
Resources/Capabilities	Idiosyncratic	Idiosyncratic	Commonalities with some idiosyncratic details
Environment	Does not differentiate	Dynamic	Moderately dynamic versus high-velocity market
Competitive Advantage	From VRIN attributes	From a firm's resource assortment that produces a market offering that (1) has superior value and (2) can be produced at lower costs, relative to competitors	From valuable, somewhat rare, substitutable DCs Lies in resource configurations built from DCs

### *Learning*

Unlike the RBV, which speaks of resources and capabilities in a static context, the DC framework introduces dynamic elements such as learning. Learning, according to Teece, Pisano, and Shuen, is a "process by which repetition and experimentation enable tasks to be performed better and quicker" (1997, p. 520). The ability to reconfigure the firm's assets and to accomplish internal and external transformation is also highlighted. The DC framework argues that such organizational and managerial processes are central to achieving competitive advantage. Indeed, competences and capabilities rest on these processes or routines.

### *Path Dependence*

The concept of path dependency recognizes that "history matters." The firm's past investments and routines constrain its future behavior (Teece, Pisano, and Shuen 1997). A firm's evolutionary and coevolutionary paths help explain its DCs and its competitive advantage.

### *Asset Positions*

Like the RBV, the DC framework acknowledges the critical importance of firm assets to competitive advantage. Teece, Pisano, and Shuen (1997) discuss technological, complementary, financial, reputational, structural, institutional, and market assets. The knowledge assets are difficult to trade.

### *Replication and Best Practice*

Teece, Pisano, and Shuen (1997) also emphasize the importance of replication, or transfer of competences from one economic setting to another, to be fundamental to competitive advantage. The industry examples provided later in this paper illustrate the implementation of best practice.

It is important to note that the DC view emphasizes processes—integrating, reconfiguring, learning, and so on. These processes or routines are used to build resource configurations in dynamic markets. Firms that can accomplish this "sooner, more astutely, or more fortuitously than the competition" will have an advantage (Eisenhardt and Martin 2000, p. 1117).

## **CONTRIBUTIONS OF THE DYNAMIC CAPABILITIES FRAMEWORK**

### **Contributions to Marketing Practice**

The DC framework validates the merits of "best practice" implementation. The trade literature is replete with stories of best practice development and implementation. Evidence of the impact the DC framework has made on business practice is the number of articles published in *Harvard Business Review*. An example is the piece by Eisenhardt and Sull, entitled "Strategy as Simple Rules" (2001). In rapidly changing, ambiguous markets, they argue, few key strategic processes and a few simple rules will serve managers well to guide them through chaos. They suggest to "jump into



chaotic markets, probe for opportunities, build on successful forays, and shift flexibly among opportunities as circumstances dictate" (Eisenhardt and Sull 2001, p. 108).

One of the best practical illustrations of DC is provided by the often-cited example of Wal-Mart (Stalk, Evans, and Shulman 1992). Researchers attribute this company's success to, more than anything, its "cross-docking" capabilities. Wal-Mart developed this logistics solution in order to minimize inventory holding costs. Suppliers deliver goods to Wal-Mart's warehouses, where they are selected, repacked, and then shipped to stores, often in 48 hours or less. This process gives the company 2 percent to 3 percent advantage in terms of cost of goods sold compared to industry average. In order to execute such an innovation, Wal-Mart actually had to make many strategic investments in a variety of support systems. Seamless, real-time interface between the Wal-Mart's distribution centers and suppliers had to be achieved. The company also had to relinquish centralized managerial control. In the cross-docking system, customers "pull" products where and when they need them, instead of Wal-Mart "pushing" products into the system. This case suggests that the building blocks of competitive advantage are not products and markets, but rather refined business processes; building such capabilities requires strategic investments in infrastructure and cross-functional integration.

Within the automotive industry, Toyota is often cited as a successful executor of innovative new manufacturing practices. In particular, Toyota has been a leader in applying "lean principles" to product development (Morgan 2002). The automotive industry is described as a "hyper-competitive market," and success in this business is defined by "a company's ability to develop exciting products and deliver them to the market first" (Morgan 2002, p. 1). Toyota has now built considerable advantage over others due to its radically shortened product development cycle time and product quality. Research in the automotive industry suggests that improved process in product development is responsible for faster speed to market. Morgan (2002), citing an extensive study of vehicle makers, attributes Toyota's substantial competitive advantage in "speed-to-market" to its "leaner" processes in product development. Underlying Toyota's lean principles are a set of capabilities that the company has carefully developed, refined, and implemented. These capabilities include:

- a holistic, systems approach to product development where people, processes, and technology are fully integrated;
- a "customer first" approach: a deep understanding of customer-defined value is the first step to new product development;

- built-in learning and continuous improvement; Toyota holds both real-time and postmortem learning events (called Hansai or reflection) that encourage functional specialists to validate and update their own knowledge databases;
- synchronized processes for simultaneous execution; each function's processes are designed to move forward simultaneously building around stable data (fresh and reliable insights) as they become available; and
- rigorous standardization to create strategic flexibility; reusability, common architecture, and standard processes drive the waste out of the product development process.

It is also interesting that the company is intent on continually improving what is already a formidable competitive advantage. Given the intense nature of its industry competition, Toyota is dynamically building and renewing its capabilities.

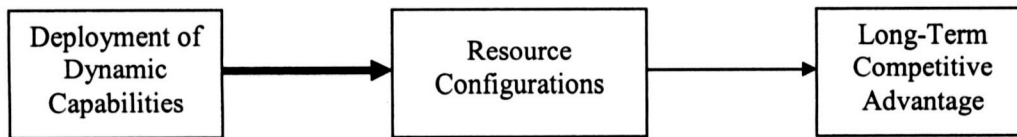
### Contributions to Marketing Theory

The DC framework starts where the RBV has left off. It builds on the strengths of both RBV and RA theory, which, unlike economic explanations, no longer treats the organization as a black box, but rather as a bundle of unique resources and capabilities. The DC view can be conceptualized as a modified, somewhat "updated" view of the RBV. The DC framework has proven to be a fruitful avenue of research as evidenced by the number of scholarly works.

The DC extension of the RBV essentially provides a potent explanation of how resources can create competitive advantage by positioning DCs as a necessary, but not a sufficient, component for achieving competitive advantage. In high-velocity environments, both are essential to building lasting competitive advantage. Therefore, it is argued that DCs can be used to develop resource configurations that lead to long-term competitive advantage. The strength of this relationship is contingent upon managers' ability to build renewable capabilities such as superior product design or business partnering. Figure 1 provides an illustration of this argument.

Being able to deploy and leverage DCs and convert them into resource configurations is the key step. DCs are embedded in specific strategic and organizational processes or routines designed to manipulate resources into value-creating strategies. Well-known learning mechanisms guide the evolution of DC and underlie path dependence. Not all firms are equally capable of developing resource configurations from DCs, but those that can outperform the competition in achieving this will gain long-term competitive advantage.

**Figure 1**  
**A Broad Conceptualization of Dynamic Capabilities**



Strategic processes, such as product development and strategic decision making, enable firms operating in dynamic markets to manipulate resources into new value-creating strategies. What is critical, then, is the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments. This relationship is especially valid for high-velocity, dynamic environments. Furthermore, learning and constant refinement of business processes play an important role in the ongoing replenishment or renewal of capabilities most critical to firm success.

### Contributions to Marketing Research

A steady stream of empirical, as well as conceptual, studies have employed the DC framework as the theoretical foundation. The following discussion provides examples of studies that have investigated DC in an empirical context. Many have peered into individual companies or industries in order to understand the nature of the evolution of DC.

In an in-depth study of automotive and mainframe computer industries, Iansiti and Clark (1994) explore the impact of integration on DCs. They aim to prove that the capacity to integrate diverse knowledge bases through problem solving makes up the foundation of knowledge building in a company. In their view, knowledge and knowledge-creating activities are the foundation of capability. The authors argue that in order to understand the roots of DCs in a company, one has to understand the relationship between knowledge and capability. The latter connection is through *problem solving* in concept development and implementation. Activities in the *concept development* stage contribute to capability building (e.g., identifying possible courses of action, conceptualizing desired outcomes, and deciding what specific types of knowledge are needed). During the *implementation* stage, participants focus on creating the assets and the routines that make up the new capability. Thus, problem-solving activities are essential to developing new capabilities.

The DC framework has also been used to explain competitive advantage in global markets. In a study of plant location decisions by two companies, Seagate Technology and Applied Materials, Bartmess and Cerny (1993) rely on the concept of

"critical capabilities" to achieve competitive advantage in dynamic business environments. Ongoing renewal of these capabilities is explained through company illustrations.

### CONCLUSION AND FUTURE OPPORTUNITIES

The DC perspective has considerably advanced our understanding of how long-term competitive advantage is created. Although the RBV explanation effectively elaborates on the importance of resource configurations, the DC perspective accentuates the role of managers in deploying DC to firm's resource endowments. The latter explanation views both the VRIN attributes of resources *and* DC as complementary components to building long-term competitive advantage. As Eisenhardt and Martin argue, the potential for long-term competitive advantage lies in "using dynamic capabilities sooner, more astutely, and more fortuitously than the competition to create resource configurations that have advantage" (2000, p. 1117).

Although the DC framework is now considered an insightful and influential theoretical foundation, it does not answer all questions about sustainable competitive advantage. Various critical views may be offered for both the RBV and the DC frameworks. The following are some of the conceptual limitations associated with the DC framework:

- A skeptical view is offered by Collis, who argues that while capabilities can indeed be valuable, "they are not always sources of sustainable competitive advantage, and they . . . are certainly not the 'ultimate' source" (1994, p. 144). He is also pessimistic: "we will never find that holy grail of the strategic management field" (1994, p. 144).
- The question of the extent to which capability creation is the outcome of *deliberate actions rather than chance events* also remains. There is sufficient evidence for the role of fortuitous events in innovations, and capabilities are sometimes the result of unforeseen rather than planned activities (DeToni and Tonchia 2003; Wernerfelt 1995).
- The close relationship between knowledge acquisition and DC has been suggested (Kogut and Zander 1992) but not quite fully understood. Are knowledge creation and integration synonymous with DC, or is knowledge a mediator to the relationship between

capabilities and competitive advantage? Further work in this area should prove fruitful.

These limitations of the DC framework, of course, present opportunities to scholars for future refinement and further empirical testing. In the realm of empirical research and validation, the following avenues should be explored in future scholarly inquiries:

- The question of precisely *how* capabilities are built and renewed is not fully explained even though several excellent pieces have been offered. Actual case studies of organizations would be extremely valuable.
- The exact nature and strength of the relationship between capabilities and sustainable competitive advantage remain to be validated and further specified. For example, how enduring and resilient is such competitive advantage?
- A consensus does not yet exist on exactly how to operationalize DCs. Perhaps most urgently, we require better, and validated, measures of these conceptual constructs. We also require relentless empirical testing under different industry, temporal, and geographic location contexts.
- Much of the empirical testing of the DC framework has thus far been through cross-sectional studies; scholars have not been able to offer *causal* statements about what leads to what, or explain how capabilities evolve over time within the same organization. A "temporal component" is needed for the framework (Priem and Butler 2001).
- To what extent should DC be "home grown" as opposed to being transferred from partner firms? In the contemporary era of interfirm collaborations, it would be worthwhile to explore the relative merits of internal refinement of routines and processes versus borrowing these from the firm's partners.
- Because DCs are embedded in the routines and experiential processes of the firm, the DC framework implies more of a "bottom-up" rather than "top-down" approach to gaining competitive advantage. Similarly, the DC framework has more to do with "execution" than "grand strategy visioning." These two features suggest that researchers should direct their attention to operational aspects of an organization, and ideal informants should be operational personnel rather than senior managers.

Given our relative inability to consistently explain sustainable competitive advantage in the complex and dynamic markets of today, scholarly interest in this area should only flourish.

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