Abstract: Beginning in the latter half of the 1990s through the early 2000s, research on dynamic capability (DC) emerged. Teece, Pisano, and Shuen (1997) were famous for being quoted even while only having a working paper, which was subsequently published. They were followed by Eisenhardt and Martin (2000). Then, researchers such as Zollo and Winter (2002) studied routines and organizational learning with a focus on the keyword “capability.” These three influential papers cited the following concepts as elements that comprise DC: 1) the level of environmental change; 2) organizational processes or routines; 3) resource configuration; 4) the role of managers (for example, decision making with regard to resource investment); and 5) learning mechanisms. Later, many researchers adopted a resource-based view (RBV) and presented their studies as incorporating DC if they contained the keywords “change,” “competitive advantage,” or “capability” even though they were merely descriptions of static resource states and discussions of their changes. By casually labeling research on R&D, acquisitions, or alliances as DC theory, these later studies a) caused ambiguity and confusion with regard to what “dynamic” means and b) lost sight of the essence of DC theory with various solutions concerning whether the concept can be explained with the stable characteristic of capability.

Keywords: dynamic capability, RBV, strategy, organization
1. Introduction

The question of how best to create an adaptive state with environments and organizations has been an important and fundamental theme in strategic and organizational theory (Andrews, 1971; Chandler, 1962; Miles & Snow, 1978). Research on dynamic capability1 (hereafter abbreviated as “DC”) emerged from the latter half of the 1990s to the early 2000s as a study on how an organization gains and sustains competitive advantage to overcome changes in the operating environment2 (e.g., Dosi, Nelson, & Winter, 2000; Eisenhardt & Martin, 2000; Helfat, Finkelstein, Mitchell, Peteraf, Singh, Teece et al., 2007; Helfat & Peteraf, 2003; Teece, 2007; Teece, Pisano, & Shuen, 1997; Zollo & Winter, 2002). Teece et al. (1997) were famous for being quoted even while having only a working paper, which was subsequently published. They were followed by Eisenhardt and Martin (2000), and researchers3 such as

---

1 Mintzberg, Ahlstrand, and Lampel (1998) stated that DC was “fashionable” in 1990s era of strategic management. Discussions on DC tend to view strategic management as a process of strategic learning with the purpose of developing and leveraging inimitable competencies and thus conform to the learning school. Mintzberg et al. (1998) and Mintzberg, Ahlstrand, and Lampel (2009) do not cite Teece et al. (1997). However, Mintzberg et al. (2009) cites both Eisenhardt and Martin (2000) and Helfat et al. (2007) as studies on DC. Mintzberg et al. (2009) maintain that the resource-based view (RBV) and dynamic capability (DC) theory both focus on the interior of an organization when considering strategy though they each appeal to a different audience, the former generating lively discussions in academic journals and the latter being preferred by consultants and managers.

2 Strategic Management Journal published a special edition entitled “Evolutionary Perspectives on Strategy” in 1996 (Barnett & Burgelman, 1996). This indicates a great deal of interest among those studying strategic management in the mid-1990s, based on a “dynamic perspective,” concerning how companies achieve competitive advantage and adapt to a changing environment. There have been attempts to pursue this issue and introduce a dynamic perspective to strategic theory. Shintaku (2005) and Fujimoto (2012) are excellent empirical studies on Japanese companies as the source of sustainable competitive advantage.

Zollo and Winter (2002) studied routines and organizational learning focusing on the keyword “capability.” These three influential papers cite the following concepts that comprise DC: 1) the level of environmental change; 2) organizational processes or routines; 3) resource configuration; 4) the role of managers (for example, decision making with regard to resource investment and allocation); and 5) learning mechanisms. Later, many researchers adopted a resource-based view (RBV) and advanced their studies as being based on DC if they contained the keywords “change,” “competitive advantage,” or “capability” though these papers did no more than provide descriptions of static resource states and the related changes. By casually labeling research on R&D, acquisitions, or alliances as “DC studies,” they 1) caused conceptual ambiguity and confusion regarding the meaning of “dynamic” and b) lost sight of the essence of DC theory by proposing various solutions regarding whether the concept can be explained with the stable characteristic of capability. This paper looks into the process described above.

2. Generating the Building Blocks of the DC Approach

Three representative studies of DC theory (Eisenhardt & Martin, 2000; Teece et al., 1997; Zollo & Winter, 2002) suggest fundamental concepts that were later cited in scores of papers. Schreyogg and Kliesch-Eberl (2007) cites these three studies as the foundation of later DC-related research. According to di Stefano, Peteraf, and Verona (2010), management journals published up until 2007 quote Teece et al. (1997) the most at 1,193 times, followed by Eisenhardt and Martin (2000) at 470 times, and Zollo and Winter (2002) in third place at 206 times.

received the Best Paper Prize from the Strategic Management Society, which shows the high level of regard for these papers in business strategy academia.

4 Schreyogg and Kliesch-Eberl (2007) cites these three studies as the foundation of later DC-related research.

5 According to di Stefano, Peteraf, and Verona (2010), management journals published up until 2007 quote Teece et al. (1997) the most at 1,193 times, followed by Eisenhardt and Martin (2000) at 470 times, and Zollo and Winter (2002) in third place at 206 times.
Implementation of DC concepts as the source of sustainable competitive advantage: Teece et al. (1997)

Teece et al. (1997) created and implemented DC concepts to explain why some companies can build competitive advantage in rapidly changing environments. According to Teece et al. (1997), DC is “the firm’s ability of a company to “integrate, build, and reconfigure internal and external competences to address rapidly changing environments” (Teece et al., 1997, p. 516). DC is a firm-specific process, and the reasons for it being the source of sustainable competitive advantage are as follows: 1) the structure and processes of organizations themselves are idiosyncratic; 2) organizational processes are determined by the companies’ history (i.e., path dependency); and 3) the resource configuration of an organization is heterogeneous. A company derives competitive advantage from its organizational processes (both organizational and managerial). Organizational processes can be divided into three primary roles: coordination and integration, learning, and reconfiguration. The processes themselves are formed by the current assets held by the company and the path the company has taken to that point.6

A focus on managerial capability: Eisenhardt and Martin (2000)

Eisenhardt and Martin (2000) state that “the firm’s process that use resources—specifically the processes to integrate, reconfigure, gain, and release resources—to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configuration as markets emerge, collide, split, evolve, and die” (Eisenhardt &

---

6 Makadok (2001) notes that resource-picking and capability-building are two mechanisms for rent generation. The former is the ability to discern the value of an asset, whereas the latter is a skill in deploying acquired resources. Each generates rent, though the latter is particularly applicable to DC.
Dynamic capability as fashion

Martin, 2000, p. 1107). This was a refinement of the definition of DC advanced by Teece et al. (1997), which positioned DC as a routine to create new sets of resources and new value in rapidly changing markets.

According to Eisenhardt and Martin (2000), the sustainability of competitive advantage depends on whether a company can develop resources more skillfully than its competitors by using DC rapidly, shrewdly, and coincidentally. Sustainable competitive advantage depends on the resource configuration that managers create using DC and not on the capabilities themselves. Thus, effective DC is a necessary but not sufficient condition for achieving competitive advantage. RBV posits that competitive advantage is sustained through resource heterogeneity, but this is often true only in the short term. The reality is that temporary competitive advantage is repeatedly created. Based on these considerations, Eisenhardt and Martin (2000) stated that DC can best be conceptualized as a method for manipulating resource configurations.

A focus on routines to change routines: Zollo and Winter (2002)

Zollo and Winter (2002) attempted to identify the mechanism through which organizations develop DC based on Teece et al. (1997) and Eisenhardt and Martin (2000). Their focus was on routines and organizational learning. They noted two organizational routines, 1)
operating routines and 2) competencies to modify operating routines, and stated that the latter is DC. According to Zollo and Winter (2002), DC is a learned and stable pattern of collective activity, and using DC, companies can systematically create and modify operating routines to improve effectiveness.

The impact of the three seminal studies on later DC research

In the three reviewed studies, the concepts comprising DC were 1) the level of environmental change; 2) organizational processes or routines; 3) resource configuration; 4) the role of managers; and 5) learning mechanisms. Later research used these concepts as a foundation. These three papers did not discuss the specific components of DC and the processes in which they can be utilized. Therefore, later studies examined more closely the necessary competencies for organizations to acquire and maintain competitive advantage in the long run (through environmental changes). Studies examining the keywords “change” (or “dynamic”), “competitive advantage,” and “capability” (or “competence”) frequently asserted in the conclusions and discussions that, for example, “X as shown in this paper is related to (or is a type of) dynamic capability as discussed in Teece et al. (1997) and others” (“X” refers to the phenomena or logic revealed in these papers). In the next section, we shall focus on later developments in DC theory, particularly an integration of concepts put forth by Helfat et al. (2007) and researchers had a strong interest in DC.

8 For more information on the relationship between organizational learning and routines, see Sato (2012).

9 Zott (2003) consolidated the concepts used in these three papers, applied DC to the three stages of “variation, selection, and retention,” and simulated changes in an organization’s resource configuration. Results showed that performance (differences in the observed product production volume, product innovation frequency, and process innovation frequency of the organization at a certain point in time) varies between companies with the same DC.
subsequent research.

3. Integration and Deployment of the Building Blocks of DC

Integration of the DC concepts by Helfat et al. (2007)

The studies of Helfat\textsuperscript{10} are representative of DC theory in recent years. Referring to the DC concepts advanced by Teece and Pisano (1994), Helfat (1997) used the U.S. oil industry from the 1970s to the start of the 1980s in an empirical analysis of how the industry was influenced by R&D competencies and complementary assets in responding to changes in the operating environment. Later, Helfat collaborated with RBV researchers to advance theoretical research related to DC. For example, Helfat and Peteraf (2003) used the concept of capability lifecycle to examine reasons for the appearance of corporate heterogeneity. They divided capability into operational capabilities and DC and asserted that the former are routines used to efficiently operate normal business processes, whereas the latter are used to develop, integrate, and reconfigure the former. Further, Adner and Helfat (2003) proposed the concept of “dynamic managerial capabilities” that comprised the competencies of managerial human resources, managerial social capital, and managerial cognition that are used by managers to develop, integrate, and reconfigure organizational resources and capabilities.

Helfat et al. (2007) comprehensively integrated DC-related arguments; the authors of Helfat et al. (2007) were Finkelstein, Mitchell, Peteraf, Singh, Teece, Winter, and other representative RBV and DC researchers. Helfat et al. (2007) defined DC as capabilities by which organizations intentionally create, expand, and modify their

\textsuperscript{10} Helfat was one (of four) of the co-editors of the \textit{Strategic Management Journal} and may rightly be called an influential researcher (as of October 2014).
resource base. By this definition, DC comprises patterns and customs, but it differs from operational capabilities, which organizations use for current business processes. Rather, DC modifies the resource base of an organization. A resource base comprises both the tangible and intangible resources held by an organization as well as competencies that may be held, controlled, and accessed by that organization. DC is considered to have two aspects: 1) the decision making regarding resource exploration and selection; and 2) the deployment and exploitation of resources acquired through these decision-making activities. It is assumed that one DC influences another DC; for example, a DC of learning promotes all sorts of operational capabilities and DC expansion and modification, and managerial DC creates, expands, and modifies various types of capabilities, including dynamic capabilities for innovations, acquisitions, or alliances.

In summary, Helfat et al. (2007) said that dynamic capabilities consist of and are used in two aspects—the decision making for resource exploration and selection and the operation of deploying and leveraging resources acquired through such decision making. Based on this, the topics of empirical research on DC are selected as follows: capabilities for appropriately using multiple resources in the

---

11 Teece (2007) and Augier and Teece (2009) made similar arguments, saying that DC can be divided into three areas: the capability for finding opportunities; the capability for leveraging those opportunities; and the capability for integrating, reconfiguring, and redeploying internal and external assets to manage threats.

12 Kor and Mahoney (2005) empirically analyzed the impact of resource development (the influence of investment in R&D and marketing activities, the particular experiences of a firm’s managers, and institutional investors) on corporate-level performance (Tobin’s q). Blyler and Coff (2003) asserted that social capital has an important influence on the important phases of DC, such as resource acquisition, integration, and disposal. Takahashi (2013) noted the importance of the “manager’s scale perspective” in managerial decision making for investment, production volume, and technology selection.
face of opportunities and threats; capabilities for using alliances to gain access to resources not held by the firm (relational capabilities); and capabilities to skillfully manage a post-acquisition integration process or selection criteria and methods for acquisition targets.

**Post-Helfat et al. (2007) research**

After Helfat et al. (2007), DC-related research experienced three developments: 1) DC-related literature reviews (Ambrosini & Bowman, 2009; Easterby-Smith, Lyles, & Peteraf, 2009; di Stefano et al., 2010); 2) empirical research on DC concepts; and 3) research focusing on how DC is demonstrated and the formation of DC and management systems that influence these processes. Thus, the DC

---

13 Drnevich and Kriauciunas (2011) validated the impact of operational capabilities and DC on corporate performance based on a large sample dataset of Chilean corporations. Doving and Gooderham (2008) established the DC as a factor that influences the extent of a firm’s related diversification. Further, Sirmon and Hitt (2009) empirically analyzed dynamic managerial capabilities with a focus on resource investment and methods to deploy those resources as dynamic managerial capabilities to show how managerial decision making regarding investment in resources impacts performance. They verified that high performance is achieved when a method of investment and the utilization of the investment conform with each other.

14 Danneels (2010) conducted an analysis using the case study of a company regarding expansion of existing resources and creation of new resources, access to external resources, and disposal of resources as activities comprising DC. This paper emphasized the need to focus on the manager’s awareness of resources in the process of demonstrating dynamic capabilities and further noted that this point had been overlooked in previous DC theory. Hodgkinson and Healey (2011) asserted that individual (or group) cognition and emotions influenced each component of DC emphasized in Teece (2007) and stated the importance of implementing DC theory for problems of emotion and cognition. Bingham and Eisenhardt (2011) showed that as managers develop businesses and encounter markets that are difficult to forecast, the use of heuristics is a more logical strategy than those based on analyses using complex and rich information. They asserted that the accumulation of experience that allows for the process of refining managerial heuristics would be a key phenomenon in DC theory.

15 Schreyogg and Kliesch-Eberl (2007) asserted that companies should
theory has been developed incorporating the concepts of various strategic and organizational theories.

4. Conclusion

Existing research on DC primarily refers to methods and patterns for acquiring new resources or changes to organizational routines. In fact, these phenomena have been discussed for many years in the research on organizational change and development, strategic changes, and organizational evolution. Indeed, combining various phenomena into the unified concept of DC has certain benefits. However, existing research on DC either 1) incorporates phenomena and concepts that have already been examined in strategic or organizational theory in order to explain and label them as DC or 2) argues that any studies on managerial phenomena related to resource modifications or changes are DC-related research.

RBV has identified characteristics of resources that are fundamentally sustainable (inimitable) sources of competitive advantage. However, this line of research is limited to static state descriptions of resources. DC theory 1) incorporates RBV-friendly concepts such as resources and organizational routines, 2) focuses on the creation of new resources to respond to environmental changes as well as on capabilities for reconfiguring resources; and 3) aims to identify sources of sustainable competitive advantage even in the face of environmental change. Thus, for researchers in strategic theory, particularly in the RBV, aiming to incorporate dynamics into the RBV discussion disguised as a “DC approach” is likely seen as a logical and effective direction. However, there is a clear tendency to create processes that increase competitiveness using existing capabilities and processes called “capability monitoring” (for monitoring internal and external environments). They further asserted that companies must have both types of processes functioning.
Dynamic capability as fashion

label any study that has the keywords of “change,” “competitive advantage,” and “capabilities” as DC research despite these studies being no more than discussions on static state descriptions of resources and their changes. This has been true for research on R&D, acquisitions, and alliances. By conceptualizing the characteristics of routines for developing new routines as DC, researchers of organizational theory can also work with routines and their evolution—an important concept in this field that may have been the reason behind the effort to incorporate and develop DC concepts.

References


Danneels, E. (2010). Trying to become a different type of company:


Takahashi, N. (2013). Behind the learning curve: Requisite of a scale


