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Abstract

The dynamic capabilities view posits that a firm's success is largely driven by its ability to adapt to a changing environment to secure value creating potential and, thus achieve a competitive advantage. The dynamic capabilities perspective has attracted much scholarly attention in the last two decades, as reflected in the proliferation of conceptual and research articles in the strategic management literature. Knowledge about the relationship between dynamic capabilities and other theoretical concepts within the strategic management field remains limited. This paper therefore synthesizes the literature and uses it to develop a more clear relationship between notions of dynamic capabilities, resources, assets, competencies and static capabilities. Potential areas of future research are also outlined.

Keywords: dynamic capabilities, strategic renewal, resource-based view

JEL: M10, M19

Introduction

Competitive dynamics and processes force companies to seek new, unique competitive strategies. The design and execution of these strategies brings to the forefront the creation and novel use of resources and capabilities. In the face of discontinuity, which implicates the combining, division, evolution and atrophy of markets, a significant determinant of a firm's success is strategic agility [Doz and Kosonen, 2010; Weber and Tarba, 2014] that

is, the capability to remain flexible, to adapt to new conditions, and implement innovative ideas that create value in single firms and within business ecosystems [Davenport et al., 2006]. The essence of strategic agility is to create new business models and product categories, instead of improving existing products and elements of the current business model [Teece, 2012].

Until recently, relatively little attention has been paid to the mechanisms that facilitate organizational change within a dynamic business environment. Moreover, the classic resource-based view (and its variations) is too outdated to reveal these mechanisms due to the pace and complexity of changes in our current knowledge-based, network economy [Kraaijenbrink et al., 2010].

The existing literature indicates that competitive advantages are hard to sustain in today's unstable markets, which feature fierce competition and disruptive technologies. This business reality has caused scholars to seek out new assumptions to more appropriately describe the processes that shape the relationship between business strategy and competition. That process has led to the idea that competitive advantage is transient, not sustainable, as McGrath [2013] states. From this perspective, competitive advantage is temporary – gained, lost and regained cyclically. Losing it over time is thus a natural phenomenon that can only be arrested by continuously seeking new ways of improving a company's potential to create value.

Traditional strategy frameworks focused on either finding a favorable position in an industry and exploiting market conditions [Porter, 1980, 1985], or accessing and securing rare, inimitable resources and developing core competencies [Barney, 1991; Lado et al., 2006], are giving way to approaches dealing with breaking inertia, collaboration, and creativity. Companies face a competitive reality in which developing new capabilities enables them to manage disruptive value innovation, survive, and prosper in a dynamically changing environment [see also Markides, 2006; Schumpeter, 1947, 1950; Wiggins and Ruelfi, 2005]. This is especially important when a given set of organizational capabilities becomes obsolete over time.

Competitive strategies of the future, some authors indicate, are focused on continuous organizational renewal that redefines ways of functioning, sensing and creating new market space shaped by non-linear, discontinuous and open-innovation processes that take changed forms of differentiation and focus strategies [Davenport et al., 2006, Grudzewski et al., 2010, Hejduk, 2013, Stańczyk-Hugiet, 2013].

The emergence of the dynamic capability notion [Teece et al., 1997] within the resource-based view allows scholars to analyze organizational change alignment with environmental dynamism through a novel theoretical prism. Nevertheless, this concept still remains in *statunascendi*, with certain issues undeveloped. Specifically, it is unclear how organizational resources, routines, assets, capabilities and competencies relate conceptually to dynamic capabilities. This study provides readers with an overview of international

research on dynamic capabilities, investigate key aspects of the relationship between notions present in the existing literature, and explores the essence of dynamic capability.

This paper is organized as follows. First, a brief overview of how new competitive conditions have affected the evolution of the strategic management field is provided. Second, the notion of organizational capabilities is defined and an overview of extant literature on the topic is presented. Next, the article discusses the similarities and differences between the notion of capabilities and its sister notions. The notion of dynamic capabilities is then introduced, and its essence is discussed. Finally, several conclusions and suggested directions of future research are presented.

Resource-Based View and Organizational Capabilities

The capabilities perspective has evolved within the resource-based view (RBV). This stream of thought focus on endogenous factors – i.e., the interior of the company, its resources, competencies and capabilities – that are treated as internal sources of competitive advantage. This perspective originates from Penrose's [1959] interpretation of the firm as a bundle of resources which shape its competitive position. This approach explains that heterogeneity between business organizations stems from differing degrees and scope of control over valuable, rare, inimitable and non-substitutable resources (VRIN criteria). If all these requirements are met, then it becomes possible to achieve and sustain competitive advantage [Barney, 1991; Barney et al., 2001]. RBV postulates that the possession of VRIN resources by a firm leads to the emergence of isolating mechanisms that hamper other firms from performing at the same level [Lippman and Rumelt, 1982]. Barney [1991] distinguishes three groups of VRIN resources: physical capital (physical technology, plant and equipment, geographic location, access to raw materials); human capital (training, experience, judgment, intelligence, relationships, and insights of the individual managers and workers in a firm); and organizational capital (a firm's formal reporting structure, formal and informal planning, controlling, coordinating systems, informal relationships among groups within a firm and between a firm and those in its environment). Grant [1991], based on Hofer and Schendel [1978], distinguishes between technological, financial and reputational resources. Other axis of division distinguishes resources as tangible (labor, land/raw materials and stock of capital) and intangible which usually rely on knowledge and abilities. Among intangibles, property rights, organizational capital and experience [Prahalad and Bettis, 1986], managerial and employee abilities and knowledge [Day, 1994; Godfrey and Hill, 1995; Grant, 1996; Nelson and Winter, 1982], brand recognition, market position [Dierickx and Cool, 1989], and organizational (tacit) knowledge [Amit and Schoemaker, 1993], organizational culture [Barney, 1986a] are enumerated. Intangible resources play a role of isolation mechanisms ("imitation barriers") to a greater degree than do tangible ones [Rumelt, 1984], being a difficult subject of

transaction due to uniqueness and causal ambiguity [Lippman and Rumelt, 1982]. For that reason, the classical resource-based view regards them as a main source of competitive advantage. RBV is, however, also criticized for a perceived inability to explain sources of value creation and achieving competitive advantage and superior performance. Among its weaknesses, the following limits are emphasized [De Toni and Tonchia, 2003]:

- the exclusive interest of a single firm, taken out of the industrial context;
- lack of a theoretical model that clearly defines links between resources and capabilities/competencies, on the one hand, and sustainable competitive advantage on the other;
- lack of distinction/relationship between deliberateness and ad-hoc opportunities;
- lack of consideration of the negative impact (a bad reputation, running into debt, etc.) that certain resources can cause;
- lack of consideration of that some resources may become devalued over the long-term. It is difficult to draw inferences about the potential of existing resources to generate future competitive advantage in the future in the face of environmental dynamism;
- inflexibility of the view that resources and competencies are created inside the firm.

It must be conceded that the above-mentioned concerns are well-aimed. It is not justified nor correct to analyze business activity separately from its environment. There exists interdependence between competitive conditions, managerial decisions and firm performance. The classical resource-based view does not consider the way of using resources. This constitutes an oversimplification, as the efficiency of how resources are managed influences the competitive position of a firm on the market. De Toni and Tonchia [2003] identify the problem of change that implies devaluation of resource value over time and narrow thinking about acquiring and creating resources within a single firm. This approach has become no less valid due to the increased significance of intangible resources and such phenomena as co-competition, network relations, and open source creation.

D'Aveni [1994] is even more critical, contending that success lies in unceasingly being destroyed and reconstructing competitive advantages in response to continuously emerging new competitive factors. All of which make it difficult to fully exploit and consolidate benefits from firm resources over the long run.

Over time, the dominant view that VRIN resources ensure superior firm profits is being discredited. Critics note that even when resources fulfill the VRIN criteria, they may bring few benefits, if used inefficiently [Katkalo et al., 2010]. Penrose [1959, p. 22] clearly distinguished resources from the services they may yield, arguing that these services are the source of each firm's uniqueness and, thus, of the heterogeneity between firm performance. Porter [1985], writing in the same tone, notes that a firm's capability to outperform its competitors stems from distinctive resource combinations defined by single activities in the value chain. That is, a firm's ability to perform similar activities differently than competitors [Porter, 1996, p. 62]. For that reason, numerous scholars began to devote greater attention to how resources are used and allocated, as well as to activities and processes, rather than to resources themselves. These two opposite

mechanisms of generating economic rent have been presented in the literature as resource picking (Ricardian perspective) and capabilities building (Schumpeterian perspective). According to the classical resource-based view (Ricardian logic), choosing resources is the main mechanism for creating economic value, which is performed by comparing the market value of a resource and its marginal productivity when used in a combination with resources already possessed by a given organization [Makadok, 2001]. It thus becomes possible to estimate expected profit *ex-ante* only under the conditions of perfect competition on the resource market, information asymmetry about the value of a given resource [Barney, 1986b], and heterogeneity between firms' productivity. One shortcoming of this reasoning is that the presence of the latter condition means that there is already heterogeneity between organizations, i.e., before firms set about acquiring resources. Competitive advantage, according to the Ricardian perspective, therefore appears regardless of the variation in access to VRIN resources. This shortcoming underscores the need to formulate new mechanisms to explain differences between firm profitability.

One new approach is a mechanism compatible with Schumpeterian logic. It assumes that managers design organizational systems to enhance a firm's resource productivity, i.e., they seek ways to create more economic value than rival firms [Makadok, 2001, p. 387]. This mechanism was referred to as creating organizational capabilities.

The relationship between resources, assets and capabilities has not yet been systematized, making it difficult to analyze strategic decisions. Existing approaches that try to organize terminology are mutually exclusive. Our literature review reveals three conceptually distinct classification types:

- resources as the sum of assets and capabilities [Barney, 1991; Day, 1994, Hooley et al., 1998],
- assets as the sum of resources and capabilities [Amit and Schoemaker, 1993; Peteraf, 1993; Foss, 1996; Helfat and Peteraf, 2003],
- resources as the sum of assets and competencies, with capabilities (as a distinct notion) created on the basis of these resources [Hall, 1993].

These classifications are a starting point for further investigation, and Hall's [1993] view is adopted in this paper. Hall treats resources as the building blocks of an organization's capabilities, which are combined and merged into a final product [Itami, 1987]. The mode of their allocation and combination constitutes a unique proficiency – that is, a firm's capability.

Notably, the notion of capability is not uniformly understood in the literature. However, all conceptualizations originate from Penrose work [1959], who observed that these are not resources that should be regarded as input (basic unit of analysis) in business activity but rather should be assessed in terms of their utility and services that these resources can yield [p. 22]. Hooley et al. [1998, p. 101] as well as Hooley et al. [2004, p. 147] regard resources as a result of the combination of assets through mechanisms of organizational capabilities. Perhaps Besanko et al. [2004], best summarize the essence of organizational

capabilities in arguing that resources should be understood in terms of a noun – a firm ”possesses” resources (resources are at its disposal), while capabilities in terms of a verb (activity) – a firm ”performs” them [p. 377].

Teece et al. [1997, p. 518], argue that there are differences between firms that stem from non-market issues, i.e. they result from organizational capabilities developed by individual organizations. This heterogeneity is conditioned by the occurrence of three types of factors:

- organizational and managerial processes (including organizational culture):
- location of resources: and
- adopted evolutionary path.

In turn, Makadok [2001, p. 189] argues that the following elements distinguish organizational capabilities from resources:

- objective (enhancement of efficiency usage of possessed resources):
- lower degree of transferability; and
- embeddedness in the organization.

It bears emphasis that a firm’s resources are transformed in order to develop a final product, but the mode of this transformation determines their value, which is reflected by different degrees of efficiency and effectiveness and perceived consumer value. Heterogeneity between firm capabilities therefore affects differences in firm performance. Notably, resource transformation (i.e., capabilities) leads, *inter alia*, to the creation of new resources. In this context, capabilities also become organizational resources over time, being subject to subsequent transformation.

Transferability is characterized by a higher degree of tangible than intangible resources and organizational capabilities. Some resources are easily subject to market exchange, for instance physical equipment and (to a lesser degree) patents or copyrights. Some intangible resources, such as knowledge (“embedded” in employees) can be transferred to other organizations. However, if an employee is transferred into different work environment, (s) he may become less productive and creative. This reflects the difference between resources and capabilities. An organization’s capabilities are built on routines, processes and organizational culture, which create good relations with clients, reputation, employee skills, efficiency, and effectiveness in a given context, and are difficult to transfer. They cannot be simply removed from one set of conditions and put into another set of conditions and be expected to yield the same results.

A third criterion – embeddedness – constitutes a major obstacle in market exchange. Employee skills gain r value if bound with human interactions, and result from past organizational events (as part of an evolution path). Therefore, capabilities should be understood as a unique set of resources that are being constantly transformed.

In this paper, capability has a conceptually different meaning than resources and assets. Assets is a broader term that encompasses tangible and intangible resources. Capabilities

are built upon resources using routines/ processes and are source of heterogeneity between firm performances, which affects their respective market position.

Some scholars treat capabilities as a special type of resource, i.e., “systemic” or “higher-order” [Black and Boal, 1994; Miller and Shamsie, 1996; Grewal and Slotegraaf, 2007], used to bind other resources, enabling their allocation in a profitable way for a company [Day, 1994]. Monetary value cannot, however, be ascribed to capabilities as easily as it can be done in the case of other assets because they are rooted in organizations and created by distinctive individual and team skills, processes, organizational structures, decision rules, and discipline [Teece, 2007]. They are also intertwined with these routines, processes and structures and are path dependent [Grant, 1991, p. 120]. So they are not subject to a market transaction, they must be built [Grant, 2005, p. 519].

The essence of an organization’s capabilities is a combination of the resource base in the way that assures the criteria of value, rareness, inimitability and non-substitutability or, in other words – a competitive barrier. Hooley et al. [1998] aptly note that there are three levels by which a firm may introduce the isolating mechanisms (barriers to imitation) [p. 141]:

- causal ambiguity – by so- called tacit configuration and coordination of resources; stemming from the phenomenon of learning by doing and managerial experience; complexity (usage of bundle of resources in order to realize a certain process or activity); and uniqueness (devoting specific resources to specific activities);
- path dependency – the more unique the resource base development, the higher its level of resistance to imitation, which in turn affects its rareness;
- vulnerability of a resource to depreciation – tangible resources, acquired or developed in an organization, such as machinery and intangibles like employee knowledge in a given area may be more vulnerable to losing value over time than other resources, such as reputation.

Besanko et al. [2004, p. 438], referring to J. Barney [1991], additionally distinguish social complexity among barriers to imitation. This stems from interpersonal relationships between managers, and between managers and employees, suppliers and clients.

Hall [1993, pp. 610–611], in expanding the work of Coyne [1986], offers the following division of an organization’s capabilities, depending on the type of resource upon which they are built:

- based on possessed assets (independent of human activity);
 - stemming from regulation (e.g., patents, intellectual rights, contracts);
 - positional (stemming from prior events, e.g., reputation, market relations);
- based on developed competencies (depending on human activity):
 - functional (abilities to realize certain activities stemming from stakeholders’ knowledge and experience, e.g., know-how);
 - cultural (customs, attitudes, beliefs, values, learning mechanism);

According to Hall's division, capability is defined as developing a way of resource combination – for instance, research and development schemes or design and implementation of the production process worked out by a firm. It is worth noting that coherence exists between Hall's proposition and the works of other authors, in the sense that it recalls two opposite mechanisms of generating economic rent mentioned previously: those capabilities that rely on allocation and the coordination of possessed assets remind resource-picking (Ricardian perspective), while functional and cultural relate to building mechanisms relying on human activity (Schumpeterian perspective).

Based on the aforementioned, it can be asserted that an organizational resource base can be transformed (renewed) by ambiguous events that may blur Hall's distinction. Capabilities independent of human activity, intertwined with those developed on the basis of competencies, generate a new type of capabilities that is harder to copy by competitors.

Although the notion of organizational capabilities can be traced back to Penrose [1959], no major definition has been adopted in the field of strategic management. Existing definitions of capabilities differ, depending on the author's theoretical background, i.e., representatives of evolutionary economics define capabilities as a set of routines [Winter, 2000, p. 983], while scholars in the field of strategic management tend to understand an organization's capability in terms of organizational processes [Easterby-Smith et al., 2009, p. S2]. The collation of the most recognizable definitions of an organization's capabilities in the literature is presented in table 1.

The aforementioned definitions underline several different aspects, but a common characteristic can be derived – capability is a way of using resources by using routines, processes and skills to effectuate a desired end result efficiently, more efficiently, or differently than competitors.

It is worth noting, at this point, that defining an organization's capabilities through routines may generate an inaccuracy. The question arises of what the difference is between routines and capabilities? Routines, according to Winter [2003], are repeated patterns of interactions that are a collective behavior undertaken on the basis of tacit knowledge [p. 991]. They relate either to individual abilities and competencies or to the collective behavior of the organization – through aggregation of the employees' individual behavior. As Strużyna [2013, p. 35] and Dosi et al., [2000, p. 2] note, the relationship between capabilities and routines are neither simple nor unidirectional. To be capable of doing something means to have a capacity to make intentions a reality, i.e., to effectively execute intentions. What follows is that capabilities are shaped by conscious decisions. The act of decisions differentiates therefore organizational routines and capabilities. Routines are in turn shaped unconsciously. It is possible also to regard some routines as organizational capabilities. However, routines cannot be considered on a high-level unit of analysis, while capabilities can be [Winter, 2000].

The increase of interest in the matter of organizational capabilities in the academic literature since the 1990s has been accompanied by a plethora of definitions and inaccuracy,

if it comes to positioning the capabilities notion among other, close-related notions such as resources and competencies, and by the lack of a strategic hierarchy of notions. This fact hinders precise analysis on a theoretical and empirical level. What is more, existing conceptualizations seem to be tautological in nature, as capabilities are often defined by terms such as "capabilities" or "abilities".

TABLE 1. The most influential definitions of capabilities in the literature

Author(s)	Definition
Mahoney and Pandian [1992], p. 365	Closely interrelated mix of routines, tacit knowledge and organizational memory that enables organizations to focus and coordinate human effort and the ability to effectively evaluate the resource position of the firm in terms of strengths and weaknesses.
Amit and Schoemaker [1993], p. 35	Capacity to deploy resources, usually in combination, using organizational processes to affect a desired end.
Hooley et al. [1998], p. 99	Complex bundles of skills and collective learning exercised through organizational processes that ensure superior coordination of functional activities.
Winter [2000], p. 983	High-level routine (or collection of routines) that, together with its implementing input flows, confers upon an organization's management a set of decision options for producing significant outputs of a particular type.
Helfat and Peteraf [2003], p. 999	Ability of an organization to perform a coordinated set of tasks, utilizing organizational resources for the purpose of achieving a particular end result.
Besanko et al. [2004], p. 377	Activities which a firm does especially well as compared to its competitors.
Helfat et al. [2007], p. 1	The ability to perform a particular task or activity.
Helfat and Winter [2011], p. 1244	Capacity to perform a particular activity in a reliable and at least minimally satisfactory manner.
Teece [2012], p. 1396	Firm abilities that enable it to efficiently perform current activities.

Source: own elaboration based on the literature indicated in the table.

Penrose's view that a capability is reflected by a utility (usefulness) that a given bundle of resources may yield, which enhances the efficiency of the firm's processes and, therefore, is a source of value creation [1959, pp. 22–23], is adopted for the purpose of this paper.

Strategic Hierarchy of Organizational Capabilities

According to Hooley, et al. [1998], a firm striving for superior performance should focus on developing three categories of capabilities and their coordination on three levels of aggregation (individual, group, and organizational) [pp. 101–103]:

- **strategic** – referring to top level managers and involving managing lower-order capabilities, learning mechanisms and elaborating dominant logic of business activity,
- **functional** – relating to functions and processes within a company [Day, 1994, pp. 40–43]:
 - *inside-out* allowing a firm to realize its core business (e.g., finance management, research and development, human resources management),
 - *outside-in* enabling a firm to compete and create sustainable relationships with customers, suppliers, and distribution channels participants (e.g., market sensing, establishing customer relations, deepening cooperation with market partners),
 - *spanning capability* that integrates capabilities belonging to the two prior categories (e.g., value chain management, product development, strategy development),
- **operational** – embracing mainly task skills.

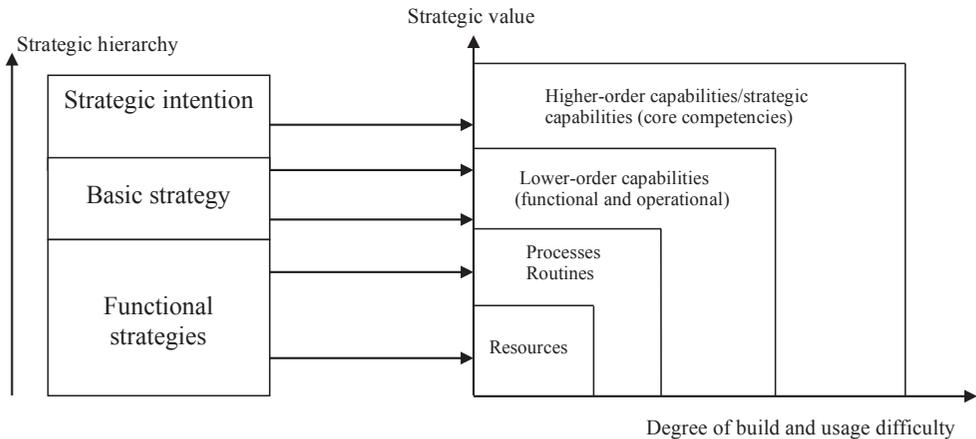
The above analysis indicates the strong similarities between capabilities and core competencies – as each refer to the same mechanism of combination, allocation and coordination of resources through processes, allowing to enhance productivity of organizational resources (capabilities) or proficiency in performing a given set of activities / tasks (competencies) to be enhanced. Moreover, structure of both core competencies and capabilities are based on hierarchy [see Prahalad and Hamel, 1990]. These conclusions permit the assumption that higher-order capability (spanning) may be interpreted as a core competence, distinctive competence, core capability, or distinctive capability. Based on the aforementioned arguments, the reasoning of Bratnicki [2000] about the strategic hierarchy of capabilities/competencies may also be applied at this point.

Based on the aforementioned, core and distinctive competencies can be regarded as essentially synonymous to an organization's capabilities, with a reservation on the level of strategic hierarchy. Owing to that fact, the conclusion is made that core competencies are regarded as strategic capabilities and are situated on the highest level of strategic hierarchy, while an organization's capabilities are lower-order (distinctive, core, functional, operational). Lower-order capabilities in turn are categorized at a higher level than resources, processes and routines that describe organizational behavior. When a change of this behavior occurs, it leads to organizational change [Nelson and Winter, 1982]. However, it must be emphasized that this happens not directly but rather indirectly – through processes and capabilities. Routines are thereby building elements of capabilities but not their only component [Strużyna, 2013, p. 36]. The summary of the above discussion is depicted in figure 1.

According to Grewal and Slootegraf [2007], the hierarchy of capabilities is related to the embeddedness phenomenon. Consistent with assumptions of evolutionary economics, as elaborated by Nelson and Winter [1982], firm's development depends on prior events. It follows that each procedure and process stems from an evolution from prior procedures and processes [Nelson and Winter, 1982]. They are thus rooted in the firm's historical path of development, its organizational culture, and technology. Based on that, it has to be claimed that the hierarchy of organizational capabilities presented implies embeddedness

of resources and processes in the lower-order capabilities, as well as lower-order capabilities in the higher-order capabilities. For instance, organizational resources – such as specialized knowledge and tangible resources (machinery, raw materials) necessary in the production process – constitute building blocks of an engineering operational capability. Its combination with other lower-order capabilities (e.g., work organization, supply chain management), creates functional value chain management capability. Product development, in association with a capability of the same order (e.g., marketing, market sensing) creates a strategic capability allowing a firm to manage product portfolio. As a strength of a company, it may affect economic performance, and thus competitive position. What follows is that embeddedness of resources, processes and capabilities that are linked cross-functionally increase complexity and thus, hinders imitation and transferability by creating isolating mechanisms [Grewal and Slotegraaf, 2007, p. 455] – the greater degree of embeddedness, the higher the difficulty to imitate by competitors and thus, the higher the probability of sustaining competitive position or advantage.

FIGURE 1. Strategic hierarchy and relation between resources, processes, routines, capabilities and core competencies



Source: own elaboration based on Bratnicki [2000, p. 112].

Purposefulness of the organization’s capabilities indicates their strategic character [Prahalad and Hamel, 1989] and consequently – their strong relationship with competitive advantage. The literature provides numerous examples of an organization’s capabilities as being crucial for achieving competitive advantage. To name just few: market sensing, flexibility of organizational structure [Jiao, et al., 2010], organizational culture [e.g., Barney, 1986], the capability to acquire and exploit knowledge about market and development of good customer relationships [Day, 1994], the capability to communicate with customers

[Jayachandran et al., 2004], merchandising and store management capability [Grewal, Slotegraaf, 2007], the capability to share knowledge within an organization [Foss, 1996], employees' knowledge integration capability, generating new applications from existing knowledge (combinative capabilities) [Kogut and Zander, 1992, p. 391], the capability to develop disruptive technology [Prahalad and Hamel, 1990], cross-docking logistic technique, and personnel's responsiveness to customers, inventory replenishment capability [Stalk et al., 1992].

When discussing the role of resources and capabilities (competencies) in value creation, it is worth referring to newer theories of the enterprise – the network-based theory and relational view of the firm [Dyer and Singh, 1998; Hakansson and Johanson, 1992]. Since companies do not have to possess resources, but may instead use their business partners' resources and capabilities, partnership improves a company's capabilities, making them more complex and thus harder to imitate. However, when it comes to the sustainability of previously discussed sources of competitive position and advantage – whether, and how, do current capabilities evolve in the face of changes?

Dynamic Capabilities Perspective as a Result of Evolution of the Resource-Based View

The perspective of dynamic capabilities is a response to critiques of the classic resource-based view and capabilities-based competition. The main controversy that has arisen around these concepts concerns the static approach and insufficient basis for explaining the problem of strategic adaptation in the face of changes appearing in the business environment [Priem and Butler, 2001a, 2001b; Winter, 2003]. Danneels [2010] notes that the dynamic capabilities perspective, as an intensively developing theoretical stream within the resource-based view, seems to be one of the most influential concepts dealing with reasons underlying ability and failure to renew organizations in the environmental dynamism.

The concept of dynamic capabilities has generated much attention among scholars, and is a relatively new area of academic research. It has experienced rapid development and been the central theme of publications in leading scholarly journals, as well as a topic of numerous scientific conferences around the globe. The special issues of journals, beginning in 2000, have been a place of conceptual papers and empirical studies regarding the evolution of capabilities and the nature of organizational changes described by “dynamic capabilities,” which are regarded as playing a central role in organizational strategic renewal and achieving competitive advantage.¹

Until now, no common definition of dynamic capability has been adopted, and inconsistencies have emerged regarding methodological issues related to the concept, its nature and operationalization [see Katkalo et al., 2010, p. 1178; Zahra et al., 2006, p. 921].

These inaccuracies refer to blurred conceptualizations of dynamic capabilities, which stem from its focus on abstract phenomena deriving from different areas within management, and the fact that this concept is still in the stage of emergence. Barr [2004] summarizes the conceptual focus of dynamic capabilities as being on strategic renewal, adaptation, life cycles and evolutionary paths [pp. 181–183]. Development of the concept has thus been interdisciplinary in character and approached from a variety of perspectives. It originates from strategic management but is also located at the intersection of such management approaches as marketing, the theory of change, innovation, organizational learning, knowledge management [Easterby-Smith et al., 2009, p. S2], corporate entrepreneurship (intrapreneurship) [e.g. Teece, 2012], internationalization theories [see Pitelis and Teece, 2010] and cooperation literature [Zahra et al., 2006, p. 919].

The relative ambiguities regarding the definition are rooted in a diverse understanding of what dynamic capability is, what it is not, and whether and how it affects an organization's performance. This debate reflects the emergence of the new approach to strategic adaptation analysis that has the potential to become an established theory and subdiscipline within strategic management. The current state of progress does not allow most of the assumptions to be empirically verified using deductive reasoning and quantitative methods [Barr, 2004]. To overcome these difficulties, several scholars used proxy measures such as dynamics of research and development expenditures or managerial perception about a given area of organizational change and its influence on a firm's competitiveness [e.g., Jiao et al., 2010]. However, there is still more conceptual work to be done before such empirical studies can be regarded as grounded in a well-established theory. Since the dynamic capabilities perspective can primarily be considered an *ex post facto* construct measured by sampling on the dependent variable – i.e., if the firm successfully adapts, then it had dynamic capability – opponents often argue that it is not doing much intellectual work. Their arguments are partially justified as, in fact, having *ex post* examples of successful firms that have adapted “in this way” (according to the assumed ability of organizational change) and examples of less-successful firms that have not, is logically flawed. It can thus be supposed there are still deep conceptual problems, because the dynamic capabilities perspective is equivocal when it comes to measurement. It is hard to specify what the “amount” of dynamic capability a firm has or to compare the “amounts” that any two firms have. As Wang and Ahmed [2007] note, the current understanding of what dynamic capabilities are is limited to case studies that illustrate the concept [p. 33]. Similarly, Teece [2007] claims that the concept is currently a type of framework rather than a coherent model [p. 1320]. On the one hand, this early stage of development poses problems to verification but, on the other, it offers promising avenues for future research.

The first definition was provided by Teece et al., in 1997. According to it, dynamic capability is the “firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environment” [p. 516]. In the context of prior

assumptions about a discrepancy between capabilities and competences, this definition suggests that dynamic capabilities are built upon higher-order capabilities/core competencies.

Eisenhardt and Martin [2000] define this notion as "the firm's processes that use resources – specifically the processes to integrate, reconfigure, gain and release resources – to match and even create the market change" [p. 1107]. Dynamic capabilities are thus, according to them, "strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die" [p. 1107]. This definition *de facto* equates dynamic capabilities with processes and routines, without distinguishing the differences between these two terms. Helfat, et al.'s [2007] definition makes further progress in conceptualization, providing the view that dynamic capability is "the capacity of an organization to purposefully create, extend, or modify its resource base" [p. 1]. This interpretation is consistent with Eisenhardt and Martin's view in that it claims competitive advantage stems from change in resource configuration, which is a reflection of dynamic capability, rather than from exploiting capabilities that shape the current *status quo*. Wang and Ahmed [2007] provide a similar definition – dynamic capabilities are the "firm's behavioral orientation constantly to integrate, reconfigure, renew and recreate its resources and capabilities and, most importantly, upgrade and reconstruct its core capabilities in response to the changing environment to attain and sustain competitive advantage" [p. 35]. What is worth noting here is that dynamic capabilities are described as a result of the organization's constant orientation toward change. It does not mean that the way of change remains the same over time, but instead refers to the orientation itself. This distinction is important in the light of prior ambiguities in the literature [Rindova and Kotha, 2001; Zollo and Winter, 2002]. Wang and Ahmed's [2007] definition speak to the strategic character of dynamic capabilities, as a firm's orientation must be conscious (it has strategic intent). The authors clearly distinguish notions of processes from dynamic capabilities:

- dynamic capabilities are not processes but are embedded in them; and
- processes are explicit and clearly codified, being a combination of resources, making them more easily to transfer than capabilities within a single firm or between firms.

These conclusions represent a step towards more precisely explaining the nature of the concept. The author of this paper agrees with Wang and Ahmed and adopts the view that dynamic capabilities differ from processes in that they rely on a change of the way of the process (set of processes) combination and coordination.²

While static capabilities allow a firm to sustain the *status-quo* (also referred to in the literature as "ordinary", operational or zero-order [Helfat and Winter, 2011]), dynamic capabilities alter the way of functioning, i.e., they extend, modify and create new "ordinary" capabilities of the organization [Winter, 2003]. Of the top place on the organization's agenda (its strategic character) may serve the fact that dynamic capabilities are partially repetitious and patterned, structured, consciously developed and "involve long-term commitments to specialized resources" [Winter, 2003, p. 993]. These phenomena are not therefore pertinent to *ad-hoc* problem solving or organizational improvisation. As

results of empirical studies suggest, the dynamic capabilities of an organization co-evolve with environmental changes [Ambrosini et al., 2009; Bruniani and Verona, 2009; Newey and Zahra, 2009]. This finding remains in line with Eisenhardt and Martin's [2000] view, which distinguishes two paths defining dynamic capability depending on market dynamism:

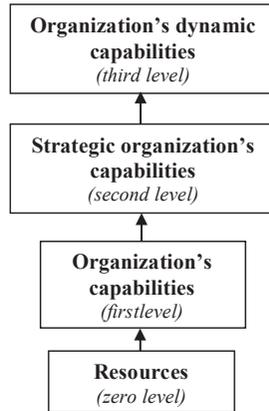
- linear in the case of moderately dynamic markets where change occurs frequently and relies on existing knowledge;
- non-linear/iterative in case of high-velocity/dynamic markets where change is non-predictable and relies on new knowledge that is created specifically for the purpose of the situation.

What is worth noting here is that organizational transformation is a reaction to environmental changes (actual or forecasted/perceived) but can also be a result of organizational experience about exploiting its own resources/capabilities, learning and striving for their more effective usage.

These arguments constitute a shift in the understanding of the nature of dynamic capabilities as compared to the view of Teece et al.'s [1997], according to which dynamic capabilities emerge only in the face of rapid changes. What follows from the quoted definitions is that dynamic capabilities are about changes in resource base alteration, i.e., a change in resources and capabilities via routines, processes and capabilities. Wang and Ahmed accurately conceptualize the hierarchy of resources and capabilities in the organization [2007, pp. 35–36] which is presented in figure 2:

- resources are zero-order – they are fundamental for a firm's existence and lasting, a base upon which organizational routines, processes and capabilities can be developed; they can be a source of temporary competitive advantage if they meet the VRIN criteria;
- operational and functional capabilities constitute a first-order in the organizational hierarchy – they are necessary to renew a firm's competitiveness or to sustain existing income streams; they convey the ability to allocate resources in order to achieve an objective;
- strategic capabilities (core competencies) being a second-order in the organizational hierarchy – integrate resources and lower-order capabilities with reference to the adopted strategy. They are crucial for a firm's competitiveness in a given moment in time;
- dynamic capabilities are third-order – depending on the degree of environmental dynamism, and are built on cyclical strategic renewal of the resource base as well as of strategic capabilities, i.e., they influence the pace of their alteration.

FIGURE 2. Hierarchy and relationship between resources, an organization's capabilities, and dynamic capabilities



Source: own elaboration based on Wang and Ahmed [2007], pp. 35–36.

What stems from the aforementioned reasoning is that dynamic capability is the organization's ability to transform resource base in an indirect way through strategic, functional and operational capabilities as a response to environmental changes. A given way of allocating and coordinating resources is subject to incremental or revolutionary changes on each strategic level. What is important to note is that the emergence of dynamic capabilities relies on change of single, few, or all of resources and capabilities, depending on needs. Alteration of lower-order capabilities does not mean change of higher-order capabilities. In turn, alteration of higher-order capabilities requires change of lower-order capabilities. These findings are illustrated in figure 3.

The aforementioned understanding of dynamic capabilities is of fundamental significance. What follows is that the essence of dynamic capabilities lies in changing how resources, routines, processes and capabilities are organized. This may be compared to combining puzzles. Transformation that changes the ways of combination affect the usefulness of those puzzles for a business. the emergence of a dynamic capability may be identified by comparing the state of organizing activities, resources, routines, processes and capabilities in the period t_2 with reference to the state in the period t_1 . The unveiled difference means dynamic capability operation.

Co-citation analysis made by Di Stefano et al. [2010] sheds some light on the research domain being discussed and puts in order work on dynamic capabilities. It helps to organize the multiplicity of studies that often deal with different issues. On the basis of 225 articles published in the period 1995 to 2007 on dynamic capabilities, it was possible to identify four factors around which studies were focused, and thus to construct a multidimensional, two axis space. These two continuums are anchored by an internal-external perspective

competitive advantage is built upon a cyclical transformation of resources, processes and capabilities as a response to environmental changes. Accordingly, transformation is possible, *inter alia*, due to cooperation and agreements with market and non-market participants (stakeholders, non-governmental organizations, consultants) [Collins and Hitt, 2006; Lei et al., 1996]. In this sense, the dynamic capabilities perspective links the *inside-out approach* of the resource-based view and elements of the *outside-in approach* of the strategy, organizational economics and industrial organization fields that concentrate on organizations' exogenous factors such as industrial conditions [see Teece et al., 1997]. This transformation results in the creation of distinctive resource base and set of capabilities. Day and Wensley [1988] name this phenomenon as the SPP paradigm (Sources – Positional advantage – Performance), according to which firm's distinctive resources and capabilities determine its positional advantage (distinction, cost advantage or concentration).

Dynamic capabilities depend on an adopted evolutionary path and may differ not only between industries but also between firms within an industry resulting in the creation of isolating mechanisms [Wernerfelt, 1984]. Competing between companies in the long-term may thus be compared to dynamic capabilities competing, i.e., competing on the basis of the ability to adapt to environmental changes.

Despite the fact that dynamic capabilities often lead to the improvement of an organization's competitive level, they cannot be identified solely with operational efficiency. From the literature review, it can be derived that operational efficiency is achieved when organizational change is based on incremental improvements of everyday activities and resources. However, organizational changes are also of greater scope – relying on qualitative changes, not limited to operational/functional activities – thus, adoption of a holistic view about the future of organization and its potential evolutionary paths. The aforementioned discussion permits the conclusion that dynamic capabilities differ between themselves with reference to their dynamism. Ambrosini et al. [2009] distinguish incremental, renewing and regenerative dynamic capabilities which resemble prevailing assumptions about a difference between operational effectiveness and strategic positioning [Porter, 1996]. Changes in the long-term performance of the organization derive therefore not from incremental operational improvements, but rather from transforming resources and capabilities in a way that enables combining and performing similar activities in a different way than rivals or performing different activities [Porter, 1996]. Accordingly, incremental dynamic capability leads to increased operational efficiency, while renewing and regenerating – through implementing major organizational changes – lead to a change in how the organization performs activities or its business.

On the basis of the above discussion, the following definition of dynamic capability is here formulated by the author – it is a *company's ability to transform resources, processes and capabilities at its disposal to address a rapidly or moderately rapidly changing environment.*

Although dynamic capabilities may constitute a unique way of value creation (and of an isolating mechanism), they may also result in creating core rigidities and competency trap [see Wang and Ahmed, 2007, p. 36]. Engaging in building distinguishing features that do not match customer needs or environmental changes may end up with transformed resources and capabilities that are of limited use in new competitive conditions. Similarly, engaging in the development of capabilities with divergent goals may negatively affect an organization's performance and progress.³

As Eisenhardt and Martin [2000] argue, possessing VRIN resources and capabilities as well as dynamic capabilities development, is a necessary but not sufficient condition for achieving and sustaining competitive advantage. The positive impact of dynamic capabilities on a company's performance may be disturbed, if partial competitive advantages generated by one dynamic capability are neutralized by competitive disadvantages generated by other dynamic capability [see Ray et al., 2004].

Conclusion and Future Research Directions

This paper provides an overview of the literature on, and explores, dynamic capabilities which can enable or impede adaptation to a rapidly changing environment. The findings were presented concisely by providing the essence of dynamic capabilities. It was noted that approaches to business strategy and sources of competitive advantage have been evolving in the literature together with changes in the business environment. As a result, two approaches to analyzing business strategy have appeared:

- external perspective represented by the strategy field (positioning school),
- internal perspective – represented by the resource-based view.

The positioning school relies on an environmental analysis which associates strategy with exogenous factors, i.e., decision-making is based on a process of identifying drivers of intra-industry competition and its corresponding barriers. As it turned out, this analysis had insufficiently explained the sources of difference in competitiveness and profitability between firms. The search for an answer has given rise to the resource-based view. However, RBV encounters conceptual problems in explaining business success and failure in a dynamically changing environment. It has been criticized for viewing single firms, taken out of the industrial context, and for inflexibility with respect to the topic of deterioration of the value of resources over time. As a response to this problem, the dynamic capabilities-based view has emerged. It has been attracting increased attention in the recent years by linking two perspectives of the firm – internal and external.

The topic of organizational changes, as a response to unstable environments, seems to gain importance in management theory and practice. Dynamic capabilities not only enable a firm to adapt to a changing environment but also, if repeated and improved

cyclically, may be a source of achieving and re-gaining competitive advantage. In summary, based on the quoted literature, the following conclusions emerge:

- resources are necessary for business activity and indispensable for an organization's strategy execution but they rarely are a sufficient condition for achieving and sustaining competitive advantage; that is why resources, especially intangible ones, constitute a basis for creating static and dynamic organizational capabilities;
- strategic hierarchy of capabilities involves three types: operational, functional and strategic;
- (strategic) capabilities are created in the same way as (core) competencies;
- core competencies differ from strategic capabilities with respect to scope and purpose;
- the essence of dynamic capabilities lies in changing ways of allocating and combining resources, processes and capabilities that aim at increasing productivity and thus – value creation potential;
- dynamic capabilities involve creation of new resources/capabilities or sets of resources/capabilities;
- dynamic capabilities distinguish features of each organization and enable firms to sustain or improve their competitive position by reacting to environmental dynamism; consequently, they may take linear or non-linear/iterative form, depending on the pace of market dynamism (incremental, renewing, regenerative);
- dynamic capabilities do not constitute a sufficient condition for competitive advantage, as they may also be a source of rigidity and may lead to a competency trap.

Based on the literature review, a number of themes for further research emerge. First and foremost, it is still unclear how dynamic capabilities are created, how they evolve, and how they change over time. Examining the key factors that precede the emergence, development and alteration of a firm's dynamic capabilities seems to be attractive avenue for further research in this area and may bring important practical implications. From a theoretical point of view, investigating factors that determine dynamic capability's emergence and its evolution constitutes a promising area of research. In this context, a common conceptual ground with the field of innovation and dynamics of inter-firm cooperation and cooperative networks [see Gnyawali and Madhavan, 2001] can be established. More specifically, referring to dynamic resources flows is an especially relevant and intriguing direction of potential research.

Dynamic capabilities open a new way for unified theoretical stabilization of the creative organization theory. Peteraf and Maritan [2007] note that tight links between dynamic capabilities and other research streams, combined with their separate discipline traditions, suggest the potential presence of unexploited complementarities and that dynamic capabilities tend to provide “a vehicle for bringing two sides together, with potential for synergy” [p. 34]. They may therefore address both content and process issues and, as such, may be helpful in breaking down the division between mainstream and evolutionary economics [p. 35]. What is more, as Graetz and Smith [2010] emphasize, existing change

philosophies provide the reader with metaphors and change management heuristics, full of ambiguity, contradiction and incoherence [p. 139], among which one could enumerate traditional approaches such as population ecology, institutional, rational, contingency, cultural and systems philosophies. Traditional approaches to strategic change, in turn, describe this phenomenon as highly structured and planned, relying on rational models and with clearly delineated steps [see more in Graetz and Smith, 2010]. In this sense, the dynamic capabilities perspective not only builds a common theoretical foundation for less structured approaches to organizational change but also for competing, but complementary, narratives of change (characterized by ambiguity and innovation) and continuity (characterized by stability and routines).

From the practical point of view, knowledge about the pattern of dynamic capabilities with respect to market dynamism and path dependence would enable companies to structure the process of strategic alteration intertwined with fuzzy and ambiguous events. In this sense, the dynamic capabilities framework aspires to be a theory that is able to explain the linkages between internal and external perspective within the strategic management field.

Notes

¹ *Strategic Management Journal*, 2000, Vol. 21, Special Issue 10–11, The evolution of firm capabilities; *Strategic Management Journal*, 2003, Vol. 24, Special Issue 10, Why is there a resource-based view? Toward a theory of competitive heterogeneity; *British Journal of Management*, 2009, Vol. 20, *Special Issue*, The Practice of Dynamic Capabilities: Theory Development and Research; *Industrial and Corporate Change*, Vol. 19, Issue 4, Special Section, Dynamic Capabilities and Beyond.

² This view is consistent with previous conclusions pertinent to strategic hierarchy. Resource alteration is therefore done *indirectly* – through processes.

³ Grewal and Slotegraaf's (2007) quantitative study showed that coordination of divergent objectives of two capabilities (store management and merchandising management), when one aims at maximizing productivity, customer satisfaction and sales, and the other strikes for minimization of inventory, purchasing and material costs, are not possible to realize in case of limited resources (time or number of employees).

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