MORPHOLOGY OF THE ECONOMIC CATEGORY ‘DYNAMIC CAPABILITIES’

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Over the last years, the dynamic capabilities concept has become increasingly popular in the economic theory and practice. This is due to the fact that in the present day economic reality it is essential to maintain the sustainability of a firm’s competitive advantage rather than adhere to resources that are hard to imitate. Obviously, it is necessary to create unique and difficult-to-imitate dynamic capabilities which can ensure the “continual creation, expansion, updating, safeguarding and protection of the applicability of the business entity unique assets base”¹. Dynamic capabilities have a multi-layer, complex core which makes the assessment and management of said capabilities a difficult task. This in turn puts a limitation to the practical applicability of the concept. One of the main problems arises from the fact that dynamic capabilities exist at several hierarchical levels which form various deep-seated layers depending on the extent of the internal change they have incurred. Another aspect of the herein discussed concept is connected to the complicated interrelatedness of its building elements which acts as a deterrent in making the concept operable. Hence, we think that elucidating these fundamental questions is an important first step towards the applicability of the said concept.

In this relation, the purpose of the present article is to define and analyze the morphology which describes the structure and interrelations between individual levels and elements of the dynamic capabilities.

1. Concept and dynamic capabilities basic characteristics

The dynamic capabilities concept is comparatively new in the economics theory and practice. It sprang in the early 90s of the 20th century as an evolutionary continuation of the resource approach, seeking to overcome its static nature as its main deficiency. In the field of science, the dynamic capabilities approach is represented as an interpretative perspective of existing conceptual and empirical knowledge, associated with the opportunities to win and maintain a competitive advantage. This approach aims to identify the capabilities which can be seen as a resource towards the sustainability of a firm’s competitive advantage but it has also the task to explain how the said dynamic capabilities create successful resource configurations. In a most general sense we can say that dynamic capabilities determine a firm’s potential to manage the dynamics in the competitive advantage.

Many authors\(^2\) have contributed to the theoretical and empirical development of the DC concept, enabling to revise, extend and clarify various aspects of this concept in time. Despite the spate of proffered opinions, the problem of defining the dynamic capabilities still remains a hard nut to crack. This in turn, has put some serious restraints on the process of their evaluation and management. Based on definitions of dynamic capabilities (DC) found in related literature we can attempt to formulate the following definition: „Dynamic capabilities refer to a firm’s ability to purposefully create patterns of routines over time, which, based on the acquired knowledge, ensure a strategic flexibility that can help maintain a correspondence between the resource base and the external environment, and thus manage the competitive advantage dynamics.” In terms of the above definition, the following basic characteristics of the dynamic capabilities can be set out:

1) Dynamic capabilities are firm-specific, which means that they are not a chance solution but a product of a purposeful human activity. They must be created inside the firm as no market exists for such a commodity, i.e. they are built rather than bought in the market. DC can be acquired over time on the basis of experience, investments made and knowledge accumulated. They are developed and embedded in the firm’s performance and evolve alongside it. Their emergence depends on the firm’s history and progress patterns.

2) Dynamic capabilities are being manifested in patterns of routines which could be integrated into the organizational processes and systems or they could be built into management capacity. Said patterns can be both formalized and non-formalized.

3) Dynamic capabilities ensure the compliance of the resource base with the changing characteristics of the external environment. They determine a company’s capacity to develop its resource base thus creating a new value.

4) By changing the resource base, dynamic capabilities reveal new strategic alternatives and paths for development, which translate into a firm’s strategic flexibility. This way, the firm is able to react in a timely fashion to the new opportunities and threats arising from the environment and also create external and internal change.

5) Managing the dynamics of the competitive advantage (creation, safeguarding, updating and if needed, destruction of existing competitive advantage) is realized through modification of the resource base. This is how dynamic capabilities affect the competitive advantage and the firm’s economic performance indirectly, as a result of which their impact is not always positive. It is even possible to affect performance negatively providing that dynamic capabilities have been inadequately developed. This is due to the fact that dynamic capabilities have a direct impact on the firm’s economic performance as their creation, development and usage generates expenditure. Therefore, in order to achieve the firm’s strategic targets, dynamic capabilities need to be properly identified whereas forecast benefits and collectable costs shall be evaluated and compared.

6) Dynamic capabilities are unique and inimitable of any business entity or organization. The above uniqueness arises from the specific combinations of their

elements. It is therefore worth saying that dynamic capabilities demonstrate similarities in the key characteristics of organizations and specifics in terms of details.

7) Dynamic capabilities seem to be vital in turbulent environment though they tend to develop in response to various circumstances, not just environmental changes. They ensure the long-term survival of the company and its progress.

2. Hierarchies (Levels) of Dynamic Capabilities

Dynamic capabilities feature a complex underlying structure and content. In view of the degree of internal change they induce, we can distinguish among several distinctive orders or levels of capabilities which in fact create various deep-seated layers. In this regard, many authors share the opinion, that there exists a hierarchy of dynamic capabilities, which is reflected in literature in a number of classifications where said capabilities are referred to a given order or level. (Table 1).

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Zero</th>
<th>First</th>
<th>Second</th>
<th>Third category</th>
<th>Meta capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collis</td>
<td>1994</td>
<td>Functional capabilities</td>
<td>Second category</td>
<td>Third category</td>
<td></td>
<td></td>
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<tr>
<td>Danneels</td>
<td>2002</td>
<td>Capabilities of first order</td>
<td></td>
<td>Capabilities of second order</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter</td>
<td>2003</td>
<td>Zero level capabilities</td>
<td>First level capabilities</td>
<td>Higher level capabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zahra, Sapienza, Davidsson</td>
<td>2006</td>
<td>Core capabilities</td>
<td>Dynamic capabilities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Andreeva and Chaika</td>
<td>2006</td>
<td>Functional capabilities</td>
<td>Key capabilities</td>
<td>Dynamic capabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pavlov and Sawy</td>
<td>2006</td>
<td>Basic sub-processes</td>
<td>First level capabilities</td>
<td>Second level capabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wang and Ahmed</td>
<td>2007</td>
<td>Resource base</td>
<td>First level</td>
<td>Key capabilities</td>
<td>Dynamic capabilities</td>
<td></td>
</tr>
</tbody>
</table>

3 Collis, D. J.; Winter; Pavlou and Sawy; Wang and Ahmed; Ambrosini, Bowman, Collier et al.
4 Collis, D. J. (1994), Research Note: How Valuable are Organizational Capabilities?. Strategic Management Journal, 15: (143–152).
Taking into consideration the positions of these and other authors, the present analysis gives reasons to conclude that dynamic capabilities exist at three clearly distinctive levels which could be represented as a pyramid of capabilities (Fig. 1). The sum total of these levels accounts for the firm’s entire capacity to achieve congruence between the resource base and fluid market conditions.

Fig. 1. Pyramid of capabilities

The pyramid of capabilities reflects the individual levels of dynamic capabilities in view of the degree of internal change which they induce.

The zero level capabilities are the resource base which allows the firm to earn a living in the present. It encompasses all resources and capabilities by means of which the organization pursues its targets and solves ongoing problems. In this respect, Collis\(^\text{12}\) observes that these are functional capabilities which are essential for running the basic business processes and for the survival of the organization. Andreeva and Chaika\(^\text{13}\) argue that capabilities at this level can be found in most of the enterprises in the respective industry sector. In our opinion, the development of the existing resource base is determined by the company history, the knowledge and learning acquired, past decisions and progress made, which makes them specific for each individual organization.

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\(^{12}\) Collis, D. J. (1994), Research Note: How Valuable are Organizational Capabilities?. Strategic Management Journal, 15: 143-152.

\(^{13}\) Andreeva, T. and Chaika, V., 2006, Dynamic Capabilities; What They need to be dynamic? Discussion paper, Institute of Management, St. Petersburg State University, p. 6.
or company. As a result, the resource base may contain (albeit on a short term basis) rare, valuable, difficult-to-imitate indispensable resources which can be the very source of competitive advantage. More importantly, the dynamic capabilities allow the organization to modify and create new strategic opportunities. It is worth noting that these cannot exist outside the resource base, as they can be revealed only through it. Regardless of the multiple terminology used by researchers (e.g. capabilities of zero or first level, basic sub-processes, functional, operational, static capabilities, resource base), this level embraces solely operational, not dynamic capabilities, which allow the organization or firm to successfully perform its economic and production operations (supply, production, marketing, finance) and management functions (planning, organization, management and control). By exerting pressure on the resource base dynamic capabilities indirectly affect the level of the firm’s competitiveness.

First order capabilities allow for gradual change in the firm’s resource base. These are dynamic capabilities which are active even in a stable environment. As external conditions do not require radical change, companies need to constantly improve and refresh their resource base to be able to retain and adapt their competitive advantage. In fact, these capabilities help the company adapt to the market requirements but they do not transform the existing resource base. Ambrosini, Bowman and Collier¹⁴ share the same view, defining dynamic capabilities of the first order as incremental, since they relate to processes associated with gradual changes in the firm’s resource base. According to these authors, dynamic capabilities of this order are recurring and embedded in the firm’s routines, hence they can be defined as stable models of collective work. Amit and Schoemaker see this type of capabilities as “recurring processes or product innovations, production flexibility, reaction to market change and short development cycle”¹⁵.

Dynamic capabilities of second order apply to processes of continual renewal, modification and expansion of the resource base, which aim to sustain the competitive advantage under conditions of change. They call for transformation of the existing resource base in the form of new resource configurations. Capabilities of this level are defined as “creative and entrepreneurial”¹⁶, as the firm’s capacity to develop new strategies in order to outrun its competitors by reconfiguring its resources is entirely dependent on their development. In this relation Wang and Ahmed¹⁷ believe that this level comprises a set of the firm’s resources and competences that are strategically important, as they integrate the resources and capabilities in line with the organization’s strategy for development.

¹⁶ Collis, D. J. (1994), Research Note: How Valuable are Organizational Capabilities?. Strategic Management Journal, 15: 143-152.  
An important feature of the dynamic capabilities is that these can be evident both in a stable environment where the firm alone, without pressure from the outside, triggers an external change and in situations where the dynamic external environment instigates a reaction from the organization, aiming to maintain its competitive advantage. According to Andreeva and Chaika this level encompasses “the key capabilities which formulate the firm’s key competences necessary to maintain its competitive advantage”\(^{18}\). “These second level dynamic capabilities are developed and embedded within the firm’s routines as they progress through time via the accumulation of experience and specific investments.”\(^{19}\) Sustaining these dynamic capabilities is an essential requirement for any firm in securing its resource base which is a guarantee for its normal operation.

Generally in literature dynamic capabilities of the first and second category are perceived as one level since the basic function of either of them is to change the firm’s resource base. However, it is worth noting that even though they reconfigure the resource base they do not affect the way in which the said change is generated.

**Third level** capabilities are these which help modify or change the dynamic capabilities. These are the capabilities which change the way the resource base is modified. External conditions which provoke these capabilities are generally highly dynamic. They are evident in those cases where there is a great disparity between the firm’s resource base and the requirements of the external environment but also in cases where the organization is seeking to create new conditions in the competitive environment. Regenerative capabilities “allow the firm to make the transition from previous routines of incurring change towards new dynamic capabilities”\(^{20}\), which correspond to the new conditions.

**Table 2**

<table>
<thead>
<tr>
<th>№</th>
<th>Level</th>
<th>External environment</th>
<th>Frequency</th>
<th>Degree of internal change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Adaptive</td>
<td>stable</td>
<td>continual</td>
<td>low</td>
</tr>
<tr>
<td>2.</td>
<td>Transformation</td>
<td>dynamic</td>
<td>periodical</td>
<td>high</td>
</tr>
<tr>
<td>3.</td>
<td>Regenerative</td>
<td>unidentified</td>
<td>if necessary</td>
<td>radical</td>
</tr>
</tbody>
</table>

It can be said that dynamic capabilities of the herein discussed levels perform various functions depending on the degree and pace at which the resource base is being changed. (Table 2).


3. Component factors of dynamic capabilities

Dynamic capabilities present a complex, integrative construct built of interrelated but distinguishable elements. Their complexity as a real phenomenon arises from a rather complex mutual interdependence of their constituent parts. More importantly, the evaluation of their level is placed at the very basis of the concept’s practical applicability. In order to overcome “the abstract and recursive nature” it is essential to identify the principal components constituting the above economic category. However, a commonly adopted opinion regarding their number, composition, scope and content is not to be found in specialized literature.

In order to systematize component factors of dynamic capabilities being in the focus of previous research we have reviewed a number of approved publications in this area. Twelve basic elements have been identified, see Table 3.

Table 3
Component factors of dynamic capabilities explicated in previous research publications

<table>
<thead>
<tr>
<th>Elements</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capability to identify and capitalize on favourable opportunities</td>
<td>Teece (2007); Harreld et al. (2007); Bazerman and Watkins (2004); Kuuuluvainen, A.; Daneels (2002); Helfat and Peteraf (2003); Jensen (2006); Litz and Klinecki (2005); Lubatkin, Simsek, Ling and Veiga (2006); O’Reilly and Tushman (2007) et al.</td>
</tr>
<tr>
<td>Capability to reconfigure</td>
<td>Teece (2007), Teece (1997); Eisenhardt and Martin (2000); Madsen, E.L. (2010); Menon and Mohanty (2008); Ambrosini and Bowman (2003); Verona and Ravasi (2003); Rindova and Taylor (2002); Zollo and Winter (2002); Daneels (2002) et al.</td>
</tr>
<tr>
<td>Co-ordinating capability</td>
<td>Pavlou and Sawy (2011); Pavlou ();Teece (1997); Menon and Mohanty (2008); Protegerou, Caloghirou and Lioukas (2011); Ambrosini and Bowman (2003); Jia-Jeng Hou (2008) et al.</td>
</tr>
<tr>
<td>Integrative capability</td>
<td>Pavlou and Sawy (2011); Teece (1997); Eisenhardt and Martin (2000); Jia-Jeng Hou (2008); Protegerou, Caloghirou and Lioukas (2011); Menon and Mohanty (2008) et al.</td>
</tr>
</tbody>
</table>

Further analysis shows that the available literature abounds in both contradictory and overlapping views when dynamic capabilities constituent components are discussed. Basic problems associated with their identification can be attributed to the following: 1) use of different terms to represent uniform elements and vice versa – different elements are signified by the same term; 2) authors’ perceptions of analyzed components differ; 3) there are conflicting views with regard to the number and composition of elements; 4) a significant group of authors assume wrongly that the nature of dynamic capabilities is nothing less than their efficiency.

Trying to overcome the above mentioned deficiencies we reckon that it is better to ignore the ‘labels’ and look at the discussed components in more depth. In view of existing differences as to their number, composition, scope or content we suggest a more detailed approach via breaking them down into constituent parts. (see Table 4).

### Table 4

<table>
<thead>
<tr>
<th>Descriptors of the component factors of the dynamic capabilities construct, explicated in previous research studies</th>
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<tbody>
<tr>
<td><strong>element</strong></td>
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<tr>
<td>----------------</td>
</tr>
<tr>
<td>Absorptive capability</td>
</tr>
</tbody>
</table>

23 Wang and Ahmed (2007); Foss, L., Iakovleva, T., Kickul, J., Ofteadal, E. and Solheim, A (2010); Protegerou, Caloghirou and Lioukas (2011); Pettus, Kor and Mahoney (2007); Borch and Madsen (2007); Griffith et al. (2006); McKelvie and Davidsson (2006).
Table 4 illustrates the output variables as explicated in previous studies, which characterize the component factors of dynamic capabilities. Preliminary analysis has made it possible to eliminate repetitions while output variables referring to the same aspects of dynamic capabilities have been grouped into separate categories. Although various authors have defined a plethora of different components, the study of output variables argues that from a content point of view, they largely overlap and can be grouped into four main categories – absorptive, integrative, coordinating and innovative capabilities. In our opinion, these are the basic component factors which constitute the complex dynamic capabilities construct.

**Absorptive capabilities** refer to the absorptive capacity of the firm: 1) to recognize the value of new favourable opportunities of the external environment 2) to acquire and attract resources that are important for the firm. The higher the absorptive capability of the firm the better its ability to identify emerging market and technological advances which can be seen as a prerequisite for the creation of a new competitive advantage and acquisition of specific tangible and intangible assets, financial and human resources which can ensure the necessary potential to create and develop sustainable competitive advantage. The differential absorptive capabilities across firms is exhibited in the following aspects: 1) learn and acquire knowledge from various partners and institutions; 2) conduct own research and experiments; 3) careful examination and evaluation of new technologies and market opportunities; 4) possess a high level of

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absorptive capability</td>
<td>Encouraging feedback; Taking decisions in work groups; Dissemination of information in heterogeneous teams; Successful integration of existing knowledge with newly-acquired information; Successful use of external and internal information in specific applications; Effective team work; Clear understanding of tasks and responsibilities by every member of the team; Awareness as to the fact which member of the group has specialized knowledge and skills in relation to the assigned job; Subordination of individual to group targets; Coordinated actions by team members; Management of complementarity of resources and tasks; Realization of synergy between resources and tasks.</td>
</tr>
<tr>
<td>Coordinating capability</td>
<td>Harmonization of the work of every team member with remaining staff; Activities within the firm are co-ordinated; Organization reports and projects are co-ordinated; Innovative redistribution of available resources; Distribution, re-distribution, combination and re-combination of resources and capabilities; Fair distribution of organization resources; Distribution of resources over time; Employment of the right staff across firm specific divisions or units; Assigning the right task to the right person; Assigned tasks are in accordance with acquired qualifications and skills; Staff experience and skills should be adequately exploited in the work process; Organization and management of staff work, etc.</td>
</tr>
<tr>
<td>Innovative capability</td>
<td>Innovative problem solving; Finding new solutions; Effective transformation of available information into new knowledge; Development of new capabilities; Launching new products and services; Product modifications and enhancements; Process improvement; Structural innovations; Effective use of newly acquired knowledge in creating new products, technologies, and business models; Development and implementation of complementary technologies; Development of new products and services; Development of new production methods; Looking for new and unusual applications; development and management of processes which shape the development of organizational processes; Replicating systems and processes; Speed of the innovation process, etc.</td>
</tr>
</tbody>
</table>
knowledge and skills in areas relevant to applying the new technologies; 5) recruitment of competent and qualified staff; 6) acquisition of tangible and intangible assets; 7) gaining financial resources.

**Integrative capabilities** embrace the firm’s capacity to distribute and assimilate new resources in the business process. The rate and efficiency of this process depend on the common knowledge about the utility and the need to include new elements in the system. This can be explained with the fact that the execution of any of the firm’s activities requires certain collective logic and collective understanding of patterns of interaction. The integrative capabilities are exhibited in: 1) established practices for product development based on accumulated experience aiming to create higher value; 2) the processes of taking strategic decisions where managers integrate their personal experience to make a strategic choice; 3) acquiring knowledge from external sources, combining interdisciplinary knowledge; 4) distributing newly-acquired knowledge in different teams; 5) adaptation of newly-recruited staff; 6) training staff in new technology. Integrative capabilities account for the staff’s ability to adapt quickly to technological and market changes. Efficient communication networks within the firm can be seen as a prerequisite for maintaining strong integrative capabilities. Further on, organizations with strong integrative capabilities have better synergy of resources and tasks, better asset turnover; they are faster to react to new situations and quicker to satisfy their customers’ needs.

**Coordinating capabilities** relate to the firm’s ability to coordinate and create purposeful interaction between its resources and routines by following a coordinated plan of action. The coordinating capabilities are exhibited in the following main areas: 1) degree of synchronization in staff operations; 2) process coordination; 3) coordination of reports, targets, strategies and projects. Strong coordinating capabilities can help cut down on the firm’s transaction costs, learn more about control objectives and replace the more costly operations in one routine with cheaper ones in another.

**Innovative capabilities** refer to the firm’s ability to create new and/or replicate new products, develop new markets, generate new technologies, develop and successfully implement new patterns of activities or new routines. Replication refers to the firm’s ability to navigate transfer processes. It manifests the organization’s capacity to replicate processes, models, systems and resources from one part of the firm into another or existing into new markets. Innovative capability effectively links a firm’s inherent innovativeness to marketplace-based advantage in terms of new products and innovations. Thus, innovative capability explains the linkages between a firm’s resources and capabilities with its product-market. Organizations which have strong innovative capabilities tend to react more quickly and more adequately to market changes and hone the environment by instigating a market change.

These four factors are correlated and mutually enhancing though conceptually distinct. Still they can be further conceptualized as good practices. Each of them comprises sub-dimensions which can suffer the direct and purposeful impact of managers in order to sustain an adequate resource configuration which in turn will lead to a sustainable competitive advantage.
In view of the above, we can conclude that dynamic capabilities exist at three distinct hierarchical levels which translate into various underlying layers. Their uniqueness can be seen in the specific combination of their constituent elements – absorptive, integrative, coordinating and innovative capabilities (see Fig. 2).

Fig. 2. Morphology of Dynamic Capabilities

**Conclusion**

In the present day economic reality only a firm which is highly adaptive to change is likely to survive. There is no doubt that if a company wishes to maintain a sustainable competitive advantage on a long term basis it must be able to manage its dynamic capabilities in a purposeful and balanced manner. This suggests that dynamic capabilities enable a firm to continually create, safeguard, update and, if necessary, destroy its existing competitive advantage. Thus the firm is able to maintain a flexible congruence between its resource base and external conditions or model the very environment by instigating a market change.

The present article is dedicated to morphology describing the structure and interrelations between individual levels and components of dynamic capabilities. Based on theoretical grounding and studies of various sources, we have proposed a definition and formulated the basic characteristics of dynamic capabilities. Further, hierarchies of dynamic capabilities have been differentiated as adaptive, transformational and regenerative. We have discussed in detail the main descriptors which have led us to the conclusion that component factors of dynamic capabilities fall into four distinct

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24 Charles Darwin.
mutually enhancing and complementing each other capabilities, i.e. absorptive capability, integrative capability, coordinating capability and innovative capability.

In conclusion, the problem of defining the morphology of the dynamic capabilities construct is of great significance towards effective capabilities development of Bulgarian industrial enterprises as it identifies levels and component factors of dynamic capabilities and sheds light on their complex interrelatedness. We also believe that the herein discussed morphology can be the basis for theory building, presenting methods for evaluating the levels of dynamic capabilities. When applied to Bulgarian firms, the concept of dynamic capabilities is more likely to lead to better company performance when particular capabilities are developed in line with the company’s strategic choice.

MORPHOLOGY OF THE ECONOMIC CATEGORY OF DYNAMIC CAPABILITIES

Assist. Prof. Monika Mihaylova

Abstract

The present article is dedicated to the morphology describing the structure and interrelations between the individual levels and elements of dynamic capabilities. There are mentioned some of the major debatable aspects, ensuing from the complex and multi-layer nature of this economic category. On the basis of a study of a number of bibliographical sources there are drawn the definition and main characteristics of dynamic capabilities. There are differentiated three clearly delimited hierarchical levels of existence – accommodative, transformational and regenerative. There is given a detailed analysis of the main descriptors, on the basis of which there is drawn the conclusion that the elements constituting dynamic capabilities can be differentiated in four distinct, but mutually complementary and reinforcing groups, namely – absorptive, integrative, coordinative and innovative capabilities. For a conclusion there is presented the morphology of dynamic capabilities, revealing the interrelations between the individual levels and elements.

Keywords: dynamic capabilities, competitive advantage, competitiveness of the enterprise.