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**DYNAMIC CAPABILITIES:
WHAT THEY NEED
TO BE DYNAMIC?**

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Strategic management theory developed dynamic capabilities concept aiming to explain how organizations can achieve and sustain the competitive advantage in the continuously changing environment. We suggest that this concept, though being extremely powerful, still needs elaboration along two important questions: what are the origins of the dynamism of these capabilities and what managers can do in practice if they want to develop them. In this paper we aim to address these issues. Bridging strategic management and change management, we introduce a concept of «organizational change capability» as a constituent of any dynamic capability. Further on we discuss key elements of change capability, propose a number of managerial tools that can contribute to its development and illustrate our arguments with a case study.

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INTRODUCTION¹

Dramatic and continuous changes of business environment that contemporary companies face regardless of their size and location pose a number of problems that have to be addressed by academics and practitioners. During the last decades strategic theory discussion was focused on the search for the sources of sustainable competitive advantages based on a firm's unique organizational capabilities that allow receiving Schumpeterian rents even in the similar environments (Barney, 1991; Prahalad & Hamel, 1990; Nelson, 1991). Under conditions of continuously changing environment the organizational ability to sustain and renew its competitive advantage becomes most important.

This idea was developed into the dynamic capabilities concept, which fundamentals were introduced in the works of Nelson (1991), Kogut and Zander (1992), Amit and Schoemaker (1993), Teece and Pisano (1994), Henderson and Cockburn (1994) and Teece et al. (1997). Intensive discussion of this concept continues in the recent publications (e.g., in Blyler & Coff, 2003; Zott, 2003; Prieto et al., 2005; Pavlou & El Sawy, 2006). Teece et al. define «dynamic capabilities» as «the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments» (Teece et al., 1997, p. 516). Despite this concept provides important insights into creation of competitive advantage, it still has «blank spaces», especially in terms of its practical application. For example, Zollo and Winter remark that Teece et al. definition «gives the understanding why the company needs the dynamic capabilities and how they work, but not the answer where they come from» (Zollo & Winter, 2002, p. 340).

We suggest that there are two important issues that have not received enough attention in contemporary research on dynamic capabilities and need to be addressed for the sake of the further development of the concept and its utility. These questions are: (1) what is/are the source/s of the organizational capabilities' dynamism? (e.g., what distinguishes dynamic capabilities from non-dynamic ones?); and (2) how managers can develop dynamic capabilities in their organization? Thus this paper is aimed to address these issues.

Our discussion is organized into five sections. At the beginning we offer a brief review of the dynamic capabilities' literature, looking for the essence of the concept, and present our vision of it. In the second section we introduce an organizational change capability as being a key ingredient

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of any dynamic capability. In the third section we approach the question how an organization can develop its change capability, resulting in creation of dynamic capabilities. Forth section presents case study illustrating our ideas. Finally, we conclude with some questions that can be addressed in the future research.

DYNAMIC CAPABILITIES: BRIEF REVIEW OF THE CONCEPT

To approach dynamic capabilities concept, we can start by confronting this notion with the other types of organizational capabilities. For example, Collis (1994) offers capabilities' classification that can serve the discussion of the essence of dynamic capabilities. He introduces the three-level hierarchy of organizational capabilities. The first level is functional and includes capabilities that are essential for a company's survival and maintenance of the main business processes. In Winter's terms these are zero-level capabilities or «the how we earn a living now» capabilities (Winter, 2003). For example, these are delivery operations or quality control functions.

The second level is directly related to dynamic capabilities since it reflects the idea of the necessity for dynamic improvement of business processes. Amit and Schoemaker regard this type of capabilities as «repeated process or product innovations, manufacturing flexibility, responsiveness to market trends, and short development cycles» (Amit & Schoemaker, 1993, p. 35). This view is close to the definition of Teece et al. as it considers the dynamic component.

The third level in Collis's capabilities' hierarchy is creative or entrepreneurial level that includes capabilities related to a firm's ability to develop novel strategies faster than competitors through the recognition of different resources' value. This recognizing has to be at least of the same speed as environmental change or even faster. We argue that it is difficult to distinguish between Collis's second and third levels of capabilities as dynamic capabilities also include entrepreneurial aspect related to the need for rapid change (searching for «new combinations» and «creative distraction» according to Schumpeter (1934)).

In the works of Eisenhardt and her colleagues dynamic capabilities are conceptualized as «combinations of simpler capabilities and related routines, some of which may be foundational to others and so must be learned first» (Eisenhardt & Martin, 2000, p. 1116). This notion also refers us to a certain hierarchy of capabilities. Example provided by Brown and Eisenhardt (1997) shows that the dynamic capability of the multiple product development consists of three simpler capabilities: single product

development, probing the future and linking routines from one product development project to another. Thus, according to Eisenhardt et al., dynamic capability in a certain functional sphere can be decomposed into a number of more «narrow» capabilities that are necessary for its maintenance.

Based on this analysis, we suggest positioning dynamic capabilities in the hierarchy of organizational capabilities as follows: a company possesses (1) functional (operational) capabilities, that are common to most of the companies in the industry; (2) «core» capabilities, that form its core competences (Prahalad & Hamel, 1990), and therefore serve as foundation for competitive advantage; and (3) dynamic capabilities that enable a company to renew its core capabilities according to environmental changes. Comparative analysis of various approaches to the hierarchy of organizational capabilities is presented in the Table 1.

Table 1

Different approaches to the hierarchy of organizational capabilities and to the position of dynamic capabilities in this hierarchy*

<i>Level of capability «complexity»</i>	<i>Authors of the approach</i>		
	<i>Collis (1994)</i>	<i>Winter (2003)</i>	<i>Authors of this article (2006)</i>
<i>from simpler to more complex</i>	Functional capabilities	Zero-level capabilities	Functional capabilities
	Capabilities, related to dynamics	First-level capabilities	Core capabilities
	Creative capabilities	Higher-level capabilities	Dynamic capabilities

* The position of dynamic capabilities in the hierarchy of organizational capabilities, as seen by each author, is highlighted in grey color.

Let us illustrate this hierarchy of capabilities with the example of an organization that follows quality leadership strategy. Quality control procedures preventing low-quality products and services out of the company represent functional (operational) capabilities for such a company. Still, these procedures can be easily imitated by competitors and are narrowly functional that leads us to doubt of their influence on a company's strategic position. The core capability in this example can be represented by the quality management system based on TQM philosophy providing systematization and harmonization of all quality management efforts. Such capability is much more difficult to imitate because it is grounded in the

complex networks uniting different stakeholders – consumers, suppliers, subcontractors. At the same time this capability allows to integrate efforts of different departments to satisfy stakeholders’ needs. Despite its strategic importance, this capability has static nature. We suggest that the dynamic aspect of the core capabilities will be present in this case if a mechanism of quick reaction to changing stakeholders’ needs is built into the quality management system. Such mechanism will allow not only to renew product lines and services but also to manage properly relationships with different stakeholders aiming for continuous quality improvement.

Thus we have positioned dynamic capabilities within a system of organizational capabilities. Let us now address more directly their essence and namely the dynamic component. Many authors do not go beyond identification of the dynamic capabilities’ position within capabilities’ hierarchy, implying that this is enough to characterize this phenomenon. However we suggest that it is more than insufficient for understanding the essence of dynamic capabilities, as in fact such approach treats them as a «black box», just putting the latter into the certain cell in the organizational «store-room». Moreover, various authors approach these issues differently using different terms and units of analysis. In fact, one can find this diversity confusing. Table 2 summarizes and compares the key points of the various authors.

Table 2

Comparison of dynamic capability’s definitions

<i>Author, definition of dynamic capabilities</i>	<i>Unit of analysis</i>	<i>Key points</i>	<i>The source of capabilities’ dynamism</i>
Collis [1994, p. 148]: The capability to develop the capability to develop the capability that innovates faster (or better), and so on	Meta-capability	Learning to learn capabilities which supersede any static organizational capabilities	not discussed
Teece, Pisano, Shuen [1997, p. 983]: The firm’s ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments	Firm’s ability to respond proactively	Environmental challenges and search for new and innovative forms of competitive advantage	not discussed
S. Winter [2003, p. 991]: Capabilities that operate to extend, modify or create ordinary capabilities	Higher-order routines	Highly-patterned and costly activity that needs special radical efforts	not discussed

<i>Author, definition of dynamic capabilities</i>	<i>Unit of analysis</i>	<i>Key points</i>	<i>The source of capabilities' dynamism</i>
K.Eisenhardt and J.Martin [2000, p. 1107]: The organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die	Organizational and strategic routines	Proactive behavior as a output of dynamic capabilities	Some patterns of dynamic capabilities' evolution were considered
M. Zollo and S. Winter [2002, p. 340]: Learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness	Pattern of collective activity	Evolution of dynamic capabilities through the coevolution of the learning mechanisms	Learning mechanisms as the base for creating dynamic capabilities

In our opinion, the definitions presented in the Table 2 use different terminologies but follow the same idea of the need to create special higher-order organizational capabilities or routines that transform operational routines and influence upon resource and capabilities reconfigurations. Most of the authors use «routines» and «capabilities» terms as interchangeable in their works. In our opinion that may lead to some confusion because even if routines are of higher-order, still they are the set of rules and decisions. This idea collides in its essence with the innovative nature of dynamic capabilities. That is why we prefer to stick with «capability» rather than «routine» terminology.

Among discussed conceptualizations of dynamic capabilities, one deserves special attention. While most of the authors use quite abstract and impersonal units of analysis («firm's potential», «firm's ability», «organizational routines», etc.), Zollo and Winter (2002) introduce «pattern of collective activity» as a key unit of discussion. In its essence this term relates to activities of the people in the organization, thus in a way focusing on the human factor as the basis of dynamic capabilities' development. Moreover these authors are the first who deliberately address the mechanisms of the dynamic capabilities' creation, introducing a new stage of the research in this area. We will return to this idea in the third section of this paper.

Going beyond the theoretical discussion, it is interesting to know what can be the examples of dynamic capabilities in the real-life organizations? Contemporary literature offers quite a number of such examples. Thus Clark and Fujimoto (1991) consider Toyota superior product development capabilities as dynamic capabilities. Dell's changing business model is another example of dynamic capability that provides constant segmentation of operating business to match shifting customer needs (Magretta, 1998).

Similarly, some authors believe that strategic decision making can be a dynamic capability by which managers pool their various business, functional and personal expertise to make the choices that shape the major strategic moves of the firm (Eisenhardt & Martin, 2000). Alliance and acquisition capabilities are also very often mentioned as examples of dynamic capabilities (e.g. Helfat, 1997; Henderson & Cockburn, 1994).

In our opinion analysis of these examples reveals one of the significant problems of the dynamic capabilities theory. Despite the fact that the definitions offered by all of the authors (refer to the Table 2) clearly point to the generic nature of dynamic capabilities, the examples of such capabilities offered by the same authors can be hardly considered generic. All of these examples represent capabilities providing special competitive advantage to a particular company, but being very specific – within the frames of the particular function or particular business task (capability to develop new products or capability to integrate newly acquired companies, etc.). All such capabilities can easily become out of date and obsolete, and they refer only to the certain aspects of the activities of a firm. It means that they do not fit into the definition of the dynamic capabilities. Why do we see this controversy in the literature?

We suggest that it happens because the authors who provide such examples focus their attention on the results of the dynamic capabilities (to put it in another words, on the effects they produce), and not on them per se. Let us consider the following example from another field: we observe the development of a child and, for example, see that he/she learned to read very quickly and surpasses in this other children of his/her age. The capability to learn quickly to read is only an applied manifestation, a result of some «internal» factors – for example, of the innate capability to acquire new skills or of such features of his/her personality as persistence and diligence. It is namely these internal factors (though they are often invisible and can hardly be measured) that lead to such an outstanding results in reading that we can witness. An important remark about this example is that the factors we discussed are generic – in the sense that they can be applied to the various activities of the child, not only to learning to read. Returning to the discussion of dynamic capabilities, we think that this example vividly illustrates in

which direction we should search for them, not confusing their essence with their manifestations.

Thus we suggest defining dynamic capabilities as a certain set of organizational properties that provides the renewal of core capabilities, i.e., in fact, ensures their dynamism. It is in this sense the word «dynamic» in the «dynamic capabilities» term leads to a certain confusion (noticed by Winter (2003), though this term might be the best among the available). Within the notion that we suggest, they are not that dynamic per se, but rather it is core capabilities that turn dynamic under their influence. To put in another words, the phenomenon that is commonly called «dynamic capabilities» represents, in our viewpoint, the source of the dynamism of the core capabilities. The example of the organizational capabilities' hierarchy of a company following quality leadership strategy that we discussed above also demonstrates that the essence of dynamic capabilities is in being responsible for the renewal of the existing competencies.

The next question logically arises as we adopt this notion of dynamic capabilities: what are the organizational properties that constitute this set that we aggregate as dynamic capabilities? The Table 2 demonstrates that most of the authors do not answer this question, concentrating, as we have mentioned, on the manifestations of dynamic capabilities (i.e. their results) rather than on their essence itself. Zollo and Winter (2002) are the only ones who approach this issue, when they write about organizational learning. What are the elements of the dynamic capabilities? In the following section we will suggest some ideas on that.

Before entering this section, we would like to discuss an important question that in fact defines whether the following discussion makes sense at all or not. It is the question of what for an organization needs dynamic capabilities (if it needs them at all). Some authors believe that dynamic capabilities influence a firm's performance as they indirectly contribute to the output of the firm through an impact on operational capabilities (Helfat & Peteraf, 2003). In our opinion, the contribution of dynamic capabilities to the firm performance is more substantial, as it is namely them that ensure proactive reaction to the environmental changes that in turn allows a company to build its distinctive competencies and appropriate economic rents until these competencies are copied by the competitors (if it is ever possible). An especially important issue here is that if a company has dynamic capabilities, the process of the development of these distinctive competencies is not discrete anymore, and this provides an opportunity to secure the company's position on the market over a very long period of time (the works of Collins and Porras (1994) and de Geus (2002) offer the examples of such companies).

WHAT IS «CAPABILITY TO CHANGE»?

As we have demonstrated in the previous section, many authors agree that one of distinguishing features of dynamic capabilities is related to organizational change management (Winter, 2003; Eisenhardt & Martin, 2000). Dynamic capabilities' concept in fact indicates that it is difficult to keep competitive advantage for long-term periods without development of the capability to change. McGuinness et al. introduce a new term «organizational change capability» that can be used to explain this feature (Oxtoby, McGuinness, Morgan, 2002; McGuinness & Morgan, 2003; McGuinness & Morgan, 2005). They define it as «organisation's capability of implementing incessant change. ... its essence being a capability for leading and managing a cascading series of inter-related change initiatives that are consistent with an inherent type of strategy dynamics» (McGuinness & Morgan, 2005, p.1312). These authors claim that this capability consists of three elements: a suitable foundation for incessant change, the ability to shape it and sustaining the energy of it. Such explanation correlates with the idea proposed by McGuinness and Morgan in their earlier work (McGuinness & Morgan, 2003, p.6) and states that change capability determines the processes used by an organization to implement and sustain changes. Conceptualizing it this way, McGuinness and Morgan separate change content from change process («what to change?») from «how to change?») and focus solely on the latter.

Contrary to this idea we suggest that organizational change capability as dynamic capability should be treated as including both components. We find support for such point of view at Barnett and Carroll, who note that a valid and comprehensive study of organizational change should incorporate both its content and implementation process, otherwise it will deliver only in one-sided narrow view of the problem (Barnett & Carroll, 1995). Eisenhardt and Martin provide a similar viewpoint as they mention that efficient implementation of dynamic capabilities requires «both the ingredients (i.e., key commonalities of capabilities) and the recipe (i.e., order of implementation)» (Eisenhardt & Martin, 2000, p. 1116). From this standpoint we suggest understanding organizational change capability as a capability of an organization as a whole (1) to see new opportunities for development, (2) to realize which internal changes are needed and (3) to implement them successfully.

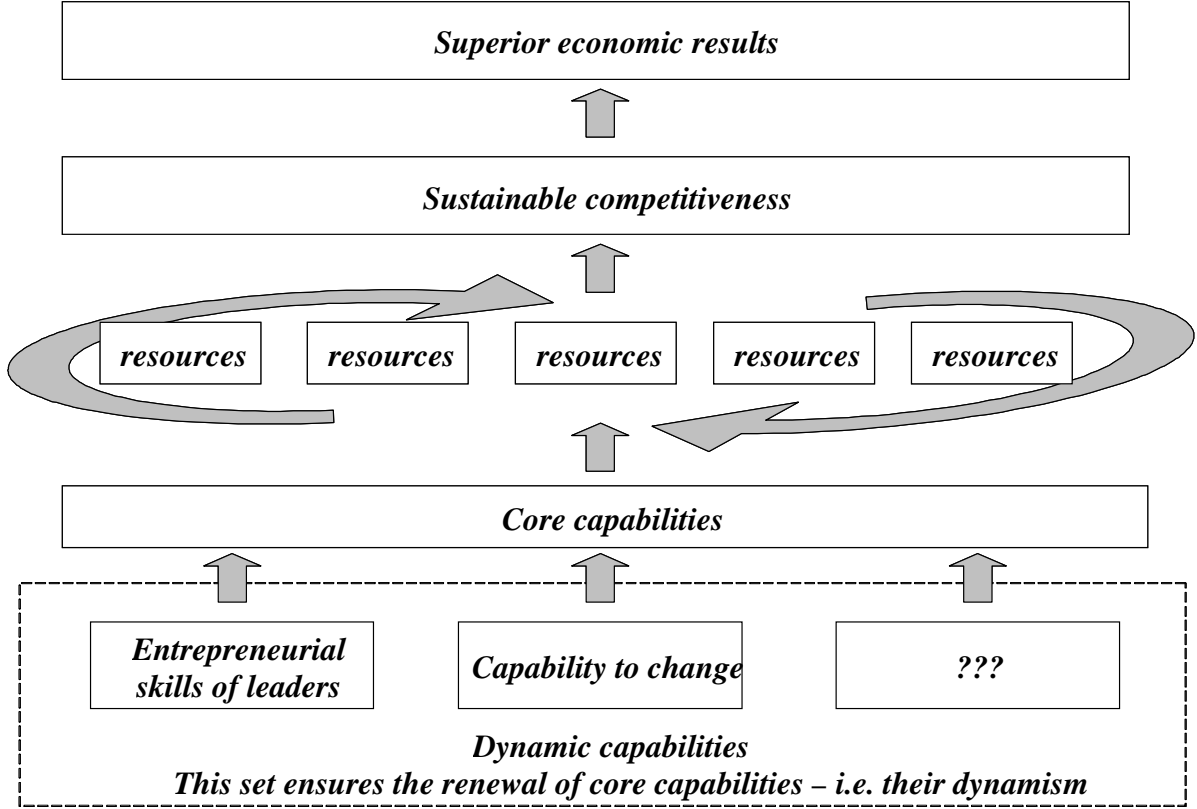
How change capability correlates with dynamic capabilities? Oxtoby et al. mention that «... a key dynamic capability – (is) an organisational change capability. Organisational change capability is ... generic to all other dynamic capabilities embedded in an organisation, and as something

that is essential if a dynamically stable organisation is to operate successfully any of the other dynamic capabilities around which it is structured» (Oxtoby et al., 2002, p.4). Later the same authors claim that this capability represents «an example of an organizational dynamic capability» (McGuinness & Morgan, 2005, p.1312). Thus the viewpoint of these researchers is not clear: whether change capability is just one of dynamic capabilities or it is a constituent of each of them.

In our opinion understanding change capability as an inherent component of any dynamic capability in an organization reveals its' nature better. Moreover, it is even possible to claim that change capability is the only existing dynamic capability – as any «functional» capability, not being coupled with it, becomes highly liable to turning obsolete very quickly in the dynamic environment. For instance, Zollo and Winter cite the ability to effectively execute post-acquisition integration processes as an example of a dynamic capability (Zollo & Winter, 2002, p.340). We see this example is quite controversial – as if the environment is really dynamic, it is possible that the next time the company will need not to acquire another firms, but, for example, enter into strategic alliances with them or develop its own «green-field» production site. The ability to integrate acquired companies will turn obsolete in such a situation and will lose its competitive value. Therefore, only a generic capability that can retain its value over a sufficiently long period of time can be treated as a really dynamic capability. For instance, in the same paper Zollo and Winter mention further that «dynamic capabilities constitute the firm's systematic methods for modifying operating routines» (Zollo & Winter, 2002, p.340). This remark highlights generic nature of such capabilities. We suggest that organizational change capability represents this generic type. Our understanding of the relationship between organizational change capability and dynamic capabilities is represented in the Picture 3.

Our scheme presents entrepreneurial skills of company's leaders as one of the elements of the dynamic capabilities phenomenon. The significance of the leader's role in the long-term development of a company is widely accepted in management literature (e.g. Drucker, 1970), but still the discussion within dynamic capabilities concept runs usually in the «impersonal» mode. We suggest that personality of company's leaders, especially their entrepreneurial skills, contribute significantly to the development of company's dynamic capabilities. In fact, recognition of the upcoming changes in the environment, understanding of the needed changes in the certain organizational competencies and implementation of these changes highly depend on company's leader and his/her entrepreneurial skills. Moreover, creation of an organization that can recognize all these changes and implement them is also a leader's business.

Still we suggest that dynamic capabilities of an organization do not concentrate themselves solely in its leaders, we believe that it is an organizational phenomenon, stretching much further than the leader’s personality. Furthermore, we argue that the leader’s entrepreneurial skills alone are not sufficient for timely and efficient renewal of organizational capabilities, especially in a contemporary environment, with its high degree of uncertainty and pace of change – due to many factors, with the bounded capability of an individual (or even a team of individuals) to perceive and process complex information among them. As for the other factors, we left one box on our picture full with question marks, as we suppose that there might some other elements of dynamic capabilities that we do not address here. This issue is subject for further research and discussion, and we will comment on it at the conclusion of this article. And now let us focus on the organizational capability to change as one of the organizational properties, constituting dynamic capabilities.



Picture 3. Role of change capability

Taking into consideration the arguments concerning the strong link between dynamic capabilities and change, in our search it is consequential to address the organizational change theories to understand the origins of change capability (which we postulate as an essence of dynamics in any dynamic capability) and the ways managers can develop it in their organizations. Interestingly, despite change is seen as embedded in

dynamic capabilities the strategic management theory and organizational change theory have been developing almost independently. McGuinness and Morgan suggest that this gap can be explained by the focus of strategic theories mainly on strategy formulation (i.e. searching to answer «what we need to change?») question) rather than on strategy implementation problems (i.e. answering «how can we do that?»), while organizational change theory has the opposite orientation (McGuinness & Morgan, 2003). In fact, while strategic management theory discusses the issue that the strategy should integrate both «what?» and «how?», (e.g. Mintzberg et al., 1998; Quinn, 1978), we have to acknowledge a certain inclination towards the first question in the most of works in this field. We will try to bridge this gap between two areas of management theory in this article.

Let us start with an analysis of underlying ideas about the nature of organizational changes within organizational change theory. A number of classical models (for example, life-cycle (Greiner, 1972); population ecology (Hannan & Freeman, 1984); punctuated equilibrium (Tushman & Romanelli, 1986) models) understand change as a discontinuous, rare event, happening due to environmental pressures resulting from organizational failure to adapt and mainly focused on short-run adaptation. These models offer different recommendations on how to manage change process but most of them are based on three-stage «unfreeze-change-refreeze» model by Kurt Lewin (1951) (see, for example, Tushman & Romanelli, 1986). In our opinion this understanding of organizational change is close to what Winter labels «ad hoc problem solving» (or «fire-fighting»), stressing that such changes do not manifest dynamic capabilities (Winter, 2003, p. 992).

There is also another model – model of emergent change that conceptualizes it not as a discrete but as a continuous cumulative process, used by an organization to achieve daily fit with fast-changing, unpredictable and complex environment and mainly focused on long-run adaptability (Weick & Quinn, 1999). This approach sees change as a flow of endless modifications in work processes and social relationships driven by natural organizational instability and its alert reactions to daily environmental contingencies (Weick & Quinn, 1999, p.366). Turning to application level, emergent change model accentuates «bottom-up» change implementation process (contrary to «top-down» approach of classical models), openness of this process and unpredictability of the environment. Proponents of this model believe that the static state is unnatural to any developing system. Therefore, «freezing», proposed as an important stage of change management program by Lewin and his followers, is unacceptable for any organization. We suggest that this approach is close to dynamic capabilities concept.

Let us confront in detail practical issues of change management within these two distinct bodies of change theory as they can help us to understand what managers can do to develop dynamic capabilities in their organization. Practical essence of the approach viewing change as discontinuous and reactive, can be described as managing a project with a clear business objective, distinct time frames and fixed list of stages to follow. In this sense we would rather argue with Winter who says that «ad hoc problem solving» is not related to creation of organizational routines (Winter, 2003, p.993). In our opinion, managing change as a project can become the organizational routine, but only the operational routine that cannot serve as a basis for dynamic capabilities development – exactly because the end of the project involves «refreezing» conflicting with the very nature of dynamic capability. This model cannot guarantee that the company has a capability to transfer successfully from one change project to another (Brown & Eisenhardt, 1997). This approach can be efficient in a relatively stable environment, but as soon as the environment turns hyper turbulent, the organizational risks increase dramatically. These are the risks that business tasks will change again before an organization completes the «previous» change project, and the risks that after «refreezing» it will be too difficult to change something again if an organization will need it once more.

The approach that understands change as continuous and proactive, emphasizes the absence of the «project» time limits and long-term orientation of the decisions and actions made. As it is less attached to a particular business task, this model suggests development of some «general» skills that can be useful not for (or not only for) «here and now» tasks, but for the future. In our opinion the essence of this approach can be described as the development of the change capability in an organization, or as the development of the search routines in terms of evolutionary economics (Nelson & Winter, 1982). While the «project» approach represents organizational reactions to the environmental events, the «change capability development» approach reflects proactive logic of the organizational behavior and leads to development of the special skills to renew the core capabilities that serve as a basis for competitive advantage.

Despite the fact that the «change capability development» approach solves the problems of the «project management» approach, it also has its own shortcomings. Focusing more and more on «general» development tasks for the sake of the future, an organization can lose the linkage to the real today's business tasks. Furthermore, as our experience shows, such approach can grow in the minds of some managers into the «schizophrenic» need to change for the sake of change, leading to unjustified investments. This situation recalls the saying «perfection is an

enemy of good». These risks are also mentioned by other authors, who say that «overusing» dynamic capabilities can lead to deterioration of the basic competitive capability (Winter, 2003, p.993; Eisenhardt & Martin, 2000, p. 1118). The above arguments are briefly summarized in the Table 4.

As both approaches have not only their advantages but the shortcomings as well, we suggest that successful companies employ some combination of these models – meaning that they use «project» approach for particular change programs, and at the same time they undertake some actions aimed to develop the organizational change capability that finally lead to creation of dynamic capabilities and provide with the sustainable competitive advantage. The following section presents our ideas concerning particular managerial actions that can contribute to development of the change capability in an organization.

Table 4

Comparison of two different approaches to change management

<i>Change is</i>	Discrete and reactive	Continuous and proactive
<i>Essence of the approach</i>	Managing change as a project	Developing capability for change
<i>Key ideas</i>	<ul style="list-style-type: none"> ✓ separate project ✓ related to short-term business task ✓ limited in time ✓ investments in “here and know” applied skills ✓ focus on employee resistance 	<ul style="list-style-type: none"> ✓ constant process ✓ related to long-term development ✓ unlimited in time ✓ investments in “generalist” skills ✓ focus on employee development
<i>Shortcomings</i>	<ul style="list-style-type: none"> ✓ difficult to change anything after the project is completed ✓ business tasks can change before the change project in implemented 	<ul style="list-style-type: none"> ✓ potential loss of linkage with everyday business tasks ✓ risk to turn into the “schizophrenic” need to change for the sake of change
<i>Level of capability</i>	Ad hoc problem solving	Developing dynamic capabilities

HOW TO DEVELOP CHANGE CAPABILITY?

Thus we have discussed that organization has to possess a certain change capability in order to make its capabilities really dynamic. This leads to a very serious practical question, topical for many managers: what particular actions managers should implement in order to develop and sustain this change capability? Some authors suggest that an organization

cannot develop dynamic capabilities as they are «born, not made» (Winter, 2003, p. 991). Few other researchers have tried to answer this question (Oxtoby et al., 2002; Zollo & Winter, 2002), though in general the practical side of capabilities' issue is rarely discussed in dynamic capabilities literature. In this section we present our vision of this problem, illustrating our reasoning with some examples based on practice of few Russian companies.

Discussion of «human» aspects of organizational readiness for change occupies key position in contemporary organizational change literature (e.g. Kotter, 1995; Duck, 2001; Miller, 2004; Jones et al., 2005). More precisely, personnel resistance is widely discussed as the most important reason for the failure of change programs – i.e., in fact, as a constituent of inability to change (e.g. Piderit, 2000; Cunningham et al., 2002; Sevier, 2003). Indeed, personnel «readiness» for change, having both needed skills and good will, provides a significant input into organization change capability. For example, Miller reduces organizational change capability only to this issue, saying that «change capacity is a combination of people-based factors that affect the organization's ability to adapt» (Miller, 2003, p.6). But alone it is not sufficient because there is another important factor that plays an important role as well. We mean the management system and organizational infrastructure (organizational structure, system of communications, system of selection, promotion and compensation of personnel, etc.). Contrary to «human», this constituent of change capability can be called «organizational», or «managerial».

Unfortunately our experience shows that managers often forget about this issue though it is equally important as «human» part of the problem. Here is a typical example: company «X» had such organizational structure and intra-firm communications system that only one department (marketing) owned all information about external environment (clients, competitors, market trends, etc.) and did not diffused it in the organization. One day it resulted in the highly hostile reaction of employees towards strategic change program despite their high loyalty to the company and its managers. It happened because the decisions of managers were not understood by employees – as they did not know all the background behind these decisions. That is why we suggest that these two aspects of organizational change capability, «human» and «organizational», as two directions of its development, should be treated together as complementary and reinforcing each other.

Let's now turn to managerial tools that can contribute to development of organizational change capability. Summarizing both our management consulting experience and research in organizations, we suggest

distinguishing three key groups of such tools: (1) development of «unspecific» skills (2) development of personnel loyalty to change and (3) creation of relevant organizational mechanisms. These tools are introduced and discussed separately below.

(1) Learning as a powerful and efficient tool for organizational development has been widely accepted in management literature. For example, it is one of the keystones in «organizational development» concept (Lewin, 1951; Bennis, 1969; Reed & Vakola, 2006). The role of learning in the development of dynamic capabilities has been introduced as well (Zollo & Winter, 2002). But while Zollo and Winter focus on the learning processes in general we will try to specify what particular knowledge and skills are important to learn. We suggest that not any learning plays an important role in dynamic capability development, but the development of the skills, unspecific for a particular change program. For example, we label «specific» a training that explains how to work with new equipment within the project of installation of a new production line as these knowledge and skills will be in demand mostly for this particular project and very likely can turn obsolete in the future – if we change the equipment again. On the contrary, «unspecific» knowledge and skills have much wider application scope not strictly tied to current operational tasks or particular change project. We think that the development of such skills weakens some traditional organizational change barriers such as employees' fear to lose a job or a status in the company, etc. Having unspecific knowledge and skills, employees feel themselves less bounded by their current narrow working task that can dramatically change at any moment; consequently, they perceive their future employment as more secure. Moreover, having broader professional horizon and deeper understanding of their organization, employees are more capable to come up with new ideas on organizational improvement – that is, in fact, a feature of a dynamic organization.

What skills can be defined as «unspecific»? Surely, it has many answers, contingent and idiosyncratic for each company in question. Nevertheless we suggest that some types of knowledge and skills will be unspecific for the most of organizations and change programs. These are (a) adjacent professional skills, (b) organization-wide knowledge, (c) process skills, (d) learning skills (including self-learning skills).

Development of adjacent professional skills (i.e. the skills that are not directly related to an employee's current task and profession but are linked to them) provides the most evident illustration to our above discussion of diminishing organizational change barriers by unspecific skills development. We will comment in more detail on the two other groups of skills and knowledge. By «organization-wide knowledge» we mean

understanding of the company's strategic goals and priorities, knowledge of functions and responsibilities of different departments, of key people responsible for various strategic issues, etc. That is the firm-specific knowledge that allows an employee to understand organizational processes better and to orient himself more easily within his organization. This understanding can be questioned and criticized as the elements we include in this group can be categorized as information rather than knowledge and skills, and might call for «communicating» rather than «learning» metaphor. But referring to the idea that unlike information knowledge and skills are always related to and transferred into action (e.g. Tsoukas & Vladimirou, 2001), we can classify these «organization-wide knowledge» as knowledge and skills as they allow an employee to direct his efforts within organization in a more flexible and efficient way. By the process skills we mean the skills to engage efficiently in the typical organizational processes – presentations, negotiations, discussions of new ideas, being able to accept different viewpoints, etc. As for the learning (and self-learning) skills, denoting an individual's capability to apprehend new knowledge, we propose that they often develop «automatically» as long as an organization intensively engages its employees in various personnel development programs.

Development of «unspecific» skills does not necessarily require from a organization to invest heavily in various formal training programs. For example, these skills can be developed as a «by-product» of implementation of such management «tools» as job enrichment, delegation of responsibilities, employees' involvement in decision-making, open communication and feedback, etc. Still in some situations unspecific skills may call for extra investments, both of financial resources and time, as we will further illustrate in the case study section. These investments may look unreasonable in the short-term returns perspective, as they are weakly tied to a particular «here and now» business task rendering their efficiency evaluation very difficult. But we suggest that for the purposes of the organizational change capability development, that in its turn contributes to the dynamic capabilities development and long-term competitiveness, these investments appear fully justified. For example, Weick points out that any improvisation (within our discussion it may mean flexible reaction to daily contingencies, i.e. change capability) requires high level of before-hand preparation (Weick, 1998).

It is necessary to acknowledge the differing viewpoints on the optimal degree of «specificity» of knowledge and skills that employees acquire within the frames of training and development programs sponsored by an organization. Becker's theory of human capital (Becker, 1973) suggests that companies should seek to invest only in training for highly firm-

specific knowledge and skills. Any other training investments, as Becker sees them, will increase employees' mobility in the labour market and their market price – contrary to company's interests. Yet within the frame of our discussion we offer an understanding of «specificity» that is different from Becker's. He speaks of knowledge and skills that are relevant only for working in a particular company, while we mean their applied relevancy for a particular business task. Contrasting our classification of unspecific knowledge and skills with human capital theory, we suggest that our group (b) (organization-wide knowledge) can be attributed to the highly firm-specific skills in Becker's view, while the other groups can be classified conversely as they are less linked to working for a single company.

(2) We see development of employees' loyalty to change as a separate direction of change capability development. While development of unspecific skills contributes to overcoming the essence of internal barriers to change («I have too much understanding, knowledge and skills to fear organizational change»), we see loyalty to change as concerned with the moral aspect of these barriers – «I know that any change is normal and not bad at all, that it why I don't fear it». We suggest that one of the most efficient (and at the same time simple and affordable) mechanisms to build such loyalty is the openness of company's managers to communications with their employees, meaning transparent organization communications allowing dialogue and feedback. Many tools to build loyalty to change and to develop unspecific skills coincide – for example, personnel rotation, both inter-functional and inter-unit. On the one hand, rotation provides employees with new knowledge and skills – adjacent professional, «firm-specific general», and, indirectly, with learning skills. On the other hand, it generates positive attitude to changes in general.

(3) The third direction of the organizational change capability development is creation of special organizational mechanisms that allow for easier and more efficient change processes. We include in this group such tools as establishment of cross-functional (cross-unit, cross-regional, etc.) working groups and committees, delegation of responsibilities, intensification of inter-department information exchange, alignment of compensation system with change capability development tasks, etc. (this list can be extended). For example, if current compensation system does not provide any way to reward employees' new ideas and interesting solutions, they in general will not be motivated to suggest these ideas as they will not see their contribution as valuable for the company. Even the more disappointing situation, though widely available in organizations happens when a very strict and exacting leader believes that any mistake of an employee deserves the proper punishment. Obviously such management style does not provide even a little incentive for the employees to change,

to try something new or to experiment with their job routines – as any new activity involves high risks to make a mistake.

The proposed grouping of the discussed tools into three clusters is quite conditional. As we have demonstrated above, the same management «tool» can contribute to different aspects of change capability. But we suggest that for reasons of both theoretical neatness and practical application, it is very important to distinguish the three key elements of organizational change capability development reflected in this classification: (1) employees' «redundant» competencies that allow for continuous change and creation of new ideas, (2) employees' positive attitude towards change in general, and (3) organizational infrastructure that supports change and prevents its impediments. First two elements relate more to «human» aspect of change capability and the third relates to its «organizational» side, and as we have argued above the desired result can be achieved only with their simultaneous development. In this case employees do not fear new tasks, understand the logics of managerial decisions, bring in their ideas that quite easily find their way to reality – and as a result organizational capability for change develops, and functional capabilities, coupled with it, turn into dynamic ones.

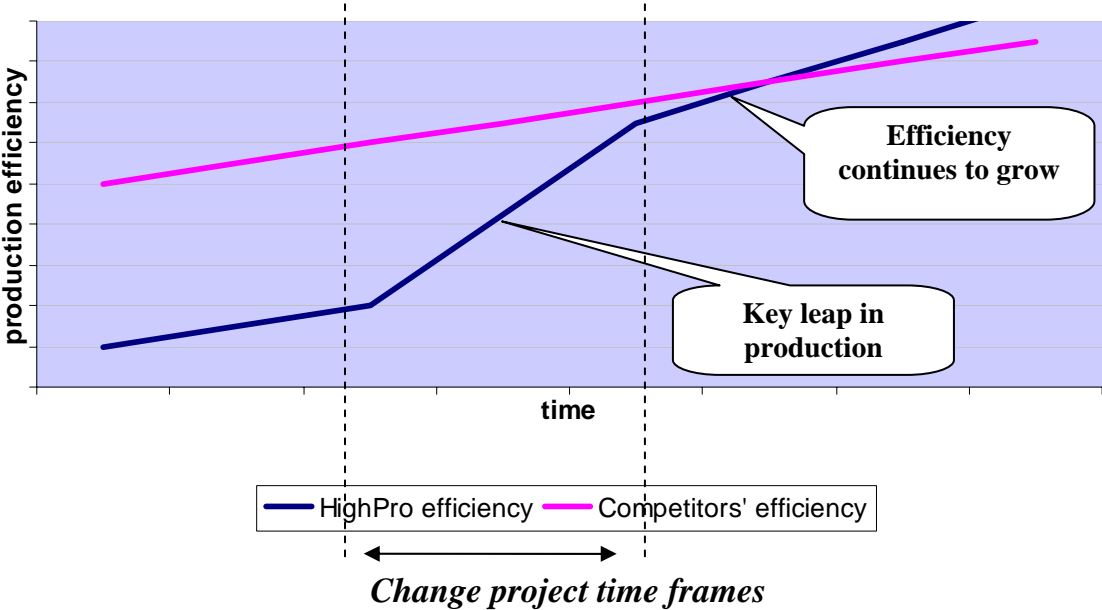
CASE STUDY: PROJECT FOR PRODUCTION OPTIMIZATION OR FOR CHANGE CAPABILITY DEVELOPMENT?

Let us illustrate our arguments with a practical example (this case is based on publicly available secondary information, including public speeches of company specialists both who managed this project and participated in it). «HighPro» is a large industrial company (we have changed the title of the company, any coincidences are accidental). Its industry has a peculiar feature of relative technological and product «stability» as new «break-through» technologies are extremely rare in it (may be once in 50 years). Yet the competition in this sector is extremely high, not on the national, but on the international level. We think that «HighPro» example is of particular interest for our discussion, as dynamic capabilities concept has historically originated from innovations and R&D research, and most of the articles in this field present cases of high-tech companies (e.g. Teece & Pisano, 1994; Brown & Eisenhardt, 1997). As to our case, the possibility of technological and product innovations is highly restricted, so the organizational and managerial innovations play the most important role and, in fact, represent virtually the only potential source of competitive advantage.

Once «HighPro» has faced a need to decrease the costs dramatically as its production efficiency was extremely low compared to key competitors. As most of the evident cost-cutting mechanisms were already implemented but the desired financial results were not achieved still, company leaders, with the help of consultants, decided to launch a project aimed to involve all employees (including shop floor workers) into generating and implementing costs optimization ideas. In fact it was the key business task of this change project. Probably, such program of production optimization would have been an operational level task for a company from other industry. But for «HighPro», taking into account industry specifics, this task can be judged as of strategic level, as it was important not only for short-term survival but for the long-term competitiveness as well.

Project results were impressing – the company succeeded to make a significant leap in cutting its production costs. But within the frames of this article we found another result most interesting – company’s production efficiency has been continuing to grow for over two years after the project was officially completed. Dynamics of «HighPro» production efficiency is presented on the picture 5.

Though the rate of growth now is not as high as it was during the officially run project, the growth continues still without purposeful interventions from the top-managers. Putting it into another words, the company transformed its capability for production optimization into dynamic one.



* Production efficiency on the graph is depicted in conventional units.

Picture 5. Results of production optimization program in “HighPro”*

We found it very interesting to understand what company has done to achieve these results. We found out that simultaneously with the key business task the top-managers formulated some additional tasks that we have labeled «process» and «prospective» tasks respectively. Process task was to stimulate during the project employees' initiative, desire to change their company and flexible, out-of-the-box vision of their work. Prospective task was to build the conditions for initiative and flexibility in the company for the future, i.e. in our terms — to develop organizational capability for change.

From the surface, the change project in discussion does not differ significantly from many other change projects in their traditional form. It consisted of six stages: project organization, goal setting, development of ideas, evaluation of ideas, preparation for implementation and, finally, implementation itself. During the first stage, project teams were established, whose aim was to lead the process of gathering ideas in the shops and other departments of the company, team leaders were selected, then the goals were set, and the program developed through the further stages seemingly by the classical scheme of managing such projects.

But the detailed analysis revealed a number of non-trivial arrangements within this program. For example, intensive training of all team members (not restricted to team leaders) was launched at the very beginning of the project. Among all other issues, they learned brainstorming techniques, negotiating in the situation of conflict, some elements of technologic and economic analysis of the idea proposals, public presentation techniques, etc. team leaders also were trained in project management issues. Further on, during proposals' development and evaluation stages, team members had been creating cross-functional working groups that involved not only «HighPro» employees, but clients, suppliers, partners and industry experts. Top-managers stimulated intensive cross-group information exchange and discussions (including cross-teams, cross-departments, cross-levels, etc.) during the whole project. (According to Zollo and Winter (2002), these actions can be attributed to such element of dynamic capability development as «knowledge articulation»). They also developed a comprehensive system to motivate employees to participate in this program that included the whole range of arrangements, from quarterly distribution of the certain share of the saved income and rewards for the best project teams to new possibilities of career development and even to regular gratifying letters to the families of the best project participants.

If we look at these significant investments of time and other resources from the viewpoint of solving the cost-cutting task and achieving the short-

term project results, some of them appear unreasonable. For example, special department (consisting of few qualified analysts) might have carried out economic analysis of employees' proposals at the less expense of time, effort and money. Moreover, public presentation skills are evidently redundant for the most of the team members within the frame of the set project goals, so in our words, they can be labeled «unspecific» for this particular change program.

We suggest that based on our discussion in the above sections, the situation in «HighPro» can be interpreted in the following way. Parallel to managing change project in its classical form, top-managers used several tools aimed in their essence to the development of «unspecific» skills and creation of organizational mechanisms that together contributed to development of organizational change capability. The company approached simultaneously both «human» and «organizational» aspects of capability to change.

If the top-managers treat a change program as a single project, then such expenses into its implementation are too high and should be economized (if not excluding them at all then at least cutting them down significantly). However, if the leaders believe that their company will face various changes in the future as well, and if they set a task to develop an organizational capability to adapt to these changes proactively – then these expenses should be actually treated as investments and appear being very reasonable.

«HighPro» had a need to reach competitive costs level at the beginning of the project in discussion, that in Winter's terms equals to the development of the zero-level capabilities. But as a result of the specific set of managerial decisions and actions, the company succeeded to develop dynamic capability that allowed it to reach sustainable economic performance surpassing its competitors. In this particular case dynamic capabilities were developed in a company from a relatively stable environment. Eisenhardt et al. (2000) discussed specifics of dynamic capabilities on the low-velocity markets, and our case correlates with their analysis.

In order to support our conclusions and to prove that the new capability of «HighPro» is strategically significant, let us control it with some of the «tests» offered by strategic management theory for these purposes. We cannot «test» this capability for being dynamic as up to the moment, at least to our knowledge, such tests for dynamic capabilities have not been developed yet, so let us apply the tests that are already available. For example, consider resource/capability evaluation model offered by Collis and Montgomery (1995) that suggest the following five «tests»:

(1) The test of inimitability: Is the resource hard to copy? In our opinion, «HighPro»'s capability to improve its production process is very difficult to imitate, as it heavily depends on the historic path. In order to change perceptions of the majority of employees (and of the shop floor workers in the first place), «HighPro» competitors will have to follow the whole process that takes a long time. Moreover, imitation is limited by some causal ambiguity. In fact, as seen at first sight, «HighPro» has used a number of widely known management tools, and it is namely their particular combination with each other and sequencing them through the project aggregated with leadership styles provided these prominent results.

(2) The test of durability: How quickly does this resource depreciate? We think that «HighPro»'s capability will retain its value for a long period of time. For example, even if the industry undergoes some dramatic technological change, the skills developed within this program can be applied for the improvement of a new production process.

(3) The test of appropriability: Who captures the value that the resource creates? The answer seems to be very evident in our case as it is the company who appropriates the outcomes.

(4) The test of substitutability: Can a unique resource be trumped by a different resource? It is probable that this resource might be substituted by some other. But, as we have mentioned before, this particular industry calls namely for the organizational and managerial innovation – which are limited in their number as well. To develop an organizational resource of the same value competitors will have to spend a lot of time as it cannot be freely purchased on the market.

(5) The test of competitive superiority: Whose resource is really better? The picture illustrating production efficiency dynamics of «HighPro» compared to its competitors (refer to the picture 2) provides the most expressive answer to this question. So we see that Collis and Montgomery test proves that «HighPro» capability is really a strategic one.

Well-known VRIO model suggested by Barney (1986) can be also used for analyzing new «HighPro» capability. It comprises Valuable, Rare, Inimitable and Organized dimensions, and it is easy to illustrate how production optimization capability in this company fits these criteria.

To summarize, «HighPro» followed the key directions of the change capability development presented in above sections and succeeded to develop dynamic capability that ensures the constant renewal of its core capability for production optimization.

CONCLUSIONS

This paper examines the sources of dynamism in dynamic capabilities. As we demonstrated in the first section dynamic capabilities based on «simpler» capabilities have essential impact on the firm's competitive advantage but the mechanisms of their creation have not received enough attention in contemporary strategic research up to moment. Literature analysis also indicates that it is difficult to keep competitive advantage for long-term periods without development of the capability to change.

So in the second section we argue that organizational change is an inherent component of any dynamic capability and that is why we call it «generic». It's necessary to find the equilibrium between «project management» approach to organizational change and «change capability development» approach in order to develop and sustain dynamic capabilities.

In the third section we distinguish three key groups of managerial tools that can contribute to development of organizational change capability. These are: (1) development of «unspecific» skills (2) development of personnel loyalty to change and (3) creation of relevant organizational mechanisms. As we conclude first tool contributes to employees' «redundant» competencies that support continuous change and creation of new ideas; second tool increases employees' positive attitude towards change in general, and third tool provides organizational infrastructure that supports change and prevents its impediments. Case study presented in fourth section shows the implications of the presented above tools for the change capability development.

This discussion allows posing several questions that are subject of further discussion and research:

(1) We suggested that organizational change capability is one of the elements of the dynamic capabilities (though we discussed the problems of this terminology at the beginning of this article). The question for the future research is what are the other elements that constitute this phenomenon? These elements should meet two key requirements – to have generic nature and to be able to preserve their value over a sufficiently long period of time. Specific skills for investment decision making that were discovered among long-living companies (Collins & Porras, 1994; de Geus, 2002) is one of the ideas for further examination in the search for the answer to this question.

(2) Is the development of dynamic capabilities relevant only for the high-velocity markets (Eisenhardt, 1989) or also for the environments with lower rates of change? We suggested that the velocity of the market is not the only feature of a firm's environment that makes dynamic capabilities important. As we have demonstrated in our case study – need for

operational effectiveness improvement in the low-rate industries where operational costs have an impact on strategic position can call for them as well. Examples from variety of industries, including non high-tech, will enrich our understanding of this issue.

(3) Do the dynamic capabilities have to be highly patterned (Winter, 2003) or simple and experiential (Eisenhardt and Martin, 2000)? Eisenhardt's and Martin's vision is close to the notion of the «organizational improvisation» (e.g. Weick 1998), suggesting that it is necessary to provide freedom of action coupled with «rules of the game». In our viewpoint such understanding can reveal the essence of dynamic capabilities better than the «routinized» option and has large potential for further research.

(4) Do learning, change, and adaptation necessarily require the intervention of dynamic capabilities as intermediaries? Concerning this point we found out that learning and change processes can happen within organizations, but only specific types of these processes contribute to the development of dynamic capabilities. Hence dynamic capability is not intermediary but mechanism itself which transforms resources and capabilities of the different levels into competitive advantage. That is why further research of dynamic capabilities' essence and mechanisms of their development has the great potential.

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