

Reflexivity, Learning, and Organizational Innovation

Joanne Roch^{1,*}, Johanne Boucher²

¹Department of Teaching and Training, Faculty of Education, University of Sherbrooke's, Canada

²Groupe Conseil NSM, Canada

Copyright © 2015 by authors, all rights reserved. Authors agree that this article remains permanently open access under the terms of the Creative Commons Attribution License 4.0 International License.

Abstract The increased complexity and velocity of change necessarily involves developing capacities for adaptation. In order to do so, the organization needs to learn how to modify and reinvent its dynamic capabilities (Helfat and Winter [1]). Yet few empirical studies can guide the application of this theoretical concept (Ambrosini et al. [2]) considered by some as an abstract notion (Danneels [3]), even "an elusive black box" (Pavlou and El Sawy [4]). Starting from these observations, our article aims at providing a response to this limitation by attempting to grasp the actionable aspect of this concept. It aims at better understanding the process of building dynamic capabilities. It underscores the contribution of operational capabilities and the importance of deliberate learning initiatives in building dynamic capabilities and brings out the crucial role of reflective activities in organizational innovation.

Keywords Dynamic Capabilities, Organizational Learning, Deliberate Reflexive Activities, Innovation

1. Introduction

Today more than ever, chief executive officers must navigate an atypical period of turbulence in which yesterday's approaches hold no guarantee for tomorrow's success. Compared to a 2010 study [5], which reported a consensus among leaders about growing complexity on a worldwide scale, the most recent edition [6], based on individual conversations with more than 1,700 CEOs from 64 countries, refers to a need for more meaningful innovation and the necessity to create a more open and collaborative culture. The velocity of change implies that resources must constantly put themselves into situations of openness and learning in order to reinvent themselves. Above all, employees must therefore be comfortable with change in order to experiment and learn from their experiences and that of others.

The present paper takes a look at how a CEO can ensure that the organization staff is developing this openness and ability to review the issues and reexamine itself. Adopting the dynamic-capabilities approach, this article examines the

types of capacities that are required to adapt to new markets and changing needs and the means organization can use to develop these capacities. Thus, it underscores the contribution of operational capabilities and the importance of deliberate learning initiatives in building dynamic capabilities. It also brings out the crucial role of reflective activities in organizational innovation.

By trying to operationalize the concept of dynamic capabilities it aims at giving some directions to organizations in context of innovation. Based strictly on theoretical concepts, this paper proposes a conceptual framework integrating both operational and dynamic capabilities and identifies future avenues of research.

2. Capacity for Change linked to Knowledge Development?

To deal with this turbulence, some authors (Teece et al. [7]; Eisenhardt and Martin [8]) have adopted the dynamic-capabilities approach and primarily focused on the aptitude of firms to build and reconfigure their resources and competencies. Eisenhardt and Martin [8] identified three factors that help organizations adapt:

- Capacity to rapidly design new products and put them on the market
- Capacity to forge alliances to acquire new resources
- Capacity of being flexible in strategic decision-making

So, according to Eisenhardt and Martin [8], adaptation in turbulent times is based on processes:

The firm's processes that use resources - specifically the processes to integrate, reconfigure, gain and release resources - to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die (p. 1107).

Although key, this conception doesn't specify what is needed to achieve this outcome. Another research movement focuses more on what prepares an organization for facing transformation and change. The capacity to adapt and

reconfigure resources results from a learning dynamic. Consequently, Zollo and Winter [9] assert:

A dynamic capability is a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness" (p. 340).

In order to identify and create opportunities, managers must watch the environment and explore new products and markets. This places the manager at the center of knowledge creation and learning. This second movement appears more promising to us in highly complex environments and high-velocity changes, all the more so since Eisenhardt and Martin [8] suggest that, in such contexts, the processes related to dynamic capabilities are simple, experiential, and unstable. Moreover, they rely on several rules specifying boundary conditions or the priorities and commitment in action with a view to rapid learning. Above all, this movement involves developing capacities for adapting and learning; these capacities take precedence over capacities for managing change processes. Sopranot [10] states that:

The capacity for change is no longer tied to managing transformation processes but rather to managing learning capacities. In other words, it means building a context that absorbs changes and becomes a powerful leavening for future transformations. In this perspective, the organization changes by itself. By learning to regenerate its responses and its inventory of solutions, the organization grows its capacity for adaptation. ... That's where capacities for change lie. (p.40)

There is nothing new in that regard, since as early as 50 years ago, Argyris and Schön [11] brought up the importance organizational learning:

Cultivation of the capacity to learn in the broadest sense, i.e. the capacity both to acquire knowledge and to develop practical abilities, seems to offer a realistic way of tackling the pressing problems of our time (Probst and Buchel [12], p.5).

Weick and Quinn [13] took up the same theme, asserting that the success of organizations is increasingly dependent on their capacity for adjustment. Taking a closer look at how these organizations can succeed in stimulating this collective learning, calls for a review of certain contributory concepts: organizational learning, routines, and capabilities.

3. Organizational Learning, Capabilities, and Routines

The concept of organizational learning refers back to an organization's acquisition of knowledge [14]. Since all knowledge is created first at the individual level,

organizational learning implies that individual knowledge has access to the organizational level. Crossan, Lane, and White [15] define organizational learning as "a principal means of achieving the strategic renewal of an enterprise." This process as a set of four subprocesses, three of which—intuiting, interpreting, and integrating—occur at the individual and group levels, whereas institutionalizing occurs at the organizational level, impacting individual and group learning and embedding it into the organization's procedures, routines, systems, structures, and strategy [16]. So, it is only when they "appear" in the institutionalizing process that individual interpretations and their integration into the collective body affect organizational knowledge.

For its part, the concept of routine is closely associated with that of capability. Routines embed the explicit and tacit knowledge of individuals and groups; routines contain their know-how. Routines guide the behavior of players by reducing uncertainty and allow for them to coordinate their action. They constitute a set of shared and recursive rules that can be formal, informal, or tacit. According to Zollo and Winter [9], "routines are stable patterns of behavior that characterize organizational reactions to variegated, internal or external, stimuli." There are two types of routines that represent fairly stable patterns of behavior. The first type of routine involves the execution of known procedures and is associated with operational capabilities. The second aims at bringing about changes to operating routines and is associated with dynamic capabilities. This type of routine, which helps advance operating routines, appears to be an essential component of organizational change.

Organizational capabilities, for their part, have been defined by Dosi, Nelson, and Winter [17] as the know-how that enables an organization to perform. They correspond to collections of routines (Helfat and Peteraf [18]; Winter [19]) that, with certain inputs or specific resources, make it possible to execute, integrate, and coordinate the tasks required for the production of outputs that meet predetermined criteria. Capabilities reside in teams (Helfat and Peteraf [18]). They are deliberately developed with a view to achieving predetermined objectives.

4. Dynamic Capabilities: Dynamic Collections of Routines

Dynamic capabilities are defined in reference to operating or functional routines. According to Collis [20], they represent the aptitude to execute basic functional activities such as production, distribution, or even sales. Helfat and Peteraf [18] and Winter [19] distinguish between operational and dynamic capabilities, considering that the former relates to "how you earn your living," whereas the second is more relevant to "how you change your operational routines."

As with all operational capabilities, dynamic capabilities develop within the framework of organizational learning. With respect to developing these capabilities, Zollo and Winter [9] underscore the importance for organizations to set

up deliberate learning initiatives in order to improve existing routines or develop new ones. The repetition of these deliberate initiatives leads to the development of change routines. Moreover, the authors define dynamic capabilities as being: "routinized activities directed to the development and adaptation of operating routines" (p. 340).

In addition to the dynamic-capabilities approach, which will be dealt with more thoroughly a subsequent section, knowledge management also applies to improving a firm's performance by changing its knowledge resource base (Cepeda and Vera [21]; Easterby-Smith and Prieto, [22]), including the routines that constitute its foundation (Cepeda and Vera [21]). Knowledge management refers to knowledge processes (that is, creation and transferring) and to activities (such as gathering internal and external knowledge, as well as sharing, disseminating, and supporting knowledge use), which facilitate these processes in the organization. This is "managed learning" according to Easterby-Smith and Lyles [23].

Resting on the resource-based view of strategic organizational management, the knowledge-based view, from which knowledge management originates, considers that certain collections of routines are dynamic. In particular, these are, according to Teece et al. [7], those relating to a "firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (p. 516).

Easterby-Smith and Prieto [22] assert that knowledge management, like dynamic capabilities, can shape the firm's operating routines and resource knowledge. They set apart, however, the dynamic capabilities of knowledge management, which appears to them to be associated primarily with the firm's internal environment. For our part, we opt for what Cepeda and Vera [21] proposed, because, like them, we consider that knowledge management includes concern about the external environment.

Figure 1, adapted from Zollo and Winter [9] and Easterby-Smith and Lyles [23], integrates these concepts.

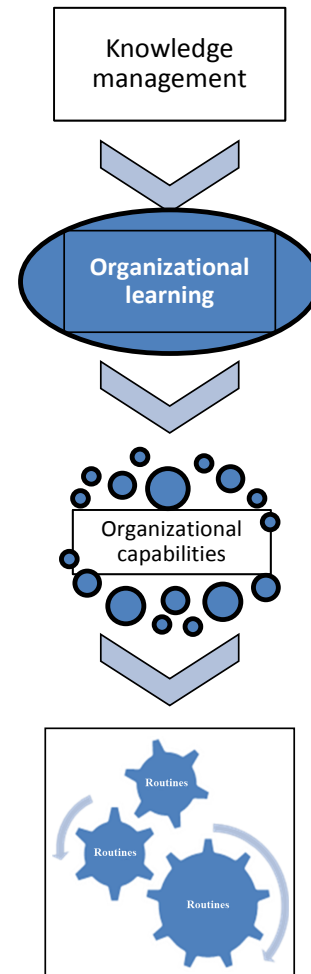


Figure 1. Knowledge management, organizational learning, and the development of organizational capabilities

5. Close-up of Dynamic Capabilities

Gaining a better understanding of how organizations can develop and advance their dynamic capabilities requires a closer look at their integral parts.

Since capacities are defined, in part, in relationship to one another, certain typologies have been introduced to take into account the hierarchy and complexity of capabilities. As a result, Winter [19] takes zero-level (ordinary) operational capabilities as his reference, specifying that these capabilities correspond to producing and selling the same product, on the same scale, and to the same customer population over time. Any change in these elements is a sign of first-order capabilities deemed dynamic because they contribute in some way in modifying operating routines and provide for making changes to the product, the production process, the geographic scale, or the type of customers served. Winter differentiates dynamic capabilities from second-order learning capabilities, which help transform operational and dynamic capabilities.

Moreover, typologies related only to dynamic capabilities have been proposed. According to Ambrosini et al. [2], there are three levels of dynamic capabilities: incremental, renewing, and regenerative. While the first two use extant resources; regenerative capabilities assess, re-examine, and adapt the overall stock of resources.

In a context of dynamic complexity, we feel that it is important for the organization to develop what Winter [19] refers to as second-order capabilities or what Ambrosini et al. [2] defines as regenerative capabilities, since they provide for the organization's ongoing adaptation.

Although promising, this research did not examine the managerial processes and knowledge management that provide for the evolution of dynamic capabilities. The proposed framework doesn't tangibly clarify the process for building and transforming dynamic capabilities.

To compensate for this operationalization issue and lack of pragmatism, we propose anchoring the remainder of our analysis to the level of the dynamic interface between dynamic and operational capabilities.

6. Relation between Dynamic Capabilities and Operational Capabilities

The distinction between operational capabilities and dynamic/learning capabilities is similar to that between exploitation and exploration proposed by March [25], which makes it possible to determine if the organization wants to discover new knowledge or exploit existing knowledge instead. According to March [25], organizations attempt to find solutions in a variety of ways. Exploitation is the extension of existing skills, whereas exploration consists in trying new alternatives. Exploitation is based on having a stable, well-oiled organization, whereas exploration-related activities require an organization to be highly adaptive. As a result, operational capabilities correspond to an effective and efficient exploitation of extant resources, including knowledge, whereas dynamic capabilities correspond first and foremost to exploring new possibilities. More than 20

years ago, Collis [20] used the difference between exploration and exploitation proposed by March [25] to qualify dynamic capabilities as driving change in operational capabilities, so that they can be reconfigured to allow the organization to adapt to a dynamic environment. Moreover, Danneels [3] posited that when creating a new product requires capabilities (market and technology) that the organization doesn't fully possess, it must undertake an explorative mode of learning, including implementing second-order competences.

Although the transformation relationship between dynamic and functional capabilities has been clearly established in the literature, we deem that it is necessary, from a learning perspective, to integrate into our analysis framework how operational competences can, in turn, provide the spark to ignite dynamic competences.

7. Contribution of Operational Capabilities to the Development of Dynamic Capabilities

Easterby-Smith and Prieto [22] recognized that there is a major link between operational and dynamic capabilities, since dynamic capabilities develop from operating routines. For example, the fact that an organization has a marketing process that closely analyzes the development of consumer needs (focus group, etc.) provides new information enabling the organization to be more creative and flexible. Similarly, having a culture of empowerment rather than a bureaucracy and stressing the development of human resources contribute to developing flexibility, openness, and a learning culture within dynamic capabilities.

In order to push ahead how operational capabilities can help stimulate exploration capabilities, it is useful to consider together the contributions of Teece [24], Dougherty [26] and Danneels [3] on capabilities. The typology proposed by Teece [24] introduces an important point in identifying three critical dynamic capabilities, i.e. the ability to (1) identify / create an opportunity, (2) seize the opportunity, and (3) reconfigure organizational assets.

- **Ability to identify (or create) opportunities:** Teece [24] indicated that, to identify or shape opportunities, companies must constantly scan, research, and explore, which involves investment in research activity and the probing of customer needs and technological possibilities.
- **Ability to seize opportunities:** Once an opportunity has been identified, it must be integrated through the development of new products, processes, or services.
- **Ability to reconfigure organizational assets:** The organization's commitment to seizing opportunities entails recombining and reconfiguring assets and organizational structures.

We suggest that operational capabilities correspond to certain organizational practices that can stimulate each of

these three aspects. Resting on Dougherty [26] and Danneels [3], we can link R&D activities with the first two components (abilities to identify and seize opportunities). These authors consider that two types of operational capabilities are involved in R&D activities: market-related capabilities, which are required to determine the current and future needs of customers, and technology-related capabilities.

The processes for monitoring, product development, marketing, price setting, and implementing business relations correspond to market-related capabilities. We refer to these capabilities as Watch process / R&D and link them to the ability to identify opportunities. Easterby-Smith and Prieto [22] underscore the importance of monitoring mechanisms for following market fluctuations and therefore, anticipate or adapt to changes.

...from the field of marketing is the introduction of mechanisms to maintain close relationships with customers, which can enable companies to respond very quickly to potential or actual changes in the market (p.238).

For their part, technological capabilities, correspond to capabilities for designing, fabricating, and upgrading products with the desired characteristics.

Once a new (technological or market) opportunity is sensed, it must be addressed through new products, processes, or services. This almost always requires investments in development and commercialization activity... Addressing opportunities involves maintaining and improving technological competences and complementary assets and then, when the opportunity is ripe, investing heavily in the particular technologies and designs most likely to achieve marketplace acceptance (p. 1326).

We refer to these operational capabilities as being Design and production technological processes and link them with the ability to seize opportunities.

With respect to the third critical dynamic capability, the ability of reconfiguring organizational assets, Teece [24] sets down four sources conducive to the continuous adjustment

of organizational assets.

- The decentralization of decision-making can give several managers access to different kinds of information and enable them to make decisions without going through an overly rigid approval process. It also implies greater accountability of managers, who have the latitude to act at their levels and to identify opportunities and threats in their respective environments. In this regard, Teece [24] advocates the adoption of a multidivisional structure.
- Managing cospecialization concerns the capacity of ensuring complementarity of one asset with another as well as the strategy's fit with the structure or processes.
- Knowledge management. The author indicates that, in the dynamic capabilities framework, the ability to integrate and combine knowledge is a core skill. In keeping with Zollo and Winter [9], three learning mechanisms must be implemented in order to develop dynamic capabilities: (1) experience accumulation, (2) knowledge articulation, and (3) knowledge codification.
- The governance of the company must provide for learning and generating new knowledge. Incentive mechanisms must also support innovation.

We refer to decentralized decision-making and structure, governance and knowledge management as Processes for integrating and managing assets.

In order to constantly develop the operational capabilities associated with the abilities to sense and seize opportunities as well as the ability to reconfigure the organizational assets, we maintain that knowledge-management activities, more particularly the deliberate reflective activities, are required to stimulate organizational learning, and that this constant organizational learning will impact dynamic capabilities and develop organizational openness and ability to review the issues and reexamine itself. The next section will develop on this point.

Figure 2 illustrates the importance of operational capabilities and how they can influence the development of critical dynamic capabilities:

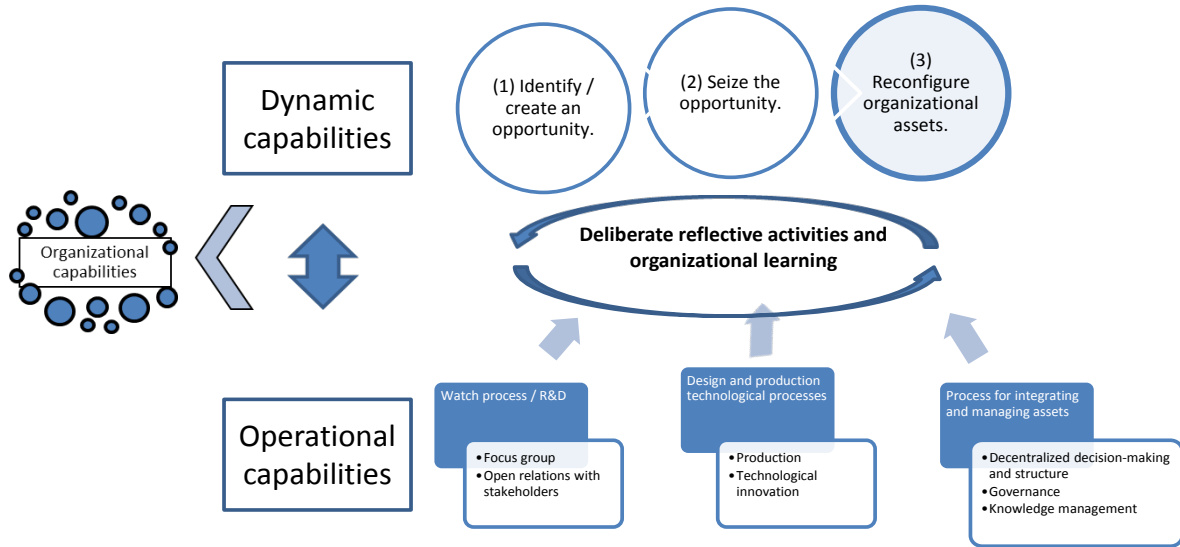


Figure 2. Relationship between operational capabilities and dynamic capabilities

8. Importance of Reflective Activities in Acting on Dynamic Capabilities

In order to push forward research aimed at guiding the manager in organizing managed learning with a view to developing dynamic capabilities, we have proposed a conceptual framework that establishes the relationship between operational and dynamic capabilities.

From our perspective, these conclusions indicate that operational capabilities are required to develop dynamic capabilities, but the body of research does not clearly state what the manager needs to do in order for them to become sources of innovation and stimulate dynamic capabilities.

Easterby-Smith and Prieto [22] observed that few studies have attempted to reconcile the dynamic capabilities approach and knowledge management. Although both deal with the means for improving a firm's performance by altering its knowledge resources (Cepeda and Vera [21]), few studies have looked at establishing the convergence between these two approaches.

Zollo and Winter [9] maintain that knowledge articulation and codification can be regarded as second-order capabilities and remain prime instruments for transformation. In order to create and evolve new knowledge, knowledge must be accumulated, articulated, and codified:

- Knowledge accumulation refers to experience already acquired by learning-by-doing. It is the learning mechanism that lies at the core of the construction and incremental development of organizational routines, mainly operating routines.
- Knowledge articulation is central and defines the delivery process by which individuals and the group attempt to understand what works and what doesn't.
- Knowledge codification relates to the importance of codifying knowledge resulting from the exercise (manual, decision-making support system) in order

to ensure knowledge dissemination and institutionalization.

For Zollo and Winter [9], knowledge articulation advocates the expression of different opinions and beliefs, and translates into constructive confrontation resulting in a better understanding of the causal relations affecting organizational dynamics. The group therefore develops a collective competence in correctly reading the environment and its relation with the company. This type of exercise helps reduce organizational complexity and makes it possible to achieve a more common vision of the issues and actions to undertake, in particular, modifying organizational routines. Knowledge articulation corresponds to an integration process and provides for what Argyris and Schön [27] referred to as double-loop learning, which implies putting into question the underlying collective assumptions, namely its norms, values, and objectives.

For Sun and Scott [28], innovation and radical changes cannot occur without challenging beliefs:

The fundamental aspect of such a change is the alteration of the fundamental beliefs and assumptions that govern an organization... Such type of learning has been described as double-loop (Argyris and Schön, 1996) or generative (Senge, 1990), and seeks to alter fundamental beliefs and assumptions resulting in an overt change in individual behavior (p .879).

Above all, the organization must therefore put into place reflective activities that facilitate shared thinking, stimulate experimentation, and challenge underlying assumptions. In doing so, it provides for the knowledge-articulation phase and could develop its capabilities. Shaw [29] asserts that sharing differing perspectives is essential for innovation:

...construction of new knowledge happens as a dialogical process in which individual perspectives

meet, collide, and negotiate new meanings (Engeström, 1995; Holland and Reeves, 1996). This conceptual conflict in social interactions drives reflection on individual perspectives and assumptions and stimulates collective inquiry (Bakhtin, 1981).

In this regard, managers, in particular, must develop, within themselves and their teams, this openness to challenging because they are the critical actors in the institutionalization process.

9. Conclusion and Avenues for Future Research

Eisenhardt and Martin [8] made a significant contribution with a view to operationalizing the concept of dynamic capabilities. They consider that dynamic capabilities would have different characteristics depending on the organization's markets. As a result, in stable contexts, dynamic capabilities can support organizational routines based on existing knowledge. In some way, this equates to continuous improvement.

This is not the case for changing business models in turbulent, unpredictable market contexts. In such contexts, an organization that wants to innovate must be flexible and able to rapidly assimilate new knowledge in order to envisage various scenarios for action. Consequently, the key dynamic capability is the one that can improve the ability to act by integrating new knowledge.

In this regard, Eisenhardt and Martin [8] have identified the best practices of "super" routines that should provide guidance to organizations:

- Involvement of cross-functional teams in new-product development to pool types of expertise and different perspectives
- Recourse to communication and intensive discussions with external resources (suppliers, customers, inter-company cooperation, etc.) in order to introduce new knowledge
- Presence of an experimental and flexible decision-making process that facilitates experimentation through action

It is therefore through action processes that the development of new organizational knowledge takes shape. Consequently, it is important for the organization to reflect on these processes, which, in some way, are a concrete application of dynamic capability from the viewpoint of improving these processes. We view this reflexivity as being a key issue that involves analysis and putting into question the assumptions underlying their dynamic. This point of view is supported by the findings of the study conducted by Berghman et al. [29] with respect to the determinant role of learning mechanisms that lead an organization to renew its understanding by using critical reflections to challenge its assumptions about customers and markets. As a result,

cognitive learning appears to be a prerequisite for behavioral learning if innovation is to occur.

These conclusions open a pathway for future research. In continuity with Berghman et al. [29], we suggest that analyzing retrospective case studies of successful organizational (and not only technological) innovations would be fruitful. These stories would make it possible to identify the action processes at work and the role of managers as well as the eventual presence and nature of deliberate reflective activities that would contribute to knowledge articulation and the renewal of collective schemata. By analyzing the events and activities that have dotted the genesis of innovation, we can track if deliberate reflective activities have had a relatively positive impact on learning and on the development of operational capabilities.

For practitioners, as indicated by Berghman et al. [29], this paper attracts attention to the relevance for organization to implement deliberate learning mechanisms that challenge their prevalent assumptions about customers, markets, innovation and production processes. Critical reflections to challenge assumptions induce learning which appears to be a prerequisite for innovation is to occur. Furthermore, "super" routines proposed by Eisenhardt and Martin [8] may help triggering appropriate mindset to challenge assumptions.

REFERENCES

- [1] Helfat, C.E., Winter, S.G. (2011) Untangling dynamic and operational capabilities: Strategy for the (N)ever-changing world. *Strategic Management Journal*, 32(11), 1243-1250.
- [2] Ambrosini, V., Bowman, C., Collier, N. (2009), Dynamic capabilities: An exploration of how firms renew their resource base, *British Journal of Management*, 20(S1), S9-S24.
- [3] Danneels, E. (2002), The dynamic of product innovation and firm competencies. *Strategic Management Journal*, 23(4), 1095-1121.
- [4] Pavlou, P., El Sawy, O. (2006), From IT Leveraging Competence to Competitive Advantage in Turbulent Times, *Information Systems Research*, 17(3), 198-227.
- [5] Global CEO Study: Capitalizing on Complexity (2010). IBM Business Consulting Services. Accessed November 2014: <http://www-935.ibm.com/services/us/ceo/ceostudy2010/index.html>
- [6] Global CEO Study: Leading Through Connections (2012). IBM Business Consulting Services. Accessed November 2014: <http://www-935.ibm.com/services/us/en/c-suite/ceostudy2012/>
- [7] Teece, D. J., Pisano, G., Shuen, A., (1997), Dynamic Capabilities and Strategic Management. *Strategic Management Journal*, 18 (7), 509-533.
- [8] Eisenhardt, K.M. et Martin, J.A. (2000), Dynamic capabilities: What are they? *Strategic Management Journal*, 21, 1105-1121.

- [9] Zollo, M., Winter, S. (2002), Deliberate learning and the evolution of dynamic Capabilities. *Organization Science*, 13(3), 339-351.
- [10] Soparnot, R. (2005), L'évaluation des modèles de gestion du changement organisationnel: de la capacité de gestion du changement à la gestion des capacités de changement. *Gestion*, 29(4), 31-42.
- [11] Argyris, C., Schön, D. (1978), *Organizational learning: A theory of action perspective*, Addison Wesley, Reading, Mass.
- [12] Probst, G. and B. Büchel (1997). *Organizational Learning. The Competitive Advantage of the Future*. London, New York, Prentice Hall.
- [13] Weick, K.E., Quinn, R.E. (1999). Organizational change and development. *Annual Review of Psychology*, 50, 361-386. Argyris, C., Schön, D. (1996), *Organizational learning II: Theory, method and practice*, Addison Wesley, Reading, Mass.
- [14] Maier, G.W., Prange, C., Rosenstiel, L. (2001), Psychological perspectives of organizational learning In: *Handbook of organizational learning and knowledge*. Dierkes, M., Beroin-Antal, A., Child, J., Nonaka, I. (Eds). Boston: Oxford University Press: 14-34.
- [15] Crossan, M. M., Lane, H. W., White, R. (1999), An Organizational Learning Framework: From Intuition to Institution, *Academy of Management Review*, 24(3), 522-537. Argyris, C. (1998), Empowerment, the emperor's new clothes, *Harvard Business Review*, May/June, 99-100.
- [16] Crossan, M., Bedrow, I. (2003), Organizational learning and strategic renewal, *Strategic Management Journal*, 24(11), 1087-1105.
- [17] Dosi, G., Nelson, R.R., Winter, S.G. (2000), Introduction: The nature and dynamics of organizational capabilities. In: Dosi, G., Nelson, R.R. et Winter, S.G. (dir.), *Nature and Dynamics of Organizational Capabilities*, Oxford: Oxford University Press, 1-22.
- [18] Helfat, C.E., Peteraf, M.A. (2003). The Dynamic Resource-based View: Capabilities Lifecycles. *Strategic Management Journal*, 24(10), 997-1010.
- [19] Winter, S.G. (2003). Understanding dynamic capabilities. *Strategic Management Journal*, 24(10), 991-995. Argyris, C., Schön, D. (1974), *Theory in practice: Increasing professional effectiveness*, Jossey-Bass, Oxford, England.
- [20] Collis, D. J. (1994), Research note: How valuable are organizational capabilities?, *Strategic Management Journal*, 15 (Winter special issue), 143-152.
- [21] Cepeda, G., Vera, D. (2007), Dynamic capabilities and operational capabilities: A knowledge management perspective, *Journal of Business Research*, 60 (5), 426-437.
- [22] Easterby-Smith, M., Prieto, I. (2008), Dynamic capabilities and knowledge management: an integrative role for learning? *British Journal of Management*, 19(3), 235-249.
- [23] Easterby-Smith, M., Lyles, M. A. (2005), Organizational learning and knowledge management: agendas for future research. In: *Dynamic Capabilities: Current Debates and Future Directions* The Blackwell Handbook on Organizational Learning and Knowledge Management. Malden, MA.
- [24] Teece, D.J., (2007), Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28, 1319 - 1350.
- [25] March, J. G., (1991), Exploration and exploitation in organisational learning, *Organisation Science*, 2 (1), 71-87.
- [26] Dougherty, D. (1992), Interpretive barriers to successful product innovations in large firms. *Organ. Science*, 3(2) 179-202.
- [27] Argyris, C., Schön, D. (1996), *Organizational learning II: Theory, method and practice*, Addison Wesley, Reading, Mass.
- [28] Sun, P., Scott, J., (2005), An investigation of barriers to knowledge transfer, *Journal of Knowledge Management*, 9 (2), 75 - 90.
- [29] Shaw, P. (2002), *Changing Conversations in Organizations - A Complexity Approach to Change*, Routledge, London. 208 p.
- [30] Berghman, L., Matthyssens, P. Streukens, S., Vadenbempt, K. (2013), Deliberate Learning Mechanisms for Stimulating Strategic Innovation Capacity. *Long Range Planning* 46 (2013), 39-71.