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# **Dynamic Capabilities and the Development of Organizational Competencies**

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Freie Universität Berlin

**Diskussionsbeiträge/**

**Discussion Papers**

des Instituts für Management

herausgegeben von/

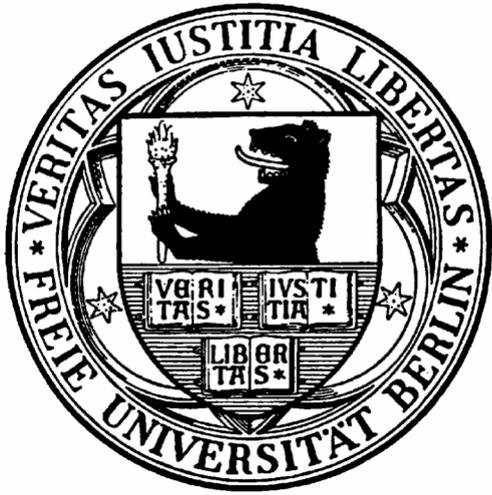
edited by

**Rudi Bresser, Gertraude Krell und  
Georg Schreyögg**

**Folge # 25/05**

**Issue No. 25/05**

ISBN 3-9809721-1-9



# **Dynamic Capabilities and the Development of Organizational Competencies**

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## **Summary**

The recent discussion in the field of strategic management broadly favours the idea of a dynamization of organizational competencies in order to overcome potential dysfunctions and rigidities of organizational competence building. The major question addressed in this paper is whether, how and to what extent it is possible to re-conceptualize organizational competencies to become a dynamic construct. After a brief recapitulation of the distinguishing features of organizational competence, two basic approaches of dynamic capabilities are identified and presented. By reconstructing the argumentation logic of both it will be shown will be shown that both approaches offer solutions that in the final analysis are likely to destroy the idea of organizational competence building. The last section of this paper aims to develop an alternative approach which preserves the advantages of competence building and tries to solve the rigidity issue, not by integrating a dynamic dimension into the competence construct but rather by establishing a dual mechanism. This two tier solution is called competence monitoring.

*Keywords: resource-based view, evolutionary economics, organizational competencies, dynamic capabilities*

## INTRODUCTION

The concept of dynamic capabilities or competencies has attracted increasing attention. By now it features prominently in the field of strategic management. This concept extends the original theory of organizational competencies. Within the resource-based view (RBV), organizational competencies have been identified as a major source for generating and developing strategic heterogeneity, i.e. competitors differ significantly and durably in their resources and competencies – they display differences which are likely to constitute a sustainable competitive advantage or, respectively, disadvantage.

Within the RBV, the strategic position of a firm varies systematically with the availability of complex and firm-specific bundles of resources or “idiosyncratic competencies” (Amit and Schoemaker, 1993; Lado *et al.*, 1992). The historical roots of this view reach back to the 1950’s. Selznick (1957) was the first author to stress the importance of firm-specific abilities for building strengths, he called them “distinctive competencies”. Elaborating on his thought, Learned *et al.*, (1969) have stated that the real key to a company’s success or even to its future development lies in its ability to find and create competence that is truly distinctive.

As a result, strategic literature has been concerned with the question of how to identify, employ, generate and develop organizational competence. With time, the characteristics of those competencies which are likely to constitute a sustainable competitive advantage have been substantiated: they have to be rare, inimitable, non-substitutable and value-creating (Barney, 1991; Peteraf, 1993; Wernerfelt, 1984). As is well known, a lot of attention has been paid in this context to the concept of core competencies, which are defined as firm-specific bundles of technologies, lateral forms of cooperation and organizational learning (Prahalad and Hamel, 1990). Referring to the observation that markets and leading market positions have increasingly become subject to turbulence and threatening erosion, Prahalad and Hamel advocate the building of structural “core” competencies that can provide guidance both in changing old markets and in emerging markets. The basic idea is that the same core capability

can be applied across different products and markets, i.e. the same core competence enables a firm to gain advantageous positions in different strategic business units.

It is this argument of increasingly turbulent markets which has been taken up again in the recent strategic literature, re-focussing the debate on a new dimension, the “*dynamization*” of organizational competence. In the meantime, a variety of conceptions have been developed (salient are: Lei *et al.*, 1996, Teece *et al.*, 1997; Kusunoki *et al.*, 1998; Eisenhardt and Martin, 2000; Zollo and Winter, 2002). All these dynamic concepts have a common point of departure: Facing increasing market-dynamics, they aim at overcoming the static and asset-oriented perspective of the traditional RBV and try to incorporate adaptability and change into the concept of organizational competence. The idea is to re-work substantially the concept of organizational competence so that it no longer represents a stable “asset” but rather continuously changing skills or even a process (Montealegre, 2002). The concept of dynamic capabilities revises the RBV insofar as not only the markets, but also the organizational competences are conceptualized as being dynamic and flexible (Helfat and Peteraf, 2003: 998). Skills for matching the pressing *change demands* are considered as becoming the future key-success-factor for gaining and sustaining competitive advantage.

This paper aims to discuss this idea of dynamizing organizational competence, more precisely it asks the question if and to what extent dynamism can be incorporated into the concept of organizational competence. We begin by re-stating the logic of organizational competencies and their potential dysfunctions (in terms of persistence and inertia) in turbulent fields, thereby unfolding their ambiguous character. In the next step, we discuss the concept of dynamic capabilities in the different ways that it is conceived, as well as its potential to overcome the ambiguity and persistence inherent in the classical competence construct. The discussion focuses on the two most salient conceptions of dynamic capabilities- those of Teece et al. (1997) and Eisenhardt and Martin (2000). The analysis will show that aside from undisputable merits, these theories have a problematic tendency, they are prone to “throw

out the baby with the bath water”, i.e. the suggested dynamization in the final analysis is likely to fade out the strategic essence of organizational competence. As a result of this discussion we suggest an alternative conception which tries to preserve the original characteristics of organizational competencies and to assure adaptability of corporate resource management in a different way, called “Competence-Monitoring”. After explaining its main elements and the underlying logic, a concluding section outlines practical implications and discusses conclusions for future research on organizational capabilities and the requirements of a dynamic resource based theory.

## **THEORETICAL FOUNDATIONS OF ORGANIZATIONAL COMPETENCE AND CAPABILITIES**

As research on organizational competencies has progressed, it has become clear that a competence is a special kind of resource that cannot simply be equated with regular assets available in an organization. Also, a competence is not only intangible but rather represents an indirect or meta-ability, a higher order skill of the organization to combine available resources/assets in a specific way. This combinative skill ensures that the available resources are uniquely allocated and interconnected so that the organization can not only successfully solve its pressing tasks but also build up a firm-specific potential for successfully mastering future challenges as well (Hamel and Prahalad, 1994; Turner and Crawford, 1994). An organizational competence is collective and social by its very nature, i.e. it has been brought about by social interaction and represents a collectively shared “way of doing” (Berger and Luckmann, 1966) that can be recognized and replicated (Gherardi and Nicolini, 2002). Since organizational competence is not the result of planned corporate conduct but rather emerges incrementally from daily interaction it is often considered as a “somewhat mysterious social phenomena” (Dosi *et al.*, 2000: 1). Thus, in a first step, organizational competence can be defined as the evolving ability of an organization as a whole to perform a challenging set of tasks by utilizing organizational resources (Helfat and Peteraf,

2003: 999). An organizational competence is thus resource-based but not a resource in itself (or at best, a derivative one). It refers to the combination of complex bundles of tangible and intangible resources, which are permanently selected and (re-)combined in the performance process (Barney 1991). In other words, competence does not directly relate to the output of the firm, but contributes indirectly through the effects of resource combination (Teece *et al.*, 1997).

In an attempt to resume the essence of organizational competence, three salient characteristics seem to emerge: *success boundedness*, *complexity*, and *reliability*.

### **Success Boundedness and Practicing**

Whatever the details of the various conceptions are, there seems to be an iron link between competence and success. Competence is conceived as a strictly success-bound category. It is only recognized and attributed to a performing social entity in the case of a successful and appreciated performance. Since performance is logically bound to action, competence clearly refers to action too, i.e. it cannot conceptually be separated from acting or practicing. Embedding organizational competence in practising or doing, means at the same time detaching the concept from an exclusively cognitive understanding. In other words, competence means more than cognitions; it covers a broader range of activity.

### **Complexity and Problem-solving**

The second dimension of organizational competence refers to a distinct and extraordinary ability to master complex problems or challenges. This dimension comes close to the notion of competence as it has been used in educational psychology, the discipline where the concept of competence was originally developed. There, competence refers to the potential and ability to deal with complex, i.e. not everyday tasks (Weinert, 2001). Similarly, the evolutionary approach depicts organizations as problem-solving entities; different institutional set-ups and capability regimes respectively are interpreted as reflections of

the complexity profile inherent to the tasks faced by the firm (Levinthal, 2000; March and Simon, 1958; Nelson and Winter, 1982).

The claim of complexity refers to the extraordinary character of a competence. Not all successful problem solving entails a competence attribution, only that which is difficult to reach. What does complexity mean in this context? In most cases, the notion of complexity refers to the characteristics of problem-situations and decision-making under ambiguity/uncertainty as to how to handle those situations (Dosi *et al.*, 2003; Duncan, 1972) or, to put it differently, ill-structured tasks (March and Simon, 1958). Extra-ordinary tasks require extra-ordinary skills; those who can develop skilful solutions are attributed competence. The complexity-dimension thus becomes relevant in a two-fold way: on the one hand, with respect to the complexity of the task to be handled it is assumed that the problem situation is ambiguous and uncertain. Ambiguity and uncertainty for their part are assumed to result from non-linear, dynamic and therefore not clearly and fully explainable causalities/causal connections in the task environment (Lippman and Rumelt, 1982).

On the other hand, complexity refers to the organizational competence itself, its structure and evolution. The underlying logic for this complexity claim may be drawn from cybernetics. The “law of requisite variety” points out that complexity can only be mastered with complexity (Ashby, 1965) - or more precisely: The larger the variety of actions available to a control system, the larger the variety of perturbations it is able to compensate. The complexity of the concept of competence therefore reflects the internal requirements for capturing complex tasks; it implies at the same time that the logic of its internal functioning is difficult to explain and to communicate. In this perspective, organizations are understood as complexity handling units (Cyert and March, 1963). Problem-solving can be defined as a sequence of generating *complex combinations* of cognitive and habitual acts (Dosi *et al.*, 2003: 170). These acts focus primarily on finding all the relevant resources needed and combining them effectively (Kogut and Zander, 1992). As a result, the organization may produce competently coordinated activity.

Problem-solving is embedded in organizational design, information procedures, micropolitics and communication channels as well as other organizational characteristics (culture, control-regimes, etc.), all these features shape the organizational competencies (Henderson and Clark, 1990) and define their distinctiveness.

### **Reliability and time**

A third common feature of organizational competence conceptions stresses the existence of a “recognizable pattern” of activities that permits repeatable and reliable performance. The notion of a “pattern” implies that in order for the performance of a set of activities to constitute a competence, it must have reached a certain level of consolidation. “At a minimum, in order for something to qualify as a capability, it must work in a reliable manner” (Helfat and Peteraf, 2003: 999). This routine nexus of competence features prominently in the neo-evolutionary theory of economics (Nelson and Winter, 1982; Winter, 2000). This approach conceives organizational competencies as a composition of a set of approved ‘linking- or combining-routines’. Viewed in this way, any organizational competence is the result of an evolutionary formation process, a process in which a specific way of “selecting and linking” resources has proved to be successful in organizational problem solving. A singular success can trigger the building of a competence but a competence is not actually constituted unless a reliable “practice” has evolved over time. Competence is therefore bounded to repeatability.

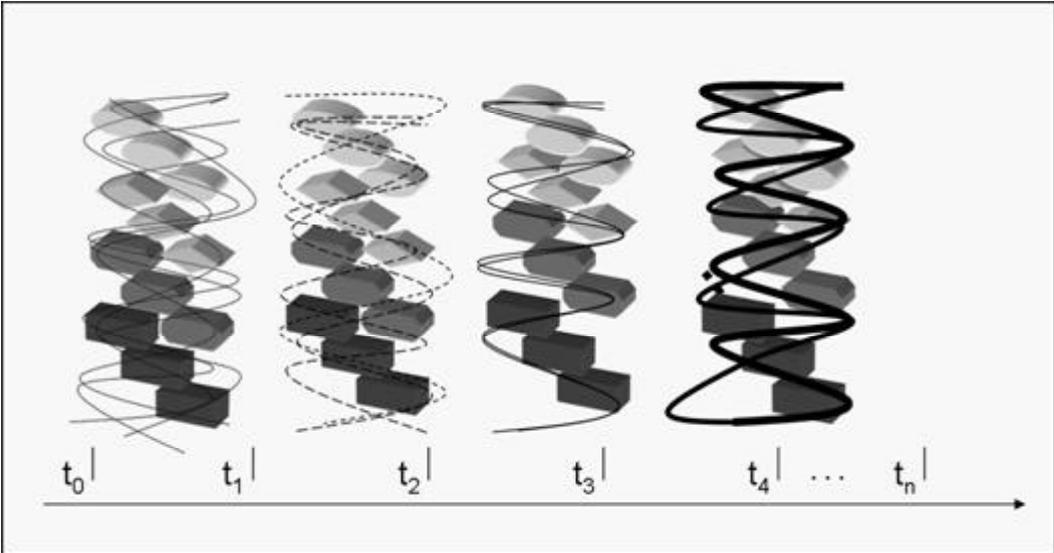
Similarly, in the evolutionary framework of Hannan and Freeman (1977; 1984) the development of *reliable* action-patterns figure prominently. The presence of reliability is even considered the precondition for the survival of an organization. The authors point out that reliability entails an “*unusual capacity to produce collective outcomes of a certain [...] quality repeatedly*” (1984: 153). Thus, the transformation from an occasional successful coordination effort into a reliable problem-solving pattern gains key importance.

Within evolutionary economics the idea of patterned organizational competence has been addressed in the context of complex routines. Nelson and Winter (1982) define routines as the “*general term for all regular and predictable behavioural patterns of firms*” (1982: 14). Brilliant improvisation can thus not be considered a routine. In a more recent contribution, Winter (2003) emphasizes that routines are not only replicable, but also learnt and specifically oriented behavioural patterns of organizations, i.e. routines refer to specific constellations of resources.

The consolidation of occasional practices to organizational competencies can be explained by drawing on learning-theory and theories of path dependency. Obviously, resource combinations once successful are likely to positively reinforce themselves over time thereby generating positive feedback loops, i.e. in our terms specific linking patterns. Systems learn by seeking to preserve successful resource combinations. Successful combinations in the past influence future processes in the sense that “history matters” (David, 1985). Finally, those self-reinforcing processes converge in the evolvement of a problem-solving architecture reflecting the specific organizational context (see Figure 1).

**Figure 1:**

**Evolvement of a Complex Selection- and Linking-Pattern**



In a way, any organizational competence is therefore based on a path, on a specific behavioural pattern gradually built from the past (Teece *et al.*, 1997). To put it differently, the evolution of organizational competence is recursive in nature. Past experience builds the frame of reference for future action and is thereby reproduced.

Stressing the historical nature of organizational competences makes it clear that time is a basic dimension of competence and that there are no time compression economies (Dierickx and Cool, 1989). Competence development takes time and the way that time is taken is relevant for the building of the competence. Organizational competence is a time- based concept, integrating the past, the present, and the future. It would be misleading to conceive of organizational competencies as totally stable entities. Competencies evolve and evolution implies gradual adaptation processes over time. Helfat and Peteraf (2003) refer to exactly this point by introducing the idea of a capability life-cycle. They argue that capabilities, just the same as products, have development paths that follow recognizable stages from founding to decline/renewal. Thus, to a certain degree, a kind of natural change is inherent in any capability evolution.

To sum up, an organizational competency represents a reliable behavioural pattern for selecting and linking resources. It is based on successful combinations in the past and therefore amounts to an organizational “problem-solving-architecture”. Evolved over a period of time, this problem-solving-architecture leads organizational members in dealing with complex challenges and tasks. Due to its complex development, the logic of its functioning cannot be fully understood. It is a skill. It should be reiterated here that it is exactly this complex character and the time intensive evolution that makes up the essence of the potential strategic value and relevance of organizational competence (Barney, 1991; Dierickx and Cool, 1989; Leonard-Barton, 1992).

## **THE PARADOX OF ORGANIZATIONAL COMPETENCE**

Organizational competencies are greatly appreciated features of firms. In most cases they are seen as salient success factors and nowadays nearly all organizations want to be perceived as being competent.

The competent organization has become a new ideal.

A closer look at competence based behaviour and competition reveals, however, a much more ambiguous reality than expected. The replication of successful selection and linking-patterns can easily become problematic. This holds particularly true in volatile environments and for dynamic competition (where the rules of the competitive game are changing). In both cases, organizational competencies may invert from a strategic asset into a strategic burden. The strengths of competence-based behaviour may amount to a barrier to adaptation. (Dosi *et al.*, 2003). This inherent tendency to inertia needs some more explanation.

### **Path-dependency**

The evolvement of organizational competencies has been depicted as self-reinforcing feedback processes, possibly based on increasing returns (Arthur, 1983). As is well known from empirical studies, those self-reinforcing processes build paths which are prone to dramatically narrowing the scope of action and which may even lead to a *'lock-in'*. The *'lock-in'* metaphor refers to the fact that the organization has lost/looses its ability to perceive and/or to implement alternative ways of selecting and linking resources. The positive feedback-process is likely to bring about path-dependency in the competence-based practice. Organizational competencies or core competencies are prone to get fixed to those constellations in which they proved to be successful. If the constellations remain over time more or less the same, this fixation does not raise a problem. In case, however, the context changes (competitors, market structure, rules of competition, etc.) – and we live in a world of change - new parameters will determine competitive success, and the competence driven action patterns are likely to

mislead the organization. In other words, the company's fixation on a specific competence results in a loss of flexibility and can cause misconduct towards the changed environmental circumstances (Leonard-Barton, 1992; Miller, 1993). The firm's (core) competence does not work any longer in the face of changed contextual features. Miller calls this tendency "Ikarus Paradox"<sup>1</sup> thereby referring to the fact that organizations facing a long period of (outstanding) success have the tendency to (over)-simplify their operational procedures and to become blind to discrepant/negative feedback (Miller, 1993, 1994). Finally, a once successful pattern can mutate into its converse: a pattern of failure. Thus, paradoxically, the cause of failure resides in what had once been the source of success.

## **Commitment**

Additional insight into the logic of this Janus-faced character of organizational competence comes from commitment research. As opposed to the premises of neoclassical microeconomics, the commitment theory highlights the irreversible effects of investments and the resulting persistence of competencies and strategies (Ghemawat, 1991). In real business settings (in contrast to the ideal world of microeconomics), initial investments limit future selections and bind firms unintentionally to historically pre-determined resource allocations (Bercovitz *et al.*, 1996). The argument is that any investment constitutes a binding commitment to specific resources and at the same time against alternative resources and their potential linkages. For a certain (specified) period of time, the investment constricts not only the current possible linkages, but the future ones as well. This holds true both for psychological and for objective economic reasons. Psychological persistence is caused by well-known effects such as "escalating commitment" (Staw, 1976), "group think" (Janis, 1982), "defensive routines" (Argyris, 1990), selective perception (Secord and Backman, 1964), mind maps (Weick and Roberts, 1993) etc.

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<sup>1</sup> Referring to Greek mythology Icarus was given a pair of wax wings which allowed him to fly to unexpected heights. Legend has it, that Icarus flew so close to the sun that his wings melted and he plunged to his death (Miller, 1993: p. 130) .

Economic constraints fostering persistence stem from factors such as “exit barriers” (Geroski *et al.*, 1990), “asset specificity” (Williamson, 1985), “forgone opportunities” (Samuelson 1976), “untradeable resources” (Barney, 1991), stickiness (Hippel v., 1994) etc. In conclusion, investment is likely to bind the company to a certain track of economic behaviour and therefore always implies the risk of becoming inflexible. The more dynamic the environment the higher the implied flexibility risk.

Leonard-Barton (1992; 1995) provides evidence relating to commitment dynamics in the context of organizational capabilities. In her empirical studies, core capabilities turned out to have a dual nature, i.e. an up side and a down side (“dysfunctional flip side”) as well. On the one hand, core competencies facilitated the development of projects and enabled product innovation. Paradoxically enough, exactly these competencies inhibited on the other hand further product innovation; they became “core rigidities”: Managers stuck to the currently successful competence (via project budgeting and investment policy), thereby unintentionally suppressing new project initiatives.

Levitt and March (1988) similarly point out that focusing on improvements of existing competencies may make experimentation with alternatives less attractive. Those inhibition-processes are not fully conscious or reflected in nature, but rather are triggered by self-defeating routines. At worst, incompetencies evolve from what had in the past been the firm’s core competencies (Dougherty, 1995).

Given the dual nature of organizational competence, managers face a paradox (Leonard-Barton, 1992): On the one hand the evolvement of complex and reliable linking patterns constitutes the generation and development of sustainable competitive advantage. At the same time, this reliability implies rigidity and the potential erosion of this advantage.

As a consequence, organizations are faced with a dilemma: On the one side utilizing and maintaining their competencies and on the other side being damaged by the “dysfunctional flip side” of exactly these competencies.

The problem of the *dysfunctional flip side* of organizational competence and suggested solutions feature most prominently in the recent competence literature. The central idea is „dynamization“ and the key conceptions are “*Dynamic Capabilities*” (Eisenhardt and Martin, 2000; Kusunoki *et al.*, 1998; Teece *et al.*, 1997; Zollo and Winter, 2002) and “*Dynamic Core Competencies*” (Lei *et al.*, 1996). In the following section we examine to what extent and in which ways a dynamization can provide a solution to the dysfunctional flip. Is it actually possible to solve the paradox of organizational competence by adopting a dynamic dimension?

## **APPROACHES OF DYNAMIC CAPABILITIES**

There is a growing literature on dynamic capabilities. From our point of view two approaches stand out in the debate: The first approach tries to build a more comprehensive conception of competence by including a dynamic dimension. We therefore call it the “*integrative approach*”. The second one does not aim at integration; it rather adopts the logic of contingency theory. One could call it the “*contingency approach*” or “non-integrative approach”. The detailed conceptions are as follows:

### **Integrative Approach**

Among the integrative conceptions the most salient one is the dynamic capability concept of Teece, Pisano and Shuen (1997). The authors do not start with the paradox mentioned above, rather, they refer to empirical evidence that finds that competitive advantages are primarily rooted in responsiveness and flexible product innovation. In their view, successful organizations are those that have developed “*dynamic capabilities*”. Dynamic Capabilities are conceived of as the mechanisms of adapting, integrating, and reconfiguring integrated clusters of resources to match the requirements of a changing environment. Put differently, the construct of dynamics refers to a general ability to change existing

competencies: “The term ‘dynamic’ refers to the capacity to renew competencies (...)” (1997: 515). Thus, the existence of organizational competencies is taken for given.

Dynamic capabilities are conceptualized by three dimensions: (1) Positions, (2) Paths, and (3) Processes (see Figure 2).

**Figure 2:**

**Integrative-Approach of Teece, Pisano and Shuen (1997), Self-Design**



(1) “Positions” refer to both internal and external positions. The internal position relates to the specific set of resources available in a firm (financial, technological, reputational, and structural). The external side refers to the specific market position/assets of the focal firm. The current positions of a firm determine to a certain extent the future decisions a firm can reach and realize (This is basically the “commitment”-argument introduced above).

(2) “Paths” represent the history of an organization, i.e. the current position of a firm is basically shaped by the patterns evolved from the past. And also, where a firm can go in the future depends on its current paths and their shaping force.

(3) “*Processes*” are conceptualized as a hybrid-dimension: On the one hand, processes are devoted to coordinating and integrating available resources. This is understood as the static component. On the other hand, processes mean organizational learning and reconfiguration of resources. These two sub-dimensions represent the dynamic component which is supposed to guarantee permanent adaptation and change of the organisation. The dynamic sub-dimension “learning” covers processes of incremental improvements (amendments of the current positions) as well as processes of identifying new opportunities - from both an organizational and an inter-organizational perspective. The second dynamic sub-dimension “reconfiguration” addresses the complete transformation of the firm’s asset structure. It covers the surveillance of the environment for discontinuities and the accomplishment of corresponding radical changes. The “processes” are at the heart of organizational competence: “The essence of competence (...) is embedded in organizational processes” (1997: 518). They build at the same time the core for the dynamization of competencies<sup>2</sup>.

In successful firms, the interaction of static and dynamic components is assumed to converge to a full blown “dynamic capability”. In order to avoid misunderstandings it seems important to stress that the term “dynamic capability” here explicitly comprises both dynamic and static elements. And that is the very reason why we call it the “integrative concept”.

## **Discussion**

No doubt, the idea of adding dynamic mechanisms to the concept of competence represents a very plausible avenue for solving the problem of the dysfunctional flip side of competence. In our view,

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<sup>2</sup> It comes as a surprise that the generation of competitive advantage is explained somewhat differently, namely as a function of processes which are specific, path-dependent and have evolved over long periods of time: “*But the content of these processes and the opportunities they afford for developing competitive advantage at any point of time are shaped significantly by the assets the firm possesses (internal and market) and by the evolutionary path it has adopted. Hence organizational processes, shaped by the firm’s asset positions and modelled by its evolutionary and co-evolutionary path, explain the essence of the firm’s dynamic capabilities and its competitive advantage*” (Teece, Pisano and Shuen, 1997: 518).

however, it is at least questionable to what extent this idea of dynamizing competences can actually provide a way out of the paradox and its underlying conceptual dilemma. A more detailed discussion of the conceptual issues is needed.

The core idea of the suggested way of dynamizing competences is to expand the competence-construct by including learning and transformation processes. The new dynamic features are added to the dimensions of patterned replication of organizational problem solving in order to ensure that they are made (or become) flexible. The guiding logic seems to be the following: The classical pattern-based essence of organizational competence (as depicted in detail at the beginning of this paper) builds the core, i.e. reliable patterns and routines are accepted as the basis of competence. The additional dynamic dimension is designed to overcome the inherent risk of becoming rigid; it aims at appropriate and timely adaptation.

In other words, Teece, Pisano and Shuen seek to exploit the positive effects of patterned competences and overcome concurrently its inherent problematic side by adding a dynamic dimension that ensures change. They actually suggest “re-programming” organizational competence as a two-dimensional notion being both a stable and a learning construct.

This solution seems, however, too easy a way out of the dilemma. It builds on two contradictory logics at the same time. Reliable replication and permanent change can hardly mix. Dynamizing in the defined sense effectively means transforming reliable and routinized action patterns into learning operations. Stable patterns are thus thought to become subject to permanent change. Reliable and replicable patterns cannot, however, evolve without stability; they cannot become effective in terms of a pure learning mode. Making them subject to the learning mode, means in the final analysis dissolving their replicable essence. The very character of competence [(distinct ways of coordinating and combining (...), 1997: 519)] would simply get lost; competence would amount to a chain of singular learning acts.

It becomes obvious that the idea of adding the learning function to the competence concept, which at first glance seemed very plausible, runs into a serious problem. It is not possible to simply add the missing learning feature; the two dimensions are contradictory in nature. To stress the one dimension necessarily means dissolving the other.

In conclusion, the idea of building an integrated conceptualization of competence by relying simultaneously on replication and the learning function cannot work. The integration logic seems to be overstretched; the paradox of competence can not be solved in this way.

It should be noted, however, that Teece, Pisano and Shuen attenuate to certain degree the dissolving effect of dynamizing by pointing out the limits of the learning function. They stress that learning is local and close to previous activities (1997: 522). So the scope of learning is constrained by the past and by historical paths. Furthermore the authors point to economic reasons for limiting changes: “Change is costly” (1997: 521). These arguments may, however, easily lead to the fostering of small scale changes only. Path driven learning and transformations are likely only to modify the established way (method) of patterned problem solving and to favour incremental changes. By implication, the basic assumptions and values underlying the predominant competence pattern are not called into question and a fundamental change or renewal of the existing competence cannot occur. But in most cases, exactly this fundamental transformation is claimed to be the most important function of dynamic capabilities.

For instance, Lei, Hitt and Bettis (1996) put forward the claim for radical changes in organizational competencies. Change in and flexibility of core competencies is thought to be effectuated by “higher-level capabilities” in terms of “dynamic routines”. In their view, dynamizing organizational competencies is primarily effectuated by double-loop learning (Argyris, 1982, 2004), i.e. by challenging the underlying basic assumptions of operational procedures and organizational problem solving.

On the other hand, any attempt to include permanent double loop learning into the competence conception inevitably leads us back to the contradictory nature of integrated approaches as pointed out in detail above.

### **Contingency Approach**

A different conception of dynamic capability has been suggested by Eisenhardt and Martin (2000). As opposed to Teece, Pisano and Shuen, these authors differentiate between different *degrees and patterns of dynamic capabilities* (2000: 1106). They advocate a contingency approach of dynamization dependent on the actual degree of market dynamic. A clear distinction is drawn between moderately dynamic and high velocity markets. Accordingly, two broad classes of dynamic capabilities are introduced. “Moderate dynamic markets” require dynamic capabilities which come close to the classical conception of routines, i.e. the pattern-driven conception of competences with some incremental changes. In contrast, high velocity markets demand the generation of a totally different type of competence which amounts to simple, experiential, unstable and highly fragile processes of reconfiguration, integration and acquisition of resources. High-velocity environments are those in which there is rapid and discontinuous change in the market conditions and rules (Bourgeois and Eisenhardt, 1988).

Thus, this approach suggests a contingent relationship between the degree of market velocity and the structural characteristics of dynamic capabilities. The competence conception as introduced at the beginning of this paper would thus only fit moderately dynamic markets. The real challenge, however, is seen in mastering high velocity markets. In order to match the demands of those rapidly changing markets, the organizational competence and its underlying patterns have to be made completely flexible. The linking- and selection process has to create continuously new combinations of resources. “They are in a continuously unstable state” (2000: 1113). Dynamic capabilities use real-time information and

multiple alternatives, rely on “quickly created new knowledge” (2000: 1106), consist of simple rules and improvisational acts, and do not produce predictable outcomes. Quite obviously, this conception of dynamic capabilities comes very close to the functioning of what is known as Adhocracy (Mintzberg, 1979) or the “total learning organization” (Pedler *et al.*, 1994; Vaill, 1996). The distinguishing characteristic of the learning organization is that all activities permanently operate on the learning mode, i.e. they are not bound to history or rules. The learning organization is always ready to revise hitherto cognitions and change the expectations; they are in flux or as (Weick, 1977) puts it, they are “*chronically unfrozen*”.

## **Discussion**

The core idea of Eisenhardt and Martin’s suggestion is to transform (or better: to reduce) the conception of competence into total adaptability - at least in high velocity markets. The continuous reconfiguration of resources and problem-solving strategies is supposed to exclude (or - force the company to refrain from) the usage of any specific selection and linking-pattern. Thus, the classical competencies can no longer build the basis of sustainable competitive advantages (Eisenhardt and Martin, 2000; Zott, 2003). The new basis for building competitive advantages is seen in the encompassing ability to change quickly and to master the erratic environmental demands.

This solution to the dysfunctional flip in high velocity markets is a radical one. The subject to be dynamized is in danger of getting lost; the generation and development of replicable problem solving *competencies* actually are no longer needed or even become dysfunctional. The only organizational competence left in high velocity markets is the ability to learn quickly and to improvise effectively. Problems are solved without relying on formerly built expertise and competitive advantages can only be gained from rapid learning and flexible pacing (Eisenhardt & Martin, 2000: 1116 f.).

This solution is without doubt an appealing one which nicely matches our feeling that all parameters of our life are continuously changing. From a theoretical point of view however, the suggested type of organization, i.e. permanently learning and “chronically unfrozen” (Weick 1973), raises some fundamental questions.

A first argument comes from cost theory: The suggested idea of full flexibility is likely to run into a trade-off with efficiency (Marengo, 1992). Realizing this idea of dynamic capability has high opportunity costs. It simply means abandoning advantages of cumulative experience, specialization, economies of scale and further synergies of all kinds (for example high quality or logistical reliability: Can such organizations deliver on time?). The flexibility solution usually is the most costly one among the available alternatives. Furthermore, those dynamic organizations would be well advised to refrain from any investments at all because investment necessarily means commitment to specialized resources and therefore barriers to quick adaptation<sup>3</sup>. It is, however, hard to see how an organization can exist without any foundation. Organizations necessarily require investments in tangible and intangible assets. Otherwise there would be no reason for an organization to exist. Pure ad hoc coordination comes very close to the (unpatterned) mode of market coordination. Under those circumstances, hierarchies are likely to become obsolete and be substituted by markets. The logic of organizations/hierarchies and this idea of dynamic capabilities obviously do not mix. The problematic side of this solution can be further highlighted by drawing on insights from modern systems theory:

A total learning system as suggested is supposed to react to any environmental trigger in a new way. Organizations could no longer operate environmental triggers on the basis of proven selection patterns and rules. They would have to be totally open without any guidance from the past and experiences with

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<sup>3</sup> By contrast, Winter (2003) holds that ad hoc problem solving may carry a lower cost burden. As he puts it, competence development typically involves long-term investments in resources. If there is no problem to be solved, the costs of ad hoc problem solving largely disappear while the (long-term) cost of the (unusable) organizational competence remains.

successful practices. This is not only a totally a-historic view of organizations and organizational behaviour, ignoring the essential embeddedness of actions, but also eliminates the very foundation of an organization. Facing environmental complexity and ambiguity, organizations have to provide orientation by developing a workable scheme for enabling action at all. Organizations must create models for understanding and deciphering the complex world, for construing their reality (Luhmann, 1995, Weick 1995). If organizations set out to refrain from doing, they would not be able to build any boundary that would allow a distinction to be drawn between inside and outside. Organizations would merge with the environment. There is no such thing as a boundaryless organization.

A similar argument can be drawn from educational psychology (Carroll, 1993; Piaget, 1983). A precondition for perceiving and thinking is a cognitive pattern or map that provides orientation. There is no unconditioned observation and perception. In the same way, to be able to act, organizations need sense-making patterns to reduce complexity to an appropriate level. Basically, this process is selective by its very nature, only part of the signals and events can be perceived and become subject to organizational processes. It is this selective pattern that constitutes the boundary between the environment and the organization (Schreyögg and Noss, 2000). If this selection is not accomplished, organizations are likely to dissolve or cannot evolve at all. Thus, bringing an organization into the total learning mode means in the final analysis eliminating its boundaries and thus dissolving the organization. In conclusion, a radical dynamization of capabilities can not be the solution to our problem; it is obviously likely to throw out the baby with the bath water.

Eisenhardt and Martin (2000) are quite aware of this danger. Relying on complexity theory they seek to find a way out of this dilemma by stressing the necessity of some minimal structures and a few simple rules. A critical number of routines and rules are assumed to prevent organizations sliding into chaos or dissolution. But this suggestion raises subsequent questions. Pursuing the claim for (minimal) structures and (simple) routines systematically, it becomes very hard to draw the line as to where the dynamic

conception ends and the classical conception of competence starts. To make this suggestion operational, these structures and rules must reach a properly defined threshold level. At a minimum they must work in a reliable and repeatable manner. In other words, the idea of minimal structure and routines refers back to the evolvement of pattern driven problem solving. The difference between the classical competence conception and the radical dynamic capabilities becomes a matter of degree only (and no longer a radical departure); in many cases the difference may even vanish.

A final question to be raised concerns the underlying contingency logic. The authors obviously advocate the case of strong environmental forces which more or less *determine* the appropriate reaction of the organization. In order to guarantee the system's survival an optimal fit between the environmental feature "market pace" and the organizational feature "competence" is demanded. Thus, for each environmental setting there exists one, and only one, efficient organizational formation: In high-velocity markets, defined as ambiguous industry structures with non-linear unpredictable change, highly adaptive ad hoc problem-solving is *required*. In moderately dynamic markets, defined as stable industry structures with linear and predictable change, competence building based on routinized problem-solving activities is *required* (2000: 1115) in order to gain and sustain competitive advantage. This approach is likely to mystify the environment just like a natural event such as lightning. This thinking ignores the social construction of environmental pressures and the fact that firms are partly autonomous (powerful) actors, which can exert influence on internal and external changes aside from "objective" pressures (Schreyögg 1980). They can for instance potentially initiate changes by creating new markets or niches (D'Aveni, 1994). It is thus to some extent misleading to restrict dynamic capabilities to the pressure of external market changes only.

Aside from this contingency question, the most surprising conclusion from this discussion is that Eisenhardt and Martin's conception of dynamic capabilities implicitly abandons the basic idea of capability in terms of pattern building at all. The suggested adaptive types of activities are hardly

capabilities. Similarly, Winter (2003) points out that new inventions or spontaneous adaptation definitively does not mean exercising dynamic capabilities because there are no “learned and stable patterns” underlying and guiding these activities. Rather, they are examples of ad-hoc problem solving which, for the sake of clarity, should not be confused with capability. Capabilities are always understood as *systematic and replicable* efforts.

## **Summary**

In summary, neither the integrative nor the contingency approach seems yet to provide a compelling solution to the pressing and challenging paradox of organizational competence. The integrative version of dynamic capabilities tends to destroy the essence of competence. By contrast, the radical version of dynamic capabilities leads into a new paradox: The idea of fully flexible dynamic capabilities actually abandons the concept of competence and in final analysis the idea of organized systems. The attenuated version stressing the importance of minimal rules and structures is not yet operational. In the final analysis it re-enters the starting point: the dysfunctional flip side of organizational competence and its underlying patterns. In this case it is a matter of degree only.

Taken together, both concepts overstretch the logic of organizational competence. They tend to ignore the constitutive core of competencies and their logic of evolution. The advantages of competence build exactly on those qualities that the “dynamic capability concept” is likely to dissolve.

As specified at the beginning of this article, capabilities/competencies are based on experience and patterns that have proven successful, thus there are no capabilities without patterns. If dynamic capabilities are actually supposed to be capabilities in the real sense of the word then they have to refer to patterned activities oriented toward specific tasks (see also Winter 2003: 992). In reverse, capabilities cannot be thought of as being fully flexible. Full flexibility destroys any pattern building. Obviously, the idea of fully flexible capabilities comes very close to a contradiction in terms. No doubt,

patterns are not totally stable; they can and do continuously integrate some change. As Helfat and Peteraf (2003) have shown, capabilities change incrementally in the course of their life cycle evolution as do all social phenomena like culture or norms. But these are organic incremental changes only and not transformational or higher order ones, as suggested in the dynamic capability literature.

Since on the one hand an integrated solution in whatever form seems to bring about unsolvable contradictions and on the other hand dynamizing is imperative, it might be better to look for solutions that conceive of organizational competences (patterned problem solving) and organizational dynamizing as two separate functions to be fulfilled in managing successfully a social system.

In the following section we aim at elaborating on this idea of a non-integrative approach. The guiding idea is to meet the need for dynamizing by setting up a dual model of competence development.

## **ORGANIZATIONAL COMPETENCE AND DYNAMIZATION: A DUAL PROCESS**

### **MODEL**

In a nutshell, the basic idea is risk compensation. Our suggestion is to exploit on the one hand the power of patterned problem-solving and on the other hand to *compensate* for its inherent risk of dysfunctional flip by alert surveillance and indicating change necessities. Instead of dynamizing the competence conception, competence evolution and system adaptation are conceived as two separate countervailing processes which are simultaneously performed.

### **The Concept of Competence-Monitoring**

The point of departure is the insight that, as opposed to the idea of a dynamic capability, the strengths of patterned problem solving and dynamization cannot be merged into one conception. It simply overstretches the scope of the concept of competence. The proposed approach therefore favours a policy of separating the functions and treating them as rival forces. Such an endeavour requires, as a first

step, shifting the perspective from the competence level to the systems level. In a systems view, competence building and dynamization can be treated as two separate functions an organization has to fulfil (Luhmann, 1995). They can be conceived of as countervailing processes which jointly ensure a proper balance between exploitation and change (exploration). Organizational competencies provide, as depicted above, a set of problem solving patterns which enable the system to master complex tasks in an effective and replicable way. To make use of these advantages means that only limited sets of procedures are employed repeatedly, while at the same time, potentially available alternatives are (consciously and unconsciously) excluded (Winter, 2003). Thus competencies are selective by their very nature.

This inherent selectivity of competencies brings forth a structural risk, namely the application of traditional patterns to new tasks; and furthermore, becoming ignorant of change requirements and alternative ways of mastering challenges. Misapplications, ignored events or discontinuities threaten the system's survival. Therefore, this inherent threat must be observed and kept under control. In other words, a system cannot only focus on developing best practices (competencies); it simultaneously has to find ways to handle the risk of being selective and recursive. Risk compensation therefore amounts to a separate high ranking system function which takes care of change requirements and adaptation needs (dynamization). At the heart of successful management is the balanced duality of patterned selection and dynamization through compensation (this concept draws on the 3-step model of strategic control developed by Schreyögg and Steinmann, 1987).

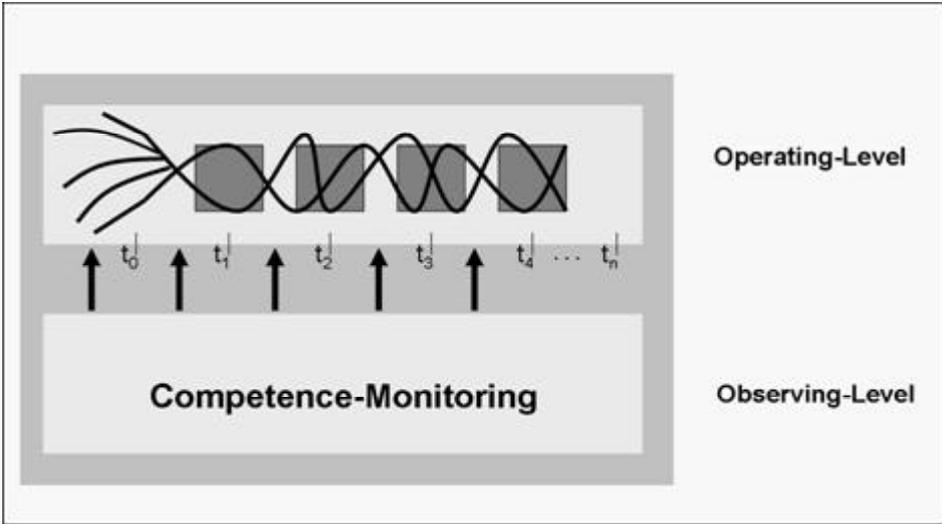
The compensation process means first of all monitoring the system's competencies, its involvement, its usage, its effects inside and outside the organization, as well as critical issues and surprises. By continuously observing (scanning) the whole competence map, potential failures and maladjustments can be identified - preferably at a very early stage. By becoming aware of those critical signals the issue of

potential change requirements is put on the agenda. This system has to make a decision as to whether or not the approved problem solving patterns should be abandoned.

Put differently, the monitoring changes the internal status of competencies; they become an explicit issue, i.e. monitoring adds a reflexive mode to the operational mode. Within the organization, monitoring establishes the task of self-observation; the organization has to observe itself and the functionalities of competencies respectively. The monitoring process looks at the practice of competence (operating level) from an alienated point of view (see Figure 3). In terms of second order Cybernetics, which is defined as the cybernetics of observing systems (von Foerster, 1982), the reflection described here represents a *second-order observation*, i.e. an observation of first-order observations from the operational level.

**Figure 3:**

**Competence-Monitoring: A Two-level Model**



Following Maturana's (1970) insight: 'anything said is said by an observer,' we can understand any practice as an observation, more precisely as a first-order observation. The monitoring we suggest here is conceived of as a second-order observation, i.e. an observation of first-order observers (practitioners). Organizational competence is - as has been shown above - a practice-bound category. In

first-order observing processes distinctions are drawn without being aware of how the distinctions are drawn. Drawing operational distinctions is thus the blind spot of any first order observer. This blind spot can be seen only by second-order observing processes. By asking how the distinction is drawn, second-order observing reflects on the first-order practice (Luhmann, 1993). It should be pointed out however that a second-order observer has no objective reality; his/her subject is socially constructed too.

Second order observations come close to “double loop learning” because they reflect the basic assumptions of action. By double-loop learning, the background assumptions (‘theories-in-use’) that were previously taken for granted and which guide the selection and linking, are called into question; the “certain way of doing’ things is made subject of reflection and thereby opened up to alternative options (Argyris and Schön, 1978: 2). To put it differently, through this observation *competencies are marked as potentially revisable*. It is marked with an index of uncertainty, i.e. the validity and temporality of competence becomes a sustainable critical issue in the organizational discourse. Insofar, the introduction of the monitoring function re-frames concurrently the concept of competence in use (Putnam and Majia, 1992; Tversky and Kahneman, 1981).

From a managerial point of view the monitoring of organizational competencies-based action patterns is a separate function to be executed on its own logic. By continuously checking whether the competence driven activities still apply and/or registered events from inside or outside are likely to threaten the validity of the competence in the future, flexibility in terms of critical reflection and response options for redirecting the firm is gained. Thus if the monitoring process is to succeed, it must be kept open; it must not become subject to (closing) routinization. Only then is there a good chance of detecting extraordinary, unforeseen signals which may call the ongoing validity of the current competence patterns into question.

Executed in this way, the monitoring process serves the dynamization of the system. It fosters an awareness for expiring (invalid) competencies and presses for changes. It should, however, be pointed out that registered discrepancies or rigidities do not automatically lead to actual change activities. Rather, the organization always has the option to learn and change the way of selecting and linking resources, or to stay with the established patterns (“not to learn”). The ideal of permanent transformation is replaced by the idea of a combination of learning and staying (not-learning) (Schreyögg and Noss, 2000). In many cases, there are good reasons to stay with the established competence patterns: Threatening signals are not strong enough, potential negative effects are too vague, change costs are too high, or the firm perceives good chances to change the threatening context in such a way that the established competence remains valid (e.g. a change in the competitive rules or the acquisition of competitors).

In sum, competence-monitoring takes over the role of *compensating* for the potential risk of a dysfunctional flip. Quite obviously, the competence building risk as such cannot be eliminated by monitoring, patterning always bears a risk. But it can provide a handle on this risk and thereby contain it at an acceptable level. The risk level varies to a certain degree with the intensity of monitoring efforts. Since monitoring efforts are costly there is no general rule saying that the more monitoring the better the organization’s performance. In some cases it might be advisable for cost reasons to accept a higher level of risk.

It should to be noted, that the proposed idea of competence-monitoring implies that evolved patterns of organizational competence are reversible, not completely frozen. Whilst being deeply embedded in organizational practices and rooted in paths, competencies can nevertheless become subject to change interventions – at least in most cases (Argyris, 1990; Schein, 1985; Zollo and Winter, 2002). Otherwise competence monitoring would not make much sense, the actual reframing or change of organizational competencies would be impossible.

## **The Design of Competence-Monitoring**

When executing the model of competence monitoring, it should first of all be taken into account that any monitoring needs a frame of reference to direct its observational activities. In our case, the competencies are suggested to build the frame of reference for the observation processes and subsequent evaluation.

Since competencies usually evolve over time in the context of complex and partly implicit experiences, organizations often lack a well articulated understanding of their own competencies. As shown above, organizational competence is successfully practiced but rarely reflected. As a consequence, as a first step in getting a competence-monitoring system going, the predominant competence patterns and their critical indicators have to be identified and brought into an observable format. Techniques that can help here are for example “cognitive mapping”, “conversational analyses” or “pattern recognition” tools (Henderson and Cockburn, 1994; Johnson and Johnson, 2002; Doyle and Sims, 2002).

The concrete *observation activity* focuses on the internal and external environment (see for the idea of “environmental scanning”, Aguilar, 1967). The field to be observed is wide and not ultimately identifiable since its dimensions can never be fully known (the environment, as opposed to organizations, is boundaryless, see Luhmann, 1995). It is therefore advisable to pre-structure the activity and define observation sectors along the derived critical competence indicators. The observers should, however, be aware of the fact that any pre-defined observation field is always arbitrarily chosen. Basing observation on pre-defined observation sectors implies that competence-monitoring becomes in its own part selective in nature too. The resulting danger of overseeing signals and missing incidents is, however, limited by the following experience: Missed critical signals from the internal and external environment do not stand still, but evolve; they finally manifest themselves as a crisis. In other words, missed signals bring about a focus by themselves; they become obtrusively felt in terms of a crisis.

Since crises are strong signals from a very late stage, they restrict the range of options so that it is dramatically reduced. Furthermore, the “best” options are at that late stage in most cases no longer

available. Therefore, monitoring should aim at detecting crisis signals as early as possible. From research on detecting crisis signals, it is known that crises are regularly preceded by weak signals. Organizations should therefore become skilled to recognize weak signals and to interpret them properly (Ansoff, 1976). The observation should be kept as open as possible and the interpretation of the incoming signals and triggers should be run as ad hoc problem solving. Any routinization hampers the process and the underlying logic of compensating for the risk of stable competence patterns.

Zollo and Winter (2002) favour in principle a somewhat similar solution. In contrast however, they suggest institutionalizing the scanning and observation activity. More precisely, they even propose installing routines for those compensating and scanning activities as well, i.e. systematic methods for generating, modifying and improving operational routines (which are similar to classical competences). In other words, it is the idea that innovation monitoring or more precisely, the dynamization of organizational competencies can be accomplished through a relatively stable set of methods and practices. This is obviously a risky endeavour since routines, however they are conceptualized, refer to past experiences and best practice principles. Routines are very selective in character.

Zollo and Winter make this point themselves and suggest overcoming the closeness of these routines by establishing a further observation level, a kind of meta-level learning which addresses the first level observation of innovation routines (Zollo and Winter call them “second-level dynamic capabilities”, 2002: 340). But they insist again on establishing routines on this 2<sup>nd</sup> observation level as well. The idea is that innovation routines (first level dynamic capabilities) themselves need to be updated continuously (at least in rapidly changing environments) and high-order routines are assumed to accomplish and guarantee this update reliably.

The question here, however, is whether routines actually provide an adequate point of departure in this context: Can innovation routines actually assure reliably in the dynamization of capabilities?

It is the routinization of problem solving activities which constitutes an organizational competence and simultaneously brings about the inherent risk to organizational competence evolution. Both the merits of competencies and the risk of a dysfunctional flip are conceptually bound to the existence of routines; partially they result from their routine character! This inevitably raises the question of whether, by installing another routine or set of routines, one can actually counteract the flip problem. Whatever the specific subject and direction of routines, the very logic of their functioning is always the same: They replicate a predetermined pattern, i.e. routines basically represent a recursive stabilization of practices (Giddens, 1984). Thus, construing the counteracting monitoring process via routines is likely to evoke the same set of problems which the monitoring intends to overcome. Innovation and observation routines are routines by their very nature, focussing on a pre-defined range of activities and thereby replicating a predetermined type of problem framing. According to their underlying logic they cannot themselves become subject to permanent change (otherwise they would not be routines any longer).

Innovation routines thus run unavoidably into the same form of congealment which has been identified as dysfunctional flip. The empirical findings by Leonard-Barton (1992) strongly confirm this conclusion. Her study focused on the evolution and working of routines in R&D, in particular product development, showing that it were exactly those innovation routines that brought about the risk of a dysfunctional competence flip.

The trouble comes from the logic of functioning: The effectiveness of (innovation) *routines* is bound to the recurrence of a specific situation or problem structure. The tasks and challenges (innovation requirements) are studied again and again within the same framing. That is promising as long as new signals do not ask for frame-breaking; it works for familiar triggers but not for surprises and discontinuities. In high velocity situations not only is the pace high, but the type of environmental signals is new and unpredictable in nature, monitoring routines, by their very character, are not suitable to meet those extraordinary requirements.

Zollo and Winter are quite aware of this problem and try to escape this trap by suggesting another higher level type of routines to assure flexibility in unpredictable dynamic markets, monitoring routines “*themselves need to be updated repeatedly*” (2002: 341). The trouble with this idea however is basically the same. The authors again set out from routines, learning routines. This obviously brings us into a spiral, or more precisely into an infinite regress. Whatever the level we approach, the essential logic remains always the same: Routines that are likely to turn competencies into rigidities. It is difficult to see how a conception that builds so strongly on routines can provide a platform for installing counterbalancing forces in a system, as the competence monitoring system is expected to do.

The *logic* of the competence monitoring activities should therefore be kept as open as possible. As far as possible, its character should be similar to ad hoc problem solving and spontaneous coordination. Any general rules or routinization are likely to evoke counterproductive effects. Since competence monitoring is designed to compensate the dysfunctional effects of patterned competencies, it has to develop a countervailing or complementary logic of functioning. Organizing monitoring should therefore refrain from installing precisely defined scanning routines. Since nobody can know in advance *which kind* of signals/events occur and *where* they show up, a pre-structuring in terms of general rules is likely to blind the observers. Because of the incidental and potentially unfamiliar character of the threatening situation, the deliberate installation of routines is likely to mislead the organization in new and unfamiliar situations (as for instance Weick (1993) has demonstrated in his well-known analysis of the Mann Gulch Disaster). Routines reflect familiar problem situations and their solutions, not the handling of unknown events. The scanning process (and not the competence) therefore has to be in flux. Some alarm systems (but only formal alarm routines) may however prove to be useful to ensure a quick response by the organization to threatening signals, examples are: “war rooms”, lists of persons who have to be informed in case of a crises, or a “red telephone” (Ansoff, 1980; Weick, 1993).

The foregoing discussion also implies that competence-monitoring cannot be the task of one single position or department. It has to be conceived of as broadly distributed activity across the entire organization. This results from the fact that it is unknown where and in which context the relevant information will show up. In principle, any (sub)-unit and member of an organization could come into the situation where they are confronted with a most important signal: on international conferences, hidden in a customer claim, in negotiations with suppliers, comments from accreditation auditors, etc. It is therefore important to encourage and motivate all units, subunits and members of the organization to actively participate in the competence monitoring process. Providing a supportive context and social climate therefore is a salient task for effective monitoring management (Schreyögg & Steinmann 1987).

## **CONCLUSION**

The suggested conception of competence-monitoring represents a dual-model for managing the dysfunctional flip side of organizational competencies. The model contains two levels. On the one hand, there is an operational-level with activities based on established competencies which are incrementally developed. On the other hand there is a complementary observation process which is designed to accompany the competence based operations in order to address the issues emerging from their inherent tendency to turn effectiveness into rigidity. This monitoring enables the organization to consciously reflect the ongoing validity of their problem solving patterns and initiates if necessary a competence change. The organization is expected to be able to handle the dual countervailing functions simultaneously. Instead of integration as suggested by most of the approaches on dynamic capabilities, we propose the balancing of two logics. This idea amounts to a dual process conception which addresses both the classical patterned organizational competence and the dynamizing forces of competence monitoring. Practical tests are needed to explore the workability of this dual level conception.

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