Dynamic Capabilities in the Food Industry? – On the Applicability of the Evolutionary Orientated Resource Based View of Firm

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1. Introduction

An important indicator or even the crucial factor of the competitiveness of a company can be seen in its innovative capacity, i.e. the abstract capacity to launch continuous product innovations and to implement the required processes in the internal structure of an organization. This is also true for the food industry as several studies of the broad area of innovations in the food market have shown (Galizzi/Venturini, 1996). From a more macroeconomic perspective, the national innovation systems have been analyzed, as well as general trends in the food sector (Menrad, 2001).
In the empirical literature we find several surveys analyzing the influence of the innovative performance of firms in the food industry (Herrmann et al., 1996; McNamara et al., 2003). Most of these contributions concentrate either on statements on the Input-Output Relationship of innovation activities or include analysis within the Structure-Conduct-Performance Paradigm provided by the scholars of the Harvard School. Both aspects are starting points for empirical research as well as in both cases the process-related and dynamic elements of innovation are treated as a black box.
The general intention of this paper is to find a more theoretical framework which explains the innovative capacity of firms that are involved in the focused sector. In this regard the concept of Dynamic Capabilities provided by *Teece et al.* (1997) and *Eisenhardt/Martin* (2000) are broadly accepted as a useable explanation of firms' innovative capacity. Since these concepts were designed with a particular regard to typical high-tech industries like IT-branch, telecommunication and biotechnology, the question comes up if these approaches do essentially fit to those conditions we can observe on the food market. Thus, the purpose of this paper is twofold: first, we want to introduce and discuss the concepts of dynamic capabilities in the context of firms' innovative capacity and market dynamics. Second, we are going to analyse the explanatory power and finally the applicability of dynamic capabilities to the food industry.
We will start with an introduction and critical discussions of the concepts of Dynamic Capabilities (II) that are regarded as the recent extension on RBV. In order to test the applicability of Dynamic Capabilities to the food market, we concentrate the analysis on three main criteria (III) derived from the theoretical background. Based on those, we will finally draw a conclusion (IV) on the applicability of the approach discussed.

2. Theoretical Background

2.1 From static RBV towards Evolutionary Perspectives

The academic literature of strategic management focuses on the general question, how firms can build up and sustain competitive advantage. In the tradition of industrial economics, the scholars of the Market-Based View (Porter, 1985) argue that those firms with successful protection mechanism against the competitive forces will achieve competitive advantages by exploiting market power. According to the RBV, the strategic performance is merely dependent on the availability of internal resources, competencies and capabilities in order to achieve competitive advantage by exploiting the so-called VRIN-resources[1] (Barney, 1986; Wernerfelt, 1984).
Despite this common basis, *Foss* (1997) points out that there are two versions of the RBV. The traditional resource-based begins by clarifying and examining the conditions that must obtain in order for resources to yield rents in neoclassical equilibrium (Barney, 1986; Peteraf, 1993). This static approach concentrates on the accumulation of resources, whereas recent contributions in the field of RBV include dynamic aspects like innovation, organizational learning and competence-building in theorizing. The focus shifts from the static perspective on resources to issues of coordination and flexibility in respect of internal resources. Contributions focussing on the dynamic elements are in particular the idea of core competencies (Hamel/Prahalad, 1990) and the concept of dynamic capabilities (Teece et al., 1997; Eisenhardt/Martin, 2000).
Following this reasoning we are in the dynamic world in terms of *Schumpeter* or *Hayek*, which is merely characterized by innovation-based competition instead of the neoclassically preferred price-based competition. Thus, the recent course in RBV-theorizing is strongly based on the mindset of evolutionary economics and directly related to the reasoning of *Nelson/Winter* (1982).

2.2 Approaches of Dynamic Capabilities

The idea of a dynamic-oriented RBV was pioneered by *Teece et al.*, who sketched out an outline for a dynamic capability approach. These cornerstone considerations were associated with the request to tighten the theoretical framework and fill up with some empirical research. This challenge was accepted by *Eisenhardt and Martin* with detailed empirical observations in different industrial sectors and some radical extensions on the theoretical framework.

"Dynamic Capabilities" in terms of Teece et al. (1997)

The idea starts with the statement, that successful firms in global competition are primarily characterized by well-timed and flexible product innovations. The resulting competitive advantage can not be depletively explained by the existence or non-existence of outstanding resources or competencies, but rather by the question of how flexible or dynamic they are. Therefore dynamic capabilities can be defined as "…the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments" (Teece et al., 1997: 516). In this context a firms' innovative capacity is determined by its flexibility to adopt the existing resource/competence pool (by recombination or reconfiguration) to new problems and environmental situations. The strong emphasis on environmental conditions and developments leads to an extension of RBV to the market perspective or its integration respectively.
The concept of *Teece et al.* is based on three categorical dimensions: *Processes* include in the first instance organizational and managerial processes that refer to routines or patterns of cur-

1. These are valuable, rare, inimitable and non-substitutable.

rent practice or learning. *Positions* mean the specific endowment of resources, like technology, intellectual property, customer base, and supplier relations. *Paths* refer to the strategic alternatives of action in subject of decisions made in the past.
Schreyögg and Kliesch (2007) pointed out that the first dimension (processes) shows a hybrid nature and can be divided into a static and dynamic part. The static component includes coordination and integration, whereas organizational learning and reconfiguration belong to the dynamic component. This comprehension of processes can be seen as the core or essence of the conceptional framework, but also the contact surface for criticism.

"Dynamic Capabilities" in terms of Eisenhardt/Martin (2000)

The second approach of *Eisenhardt and Martin* refers to the idea of *Teece et al.* but clearly contests the universal explanatory power of the conceptional work and extends their own understanding of dynamic capabilities.
In doing so, *Eisenhardt and Martin* argue that the design of dynamic capabilities will vary with the degree of market dynamics, in contrast to the overall understanding illustrated above. Therefore, the authors suggest differing between dynamic capabilities in moderately dynamic markets on the one hand, in which changes occur frequently but along roughly predictable and linear paths. And on the other hand those in high–velocity markets where changes become nonlinear and unpredictable. In the first mentioned category, effective dynamic capabilities can be supported by the application of existing knowledge and incremental adjustment processes. Contrary, in the second-mentioned category, the dynamic capabilities are strongly connected with the rapidly creating of situation-specific new knowledge (Eisenhardt/Martin, 2000: 1110 ff).
In extending the conception by the implication of market dynamics, *Eisenhardt and Martin* arrive at the conclusion that dynamic capabilities in the first market category resemble the traditional concept of routines in terms of *Nelson and Winter*, whilst dynamic capabilities in the second market category mean a permanently process of alteration in order of firms' survival. In this context the authors state that the strategic imperative in high-dynamic competition is not leverage (reasoning of the core competencies approach) but only change.

2.3 Critical Reflection

The concept of dynamic capabilities can not be regarded as an frictionless contribution in the debate about strategic resources and competence-based competition. Particularly the pioneer work of *Teece et al.* has been marked as conceptually vague und in parts tautological (Mosakowsky/ McKelvey, 1997; Priem/Butler, 2001) and as theorizing with lack of empirical grounding (Priem/Butler, 2001; Newbert 2007).[1]
Schreyögg and Kliesch (2007) showed that the processes of reconfiguration in terms of *Teece et al.* lead to a contradictionary relation to efforts for stable routines as a basic precondition to build up core competencies. This is also true for dynamic capability patterns in high-velocity markets in the approach of *Eisenhardt and Martin*. For business processes, the fundamentally requested capability of regeneration means a sequence of single independent acts of improvisation, which dismantles a systematic assembling of replicatable competencies in the long-run.

1. *Eisenhardt and Martin* disagree with this evaluation and show their understanding of dynamic capabilities by means of extensive empirical research bases; see Eisenhardt/Martin 2000, p. 1108.

Consequently, the dominant idea in strategic literature of sustained competitive advantage throughout setup of specific problem-solving architecture (logic of core competencies) must be abandoned.[1]

Considering the theoretical state of the arts including the critical remarks, we draw following points as an intermediate conclusion. First, when talking about dynamic capabilities we have to address the question of how dynamic the considered market is and how it affects the patterns of dynamic capabilities. Second, the integration of the environmental or market dimension leads to the question of how firms can perceive and incorporate the crucial market impulses as a starting point for reconfiguration processes, which is not exhaustively answered in the treated concepts. Third, the arising trade-off between efficiency (using core competencies) and flexibility (using dynamic capabilities) can not be solved with means of strategic content issues but rather leads to an analysis of strategic processes. These cognitions provide the foundation for the assignment of section III in order to evaluate the applicability of the conceptual approaches of dynamic capabilities by means of three analysis criteria.

3. Analyzing the Applicability

3.1 Market Dynamics

The predominant opinion considers the food market to be at a mature and saturated stage of development, which is generally associated with a low market dynamics. Keeping in mind current market trends, let us suppose that this superficial approach will result in a shortened conclusion. Therefore, the classification of market dynamics must be discussed in more detail.
Starting with the remarks on market dynamics of RBV-scholars, *Eisenhardt and Martin* apply a bipolar distinction of high-velocity markets vs. moderately-dynamic markets in order to respect market dynamics.[2] In moderately-dynamic markets changes (frequent, but in a linear and predictable path) occur in relatively stable industry structures with regard to well-known competitors, customers and complementators. In contrast, changes in high-velocity markets (nonlinear and less predictable) happen in a setting of shifting market players, blurring market boundaries and a general unclear market structure.

In some markets a classification by using bipolar assignment is not convincing. In the case of the pharmacy market, *Eisenhardt and Martin* propose to differ between a high-velocity dynamic part and a part which is moderately dynamic, i.e. a differentiation of the biological-based pharmacy market and the chemical-based industry.[3]

Attributes of innovation activities

In order to rate the market dynamics, we start with a more precise view on the innovation activities taking place in the food market. This analysis often starts with the question whether the sources of innovation are more linked to the demand-side (*demand-pull*) or to the side of suppliers (*technology-push*). In this context it is important to keep in mind that the essence of dyna-

1. See in detail *Schreyögg/Kliesch* (2007), the authors suggest the implementation of competence monitoring in order to solve the shown conflict.
2. *Eisenhardt/Martin* (2000) give several examples of industries when discussing their assignment of market dynamics. The Disc drive industry and biotech industry are typical examples for high-velocity dynamics whilst the paint industry is regarded as a slowly evolving industry.
3. The pharmacy market was observed by *Pisano* (2002).

mic capabilities was identified as the capacity to react faster than competitors on market impulses (demand-side) by means of a very specific inimitable reconfiguration of internal resources or competencies (technologic competencies). Thus, competencies in terms of dynamic capabilities correspond to both aspects and make their application obsolete in markets with exclusively demand-driven or technology-driven innovation activities. In fact, we find combinations of both types of innovation in most markets, whereas the food market predominates in demand-driven innovations (Grunert et al., 1995).

Beside the source of innovation, the degree of recentness and the dichotomy of *radical vs. incremental* innovations is another descriptive feature to be regarded. However, the latter is recognized as being typical in high-dynamic markets. In reference to the competencies treated above, radical innovations have a competence-destroying effect. Incremental innovations, on the other hand, show competence-enhancing potentials (Tushman/Anderson, 1986). Concerning the food market, several studies show dominant innovation activity in the area of incremental innovation (Traill/Grunert, 1997; Menrad 2001). Radical innovations are unlikely because consumers behave conventionally in food issues and associate radical food innovations with additional health hazard. Consequently, the development and introduction of radical innovations in the food market is connected with a relatively high risk for the acting companies. In general, processes of new product development in food industry firms are orientated on patterns of differentiation around the product core and aim at enhancing single product features (improvement innovation).

The most common schedule line of innovations is the distinction between *process innovations* and *product innovation*. Whereas the first one primarily refers to efficiency and cost saving effects, the latter implies the creation of additional demand and sales increases. Even though process innovations[1] play an important role in the food industry, the stress of innovation activities nevertheless lies on product innovations and product imitation (Traill/Grunert, 1997). Most industries pale in comparison with the food sector and its enormous innovation rate in the field of product innovation. But we can also identify a comparatively high percentage of unsuccessful new products that disappear from the market shortly after introduction.[2]

Utterback (1994) analyses the role of product and process innovations in the context of the development of industries. Thus, early market phases are characterized by competition with different product designs until a dominant product design is asserted in the expansion phase. The orientation on the dominant product design causes a decrease of product innovations and an increase of process innovations in order to achieve economies of scale. When entering the maturity phase, no further advantages of productivity can be expected by process innovations. As a result, high competitive pressure leads to enduring and intensive innovation competition which is carried out primarily by product innovations. This phenomenon also applies to the food industry and indicates a higher dynamic potential of mature markets in terms of innovation-based competition than generally agreed.

1. In the past, innovations in the agriculture sector focussed primarily on productivity increase and efficiency. Systemic process innovations along the value chain were merely dedicated to ensure quality standards and food security aim.

2. *Menrad* (2001) refers to estimates on the German food market implying that 75% of new developed products disappear from the market within one year (increases to 90% in two years).

Market Convergences

Magnitude and acceleration of market convergences in the respected market are typical indicators for the assessment of market dynamics. Market convergences are initiated and pushed by product- and process innovations which cause a change in the boundary of markets. In this context the emergence of new products or technologies allows markets to converge, that were economically separated before (Stieglitz, 2004). In terms of convergence processes in high-tech industries, firms reinforce their efforts to find linkages between the focal firm and extern knowledge sources of the other market.[1]
When applying these considerations to the selected market we can observe convergence tendencies taking place in the field of functional food. This convergence process of the food and the pharmacy market performs with moderate speed but includes increasing importance of the application of cooperation strategies in order to obtain necessary market knowledge. On the other hand, one can expect an increasing level of competition in future by a new substitutive relationship of products bringing companies from both industries in rivalry. Thus, we can state that the food industry shows a high-dynamic development process and potential in special submarkets like those for functional food.

3.2 Incorporation of Market Impulses

The second criterion is related to the question how firms can acquire the relevant market knowledge required for reconfiguration processes by using its absorptive capacity. The basic concept of absorptive capacity (Cohen/Levinthal, 1990) includes three components: First, the capacity to appreciate external knowledge (recognition), second the capacity to assimilate appreciative external knowledge and to integrate into the existing resource pool (assimilation) and third the capacity to use the integrated resources (application/exploitation).

Recognition and the Role of Food Retail

The maturity stage of the food market in combination with limited storage rack on the distribution level implies an intermediary function concerning activities of recognition of food producers. The relationship between food industry and retail is for some time characterized by a shifting of balance of power towards a dominant position of the food retail. As we have seen before, the food retailers have to deal with a large amount of new products that are in the majority not assertive on the market and they also have to decide which articles will be listed in the future. In order to get their products listed, food producers are confronted with additional food retail-oriented requirements that will influence the process of innovation in general and especially those of recognition external knowledge. Thus, the listing of new products becomes a crucial success factor for food producers' innovation activities and addresses the question whether food producers should also observe the (sub) market of food retail with independent market impulses. In this regard we can postulate:

Hypothesis 1 (trust-thesis): Food retail and their listing decisions imply an effective selection mechanism for product innovations. If so, food producers can trust in the market knowledge of retail and that reduces the efforts in innovation activities.[2]
Hypothesis 2 (antithesis): Food producers' processes of recognition of market impulses, identi-

1. *Henderson/Cockburn* (1997) investigated those linkages (gatekeepers) in the pharmaceutical industry, whereas *Powell et al.* (1996) found significant alliance relationships in R&D used by firms in the biotech sector.
2. This argumentation would imply a perfectly derived demand from consumer needs to retail requirements.

fication of market potentials, and in consequence the navigation of R&D-efforts are twofold. Therefore innovative-oriented actors in food industry have to analyse both requirements: on the one hand those of the food retail in order to get listed with innovative product and on the other hand, the changing needs of the consumers. The question which hypothesis is true will be a single case decision depending on the bargaining power of food producer and the absorptive capacities of the retailer.

Assimilation and R&D-Activities

The food industry is traditionally considered as a sector with low R&D-intensity (Menrad, 2001), especially in comparison with other industrial sectors. By connecting these findings to the first analysis criterion, we can identify significant branch-specific differences of R&D-activities. While in the chemical industry 80% of innovating firms are engaged in company-internal R&D- activity, there are just 30% in the food industry (Gottschalk, 2003)[1]. The large multinational corporations spend about 1 % of their sales volume in R&D-activities whereas a large amount of the small and medium-sized companies do not carry out any noteworthy R&D-activities (Menrad, 2001). Today, most of the large international corporations (Nestlé, Danone, and Unilever) maintain smaller regional R&D-entities rather than central R&D-laborates. These findings draw upon the Schumpeter-Hypothesis that emphasizes the importance of the firm size for R&D and innovation activities.
Branch-specific low R&D on the one hand and a relatively high product innovation rate on the other hand leads to the assumption that market and innovation relevant knowledge in the food industry will also be absorbed by alternative channels. In this context, there is a large amount of public organizations that are active in producing R&D in nutrition issues that supports collaborative innovation activities embedded in an innovation system rather than isolated innovation efforts on firm level (Mendrad, 2003). *Mangematin/Mandran* (2002) found that small and medium sized firms in low-tech sectors (like clothing and agro-food) without internal research try to benefit from spillovers from external research.

Application and Innovation Activities

The academic discussion focuses the question how absorptive capacity can be supported by the design of the organizational structure. Positive effects have been asserted by the existence of cross-functional teams (Meeus et al., 2001), the level of centralization (Gupta/Govindarajan, 2001), the presence of formal integration mechanism (Meeus et al., 2001; Gupta/Govindarajan, 2001), and task forces (Lane et al., 2001). Van den Bosch (1999) focuses on the overall organizational structure of the firm and argues that the scope, flexibility and efficiency of knowledge absorption vary, depending on the organizational structure. These findings support the assumption that the volume of R&D-spending will give an incomplete impression of the absorptive capacity of a firm.

The relationship between absorptive capacity and innovation output is often recursive (Hurry et al., 1992) or circular, when efforts of absorption of market knowledge increase the innovation rate of a firm. Further absorptive activities will benefit from innovation experience and a higher organizational base of knowledge. This statement can be confirmed in the food industry relevant case of incremental innovation. In this context, *Van den Bosch et al.* (1999) show that incremental innovations in one specific product area can be supported by increasing absorptive capacity in this particular area.

1. This survey refers to the German economy but it shows typical tendencies for developed countries.

In contrast, radical innovations can be best supported by a broad range of loosely related knowledge domains.

3.3 Processes of Reconfiguration

The processes of reconfiguration will be first regarded in respect of a deeper analysis of necessary competencies in new product development.[1] In this section, we will discuss a key question in the analysis of applicability. Do processes of innovation activities in the food industry rather correspond to the concept of core competencies or the concept of dynamic capabilities?

Competencies in New Product Development

Assuming that new product development shows typical characteristics of dynamic capabilities, we can address the central question: which resources i.e. competencies are required exemplarily for this kind of issue? Answering this question, *Danneels* (2002) argues that processes of new products combine technological know-how (manufacturing knowledge) with customers' knowledge (understanding customers' needs). This combination includes material components as well as those of cognitive dimension. In order to stress the dynamic aspect, *Danneels* states that a successful product innovation requires technological and customers competence but also and essentially their linkage as a dynamic capability in the meta dimension (Danneels, 2002).
In a similar way of argumentation, *Song et al.* (2005) find marketing- and technology-related capabilities as key resources in new product development. Their examination concentrates on both capabilities in low and high technology turbulence environment.[2] They found that a high technology turbulence environment implies harder and more uncertain conditions for competitors to imitate in a timely fashion, because the technological conditions can change rapidly. Accordingly, in less technology turbulence environments incentives for imitation wars are higher, when imitation rents are more stable and predictable. This point of view brings the considerations of dynamics to another dimension, when less technological turbulence leads to a higher rate of imitations as one element of innovation-based competition. Applying these considerations to the food industry brings to light a new aspect on dynamics when assuming a less technology turbulence environment.

Core Competencies and Complementary Assets

Regarding processes of reconfiguration from a broadly point of view, they can be described as a pattern of redesign of certain elements (resources) or components of a system (firm) acting in a certain super system (industry). In this perspective, dynamic capabilities in general and processes of reconfiguration in particular are strongly related to the connectivity of elements.
In this context, *Karim* (2006) examines the correlation between the origin of resources and their suitability in reconfiguration processes by distinguishing between acquired competencies and resources and internal units. Internally developed units are merely based on incremental changes and experience values. This argumentation is conform with those of building up core competencies (Prahalad/Hamel, 1991), which is in a contradicting position to the logic of dynamic capabilities, as shown in the intermediate conclusion of section II.

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1. *Eisenhardt and Martin* (2000) argue that product development is a typical example for dynamic capabilities, because it is an ability to alter the resource configuration of the firm.
2. *Song et al.* (2005) classify technological turbulence of markets by means of (1) the state of technology in the industry (2) the rate of changes in technology (changing standards, length of technology life cycles) and (3) the inability to forecast the changes.

Thus, internal units are less suitable for patterns of reconfiguration than acquired units that are unattached of the existing organizational structure and have a higher potential of flexibility.

The combination of technological know-how and customers' knowledge mentioned above demonstrates the importance of complementary assets in issues of managing innovation and market dynamics. Concerning managing innovations, it comes to complementary assets when systemic innovation[1] requires competencies from two different core competence areas, which are in complementary relation regarding the underlying targeted innovation. Concerning market dynamics, complementary assets emerge in the case of market convergences, where firms try to obtain knowledge of the complementary market. In addition, according to *Helfat and Raubitschek* (2000) unutilized complementary assets can also be found along the value chain of a firm. With respect to the food market, one may assume technological competence in food industry firms and customers' competence in food retail. Linkages within the value chain aiming at an exploitation of these assets are in a close connection to dynamic capabilities and processes of reconfiguration.

Different competencies required: convenience food vs. functional food

Convenience products highly correspond to local customer habits when these occur in less predictable manners. Therefore, in the competence view fast learning and understanding of changing consumer needs seems to be crucial in processes of product development rather than in technological and manufacturing know-how. Additionally, most of the convenience-based benefits will be concreted at the point-of-sale. Thus, complementary assets can be found along the value chain and suggests close collaboration with the retailing sector in order to incorporate changing customers' habits in the internal production processes. Flexibility not efficiency may be of great importance in order to react in time on convenience trends. Firms' innovation activities should aim on identifying single local convenience trends in combination with a very specific reconfiguration of resources based on these market trends. In conclusion, the development and implementation of convenience products can be seen in close connection to processes of reconfiguration and implies the basic applicability of dynamic capabilities.

A completely different picture can be drawn when looking on the required competencies for functional food development. The general underlying market trend is much more linear and predictable than in the case of convenience food. In processes of new product development the focus shifts from customers' know-how to technological (medical and pharmaceutical) competencies. In this regard, the analysis of market impulses shows a high importance of long-term R&D-activities in order to build up experience in a quite sophisticated field of research. Furthermore, complementary assets can be found in terms of market convergences between actors of the pharmacy industry and those of the food market. In conclusion, the development and implementation of functional food products are in contrast with those of convenience food. In this context, convenience food is associated with dynamic capabilities, whereas functional food primarily requires core competencies.

1. *Helfat and Raubitschek* (2000) combine the RBV-concept of complementary assets (Teece, 1986) with the MBV-analysis of value chains (Porter, 1986).

4. Conclusion

The examination of the main analysis criteria offers a complex and heterogeneous picture on applicability of dynamic capabilities in the food industry.

First, the consideration of market dynamics classifies the food market to be in a mature and saturated stage market development. In comparison to other industries, low spending in R&D as well as a moderate technological turbulence can be identified. Also the focus on the attributes of innovation activities supports this shortened conclusion at the first glance. Despite these typical criteria of economic analysis we find different aspects of market dynamics, especially with regard to tendencies of market convergences in some areas and elements of imitation-based competition. Second, the volume of R&D-spending will give an incomplete impression of the absorptive capacity of a firm. In this context, the recognition of market impulses must be seen in closer connection with innovation activities of the food retail which leads to two alternative hypotheses. Furthermore, we found out a significant importance for alternative channels in order to absorb market and innovation relevant knowledge in the food industry. Third, the question whether dynamic capabilities are applicable to the food development process, always depends on the area of products we focus on. Whereas the development of convenience products shows a great importance of dynamic capabilities, the development of functional food is merely characterized by the application of core competencies.

Taking into account the strategic conduct of the large corporation groups within the food industry sector, the assumption will be supported that core competencies instead of dynamic capabilities are primarily applied. Their strategy is to establish a worldwide predominance of an attractive commodity group. In doing so, it is necessary to concentrate on those business fields with the potential of international umbrella brands, whereas brands with limited local potential get listed out. In this context, the findings on the importance of dynamic capabilities for convenience product development seem to be a single case and do not fit to international strategies.

As the result of our examination we state a higher importance of the incremental development of core competencies than radical adoption of new technologies. Thus, the strategic imperative for innovation activities in the food industry is stable leverage in terms of core competencies rather than permanent change in terms of dynamic capabilities.

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