Competencies of Reconfiguration in Product Development – The Case of Convenience Food

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1. Introduction

Convenience food is characterized by a value added to the product core that corresponds to fast changing consumer needs. Thus, convenience food can be considered as an example of one of the most innovative product categories in the domain of the food industry. Concerning innovative activities the prevailing perception of convenience food is that all decisive impulses are coming from the market e.g. are driven by the power of demand. If so, than food producers have the chance to react on these impulses when developing novel convenience food solutions timely and close to the market development intent meeting the requirements of the consumers.

In this paper we are going to propose a different viewpoint: firms who are developing, producing and selling convenience food products may follow a corporate strategy which is not necessarily and primarily in line with the consumer welfare but is rather oriented to their competitors. Thus, the strategic dimension is also or predominantly geared to a firm’s competitive environment when trying to find attractive niche positions and aiming on competitive advantage by using internal resources and competencies. We understand that convenience food shows clear distinctive characteristics in comparison to conventional foods. These require a very particular set of competencies in the sense of how to employ resources and capabilities in a useful way. Additionally, we argue that the characteristics of convenience food to employ an innovation strategy based on fast processes of resource reconfiguration.

The purpose of this paper is threefold: first, we want to present convenience food as an interesting field from an alternative perspective and in the context of processes of resource reconfiguration. Second, we arrange a linkage between the strategic content and strategic process by extending the framework to an analysis of competencies in new product development. Finally, we want to point out how inter-firm cooperation can contribute to the objective of creating imitable and non-substitutable convenience food products.

This paper is organized as follows: In the next section (2) we reflect convenience food with the resource-based view of the firm which also indicates the first criteria for the further analysis. In section 3 we present the strategic content dimension of convenience food with particular attention to inter-firm cooperation whereas section 4 contains the strategic process dimension concerning new product development with four competencies of reconfiguration in product development of novel convenience food solutions. Finally, the last section (5) contains the resulting hypotheses of our examination and some conclusions.
2. Convenience Food and the Dynamic Resource View

According to Twedt (1967) convenience food can be characterized as „a food which, because of processing and/or packaging, is quicker or easier to prepare, than the basic standard form in which the product category is generally available to consumers.“ Suppliers of convenience food provide a value added to customers by an increased degree of processing. This value added indicates on the one hand a reduction of food preparation time and on the other hand a higher product price in comparison to the basic product (Twedt, 1967). The trend of convenience is influenced by the general trend of individualization, the growing number of single households, the demographic shift and the increasing occupation of women. Thus, the time invested in household activities is declining constantly and consumers demand timesaving but also healthy and fresh food solutions.

The primarily aim of this chapter is to offer an alternative view on convenience food solutions. We are used to reflect economic issues of convenience food as a demand-pulled phenomenon and to start the analysis with the impulses coming from the market. In Contrast, we suggest seeing convenience food through the glasses of the resource-based view of the firm (Penrose, 1959; Peteraf, 1993). In this regard we assume that a firm needs to control a very specific set of internal resources and capabilities for yielding rents in the field of convenience food solutions. In a strategic perspective these resources have to comply with the conditions of VRIN-resources if contributing to a firm’s competitive advantage (Barney, 1986; Wernerfelt, 1984). First, resources are valuable (V) if they contributing to a firms objectives by creating an additional customer's benefit. On the product level this condition can be seen in association with the value added of convenience food products. Second, resources are rare (R) concerning the environment of current and potential competitors. The resulting competitive advantage in producing convenience food can not be depletively explained by the existence or non-existence of one or a few rare resource, but rather by the question of how flexible or dynamic these are (Teece/Pisano/Shuen, 1997). 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. Finally, convenience food products in general can be imitated or substituted relatively easy in contrast to technology-based products. Therefore we will concentrate the following analysis on the two remaining aspects: inimitable (I) and non-substitutable (N), since competitive advantage in the convenience food segment can not result from rare technological resources but rather from fast and flexible reconfiguration of resources according to changing convenience trends.

3. Strategic Content Dimension of Convenience Food

3.1 Starting Point: Strategic Options for Food Players

In a previous paper (Voigt/Kühl 2007) we showed that there is not only one direction of strategic content in the discussion of competence-based management in the food sector. Assuming a firm operating in the large field of the food industry concerned with processes of NPD (New Product Development) for convenience products and functional food products may have two different strategic content dimensions. The first option is strongly connected with food products underlying in general a more linear and predictable market trend, which we identified exemplarily for functional food products. In processes of NPD 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 pharmaceutical industry and those of the food market. In conclusion, the development and implementation of functional food is associated in the strategic content perspective with the logic of leveraging core products (see in detail Voigt 2007).

A completely different picture could be drawn when looking on the required competencies for convenience food development. Since convenience products highly correspond to less predictable local customer habits fast learning and understanding of changing consumer needs is crucial in processes of product development rather than in technological and manufacturing know-how. Additionally, most of the convenience-based benefits will be concretized at the point-of-sale. Thus, complementary assets can be found along the value chain and suggests a 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 this context, convenience food is associated with dynamic capabilities, whereas functional food primarily requires core competencies (Prahalad/Hamel, 1990). 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. Talking about competencies in product development of new convenience food products means how firms use their bundles of resources in accordance with the strategic concept of dynamic capabilities.

3.2 Technological Leadership vs. Organizational Flexibility

A central question in the field of innovation management is, whether the sources of innovation are more linked to the demand-side (demand-pull) or to the side of suppliers (technology-push). Using a firm’s capacity of dynamic capabilities means 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. However, the food market is recognized to be predominated in demand-driven innovation activities (Grunert et al., 1995). Following this argumentation one could assume that also new convenience food products are primarily demand-driven. However, one major objective of this paper is to show that these product innovations are also “capability-driven”. In contrast to conventional supplier-pushed innovations we argue that capability-pushed innovation activities happen in respect to gain a beneficial position in the innovation/imitation competition by assembling market entry barriers or raising the competitors’ costs. In this regard dynamic organizational capabilities and especially processes of resource reconfiguration are used in order to immunize firm’s products against imitation and substitution. Consequently, sustainable competitive advantages in the field of convenience food can not be reached by developing and exploiting technological resources (technological leadership) but rather by organizational and strategic flexibility.

Whilst technological resources can be protected by patents convenience novel food products are usually not based on an outstanding technological performance of the innovator; there are no critical parts in the product design or ornamental aspects which can be protected from imitation in this way. Furthermore, the short and less predictable path of convenience trends makes it difficult to abstract away from future substitutive opportunities (in contrast for example to functional food). Therefore, the food players are forced to find other possibilities to protect their products from the strong imitation competition in the food market. Leadership of strategic fle-
xibility comprises developing an organizational structure with flexible organizational resources and capabilities. The strategic imperative is controlling organizational capabilities which allow to reconfigure internal resources rapidly according to non-durable consumer trends (hit-and-run merchandising) instead of technological leadership.

3.3 Investment, Asset Specificity and Strategic Flexibility

As indicated in the starting point of this section a firm’s strategic content dimension is furthermore decisive for the modality of future investment. The logic of core competences (Prahalad/Hamel, 1990) implies a stable competence-enhancing investment when long-term R&D has been applied for example in the field of cardiovascular strengthening ingredients for functional food products. These efforts can be seen as investments with a general high asset specificity which causes considerable costs that cannot be eliminated in the intermediate run, even by a total cessation of production (Baumol et al., 1982). It comes to sunk costs in order to achieve a high level of efficiency and consequently the strategic flexibility of a firm decreases. These circumstances are less critical in markets which develop in predictable paths and the danger to be locked-in an assembly of specific set assets and resources is limited.

Since novel convenience food products correspond to less predictable local customer habits the logic of leverage is unlikely to apply. However, a firm’s investment program should be in accordance with a corporate strategy which is based on strategic flexibility. Thus, specific asset investment und sunk costs can not be used for developing market entry barriers. A local convenience trend could reach its end before the capital investments made in specific assets generate any cash flow. Instead of this we have already pointed out the importance of fast learning and speed innovation.

The competition is merely characterized by timely identification of new convenience trends, fast imitation of already existing convenience solutions or processes of product development within an organizational setting with a minimum of specific asset investment but a maximum of strategic flexibility (which requires the capacity of resource reconfiguration).

3.4 Inter-firm-Cooperation and rising rival costs

So far, our remarks assumed that all resources required for the processes of reconfiguration and the associated investment program are owned or to be more precise controlled by the respective firm. Inter-firm cooperation is one important way achieving access and utilization of internal and external resources (Pfeffer/Salancik, 1978) and network partners (White/Lui, 2005) which increases the participants’ capabilities and endowments (Combs/Ketchen, 1999). Regarding the decision whether to engage in inter-firm cooperation or not is on the one hand a question of minimizing the costs of organizing transaction (Williamson, 1985; Thorelli, 1986; Brockhoff, 1992) and on the other hand a concern or a discussion of the need to protect themselves from the opportunistic behaviour (Williamson, 1985) of their partners to retain their own core proprietary assets (Kale/Singh/Perlmutter, 2000). Besides the rapid and efficient pooling of resources alliance partners face the problem to maintain an open knowledge exchange sufficiently to achieve alliance objectives while controlling knowledge flows to avoid unintended leakage of valuable technology in longer-term considerations (Oxley/Sampson, 2004).

In our field of convenience food we can identify horizontal, but intra-sectoral (in the field of functional food we pointed out the importance inter-sectoral forms; see in detail Voigt 2007) forms of cooperation (co-branding and product bundling) as well as vertical forms along the value chain (especially between food processors and food retailing). In this regard the question comes up how firms select appropriate partners (Porter/Fuller, 1998; Gulati, 1998; Hitt et al., 2000; Reid/Bussiere/Greenaway, 2001). In doing so a firm may concentrate on the level of at-
tractiveness to exploit and develop their cooperative resources (Hamel, 1999) and using their technological capabilities (Singh, 1997; Mowery, 1998). Since cooperation activities in the area of functional food were concentrated on complementary technological capabilities of the converging counterpart we continue in the context of convenience food with our argumentation with the help of vertical and horizontal cooperation in means of combining and recombining existing resources in future directions (Teece/Pisano/Shuen, 1997; Eisenhardt/Martin, 2000). Cooperative strategies become more reasonable since most of the typical strategic parameters like using technological leadership, protecting resources with patents and investing in specific assets do not bring any competitive advantage. We even argue that some of the typical horizontal intra-sectoral cooperations in the convenience food segment are aimed on building up market entry barriers or on raising the rivals’ costs.

3.4.1 Inter-firm Cooperation I: Raising Rival Costs by Product Bundling

Product Bundling is not inevitably an issue of inter-firm cooperation when two or more distinctive products are offered as a package at a single price (Venkatesh & Mahajan, 1993). Shapiro/Varian (1995) showed how software product bundling can be used to increase the value a firm extract from customers when reducing the dispersion in their willingness to pay. Furthermore, product or combined product/price bundling is a popular and well investigated instrument in the scope of price strategy of fast food restaurants (Wübker 1999; Olderog/Skiera, 2000). In the context of food products it is generally argued that concepts of product bundling intend to create a demand-pulled added value by reducing consumer confusion.

All elements of the product bundling are also available by each own which means that the convenience food solution can also be substituted by an accumulated imitation of all single components of the bundle package. Thus, convenience solutions based on the economic principle of product bundling as a firms unilateral approach can relatively easily be substituted if both, innovator and competitor dispose of a comparable degree of diversification. Product Bundling gets an issue of horizontal collaboration if the different package components are coming from different firms. Even if the imitator is diversified similar to the innovator a successful imitation of the convenience solution requires finding an appropriate partner of cooperation.

Therefore, firms who decide engaging an inter-firm cooperation with the objective of product bundling keep their rivals from an easy and cost-efficient imitation of the convenient product solution.

3.4.2 Inter-firm Cooperation II: Raising Rival Costs by Co-Branding

Co-Branding is an increasingly popular and well-proved innovation technique firms use to transfer the positive associations of the partner brand to newly formed composite brand (Washburn, Till, Priluck 2000). This form of cooperation of two or more brand manufacturer and their branded products forms a separate and unique product for introducing new consumer products. Pairing two or more branded products is an attractive choice for both, international food producers and local firms when the transition of well-known local brands (Milka, Ritter Sport and Haribo) to global ones (like Nestlé, Unilever and Kraft Foods) is intended. Dual branding may increase the chance that the two products will be regarded as being similar in quality and may give consumers more information on which attributes are important (value added) and thus make the brands more attractive (Abratt/Motlana, 2002).

In our field of research co-branding imply to create a unique convenience product which is indivisible. That is what distinguishes cooperative products bundling from co-branding. The convenience food solution based on co-branding can not be substituted by all single compositions of the brand fusion. Novel convenience products which are based on co-branding are extremely
difficult to imitate because an identical co-branding cooperation is contractually simple not possible. Competitors who intend to create comparable convenience solution as a substitutive product will be confronted with much higher costs regarding the selection process of appropriate co-branding partners.

4. Strategic process dimension of convenience Food

4.1 Competencies of Strategic Process and New Product Development

Brown/Eisenhardt (1995) give an detailed and elaborated overview of the literature of new product development by differentiating three streams of product developments:

- product development as a rational plan,
- product development as a communication web and
- product development as disciplined problem solving.

Most of the past studies in this research field deal with the empirical analysis of success factors and statements on best practice (Cooper/Kleinschmidt, 1987; Cooper/Kleinschmidt, 1995), whereas recent studies focus on emerging markets in eastern Asia. In contrast capabilities and competencies that are in the interdependent relationship with competence building and deploying them due to the previous chapter are not in the research focus. However, in a strategic process perspective new product development is recognized as a typical example of resource reconfiguration within the approach of dynamic capabilities (Eisenhardt/Martin 2000).

When reviewing the literature of new product development with a particular view on organizational competencies two different dimensions of development-related competencies can be identified. Assuming the case that complex product units are composed of a number of components, the process of new product development requires a set of function-specific or component competencies (Clark, 1985; Clark/Fujimoto, 1991). These functional competencies must be combined with each other and in line with superior product architecture. The competence needed to perform these integrative tasks is not included within the component competencies but can be rather described by architectural competencies, which capture the interactions between components in their applicational context (Cockburn/Henderson, 1994).

In a general manner and in order to meet our focus on required competencies Danneels (2002) argues that processes of new products combine technological know-how (manufacturing knowledge) with customers’ knowledge (understanding customers’ needs). According to Danneels (2002) a successful product innovation requires technological and customers’ competence and their linkage as a capability in the meta dimension. 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 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. Consequently, in less technology turbulence environments incentives for imitation wars are higher, when imitation rents are more stable and predictable. This argumentation support our cognitions about imitation-based competition in the convenience segment of the food sector made in the previous chapter.

When shifting the focus on firms’ environment the relationship between focal knowledge or competencies and external knowledge become more important. In this regard Helfat and Raubitschek (2000) combine the RBV-concept of complementary assets (Teece, 1986) with the MBV-analysis of value chains (Porter, 1985). This study disclosed the impact of unutilized complementary assets that can be found along the value chain of a firm (Helfat and Raubitschek, 2000) and corresponds to a firms alliance competencies concerning vertical cooperation in the
context of new Product development. Furthermore, external resources can be explored and ex-
exploited also by horizontal forms of cooperation. First mentioned form includes firms located in different in-
dustry. In previous related study concerning functional food the complementary potential of 
collaboration between actors of the pharmaceutical and the food industry in terms of the upco-
mimg market convergence was analyzed (Voigt, 2007). The latter form includes collaboration 
between firms coming from the same industry like strategic alliances, very often the partners 
are even coming from the same strategic group.

4.2 Competencies for Developing Convenience Food Product

In this section we are going to reflect the findings of the NPD-Literature in the light of the stra-
tegic process dimension of resource reconfigurations. As an intermediate result we identify four 
types of (meta-) competencies that play a key role in the processes of new product development 
of functional food.

First, there is a strong connection between platform development and strategic flexibility in or-
der to avoid high sunk costs (see section 3.3 of this paper) investments as an architectural com-
petence. However, Strategic platform concepts are also important for leveraging core products 
to a high number of end products (Koruna, 2004; Kogut and Kim 1996). In the case of functional 
food the competence of combining different component competencies includes nutrition solu-
tions on the one hand and pharmaceutical solutions on the other hand (V oigt 2007). Contrary, 
platform concepts in context of convenience food products do not focus on developing compet-
encies in the long run but on fast learning and recombining existing investments and resources 
according to local convenience trends.

Second, even though product development of novel convenience food requires less R&D efforts 
where technological knowledge is needed there is still the challenge to combine customers 
knowledge with technological know-how. Often, alternative uses of a product are not discover-
ed by the firms themselves but rather by the firms’ customers (Leonard and Swap, 1999). Iden-
tifying alternative applications of a technology or competencies largely depends on a firm’s 
absorptive capacity (Cohen and Levinthal, 1990) and the firm’s ability to tap the customers’ ab-
sorptive capacity (von Hippel, 1986).

Third, external resources can be obtained through access of non-institutional ways (recruiting 
personnel directly from other companies or even competitors, doing extensive reverse enginee-
ring) or institutional forms (licensing, technology buying, contract R&D, and cooperation). In 
general firms deploy the whole spectrum of external technology acquisition possibilities, each 
mode of transfer having its specific advantages and disadvantages (Barabaschi, 1992). Regard-
ing vertical forms of cooperation it is essential for both players (food processing and food re-
tail) to combining their individual focal knowledge with external knowledge along the value 
chain.

Finally, in the previous section we pointed out the more crucial importance of horizontal coope-
ration for creating inimitable convenience food solutions. Thus, external resources can be finally 
gathered by horizontal forms of cooperation as shown exemplarily with our remarks on 
product bundling and co-branding.

5. Resulting Hypotheses and Conclusion

The objective of this paper was to offer an alternative academic view on convenience food 
through reflecting this field of the food sector with help of the resource-based view and the in-
dustrial organizations literature. In addition, we based our examination on the differentiation 
between the strategic content and a strategic process dimension of strategic management. In the
context of innovation-based competition this leads to imitation, cooperation and new product development. We see our remarks furthermore as a possible starting point for further empirical research. The results of the study on first mentioned dimension can be summarized by formulating the hypotheses (1) to (3), whereas hypothesis (4) refers to the process dimension.

1) **If multinational food producers aim to reach a sustainable and diversified position in the food market they need to integrate in their corporate strategy the aspect of stable leverage as well as permanent change.**

When reflecting this statement in application of the product business units of functional food and convenience food they can be subdivided as follows:

1a) **Functional food is an appropriate product field for investments in specific assets and long-term assembly of core competencies.**

1b) **Convenience food is an appropriate product field for investments in organizational and strategic flexibility and the application of dynamic capabilities.**

This study was focussed on firms’ innovative conduct in the field of convenience food and showed by comparing the aspects of technological and organizational leadership that:

2) **Innovation activities in the product field of convenience food are not only demand-pulled but also capability-driven.**

This hypothesis can be divided up into two parts when considering a firms product level and the level of internal resources and capabilities:

2a) **In a competitive environment which is based on innovation and imitation there is a little chance to protect novel convenience solutions from imitation and substitution on the product level.**

2b) **Instead of that the absorptive capacity of fast learning regarding convenience food trends and the corresponding reconfiguration of internal resources are providing an appropriate starting points for firms immunization (from imitation and substitution) issues.**

If we accept the aforementioned hypotheses the focus of analysis shifts from a firm’s market environment to its positioning among the competitors. In this regard we state that:

3) **Firms efforts and investments in the processes of reconfiguration of novel convenience products are not primarily related meeting new product requirements but aim on rising up the rivals costs or on building up market entry barriers.**

One very important implication of our results can be seen in the requirement of inter-firm cooperation in order to achieve the aims of (3). Thus, we formulated hypotheses (4) to (4d) to reflect this insight:
The propensity to cooperate in the context of novel convenience food (which we discussed exemplarily for product bundling and co-branding) is primarily influenced by the objective to create inimitable and non-substitutable convenience food solutions.

When shifting from the strategic content view to the process dimension, we state that following competencies play a critical role in the processes of reconfiguration in product development of new convenience food solutions:

(4a) architectural competence of reconfiguration
(4b) competence of combining customer’s knowledge with technological know-how
(4c) combining focal resources with external resources along the value chain by vertical collaboration
(4d) combining focal resources with external resources for building up market entry barriers by horizontal collaboration

References


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