

Supplier involvement in new product development in the food industry

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Abstract

Purchasing and supplier involvement as one possible explanatory factor of product development success has been gathering growing attention from both managers and researchers. This paper presents the results of a Dutch benchmark study into supplier involvement in product development, and discusses the topic more specifically in the context of the food industry. Regarding supplier involvement, this industry has not been studied intensively, although its specific characteristics make continuous development of new products imperative and the amount of outsourcing of production and development has increased substantially. The benchmark was conducted by means of an existing framework which has not yet been applied to the food industry. The food company in the benchmark study performs consistently better than companies from other industries. At the same time, the results of a similar case study carried out at a Scandinavian food company show contradictory results. By comparing the Dutch and the Scandinavian case, we illustrate that our analytical framework can explain these different results in terms of the underlying processes and pre-conditions, thereby validating its application to the food industry.

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1. A contingency-based approach to supplier involvement in product development

In an ever-increasing competitive environment, suppliers can contribute to product development in several ways. Involving suppliers in product development is supposed to have a positive effect on development time, development and product cost and product quality (McGinnis & Vallopra, 1999; Ragatz, Handfield, & Petersen, 2002). However, this turns out not to be true for all situations (Birou, 1994; Hartley, Zirger, & Kamath, 1997). Therefore, some authors argue that the way supplier involvement in product development is managed is crucial in explaining the amount of success of this involvement (Clark, 1989; Ragatz, Handfield, & Scannell, 1997; Wynstra, 1998).

At the same time, literature in the area of product innovation as well as supplier involvement demonstrates that researchers increasingly adopt thoughts from contin-

gency theory to address the topic (Souder, Sherman, & Davies-Cooper, 1998). Contingency theory tries to understand and explain phenomena and organizational issues from a situational point of view. Applying this to the topic of supplier involvement in new product development, this means that determining the way suppliers should be involved in product development requires an analysis of the specific contextual factors at hand.

For example, one of the contingencies studied in the literature on supplier involvement in product development regards the degree of innovativeness—or the technological and market uncertainty—of the overall new product development project. Eisenhardt and Tabrizi (1995), for example, found that supplier involvement accelerated product development time, but only in *mature* market segments and when the product development effort was well defined. Ragatz et al. (2002) finds evidence that increased technological uncertainty has a negative impact on cost results, but this effect is partly mediated through the use of effective integrative strategies. In other words, higher degrees of technological uncertainty increase the need for project-related supplier management activities.

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In line with this reasoning, a contingency-based framework for analyzing processes related to purchasing and supplier involvement in product development has been developed in prior research (Van Echtelt, Wynstra, Van Weele & Duysters, 2004; Wynstra, van Weele, & Axelsson, 1999). This framework posits that in order to be successful, the involvement of suppliers needs to be embedded in the wider context of bringing a purchasing perspective to the development process. Such a perspective looks at the availability and suitability of external resources (i.e., the knowledge and skills of suppliers) for integration in the development process under conditions of timely availability and appropriate or optimal costs and quality of the input items (parts, materials etc.) embodying those resources. This integration of purchasing and product development processes and considerations is sometimes referred to as Integrated Product Development and Sourcing (IPDS) (Van Echtelt, Wynstra, & van Weele, 2004; Wynstra, van Weele, & Wegeman, 2001).

Traditionally, most research on supplier involvement in product development has been situated in large-scale assembly industries, like the electronics and automotive sectors. Little is known about supplier involvement in the food industry. Yet, this industry has increasingly been relying on suppliers for carrying out production and development activities. Hence, it would be interesting to investigate to what extent an analysis framework for studying supplier involvement—which originally is mainly based on research in assembly industries—would also hold for the food industry, and whether there are any particular features and challenges in managing supplier involvement in this sector. The results of such a study would help in further strengthening the external validity of the analysis framework.

In the remainder of this paper, we first discuss some specific characteristics of the food industry and its product development process, after which the analysis framework is presented in more detail. Subsequently, we discuss the results of a Dutch benchmark study where we compared eight different development projects from four different manufacturing companies, one of which is from the food industry. This is followed by a detailed discussion of the two Dutch food development projects and a comparison with two projects at a Scandinavian food company. The paper ends with a discussion of the conclusions and implications, specifically focusing on the applicability of our analytical framework to supplier involvement in product development in the food industry.

2. Product development and supplier involvement in the food industry

The food industry is composed of very diverse firms processing various ingredients to in any way produce food products in solid (crisps, quick meal solutions) or liquid

form (soup, beverages). The food industry is well known for its large variety of products, which vary in size, packaging, flavour, et cetera. Most of these products are sold through retailers to large numbers of consumers throughout the world, and margins are relatively low. For the larger part, the industry in Europe exists of small to medium sized enterprises, supplying local or specialist niche markets (Hingley & Lindgreen, 2004; Traill & Grunert, 1997). Large companies and multinational enterprises complete the industry. Whereas large food companies supply a limited range of national brands and processed foods and increasingly produce private-label products for national retailers (Verhoef, Nijssen, & Sloot, 2002), multinationals are additionally engaged in exports or other multinational activities.

As a result of increased consumer awareness, consumers impose more and more demands on food companies (Weston & Chiu, 1996). Consumers have more money to spend, but also expect higher product quality in terms of freshness, storage life, et cetera. There is a growing interest in convenience products due to changes in lifestyle (going out more, working longer hours, women working in addition to men or instead). The market situation is one of consumer pull; consumer buying patterns direct product development. In addition to that, retailers buy and assign shelf space based on consumer buying patterns; since shelf space gives retailers strong bargaining power when negotiating with food companies, the power in the supply network is also largely in hands of the retailers (Hingley & Hollingsworth, 2003).

Another trend is the continuous growth of retail chains, whereby the retailers increase their power over food companies even further. More and more retailers switch to operating under the flag of an established brand name (e.g., ICA or Albert Heijn), and more and more chains go together in consortiums like Ahold or Carrefour. Food companies need to position their products well in relation to their competitors in order to get in favour with the retailers and with the consumer.

These trends and specific characteristics of the food industry bring growing pressure upon food companies. In their struggle to obtain shelf space in supermarkets, food companies must know which products to offer to the final consumer, as to initiate a customer-pull situation at the retailers. This means that much attention has to be given to researching consumer wishes on the one hand and developments in supplier offerings on the other. The latter can bring about ideas for new food products, after which the consumer has to be convinced that he or she wants or needs that product.

The continuing changes in consumer buying patterns also require speedy development from food companies; what consumers buy today will probably not be bought tomorrow. Retailers practically force food companies to either innovate, or loose shelf space to the competitor that does. New developments need to take place in rapid succession. However, very few of the newly launched products are successful in terms of acceptance by the market. Rudolph

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