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New Business Model for Quality Supplies

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NEW BUSINESS MODEL FOR QUALITY SUPPLIES

ABSTRACT

Food quality and food safety have become increasingly important in the food sector. Given the perishable nature of agrifood products, high rotation and high spatial dispersion of production and commercial processes, there is an increasing need for high levels of coordination. Because supply chains are becoming too complex for any one entity to manage effectively, tomorrow's winners will be the companies that conduct the orchestra – not those that play all the instruments. Here, we focus on a strategic business model for quality supplies as one of the driving forces of the vertical collaboration in managing the food supply chain.

KEYWORDS:

Food Supply Chains, Chain Management, Balanced Scorecard, Quality, Fish

INTRODUCTION AND THEORETICAL BACKGROUND OF FOOD SUPPLY CHAINS

Nowadays, the food sector faces increasing demands for quality, which consequently encompasses the entire chain. Food quality is a broad concept that includes physical product attributes such as nutritional content, as well as process attributes relating to how the food was produced. Many process quality attributes are credence attributes. In case of the absence of monitoring or quality signals buyers are not able to verify product attributes like animal welfare standards or environmental standards, organic produce, or whether a product contains genetically modified organisms. Information asymmetry arising from experience or credence attributes increases transaction costs for food firms. To guarantee the consumer the correctness of credence attributes, the vertical linkages between the different actors are especially relevant. Thus, the food chain does not just concern the supply of products but is a series of interconnected flows of goods, services, incentives and information between the different participants in the market chain (Martinez et al. 2006). Politicians, consumers, producers and suppliers all assess food quality as no longer the matter of a single firm. In order to deliver the “new quality” the whole food chain has to work together (Hanf and Hanf 2007).

A food chain has specific characteristics, including multiple stages, global sourcing, variety of sources, leading to a complex network structure. Moreover, food is an inhomogeneous material, with a wide uncertainty and variability in quality and quantity of supply, as well as yield of production processes (Lindgreen and Hingley 2003). Given the perishable nature of agrifood products, high rotation and high spatial dispersion of production and commercial processes, there is an increasing need for high levels of coordination. One can observe that the food chain is in the progress to be re-designed from traditional (spot) market exchange into vertical co-ordinated network organisations. The key driver for the re-designing of a food chain is the reliable transfer of trust attributes regarding product quality to the consumer.

As a result, today many food products are produced in vertically cooperating organizations or networks. Such chain organizations can have various forms of co-operation or even be vertical integrated firms. However, several studies have shown that the majority of vertical chain organisations are co-operations of a number of firms. We focus here on a specific type of chain organization named **supply chain networks (SCN)** (Lambert and Cooper 2000; Hanf and Dautzenberg 2006).

Generally, supply chain networks have strictly coordinated vertical linkages (Zylbersztajn and Farina 1999) and can be regarded as strategic networks (Burr 1999). Supply chain networks embody collaboration of more than two firms (Omta et al. 2001) so that numerous and heterogeneous members of supply chain networks maintain highly intensive and recurrent interactions with each other. Strategic chain organizations possess a **focal firm** being the core element that is expected to manage the system (Jarillo 1988). The focal company determines the decisions of all network members to ensure the achievement of the super-ordinate network aims (Wildemann 1997). In general the focal firm is that firm that is identified by the consumers as being ‘responsible’ for the specific food item, e.g. the producer in the case of a producer brand and the retail firm in the case of private brand (Hanf and Dautzenberg 2006). If the focal firm is widely regarded as being responsible for the safety of the food then the focal firm will and should establish a network management system that effectively prevents further recurrence of food scares. This is a very difficult and very comprehensive task. Figure 1 demonstrates the growing complexity and task of organisation for the focal company.

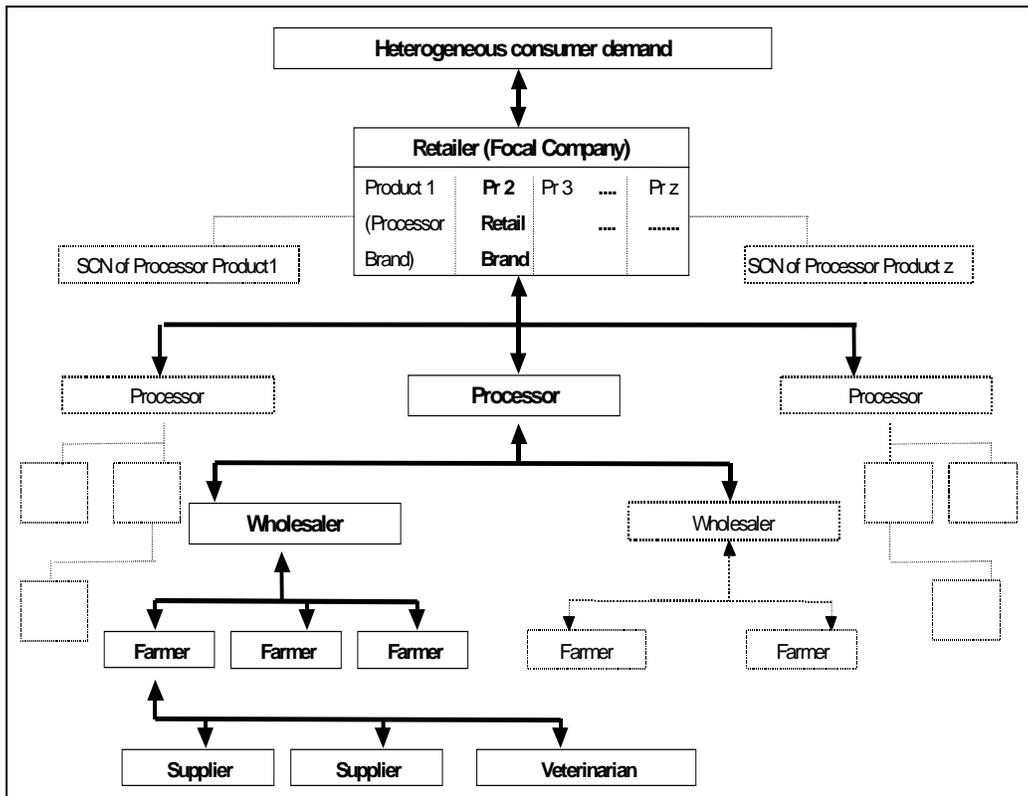


Figure 1: Supply Chain Network of a Retailer (Hanf and Kühl 2003)

The questions how such chain networks have to be designed and which governance structure fits best have been addressed in several well known articles (Gulati et al. 2000, Hendrikse 2003, Omta et al. 2001, Lazzarini et al. 2001). On account of this, the aim of our paper is not to improve the discussion of the government of chain networks. Instead, we want to enhance the discussion on the co-ordination of vertical network i.e. chain management.

First we will outline the theoretical background of food supply chains. Thereafter, we will elaborate on the questions of a chain management and introduce the concept of a management model based on the Balanced Scorecard. Finally, we will draw some conclusions and give an outlook on our further investigation.

MANAGING FOOD SUPPLY CHAINS

Vertical inter-firm organizations have to be coordinated to gain value throughout the whole supply chain. Because supply chains are becoming too complex for any one entity to manage effectively, tomorrow's winners will be the companies that conduct the orchestra – not those that play all the instruments (Matchette and Seikel 2005, S.148). The challenge to a supply chain organization is to choose the appropriate management mechanisms (Xu and Beamon 2006). To find out how to manage “the orchestra” a more differentiated look at the management theory of food supply chains is needed.

The management literature usually only distinguishes between the two types of strategies - corporate and business strategies. This distinction is not sufficient for an adequate consideration of the multiple linkages which exist between interdependent organizations within a chain network (Bresser and Harl 1986). Thus, various authors have introduced the concept of collective strategies (Astley 1984, Carney 1987, Edström et al. 1984). “A collective strategy is a systematic response by a set of organizations that collaborate in order to absorb the variation presented by the inter-organizational environment” (Astley and Fombrun 1983, p.380). Collective strategies can be re-active, absorbing variation within an environment, or they can be pro-active forestalling unpredictable behaviour by other organisations (Astley and Fombrun 1983). The adoption of collective strategies in SCN implies that, similarly to the firm, the network pursues certain goals.

In a SCN the focal company is the strategy setting unit that sets network goals. To achieve the goals the management of chain organizations has to orient towards organizing activities through interfirm **coordination and cooperation** (Ménard 2004). Generally, cooperation refers to the alignment of interests, and, thus, successful cooperation can be

hindered by conflicts of interests (Gulati et al. 2005). Conflicts of interests arise if self-interested individuals optimise their private benefits before they strive for collectively beneficial outcomes. Therefore, cooperation between actors correspondingly requires the coordination of their activities. Resource and information flows have to be coordinated as to timing, quantity, quality, etc. in order to provide benefits for supply chain actors and deliver value to the customers. On this account, coordination is attributed to the alignment of actions. Problems of coordination can arise due to the lack of shared and accurate knowledge about the decision rules that other actors are likely to use and how one's own actions are interdependent with those of the others (Gulati et al. 2005). In order to realize the strategic objectives the focal company has to work out a collective strategy that addresses cooperation aspects as well as coordination aspects (Gulati et al. 2005).

Besides the equal consideration of cooperation and coordination aspects, another shortcoming of many articles on chain management is that they do not consider that networks consist of different levels, namely firm, dyadic, and network levels. However, Duysters et al. (2004) highlighted their importance for chain management in an analysis of strategic alliances. On account of this, goals of chain management have to be considered in the same way - at least at the firm and network levels (Gagalyuk and Hanf 2008). Due to this fact, it might be often difficult to distinguish between the network level goals and the firm level goals. Under **network-level** goals we understand goals set within a network that can only be met if all networked firms are jointly working to achieve them. An example is to enhance the total chain quality. In general, we suppose that such aims are rather of non-pecuniary or intangible nature. **Firm-level goals** refer to goals that single firms want to achieve for their own firm entering the network. Examples might be higher sales, risk reduction, higher profits, or knowledge generation. Therefore a collective strategy has to be regarded as a systematic approach that addresses the alignment of actions (coordination) and interests (cooperation) of independent but collaborating companies in order to achieve certain goals that have to be analysed on firm level as well as on network level.

One can say, that successful chain management requires a change from managing individual functions to integrating activities into key processes (Lambert and Cooper 2000). This integration of our key processes (named cooperation, coordination and the consideration of different levels) can only be efficiently aligned by a sophisticated **management concept** (Bogaschewsky 1995).

During the last twenty years concepts like Total Quality Management (TQM), Supply Chain Management (SCM) and Efficient Consumer Response (ECR) have been developed to

optimise vertical inter-firm interactions. TQM can be characterised as a customer-orientated quality management concept that concentrates on the quality of processes rather controlling the (end) quality of single products i.e. instead of an “end-of-pipe orientation” a process orientation is taken leading an overall quality optimisation. In the mid 1990’s the customer orientated Supply Chain Management (SCM) and Efficient Consumer Response (ECR) were introduced. Critical and sensitive information (e.g. scanner data, amount of stocks) based on logistics should be passed throughout the whole chain. In the late 1990’s Collaborative Planning Forecasting and Replenishment (CPFR) emerged based on the ideas and aims of ECR and SCM. Even though these concepts consider the whole chain the concepts themselves are mainly designed for a single company and optimising the product and information flow between sequenced ties. Being widely used in the agri-food business TQM has altered in the course of time from a management system to an implementation of ISO certification. Consequently, TQM nowadays can be seen as a competitive must and not as a competitive advantage. In a literature survey of monographs on Supply Chain Management Müller et al. (2003) showed that the majority of monographs made no any clear distinction between SCM and logistic concepts. Especially, the perspective of interfirm co-operation was only addressed in some exceptions. Additionally these concepts were designed for major enterprises rather than for small and medium enterprises that are mainly found in the food business (Hanf and Andreä 2005). Besides that, practice shows that these concepts mainly address operative management objectives but disregard the strategic side.

Talking about strategic business models we have to take a look at the firm-level. There are multiple strategic management systems for single companies to manage the firms’ processes in order to reach a well defined strategic goal. Kaplan and Norton perceived that the key to executing the strategy is to have people in the organization understand it. They introduced in 1996 a management framework, named Balanced Scorecard (BSC) that nowadays is a widely adopted strategic management system. The Balanced Scorecard is a multidimensional concept that combines financial and also non-financial parameters to link today’s actions with tomorrow’s goals (Kaplan and Norton 1996). The BSC translates the firm’s strategy into objectives which are classified in critical and important business perspectives. For our further consideration the Balanced Scorecard addresses one important deficit in traditional management systems: the inability to link a company’s long-term strategy with its short-term actions. Hence, building a BSC enables the company to align its management processes and focuses the entire organization on implementing long term strategy (Kaplan and Norton 1996, p.85).

On this account we presume that the BSC approach provides beneficial insights for the management of SCN. First attempts using the BSC in supply chains have been undertaken by Brewer and Speh (2000, 2001) and Werner (2000). It has to be considered that the complexity and diversity of interests within a single enterprise frequently hinders the implementation of the overall strategy throughout a single company. It is certainly much more ambitious to create a strategy for networks that are composed of a multitude of firms (Kaplan and Norton 2001). A prerequisite for the use of business management systems in chain networks is the comparability of firms and networks. Hanf and Andreä (2005) deduce that strategic networks are comparable to conglomerates and therefore similar concepts can be utilized to coordinate a SCN. Thereby the above presented characteristics of supply chain networks have to be taken into account.

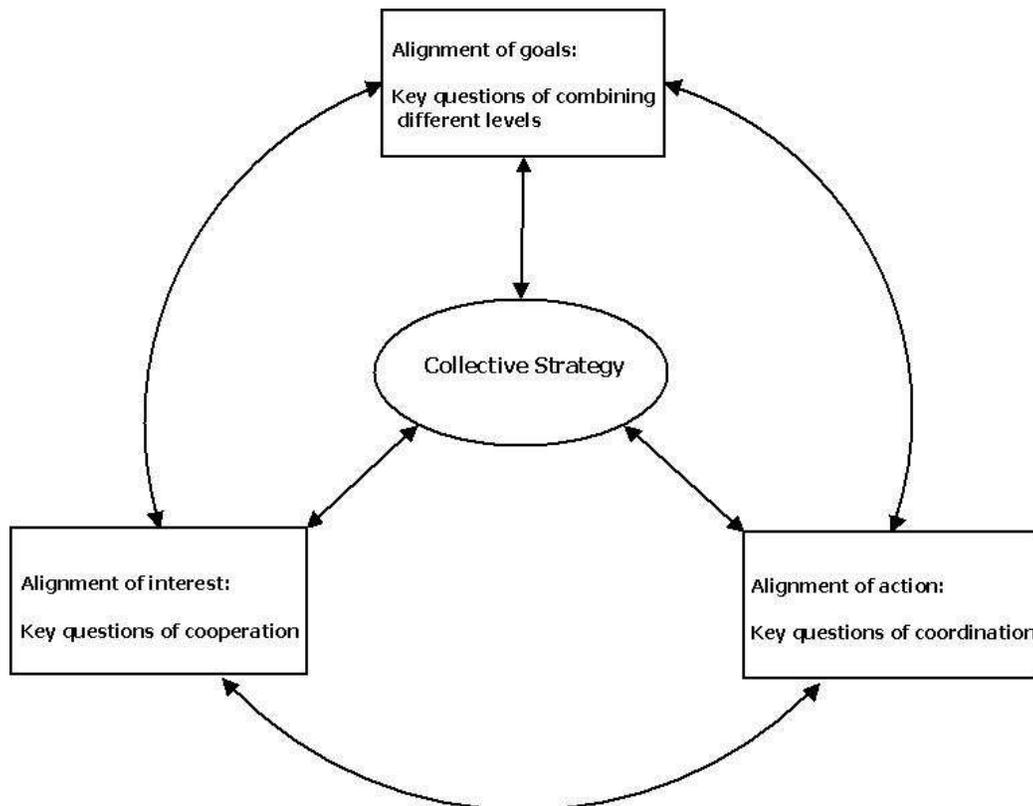


Figure 2: Supply Chain Network Management modell

In our strategic management model we consequently combine the identified main strategic management objects for SCN, named alignment of interests (cooperation), alignment of action (coordination) and alignment of goals (different levels) with the concept of Balanced Scorecard. In this context, the three perspectives must be linked to collective strategy. Figure 2 presents the framework of our conclusions. This balanced approach of

translating collective strategy into three strategic important perspectives helps the involved firms, especially the focal company, to acquire foresight about which problems are most relevant in achieving the network goals and thereof to reduce conflicts.

CONCLUSION AND OUTLOOK

The creation of a management system for a whole supply chain network is a tremendous organizational task that the focal firm has to accomplish. Chain management is a multidimensional construct consisting of cooperation and coordination elements and occurring on various levels. Therefore, a food chain can be called “supply chain network” if it highlights a collective strategy, that focuses on the alignment of interests, the alignment of action as well as on the alignment of different network goals. The implementation of a collective strategy has to be carried out in the interest of the whole chain. Therefore, a major task for strategic chain management is to translate strategy into network goals. As a prerequisite understanding the various determinants of chain management is an important managerial issue for every supply chain network. Our concept provides important implications for this practice.

For our further investigation we will conduct an in-depth analysis of the governance structures and supply chain strategies in the fish sector. As a raw product, fish is a fresh and perishable food product, and must be delivered to the processor in the shortest time spans. Given the latent perishability and increased public concerns about quality (Várdi 2001), quality assurance mechanisms become increasingly important in this sector. Therefore the fish sector is appropriate to the study of collaborative supply chain organizations that are coordinated by a focal company. Based on strategic management literature structural equation models can be seen as a useful validation method of our insights.

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