The importance of network goals for strategic chain management

1. Introduction

Food products are usually not produced in vertically integrated food chains but rather in vertical cooperating networks. A self-evident reason for the formation of vertical networks instead of single line chains is the differing size of firms along the food chain. Striving for economic independence, protection against market power, and economics of scope are other examples for reasons to collaborate. Albeit networks have been the object of intensive scientific research for many years there is no consensus about elementary characteristics (Kasperzak 2004) such as the number of actors required to constitute a network, or about the autocracy of the network companies.

I will use the term network in the following sense. Networks are "specific properties of the transaction relationships, typified by relational relationships in which formal and informal sharing and trust building mechanisms are crucial" (Zylbersztjn/Farina 2003). Therefore, they are addressing all questions on inter-organizational relationships of more than two firms (Omta et al. 2001). In order to narrow the discussion on networks I will further use an approach by Burr (1999) who classifies four typologies i.e. the spontaneous network, the self-organizing network, the project–orientated network, and the strategic network. The typology is derived from the intensity of relation, the coordination mechanism, and the existence of a focal company. In the agri-food business strictly coordinated vertical linkages are relevant on the one hand to guarantee the consumer the correctness of credence attributes like organic produced and on the other hand in order to gain cost advantages. Thus, generally networks in this sector are strategic networks being defined as "netchains" (Lazzarini et al. 2001) or as "supply chain networks" (Hanf/Kühl 2004).

Strategic networks can be characterized as pyramidal-hierarchic collaborations (Gulati et al. 2000, Jarillo 1988). On account of this, they possess a focal firm coordinating the network firm in a hierarchical style. Additionally, the intensity of the rela-

tions within strategic networks is rather high and they inhere to recurrent interactions (Burr 1999). The focal firm is in general that firm that is identified by the consumers as being ‘responsible’ for the specific food item, e.g. manufacturers in the case of a producer brands and retailers in the case of distributors own brands. The other network actors are more or less heavily dependent on the focal company because of (long lasting) explicit or implicit contracts. The level of dependency is usually higher for vertical than for horizontal ties (Wildemann 1997). In the case that the focal organization itself is dependent on critical inputs of its supplier a mutual dependencies exists so that the supplying organizations restore some power of the focal company (Medcof 2001). This argumentation of the resource dependency theory (Pfeffer/Salancik 1978) is getting evident if the procurement relationships in today’s agri-food business are taken into account. The highly specialized equipment of the processing firms requires continuously high specifications on the agricultural inputs so that the processors cannot dispose suppliers frequently. Therefore, trust mediating chain organizations deserve a special attention and particular contractual design in the vertical chain relations. Nevertheless, as the focal company is the core element of the supply chain network it has also the power to align the actions of the network partners so that it has the ability to manage the network in order to realize the strategic objectives.

However, this managerial task can be divided into two domains – the task of cooperation and the one of coordination. Problems of cooperation esteem from conflicts of interests causing motivation problems (Gulati et al. 2005). Problems of coordination refer to difficulties of alignment of actions of independent firms created by a lack of shared and accurate knowledge about decision rules that the other parties are likely to use as well as the unawareness of existing interdependences. In business practice as well as in theory since many years the firm boundaries overlapping concept of supply chain management has been introduced. Since the logistic driven concept of supply chain management focuses mainly on the alignment of distribution processes and related questions on data exchange and standardisation it does not take into account questions regarding cooperation. Additionally, small and medium sized enterprises have not

been addressed despite the fact that still the majority of the agri-food business consists of small and medium sized companies.

In conclusion one can say that as modern competition does not take place between individual companies but between entire supply chains, the emerging challenges have to be faced at the supply chain level. Thus, where formerly the goal used to be having a successful company, there is now a need to construct successful supply chains. Creating and managing supply chains will become one of the main differentiating aspects in a world of global competition. However, because supply chain networks consist of a multitude of collaborating firms one can assume that not only one common goal exists but also many others. Thus, for successful chain management mechanisms have to be carefully worked out that align the goals of the different parties.

On account of this, the **aim of this article** is two answer the two questions of the title. Firstly, I want to answer the question **"What are the goals of supply chain networks?"**. Secondly, I want to find an answer to the question **"How do the goals effect cooperation and coordination?"**. In order to conduct this task I will present a review on chain management. Afterwards I will elaborate on supply chain network goals and their role for successful chain management. The article will be closed by showing some limitations, presenting some implications for science and managerial practice as well as a short summary.

2. Review on chain management

Supply chain networks consist of many organisations acting together, with each organisation dependent on the performance and actions of the others in the chain (Brito/Roseira 2005,). In this context the crucial question is how to organise and run the supply chain network. Thus, the managerial challenge is to address the matter of cooperation and coordination.

Even though cooperation can be regarded as a prerequisite of supply chain networks, different problems exist. Problems of cooperation arise from conflicts of interest among the different actors, i.e. collectively beneficial outcomes fail to arise due to actions motivated by the private benefits to individuals. The canonical problem

is the famous prisoner's dilemma (Gulati et al. 2005). However, these problems can be solved by aligning interests through formal and informal mechanisms (Baker et al. 2002, Granovetter 1985, Gulati 1995, Heide/Miner 1992, Kogut/Zander 1996, Uzzi/Gillespie 2002, Williamson 1975, Zaheer/Bell 2005).

Considering supply chain networks and the heterogeneity of their member firms, the optimal mode of partnerships can be expected to vary widely along the whole chain. Thus, the focal company must determine how to design the partnerships (Hanf/Hanf 2007, Xu/Beamon 2006). Partnerships that extend beyond price can be divided into strategic and independent partnering (Webster 1992). Mentzer et al. (2000) define strategic partnering as an "on-going, long-term, interfirm relationship for achieving strategic goals, which deliver value to customers and profitability to partners" (Mentzer et al. 2000: 550). Strategic partnering aims to improve or dramatically alter a company's competitive position through the development of new products, technologies, and markets (Webster 1992). Independent partnering strategies seek to improve operational efficiency and effectiveness through needed, short-term relationships to obtain parity with competitors (Mentzer et al. 2000).

However, even when the interests of the different actors are aligned and cooperation is achieved, problems of aligning the action of the different actors can persist (Gulati et al. 2005). Gulati and Singh (1998) state that incentives, sanctions, monitoring, rewards, and punishment can help to achieve cooperation but are not sufficient to achieve coordination. Just as coordination can be considered the alignment of actions (Levy/Grewal 2000), coordination problems arise if actors are unaware that their actions are interdependent and if there is uncertainty that makes the others' actions unpredictable (Gulati et al. 2005). Thus, coordination problems arise when partners fail to share accurate knowledge about the decision rules that others are likely to use or when they fail to understand how one's own actions interact with those of the others (Gulati et al. 2005: 419).

Mechanisms for overcoming coordination problems include programming, hierarchy, and feedback, as well as culture, commitment, and a collective strategy (Kogut/Zander 1996, March/Simon 1958, Nadler/Trushman 1998, Thompson 1967). For each type of in-

terdependency[1] there are many coordination mechanisms available (Malone 1987, Malone/Crowston 1994, Nassimbeni 1998). Simatupang et al. (2002) state logistics synchronisation, information sharing, incentive alignment, and collective learning as general coordination modes. Related topics are e.g. revenue sharing (Cachon/Lariviere 2005, Giannoccaro/Pontrandolfo 2004), decision support systems (Boyaci/Gallego 2004, Xiao et al. 2005), and the use of modern IT infrastructure (Fritz/Schiefer 2002, Müller 2001). Overall, the strategic design of coordination mechanisms can be subsumed in supply chain management, which is defined as the planning and coordination of activities from procurement to production with special emphasis on logistics (Xu/Beamon 2006).

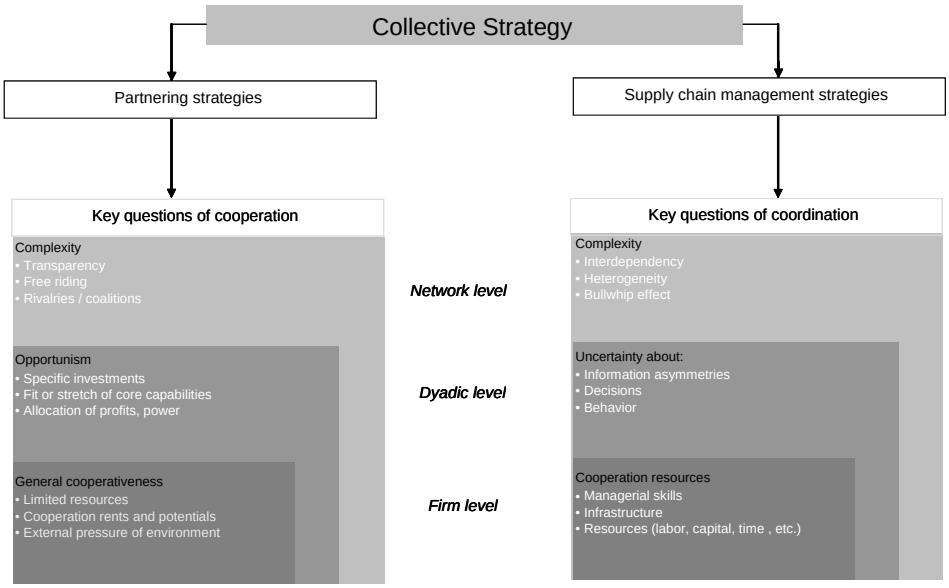
Both cooperation and coordination must be included in the chain management to achieve the super-ordinate network aims. Due to the pyramidal-hierarchical structure of strategic networks (Gulati et al. 2000, Jarillo 1988, Wildemann 1997), the focal company has to work out a strategy which addresses partnering strategies as well as supply chain management strategies (Hanf/Dautzenberg 2006). Thus, such a strategy must consider that networks consist of different levels, namely firm, dyadic, and network levels (Duysters et al. 2004). Additionally, Hanf and Hanf (2007) have emphasised that deriving from the super-ordinate network aim, a distinction must be made between an operative and a strategic chain management. While operative chain management is used to gain parity with the competitors, strategic chain management[2] aims to create enduring competitive advantages.

In conclusion, it can be said that the focal company that wishes to construct a strategic chain management must work out a collective strategy that addresses cooperation aspects (partnering strategy) as well as coordination aspects (supply chain management strategy), allowing for the demands of the three different network

[1] Interdependency is created when decisions and actions by one partner influence the decisions and actions of partnering firms. (Astley/Fombrun 1983, Dyer/Nobeoka 2000, Lazzarini et al. 2001, Theuvsen 2004).

[2] In particular, strategic chain management is often exercised only with a subgroup of firms in the supply chain network because only a part of whole supply chain has to be aligned tightly (due to product characteristics) (Hanf/Hanf 2007).

levels (Hanf/Dautzenberg 2006). The following graph visualizes their framework.



Graph 1: Framework of chain management (Hanf/Dautzenberg 2006)

4. The role of goals for chain management

4.1 What are the goals?

The illustration of strategic chain management demonstrates the superior importance of collective strategies. However, Bresser (1988) points out that in the literature one can find two rivaling concepts on collective strategies. The first characterizes collective strategies as inter-organizational networks that have developed accidentally without any kind of (master)plan. The second one – that will be used afterwards throughout the whole article – defines collective strategies as systematic approaches by collaborating organizations that are jointly developed and implemented (Astley/Fombrun 1983, Astley 1984, Bresser/Harl 1986, Carney 1987, Edström et al. 1984, Sjurts 2000). The aim of such strategies is that the involved organizations jointly manage the common interdependencies (Bresser 1988).

There are three types of interdependencies: i.) pooled interdependencies between firms competing in the same market, ii.) sequential interdependencies between firms operating in different markets but linked by vertical work flows where the output of one is the input of the other, and iii.) reciprocal interdependencies between firms that complement each other or have reciprocal product and/or information flows (Astley/Fombrun 1983, Lazzarini et al. 2001).

Thus, collective strategies are regarded as instruments dealing with the variation in the inter-organizational environment i.e. they were aiming to stabilize and dominate the interdependent task environment (Bresser/Harl 1986). Thus, one could conclude that the sole goal of a network is to create a set of mechanisms that manage the existing interdependencies i.e. the creation of a strategic management itself is the networks' goal. Because strategic chain management takes into account the existence of different levels of a network (Duysters et al. 2004, Hanf/Dautzenberg 2006) network goals have to be addressed in the same way. On account of this, goals of chain management have to be considered at all (or at least at two) network levels. Furthermore, because strategic chain management is consisting mechanisms addressing cooperation as well as coordination also network goals have to be dived in these two dimensions (Table 1).

Goals	**Network levels**		
	Firm level	Dyadic level	Network level
Examples of cooperation sub-goals	Knowledge generation	Avoidance of opportunism Gaining or distribution of power Trustful relationships	Chain transparency Trustful relationships
Examples of coordination sub-goals	Increase in sales Risk reduction Consumer satisfaction	Access to information Customer satisfaction	Chain quality Consumer satisfaction

Table 1: Chain management goals (Gagalyuk/Hanf 2007)

Under network-related goals I 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 or to

prevent a law as it was the case of the creation of the German Q&S-System. In general, I suppose that such aims are rather of non-pecuniary or intangible nature. This is another reason why their indication is complicated in terms of supply chain network. Firm-related 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.

However, Gagalyuk and Hanf (2007) point out that given the character of supply chain networks the focal company is able to exert power over the other network companies and which is the strategy setting unit. Based on this, the setting of the overall network goals is in most cases the prerogative of the focal company. Due to this fact, it might be often difficult to distinguish between the network level goals and the firm level goals (e.g. end consumer satisfaction can be regarded as either a firm level aim of a retailer or a network level aim as its fulfilment involves many firms but it is addressed by retailer being a focal actor).

4.2 How do goals effect chain management?

Generally business scholars argue that strategies can be understood to be a middle- to long-term oriented decision of general principle that has an instrumental character. Such a decision has the task to create a framework of orientation for the subordinated decisions. Therefore, strategies are canalizing all firm activities on the achievement of the general aims or goals of the firms. Vis-a-versa one can say that the process of setting goals and the actual goals themselves significantly influence the management of firms. As shown in the previous chapter supply chain networks possess strategic goals on all three network levels. Thus, the question to answer is “how do the goals on the different network levels effect chain management?”. In this context, due to the characteristics of supply chain networks particular interest has to be paid to the role of focal companies and their goals.

Because of the pyramidal-hierarchical structure of strategic networks the focal company can be considered as the strategy setting unit in the network. Furthermore as being the managerial center of the network it is also the duty of the focal company to work out the chain management concept. As argued above, thus the goals of the

focal company can be regarded as being also network goals. Thus, whereas one can understand the creation of a chain management concept as the general goal on network level some of the goals of the focal companies' firm-level goals have the scope to be regarded as particular goals on network level e.g. end consumer satisfaction. Considering the importance of such network goals for the design of the strategic chain management concept one has to take into consideration the approach of Hanf and Hanf (2007) who distinguished between operative and strategic chain management. Operative concepts are mainly tools that have the goal to achieve parity with competing supply chain networks, whereas a strategic chain quality system have the goal to achieve a competitive advantage for the network and thereof for the focal company.

It is evident that an operative chain management aiming to achieve parity with the competing supply chain networks demands a different set of mechanisms to align the interests and actions of the involved firms than a strategic chain management concept that aims to derive a competitive advantage through networking. Referring to the chain management concept of Hanf and Dautzenberg (2006) particular differences will occur in the design of the partnering strategies that address the alignment of the interests of the involved actors. I conclude that in the case of a strategic chain management approach the focal actor has to carefully align the interests and thereof the goals of all involved parties. Thus, designing the collective strategy and the resulting management concept the focal company has to assure that (all) goals on the three different networks levels are considered. Because networks are of dynamic nature also mechanisms have to be worked out how to include changes in the relevant goals. Contrary to the strategic chain management approach I assume that for an operative chain management it is sufficient that the focal company takes such a powerful position in the chain that it is able to exert its managerial decisions throughout the whole chain. In that case not the alignment of the interest of the actors i.e. goals is of primary importance for the chain management instead it is the establishment of power. A prerequisite for this is that the focal company is accepted by all parties to be the chain captain (Hingley, 2005).

5. Limitations, future research, and managerial implications

I attempted to comprehensively review the state-of-the-art of chain management in this paper. The article, as any article, suffers from some limitations. The paper is based on an extensive literature study; still there is a problem with the coverage of all articles. Although I tried to cover a huge number of relevant articles, I am totally aware that I might have missed relevant pieces of work. A further limitation is that I have not conducted a survey testing my assumption regarding network goals and their importance on chain management. However, I believe that a theoretical elaboration still can provide some insights that are useful for science and managerial practice.

Future questions and tasks for research I see in the strand of network goals and their implication for chain management and the success of networks. As long as the goals of all participants are not clear a true validation of the success of the network and its management can not be given. This leaves room for dissatisfaction of the involved firms. A result might be lower motivation and higher opportunism. Because there is a consensus in strategic management literature that structural equation modelling is a preferable way to analyse success and success factors I want to encourage the use of structural equation modelling.

Besides this rather general recommendation, I want to encourage studies on the network goals. Particularly the translation of the interests of the different chain actors in their specific goals is of high interests. Having a set of the different goals (on all network levels) can help to categorize the goals in conflicting, independent and complementary ones. Based on this categorization (theoretical) managerial implications can be achieved. Furthermore, because the focal company is the strategy setting unit in the supply chain network I want to encourage the highlight the perspective of the focal company and thereof the theoretical modelling of the duties and tasks of it. Because the goal analysis as well as the study of the focal company rather demands in-depth knowledge, in this case I want to encourage the usage of case study approaches as well as qualitative empirical methods.

I believe the main managerial implication of this article is that for the successful management of supply chain networks the knowledge of different goals is essential. Knowing that there is a difference between network goals and the goals of the individual firms allows lowering the risk of setting wrong incentives. Particularly, if the network specific goals are mostly determined by the goals of the focal company confusion and misunderstanding can develop in the supply chain network. In accordance to this argumentation I perceive the duty and responsibility of the focal company as to work out a strategic setting that on the one hand outlines the common aims of all participants and on the other hand includes incentives on the firm level i.e. includes the firm level specific aims. In case that conflicts exist between chain (network) related and firm specific goals the focal company has to include conflict solving mechanisms. In general management literature mechanisms to overcome conflicts are named but have to be specified to collaboration setting. Because the active part of the strategy setting lies in the responsibility I understand the involvement of the other network companies in the strategy outlining process rather indirect. In most cases I assume most network companies are rather involved by giving some feedback directly or indirectly by (opportunistic behavior). In the case of strategic families a few key suppliers are more closely involved in the strategy creating process (Albach 1992). However, in the agri-food business this is rather the exception than the rule.

Moreover, focal companies as the predominant strategy setting unit have to take into account that the aims and mechanisms of the ‘sub-strategies’ i.e. partnering and supply chain management strategies might be conflicting. For sequential interdependencies the introduction of hierarchies and thereof a clear dispersion of power is a preferable co-ordination mechanism. However, from the co-operative perspective power is often perceived as the antipode of trust. Thus, the inclusion of power as a co-ordination mechanism might be conflicting with the goal to create a trustful chain environment. Again, the collective strategy has to include mechanisms to solve this conflict or at least to minimize to a minimum level.

Last but not least I think the recognition of the differences between operative and strategic chain management and the thereof resulting differences in the network goals has significant managerial

implications. In order to achieve parity with competing supply chain networks a (totally) different partnering approach is need as in the case when the creation of a competitive advantage is the aim of the network. If, as observable in Germany for a discount retailer, the focal company wants to change from an operative chain management approach to a strategic chain management its suppliers as well as the other stakeholders have difficulties to believe the strategic swift. Particularly, in this case the ability to demonstrate the 'new' network aim and the 'new' firm goal of the chain captain as well as the knowledge and inclusion of the different goals of the rest of the involved network actors is essential for the focal company.

5. Summery

Since many years more strictly coordinated chain organizations have occurred in the agri-food business. In their majority such chain organizations are of collaborative nature. If this cooperation has a pyramidal-hierarchic structure so that a focal firm is coordinating the network firms in a hierarchical style such collaborations can be characterized as supply chain networks that are strategic networks. In this context I addressed the topics of cooperation as well as coordination. Gulati et al. (2005) deduce that even though cooperation may be achieved i.e. the interests of the individual actors are aligned the coordination problems may persist. Thus, both the alignments of the interests as well as the alignments of the actions have to be simultaneously achieved in order to create a successful partnership i.e. they can be considered to be two sides of the same coin.

The review on chain management showed that additionally to the inclusion of cooperation and coordination the management of networks has to be analyzed in respect to the firm level, dyadic level, and the network level (Duysters et al 2004). Therefore, these aspects have to be integrated in the strategic setting of chain management. Thus, the collective strategy (Astley/Fombrun 1983) has to take into account cooperation, coordination, as well as the three network level. As a result Hanf and Dautzenberg (2006) argue that a chain management has to consist of a collective strategy divided into a partnering strategy – addressing the alignment of interests – and a supply chain management strategy - addressing the alignment of ac-

tions. Furthermore they present a framework that shows mechanisms for cooperation and coordination in regard to the three network levels.

Discussing strategic chain management I believe that in this context the study and discussion of the collective strategy and thereof the aims and goals of networks are of major importance. Hence, I wanted to answer the questions **"What are the goals of supply chain networks?"** and **"How do the goals effect cooperation and coordination?"**. Reviewing the literature on collective strategies I derived to the conclusion that in general the aim of collective strategies is to create a set of mechanisms that manage the existing interdependencies i.e. the creation of a strategic management itself is the networks' goal. Taking into account the above mentioned chain management framework it is getting evident that network goals have also to be discussed in the light of cooperation and coordination as well as in regard to the three network levels. In my perception particularly goals on network level and on firm level bear the potential of conflicts. Thus, chain management concepts have to include conflict solving mechanism.

Due to the particular characteristics of supply chain networks the focal companies are the primarily strategy setting entities of networks. Therefore, to some extend their firm level goals are simultaneously the goals for the entire network. In this context a collective strategy has to be understood as a by the focal company induced systematic approach that addresses the – alignment of actions and interests of independent but collaborating companies in order to achieve the focal companies' goals by collaboration.

In the discussion of the role network goals play for chain management it is also important to include the differentiation between operative and strategic chain management (Hanf/Hanf 2007). Whereas operative chain management fulfills the aim to gain parity with rival networks strategic chain management aims to create a competitive advantage for the network. It is obvious that such a difference in strategic orientation has severe consequences on the alignment of interest and to a lesser degree on the coordination of actions of the involved supply chain network actors.

In conclusion, successful chain management requires that the focal companies have extensive knowledge about the different goals

of a network and its member firms. This knowledge has to be included into the collective strategy and thereof also into the design of the partnering and supply chain management strategies on all three network levels.

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