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STRATEGIC MANAGEMENT OF FOOD NETWORKS: ARE NETWORK GOALS NECESSARY AND ACHIEVABLE?

*Taras Gagalyuk und Jon Hanf**

Abstract

Nowadays food products are increasingly produced in vertically cooperating supply chain networks. The questions of how such networks have to be designed and governed have been addressed in several well known articles. However, questions dealing with chain strategy and management are not discussed satisfyingly. In particular, the importance of network goals for the network's strategy and management is undisclosed. Therefore, the aim of this paper is to provide the theoretical elaboration on the possible role of network goals in strategic chain management. Specifically, the following questions are inquired. First, what are the network goals? Second, how can these goals affect chain management?

Keywords

Supply Chain Networks, Network Goals, Chain Management, Agri-Food Business

1 Introduction

For several decades the need for a rapid response to end-consumer demands has been recognised by the agri-food business. One of the most evident consequences of this recognition is a shift from competition between individual organisations towards competition between supply chain organisations (VAN DER VORST et al., 1998). As a result, today many food products are produced in vertically cooperating organisations or networks. Except for consumer satisfaction, the rationale for networks originates from the demand for inter-firm trust, advances in technologies, and increasing global competition (POWELL, 1990; FRITZ AND SCHIEFER, 2002; PARKHE et al., 2006). In the agri-food business, vertically cooperating networks are particularly important for the development, signalling and monitoring the quality aspects (MÉNARD and VALCESCHINI, 2005).

Though there are different types of networks in different businesses (see e.g. BORGATTI and FOSTER (2003) for a review), it is evident that a specific type of networks named supply chain networks is formed in agribusiness. Generally, supply chain networks can be regarded as strategic networks (BURR, 1999). LAZZARINI et al. (2001) define supply chain networks as a set of networks comprised of horizontal ties between firms within a particular industry or group, such that these networks (or layers) are sequentially arranged based on the vertical ties between firms in different layers. Thus, supply chain networks embody collaboration of more than two firms (OMTA et al., 2001). Furthermore, numerous and heterogeneous members of supply chain networks maintain highly intensive and recurrent interactions with each other (BURR, 1999). Because of such structure and of strategic nature, a supply chain network possesses a focal actor that sets the network strategy and coordinates its implementation in a hierarchical manner (JARILLO, 1988; HARLAND et al., 2001; SANDERS, 2005). The reason for this is that the focal actor generally stands for the firm that is recognised by the consumers as "responsible" for the specific product (HANF and KÜHL, 2005).

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More specifically, the managerial task of the focal company is to deal with problems of the two domains – cooperation and coordination (GULATI et al., 2005). While the problems of cooperation arise from the conflicts of interests, the problems of coordination originate from unawareness of the existing interdependencies or the lack of one's knowledge about the behaviour of others. Additionally, problems of cooperation and coordination can be viewed as a consequence of distinctive goals that are established at the firm, dyadic and network levels of collaboration (DUYSTERS et al., 2004). Whereas the establishment of clear goals is recognised as a prerequisite of the firm strategy's success (SIMON, 1964; PORTER, 1980), we argue that the importance of network goals for the network's strategy and (chain) management is still undisclosed. We have come up to this argument after having reviewed approximately 300 articles on network, supply chain and inter-organisational performance in 17 international peer-reviewed management and agribusiness journals. Although the review has been conducted in terms of another research, some of its results provoked our interest in analysing network goals. First of all, in spite of declaring the analysis of network performance (e.g. the level of the achievement of network goals), almost all the articles analyse how the goals of single firms are achieved in the network. Second, many articles address the goals which have the scope to be regarded as network goals but they are analysed in terms of the single firm participating in the network. These findings have led us to a conclusion that the network goals are still poorly conceptualised. Furthermore, in the context of numerous collaboration failures, the understanding of network goals is unlikely to be achieved in managerial practice either.

Therefore, the aim of this paper is to provide the theoretical elaboration on the possible role of network goals in strategic chain management. Specifically, the following questions are inquired. First, what are the network goals? Second, how can these goals affect chain management? To answer these questions, we first present the short review on chain management. Afterwards, we elaborate on goals of networks and their implications for chain management. Finally, we summarise our findings.

2 Review on chain management

In supply chain networks, each organisation depends on the performance and actions of others embedded in the chain (BRITO and ROSEIRA, 2005). In this context, the crucial question is how to organise and run the network. Thus, the managerial challenge is to address the matter of the alignment of interests (cooperation) and the alignment of actions (coordination).

Although cooperation can be regarded as a prerequisite of networks, problems of cooperation exist in supply chain networks. Being induced by conflicts of interests, problems of cooperation reflect an endeavour of different actors to optimise their private benefits instead of working for collectively beneficial outcomes. However, these problems can be solved by aligning interests. Specifically, interest alignment involves the use of formal and informal mechanisms (WILLIAMSON, 1975; GRANOVETTER, 1985; HEIDE and MINER, 1992; GULATI, 1995; KOGUT and ZANDER, 1996; BAKER et al., 2002; UZZI AND GILLESPIE, 2002; ZAHEER and BELL, 2005) developed in the partnering strategies.

Considering the structure of supply chain networks, the optimal mode of partnerships can be expected to vary widely even in terms of one network. Thus, the task of the focal company is to determine how to design the partnerships (XU and BEAMON, 2006; HANF AND HANF, 2007). 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, inter-firm 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 seeks to

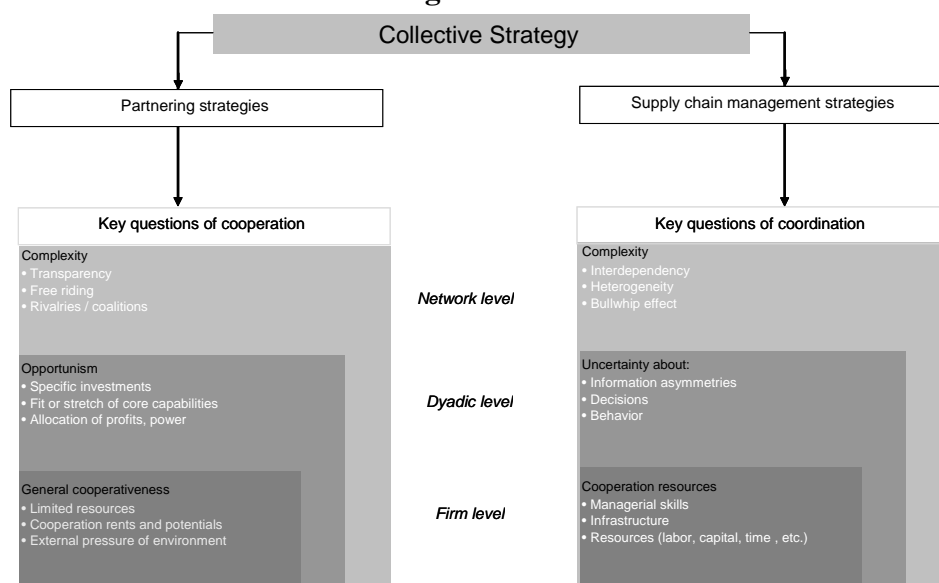
improve operational efficiency and effectiveness through needed, short-term relationships to obtain parity with competitors (MENTZER et al., 2000: 550).

However, even when the interests of the different actors are aligned, problems of aligning the actions 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 and 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 shared strategy (MARCH and SIMON, 1958; THOMPSON, 1967; KOGUT and ZANDER, 1996; Nadler and TRUSHMAN, 1998). SIMATUPANG et al. (2002) define logistics synchronisation, information sharing, incentive alignment, and collective learning as general coordination modes. Related topics include also revenue sharing (GIANNOCCARO and PONTRANDOLFO, 2004; CACHON and LARIVIERE, 2005), decision support systems (BOYACI and GALLEGO, 2004; XIAO et al., 2005), and the use of modern IT infrastructure (MÜLLER, 2001; FRITZ and SCHIEFER, 2002). Overall, the strategic design of coordination mechanisms can be subsumed under supply chain management, which is defined as the planning and coordination of activities from procurement to production with special emphasis on logistics (XU and BEAMON, 2006).

Both cooperation and coordination must be included in the chain management to achieve the super-ordinate network aims (Hanf and Hanf, 2007). The focal company has to work out an integrative strategy which addresses partnering strategies as well as supply chain management strategies (HANF and DAUTZENBERG, 2006). Due to the pyramidal-hierarchical structure of strategic networks (JARILLO, 1988; WILDEMANN, 1997; GULATI et al., 2000), such a strategy must consider that networks consist of the three different levels, i.e. firm, dyadic, and network levels (DUYSTERS et al. 2004).

Figure 1: Framework of chain management



Source: Hanf and Dautzenberg (2006).

To summarise, the focal company that implements a strategic chain management must work out a collective strategy that addresses cooperation aspects (partnering strategy) and coordination aspects (supply chain management strategy), allowing for the demands of the three different network levels (HANF and DAUTZENBERG, 2006). Figure 1 visualises the framework of strategic chain management.

3 What are the network goals?

The framework of chain management demonstrates that the implementation of collective strategies is particularly important in networks. Talking about strategies in general, business scholars argue that a strategy can be understood as a middle- to long-term oriented decision of general principle that has an instrumental character (e.g. ANDREWS, 1971). Such a decision has the task to create a framework of orientation for the subordinated decisions. Therefore, strategies canalise all activities to achieve the general aims or goals. Vice versa, the process of setting goals and the actual goals themselves can significantly influence the management (e.g. PORTER, 1991).

Because collective strategies are widely recognised as a type of strategies implemented by collaborating organisations, they can be assumed as those aiming to create a framework of activities to achieve network goals. At the same time, inter-firm networks are rarely characterised as those having their own objectives. Chain management literature generally acknowledges that networks consist of single firms that pursue their own goals as well as common goals. However, most analyses of performance (i.e. the level of the achievement of goals) concentrate on the firm's performance in a network and rather sketchily elaborate on the question of how the network itself performs (NARASIMHAN and DAS, 1999; CAI et al., 2006). Yet, the understanding of network performance can be thought of being important because it can explicate at least some patterns of firm performance (e.g. Baum et al., 2000; DYER and NOBEOKA, 2000; ELLRAM et al., 2002; SANDERS, 2005). One possible explanation of poor elaboration on network performance is that the network goals are weakly conceptualised. Another reason can be that the network is not seen as an entity which can have its particular goals. Nevertheless, there is an agreement that networks represent a particular type of institutions (FURUBOTN and PEJOVICH, 1972; WILLIAMSON, 1985) or an organisational form (JARILLO, 1988; GULATI et al., 2000; BORGATTI and FOSTER, 2003). Therefore, similarly to firms, networks can be supposed to pursue certain goals. Collective strategies, thus, aim to achieve network goals which, in turn, can influence the implementation of collective strategies. In this context, we first provide the possible theoretical interpretation of network goals in a general network setting. Afterwards, we show how the goals can vector chain management in the particular type of (strategic) networks, i.e. in supply chain networks.

4 So what are the network goals?

In terms of networks, it is theorised that firms collaborate with regard to vertical and horizontal flows of information, resources, materials, finances, etc. (GULATI et al., 2000; OMTA et al., 2001). Collaboration per se means common work of numerous actors to achieve common goals (e.g. CHANDRA and KUMAR, 2001). Consequently, deliberate achievement of common goals requires the implementation of collective strategies defined as systematic approaches by collaborating organisations that are jointly developed and implemented (Astley and FOMBRUN, 1983; ASTLEY, 1984; EDSTRÖM et al., 1984; CARNEY, 1987; SJURTS, 2000). BRESSER and HARL (1986) characterise collective strategies as instruments that deal with the variation in the inter-organisational environment, i.e. collective strategies aim to stabilise and dominate the interdependent task environment. Because networks themselves arise from existing interdependencies among firms (DOZ et al., 2000), the implementation of collective

strategy itself can be regarded as the network's goal or, better to say, there are such overall network goals that nurture the implementation of collective strategy. To exemplify, one can consider the case of adoption of the quality assurance system in agri-food supply chain, e.g. Q&S in Germany. The declared goal of Q&S is to regain and strengthen consumer trust in the proper and high quality production of food, i.e. to provide the comprehensive and complete food safety (QS Qualität und Sicherheit GmbH, 2007). This goal motivates all the companies of the food chain to work together with the use of mechanisms agreed upon in terms of the Q&S system. Therefore, the implementation of collective strategy is in place.

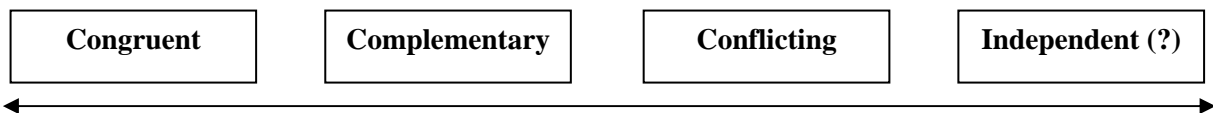
Considering the fact that collective strategy involves the alignment of interests and the alignment of actions of the network actors, network goals can be generally viewed as those consisting of cooperation sub-goals and coordination sub-goals. The reason for this is that the achievement of overall network goals is doubtful without ensuring that all actors harmoniously work together to achieve them. In this context, cooperation and coordination sub-goals of the network signify the existence of the objectives of single actors constituting the network. The decisions by independent firms to enter the network do not mean that the firms refuse the achievement of their own goals. Generally, firms form networks because their expected benefits from participation outperform possible shortcomings (e.g. HANF and DAUTZENBERG, 2006). Therefore, the network can be considered as a set of the multiple firms' goals. Additionally, the existence of cooperation and coordination sub-goals is indicative of a possibility that the interests and the actions of certain dyads of firms can be aligned more than the other combinations of interests and actions. Moreover, the coalitions of interests between firms can be formed in networks (BLOCH, 2002). In such cases, dyadic relationships of firms can arise typified by orientation towards the achievement of particular common goals of and by two firms.

Thus, as seen, the process of goal setting in networks tends to occur at the different levels, i.e. at the overall network level, at the dyadic level and at the firm level. Taking into account that the self-oriented goals of firms constituting the network are rather inverse, one can conclude that the overall network(-level) goals seem to be of different nature than those of firms. The reason is that firms prefer to work together (and not to compete) because of such goals. Therefore, the overall network goals or network-level goals can be referred to as goals which all the network actors pursue by working together to achieve them. In turn, the firm level goals are the objectives which single firms strive to achieve for themselves by entering the network. While the examples of the firm-level goals are profit maximisation, increase in productivity, etc., the network level can be characterised by the goals of information sharing, improvement of total quality, etc. On account of this, the overall network(-level) goals have mostly an intangible or non-pecuniary character. Talking about the dyadic-level goals, one can generally consider that they are similar to goals of the network level because they also require collective action (between two firms). Therefore, cooperation and coordination sub-goals are also likely to be set at the dyadic level of collaboration.

Cooperation and coordination sub-goals of the network, i.e. the goals of alignment of interests and of alignment of actions indicate that the aims of network actors can deviate from the overall network goals. Thus, it becomes evident that the goals in networks can be conflicting (Figure 2). Therefore, the interests and the actions of the network actors must be aligned to ensure that they do not impede the achievement of the overall network goals. On the other hand, there can be situations when the objectives of network actors can cause the actors' courses of actions which are in line with the overall network goals. In this case, it is reasonable to qualify such goals of actors as those matching or complementary with the overall network goals. Furthermore, the actors' goals can even coincide with the overall network goals under conditions when the interests and the actions are fully aligned. Such goals can be, thus, referred to as congruent. Expectedly, complementary and congruent goals can predominantly explain why the actors enter the networks. At the same time, logically,

network actors can have specific objectives the achievement of which is not connected in any way with the achievement of overall network goals. Such goals can be generally called independent. Although such aims can be thought of being irrelevant in networks, they can exert influence on the process of achievement of network goals. The reason is that, due to the actors' embeddedness in the network, the achievement of independent goals can distract resources (of the actors and of the network) needed for the achievement of the overall network goals. Consequently, independent goals must be clearly detected in/by the network. However, based on this argumentation, it becomes evident that, paradoxically, independent goals are interdependent, i.e. dependent. Therefore, we have doubts whether independent goals can occur in networks at all. Yet, possibility of their occurrence can not be excluded without a more in-depth research. (Perhaps, independent goals can be incorporated in the notion of conflicting goals which are definitely interdependent.) In this study, we prefer not to concentrate on independent goals.

Figure 2: Continuum of network goals



Source: Authors' representation

The achievement of cooperation and coordination in the network plays an important role in the network success because it facilitates the implementation of collective strategy, i.e. the achievement of the overall network aims. Although coordination and cooperation are generally referred to integration in organisational theory (Gulati et al., 2005), there are distinctive differences between them (Kogut and Zander, 1996). In this context, the goals of alignment of interests and of alignment of actions can be also conflicting though they can be considered as complementary or congruent too (Smith et al. 1995; Gulati and Singh, 1998). At the same time, cooperation and coordination sub-goals can not be considered as independent if they are subordinated to the achievement of an overall common aim (Malone and Crowston, 1990). Potential conflicts between cooperation and coordination sub-goals reside in the problems they address and in the specifics of their mechanisms (Gulati et al., 2005). We discuss the possible effect of the goals established in the network as well as of their interrelations on chain management in the following section.

Summarising the current section, one can conclude that the network goals are the goals established at the three network levels. The overall network(-level) goals require that all network actors work together to achieve them. Such goals predefine the course of collective strategy that includes the achievement of cooperation and coordination sub-goals in the network. Generally, the goals pursued in networks can be classified as congruent, complementary and conflicting.

5 How can goals affect strategic chain management?

In the case that the relevance of goals is strategically recognised, the appropriate structure gains in importance in order to enable the achievement of goals. Based on arguments of the previous section, the goals established in networks generally correspond to the different network levels and involve cooperation and coordination sub-goals. Therefore, the network goals can be subsumed in the case of pyramidal-hierarchical supply chain networks in which chain management is exercised and in which the focal company acts. Considering the described specifics of goals established in networks, one can postulate that these goals can influence chain management.

So how can the goals affect chain management?

In order to answer this question, we have first to consider theoretically the situation when the network goals are not achieved at all and whether this has any relation to chain management. Specifically, it is necessary to conceptualise the implications for collective strategies, i.e. partnering strategies and supply chain management strategies. Furthermore, the role of goals pursued by these strategies and goals of the different network levels is also of an interest. Additionally, the goals of the focal company as the centralised decision making unit have to be considered.

Taking into account the structure of supply chain networks, one can conclude that they are subject to a high risk of failure, i.e. the situation when the overall network goals are not achieved. What does it mean to the supply chain network? Most probably, such a network will collapse. The explanation is that the supply chain network is a strategic network, i.e. it focuses on the achievement of certain goals. If the goals are not achieved, then the network loses its meaning. On account of this, inadequate understanding of the network goals is one of the most important reasons of failure because it can bring about conflicts.

Because supply chain networks consist of the three levels, one can suggest that the probability of conflicting goals is high. In this context, goals of the dyadic level which arise due to coalitions of interests formed by two firms can be conflicting with the network-level goals. Additionally, interrelations between the firm-level and the network-level goals can be conflicting. To exemplify, the goal of profit maximisation at the firm level can contradict the network level goal of quality improvement which induces costs.

However, not only the goals of the different network levels can be conflicting, but also the goals pursued by the partnering and the supply chain management strategies, i.e. cooperation and coordination sub-goals can conflict with each other. For example, hierarchical coordination mechanisms can be installed to achieve the coordination sub-goal of the alignment of actions. Yet, the use of power can hamper the achievement of cooperation sub-goal of the alignment of interests typified by the establishment of trustful relationships.

Due to the pyramidal-hierarchical structure, the supply chain network possesses the focal company that acts as the managerial centre of the network. What about the goals the focal company pursues? Since the focal company is the centralised decision making unit of the network, collective strategies can be considered as systematic approaches that address the achievement of goals induced by the focal company. Based on this, the setting of the overall network goals and the development of collective strategy are prerogatives of the focal company in most cases. Therefore, it can be often difficult to distinguish between the firm-level goals of the focal company and the network-level goals. For example, end consumer satisfaction can be regarded as either the firm-level goal of a retailer being the focal company or the overall network-level goal because its fulfilment must involve many firms though it is induced by a retailer. Moreover, based on this argumentation, the overall network goals can be referred to as (some of) the goals of the focal company. In such a case, other networked firms can have difficulties to see goals set by the focal actor as the network-level goals, i.e. as those that have any relation to these firms. Thus, they may not want to invest in the achievement of such goals. For instance, a farm does not want to raise the level of its quality required by a processor because it does not recognise this goal as the overall goal of the network in which this farm participates. This issue is particularly important in the case of introduction of collective strategy by the focal company because its adoption by other chain actors is crucial to at least avoid the failure of the supply chain network in the short run. Thus, the achievement of the goals of supply chain network can be interpreted as the achievement of goals of the focal company but this achievement cannot be realised without considering the goals of other network actors.

Agency problems of this kind can be resolved by motivating the other network actors to be in line with network goals. On account of this, the achievement of goals of supply chain

networks can be addressed only if the firm-level interests are aligned. Although the installation of the optimal modes of supply chain management is relevant, implementation of the appropriate partnering strategies is particularly important in supply chain networks.

6 Summary

Our aim in this paper was to provide the theoretical understanding of the importance of network goals in chain management. Having reviewed approximately 300 articles on network performance in terms of another research, we have come up to the argument that the role of network goals is still undisclosed. Therefore, we specifically inquired the following questions. First, what are the network goals? Second, how can these goals affect chain management?

Based on elaborations of strategic chain management literature, we have found out that the goals in networks can be established at the three different levels, i.e. at the overall network level, at the dyadic level and at the firm level. In this context, the overall network(-level) goals can be referred to as goals which all the network actors pursue by working together to achieve them. If such goals are not achieved in the strategic supply chain network, then the network fails.

One of the most important reasons of the network's failure is inadequate understanding of the network goals that can bring about conflicts of goals. In supply chain networks, the goals of the different network levels can conflict with each other. Additionally, the goals of the alignment of interests and the alignment of actions of the network actors can be conflicting, though they aim to provide the achievement of the overall network goals. Furthermore, due to the pyramidal-hierarchical structure, the supply chain network possesses the focal company which sets the overall network(-level) goals and implements the collective strategy. In such a case, other networked firms can have difficulties to see goals set by the focal actor as the network-level goals, i.e. as those that have any relation to these firms. Thus, they may not want to invest in the achievement of such goals. On account of this, the achievement of goals of supply chain networks can be addressed only if the firm-level interests are aligned. Therefore, implementation of the appropriate partnering strategies is particularly important in supply chain networks.

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