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**Article — Published Version**

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Journal for East European Management Studies

**Provided in Cooperation with:**

Rainer Hampp Verlag

*Suggested Citation:* Hanf, Jon; Gagalyuk, Taras (2009) : Supply chain quality and its managerial challenges: Insights from Ukrainian agri-food business, Journal for East European Management Studies, ISSN 0949-6181, Rainer Hampp Verlag, Mering, Vol. 14, Iss. 4, pp. 332-356

This Version is available at:

<https://hdl.handle.net/10419/84107>

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## Supply chain quality and its managerial challenges – Insights from Ukrainian agri-food business\*

*Jon H. Hanf, Taras Gagalyuk\*\**

*This article analyses the effect of the East-European business environment on quality management as a means of operationalising chain management strategies. The particular focus on the Ukrainian agri-food business in combination with fifteen in-depth expert interviews reveals the infancy of chain (quality) management in transition economies. General mechanisms of chain management are primarily installed by foreign enterprises acting as focal companies in their supply chain networks. At the same time, progress in operationalisation of chain management (including quality management) is still hampered, mainly due to infrastructural and institutional conditions.*

*In diesem Artikel wird der Einfluss wirtschaftlichen Rahmenbedingungen Osteuropas auf das Qualitätsmanagement (QM) analysiert. Hierbei wird QM als Operationalisierung von Chain Management Strategien verstanden. Der Fokus auf das ukrainischen Agribusiness kombiniert mit fünfzehn Tiefeninterviews lassen erkennen, dass die Entwicklung des Chain (Quality) Managements in den Transformationsländern sich erst in der Anfangsphase befindet. Es konnte gezeigt werden, dass im Allgemeinen die Mechanismen des Chain Managements von ausländischen Investoren, die als fokale Unternehmen in ihren Supply Chain Netzwerken agieren, eingeführt werden. Dabei wird der Fortschritt der Operationalisierung von Chain Management (inkl. Qualitätsmanagement) hauptsächlich durch die ungünstigen infrastrukturellen und institutionellen Rahmenbedingungen behindert.*

*Key words: Ukraine, agri-food business, supply chain networks, chain quality management*

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\* Manuscript received: 22.07.08, accepted: 29.06.09 (1 revision)

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## 1. Introduction

Food production, processing, distribution, and retailing have never been under greater scrutiny by stakeholders than (they are) today. The necessity to increase food safety and quality, to reduce costs and waste, to build customer and stakeholder value, and to achieve social and environmental stewardship requires the whole food chain to act jointly. This condition promotes the process of vertical coordination in the agri-food business, i.e. the tightening of the procurement relationships. Depending on relative transaction costs and costs of physical product flows, vertical coordination becomes apparent in the form of vertically integrated firms or vertically cooperating hybrids. As these hybrids consist of many organizations that are mutually dependent on the performance and actions of their/each member, they have to act in unison (Brito/Roseira 2005). Moreover, as such collaborations are most often encouraged by focal companies, i.e. branded processors or retailers, hybrids dispose of a pyramidal-hierarchical structure (Wildemann 1997; Jarillo 1988; Gulati et al. 2000).

In this regard, Central and East - European countries (CEEC) are no exception. Indeed, they show a significantly wider scope, as well as a higher complexity of vertical coordination than Western economies. But, paradoxically, this development is to a large extent induced by the Western investors who strive for establishing well-functioning supply chains. Imported chain-wide business models usually bring about competitive advantages for the Western investors in CEEC economies. In order to successfully compete with foreign capital, local companies mainly recourse to imitating these chain-wide strategies.

Of course, such chain-wide collaborations demand firm boundary overlapping management approaches; a view that is widely agreed upon in scientific literature. Although there is a consensus about the need for chain management concepts, the vast number of different approaches, ranging from “nothing more than a different name of integrated logistics of firms” (Tyndall et al. 1998) to “a management philosophy” (Ellram/Cooper 1990; Min/Mentzer 2004) is confusing rather than helpful. However, all approaches address the same crucial question, how to organize and to run the vertical collaboration? Thus, the managerial challenge is to explicitly address the matter of cooperation and coordination. Cooperation as a prerequisite of supply chain networks faces various, different problems. Mainly, these difficulties stem from conflict of interests among the different actors. Yet, even if the interests of the different actors can be aligned and cooperation is finally achieved, problems of aligning the actions of the different actors can persist (Gulati et al. 2005). The reasons for coordination problems are twofold. For one thing, they primarily arise when the actors wrongly assess, if not completely ignore, the (effects of) interactions between the decision units, and for another, when there is uncertainty that makes the others’ actions unpredictable; a problem (that is) certainly exacerbated by the first (Gulati et al. 2005). Thus, coordination problems occur when partners fail

either to share accurate knowledge about the decision rules that others are likely to use or to understand how one's own actions interact with those of the others (Gulati et al. 2005:419). Both cooperation and coordination must be included in the chain management in order to achieve the superordinate network aims. Furthermore, because vertical collaborations include firms at different levels of the value chain, such an approach has to consider the different levels, i.e. firm, dyadic, and network levels (Duysters et al. 2004).

The motivation behind developing tighter vertical coordinations in Central and Eastern Europe results from the breakdown of relationships along the whole food chain – from farm suppliers to retailers – during the transition process. The breakdown has led to disruptions of supply and inferior-quality food products. In other words, vertical coordination, hence the coordination of each link in the food chain, is an appropriate way to overcome problems of supply and quality as indicated above (Валентинов [Valentinov] 2003b). This is because coordination enables traders, agribusinesses, and food companies to contract with farmers and provide them with inputs and assistance in return for guaranteed supplies of a certain quality (Gow/Swinnen 1998; Dries/Swinnen 2004; Gorton et al. 2006; Swinnen 2006). Since food quality can only be achieved if all participants of the food chain work together, the managerial approach has to be a chain-wide concept, i.e. chain quality management. Chain quality management can be divided into operative and strategic chain quality management (Hanf/Hanf 2007). Operative chain quality management is usually the right approach for a cost leadership strategy, whereas strategic quality management is usually best for a differentiating strategy (Hanf/Pieniadz 2007).

Vertical coordination and the resulting managerial tasks can be viewed as one of the most relevant challenges for enterprises which are or want to be active in CEEC. In this context, the aim of our study is threefold. First, we want to outline the extent and relevance of vertical coordination in transition countries. Second, we want to study the relevance of related chain-wide management concepts. Third, we pay particular attention to chain quality management. On account of all of these points, we have interviewed fifteen decision makers in the agri-food business about the mentioned topics in transition countries focussing on Ukraine. We have concentrated on the agri-food business because in this field food quality and thereby food safety are considered, without exception, to be of highest priority. Our focus is on transition countries because here we can trace business activities in an economy that comes into being. On the one hand, we can observe that foreign companies entering these countries “export” their business models, and on the other hand, local firms imitate these concepts.

To accomplish the three aims, we structure the paper as follows. First, we introduce the agri-food business in transition economies based on secondary data. Second, we provide a comprehensive overview of chain management and draw attention to quality management in the context of supply chain networks.

Furthermore, we elaborate on recent changes in food quality perception. The following two sections describe the empirical survey and discuss the results of the in-depth interviews. The article concludes with some implications, limitations, and a short summary.

## 2. Agri-food business in transition economies

Swinnen (2006) has shown that vertical coordination is a growing phenomenon in agri-food chains of East-European countries with far-reaching consequences for the whole economy. Verticalisation was mainly driven by private contractual initiatives that were formed to overcome supply disruptions (Валентинов [Valentinov] 2003a). In this respect, quality can be regarded as the catalyst for the development (Gorton et al. 2006; Гагалюк/Валентинов [Gagalyuk/Valentinov] 2009). Because foreign direct investments (FDI) most often demand higher quality, they significantly influence the food sector. Accordingly, these companies can be regarded as a more powerful source of structural changes in transition countries than WTO and trade policy (Swinnen 2006).

Even though the transition process varies widely in the different countries, we choose Ukraine as an example to identify the remaining challenges more clearly. Today the Ukrainian food supply chain is undergoing structural changes with an increasing orientation towards end consumers. Recently, the requirements of end consumers have increased with regard to quality characteristics of food products, assortment, package features, and the way food products are presented at a store. To a great extent, the growing consumer requirements can be explained by increasing incomes and the development of the retail sector. Motivated by a growing competition within the sector, retail companies provide their customers with a range of offers comprising not only food-related items but also store location, and quality-related services. In this context, the importance of brand management has substantially increased. Nowadays the biggest players of Ukrainian retail sell up to 25% of the products under their own brands (Експерт Онлайн [Expert Online] 2007).

For retailers, it is obviously more beneficial to work with large-scale suppliers (Swinnen 2005). In Ukraine, however, most enterprises are small- and medium-sized (SME) at processing and farm level<sup>1</sup>. There is, yet, some evidence of consolidation at these stages of the supply chain. The processing industry is currently represented by several distinguished actors. Market shares of the ten biggest players in the processing industries of meat, milk, flour-milling, and

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1 In general, the Ukrainian agri-food business includes more than 85,000 agricultural producers, about 22,000 food processing companies, and about 60,000 food retailers (Державний комітет статистики України [State Statistics Committee of Ukraine] 2004).

sunflower-seed are 40 %, 40 %, 50 %, and 70 %, respectively, each of them with increasing tendency (Галицькі Контракти [Galyts'ki Kontrakty] 2000; Dragon Capital (in Ukrainian) 2006). Accordingly, these sectors exhibit some backward vertical integration tendencies in agriculture. At the same time, more than 60 % of gross agricultural output is produced by households, which is a distinctive feature of Ukrainian agriculture in transition (Державний комітет статистики України [State Statistics Committee of Ukraine] 2006). Especially, the share of animal production (about 70%) is high in households (see Table 1). After restructuring of large Soviet-type collective farms in 1990s, capital-intensive animal production has experienced a huge downturn. As a result, Ukraine is now highly dependent on imports of meat and meat products and of milk and milk products. On the contrary, the country is export-oriented in such crop products as grain and sunflower oil (Державний комітет статистики України [State Statistics Committee of Ukraine] 2008).

Table 1. Production of major types of agricultural products in Ukraine in 2007

Product	Large agricultural enterprises		Small farmers		Households		Total production, thousand tons	Marketed	
	thousand tons	% of total	thousand tons	% of total	thousand tons	% of total		thousand tons	% of total production
Grains	19598.6	66.9	3249.5	11.1	6446.8	22.0	29294.9	13965.4	47.7
Sugar beet	13353.5	78.7	1410.4	8.3	2213.8	13.0	16977.7	7210.2	42.5
Sunflower seeds	2685.0	64.3	688.7	16.5	800.7	19.2	4174.4	3200.0	76.7
Potatoes	271.5	1.4	117.0	0.6	18713.5	98.0	19102.0	175.2	0.9
Vegetable	545.2	8.0	168.2	2.5	6121.8	89.6	6835.2	430.5	6.3
Raw meat of all kinds	1215.5	43.9	56.0	2.0	1498.4	54.1	2769.9	1312.1	47.4
Raw milk of all kinds	2083.3	17.0	94.7	0.8	10084.1	82.2	12262.1	1824.8	14.9
Eggs, Mio.	7544.3	53.6	60.2	0.4	6458.0	45.9	14062.5	6746.9	48.0
Honey, tons	1561.0	2.3	141.0	0.2	65979.0	97.5	67681.0	699.3	1.0

Although planned vertical coordination was implemented in Ukraine before 1990, the majority of transactions in the agri-food chain now are conducted at the arm's length price mechanism (Гагалюк/Валентинов [Gagalyuk/Valentinov] 2009). However, in order to gain short-term advantages, existing contracts are broken quite often – a behaviour that is easily encouraged

due to weak enforcement mechanisms. According to Gorton et al. (2003), it was medium-sized processing enterprises that suffered most of all. Here, breaches of contract by suppliers amounted to about 12 % in 2001. At the same time, small enterprises do not enter into contracts at all.

There are two reasons for breaches of contract in transition countries (Swinnen 2006). First, producers mistrust their buyers and are afraid of not being paid for production. Second, they may not be able to fulfil a contract because of denied access to basic production factors such as necessary inputs, expertise and know-how.

Again, through lack of factors, a shortage of quality supplies occurred in the Ukrainian agribusiness. A development that primarily resulted from poorly negotiated contracts between the vertical partners which neglected to consider the issue of food quality. In other words, initial vertical ties did not aim at resolving this problem. After all, processors usually offered commodity credits to their suppliers (agricultural enterprises) to simply make use their production capacities.

Nonetheless, foreign direct investments in Ukrainian agribusiness are increasing. FDI can be found at farm and processing levels as well as in the retail sector. Moreover, as foreign enterprises export their own business concepts, local companies often imitate these strategic concepts in order to successfully compete with the “exporting” investors (Радаев [Radaev] 2005). An essential part of global retailers’ and manufacturers’ businesses is connected with producing or selling high-quality products. Several studies on the effects of FDI in CEEC show that foreign investors work hard to raise the level of quality of their suppliers in order to meet their own global quality requirements. Further, international retailers impose high (global) private standards to differentiate their products from those of competitors, i.e. these standards serve as strategic tools (Swinnen 2006).

Because the commodities are often produced by households, processors and retailers face problems determining the supplies’ quality. A leadoff solution is provided by the dairy sector. Here, the processors organise their own collecting stations in order to coordinate their suppliers and conduct random quality tests. Furthermore, milk processors ensure quality supplies by leasing cooling tanks to agricultural enterprises as part of their contracts. These findings correspond with other investigations on processors’ farm assistance in other transition countries and sectors, e.g. Gorton et al. (2006) in Moldova, and Swinnen (2006) in Bulgaria and Romania.

The following example of the Metro Group Russia illustrates how foreign investors can cope with the transition challenges in Central and East-European Countries. After entering into the country’s market five years ago, the Metro Group Russia established the subsidiaries Metro Asset Management, Metro

Buying Group, Metro Advertising, Metro Group Logistics, and Metro Group IT. The 140,000 listed articles in the twenty-six cash and carry markets and three super centres of the whole group are delivered by 2500 suppliers. Only 5% of them are foreign manufacturers, while 20% of the articles are region-specific. As a whole, all suppliers aim at complying with the global Metro quality and the supply chain standards. Thus, the Metro Group exerts a strong influence on the Russian agribusiness not only in general but also on the local agri-food sector because the markets are mostly located in the Moscow region.

### **3. Chain quality management in transition economies**

Different studies highlight that foreign investors are the driving forces behind vertical coordination in the agri-food business in CEEC (Palmer 2005; Roberts 2005; Hanf/Pieniadz 2007). As the example of the German Metro Group in Russia demonstrates, the reason for this development is that foreign investors usually “export” their business models. Hence, “Western style” business concepts are growing in importance. In the agri-food business, particular attention is paid to the establishment of modern procurement concepts – i.e. chain management – as well as food quality and safety by international standards (Dries et al. 2004).

#### **3.1. Status quo of chain management**

Vertical (procurement) relationships involve exchange between adjacent stages of the value chain. Therefore, many organizations have to act in unison, with each organization mutually dependent on performance and actions of the others (Lazzarini et al. 2001; Brito/Roseira 2005). Thus, the crucial question is how to organize the participating firms along the supply chain. But different problems can occur. The first set of problems stems from conflict of interests among the different actors, which, in essence, means the famous prisoner’s dilemma (Gulati et al. 2005). Such problems can be solved by aligning the interests of the different actors through formal and informal mechanisms (Williamson 1975; Granovetter 1985; Heide/Miner 1992; Kogut/Zander 1996; Gulati/Singh 1998; Baker et al. 2002; Uzzi/Gillespie 2002; Zaheer/Bell 2005).

The second set of problems addresses the alignment of actions of the different actors (Levy/Grewal 2000). Coordination problems arise whenever actors are unaware that their actions are interdependent, and whenever decisions are afflicted with uncertainty that makes the others’ actions unpredictable (Gulati et al. 2005). Thus, in both cases partners fail either to share accurate knowledge about the decision rules that others are likely to use or to understand how one’s own actions interact with those of the others (Gulati et al. 2005:419). Programming, hierarchy, and feedback, as well as culture, commitment and collective strategy are mechanisms for overcoming coordination problems (March/Simon 1958; Thompson 1967; Malone/Crowston 1994; Kogut/Zander

1996). Simatupang et al. (2002) name logistics synchronization, information sharing, incentive alignment and collective learning as general coordination modes. Related topics include revenue sharing (Cachon/Lariviere 2005), decision support systems (Xiao et al. 2005) and the use of modern IT infrastructure (Müller 2001).

*Thus, chain management consists of the alignment of interests and actions of the various firms involved; and both tasks have to be addressed simultaneously.*

Studying vertical procurement relationships in the agri-food business, two aspects matter most. For one thing, such relationships are established by heterogeneous firms (e.g. retailers, processors and farmers), and for another, these relationships are built up to pursue a clear aim. Hence, vertical procurement relationships can be characterized as a strategic network disposing of a pyramidal-hierarchical structure (Jarillo 1988; Wildemann 1997; Gulati et al. 2000). This means that there is a focal company (Mentzer et al. 2001; Куш et al. Kouchtch et al.] 2002; Куш/Афанасьев [Kouchtch/Afanasyev] 2004; Hanf/Dautzenberg 2006) that acts as chain captain and, what is more, considers collaboration at the firm, dyadic and network levels (Duysters et al. 2004).

*Thus, modern procurement systems are based on a strategy setting with a chain captain and three different levels.*

As outlined before, vertical coordination pursues two aims: disruption of a free supply chain and increase of food quality. Hence, chain quality is the pivotal factor. Since this development is to a large extent induced by Western investors who strive for establishing well-functioning supply chains that operate according to Western food standards, we present a brief review of the recent food quality discussion.

### **3.2. Status quo of quality management**

In general, people are concerned about the quality of their food. A behaviour that becomes even more distinct during times of food scandals, such as the Coke scandal in Belgium, the BSE crisis in the UK, and the wine scandal in Austria and Germany. The most striking consequence of these dramatic food scares has been a change of thinking of politicians and consumers, as well as producers and suppliers. They now value food quality as more important such that it can no longer be in sole responsibility of a single firm but has to be a key issue of the whole food chain (Böcker/Hanf 2000; Hanf/Hanf 2007). This means, in view of the customer, that any visible link of the chain has to guarantee “correctness” of the total food quality, i.e. in the case of manufacturer-owned brands it is the manufacturer and in the case of retail brands the corresponding retail firms. Moreover, if something negative happens, e.g. products of inferior quality are being sold, the focal companies (chain captains) lose their reputation even though the mistake happened somewhere in the supply chain. As a result,

retailers as well as branded food processors have raised the requirements of their private food quality standards and demand them globally (Lindgreen/Hingley 2003). Additionally, Hanf/Hanf (2007) have shown that focal companies should make a distinction between operative and strategic chain quality management.

In the field of operative quality management, quality strategy aims at achieving parity with competitors. A certain level of (chain) quality can be regarded as competitive necessity while other differentiating elements such as cost leadership are used strategically. These elements are supplemented by private standardization approaches. An example of industry-wide vertical standardization systems is the German ‘Qualität und Sicherheit’ standards (QS), whereas the “International Food Standard” (IFS) or Standards of the “British Retail Consortium” (BRC) are examples of horizontal ones.

Today, any food quality management system must include the aforementioned standards. Since such safety standards have been established for the majority of products and must be considered in any case, no competitive advantage is to be expected from adopting such a standardization system. However, the chain captain can try to use the operative quality management system to create long-term competitive advantages by adding strategic components such as strategic transparency (Theuvsen 2004). In this case, the chain captain must convince specially selected partners to accept additional quality attributes and norms that are higher than standard. Furthermore, the chain captain has to ensure that both control and communication processes are adequately installed so that loyalty of the supply chain partners is being inspired and not hampered (Uzzi 1997; Das/Teng 1998; Uzzi/Gillespie 2002; Inkpen/Tsang 2005). With such intensive, trust-based relationships not only strategic goals but also exclusivity/exclusiveness and inimitability can be achieved (Cooper et al. 1997; Ross 1998; Mentzer et al. 2000; Min/Mentzer 2004)

*While operative chain quality management is used to achieve parity with competitors, strategic chain quality management aims at creating enduring competitive advantages.*

After having elaborated on the principles of chain management in general, and chain quality management in particular, we discuss and examine the impact of different country conditions and development stages on chain (quality) management in the following sections. To accomplish this aim, we have interviewed mainly foreign investors and business experts who are engaged or working in transition economies, particularly in Ukraine. Because foreign (Western) investors usually “export” their business models, i.e. chain quality management, interrogating them provides valuable insights into general principles of chain management as well as into the perceived need of adaptation to significantly different business environments (Rapp1995; Dries et al. 2004; Palmer 2005; Roberts 2005).

To ensure comparability of the results, we confined our interviews to agri-food business; all the more because the aspects of food quality and safety are essential and regarded as competitive necessities in this sector. However, this general statement holds only partly true in transitional economies. Firms starting their business have to establish buyer-seller relationships as well as design them according to their business strategies. Thus, we describe the interrogated sample and the underlying hypotheses, and discuss the results.

#### 4. Interviews and underlying hypotheses

To assess the role of chain management in general and chain quality management in particular in the agri-food business of transition economies, the study includes exploratory interviews with experts (managers, academics, and officials) in the field of Ukrainian agribusiness<sup>2</sup>. The interviews were held from 18<sup>th</sup> April to 19<sup>th</sup> July 2007. Fifteen telephone interviews (each lasting from 15 to 30 minutes) were carried out. Although we conducted semi-structured in-depth interviews, we prepared a list of twenty points of interest in advance. The interviewees were first informed about the interviews via email. After receiving their consent, the calls were given at the time appointed by the interviewees.

##### *Appendix 1*

Job title of the interviewees	Number	Affiliation
Managing Director	6	International retail institute (1) International standardisation bodies (2) International meat processor (1) Local dairy company with FDI (1) Local beverages distribution company (1)
Purchasing/Procurement Director	2	International retail group
Chief Executive Officer in Total Quality Management	2	International retail group
Expert for Supply Chain Management	3	International agricultural equipment company International confectionary company International Finance Corporation
Internal Audit Director	2	Local group of agribusiness companies

In the process of sampling, we made a deliberate (purposeful) selection of the interviewees (Patton 1990; Blankertz 1998; Merkens 2000). Specifically, we employed an expert (concentration) selection (Patton 1990; Fritsch 2007), i.e. the interviewees were chosen according to their prominent positions in order to

<sup>2</sup> See Appendix 1 for a detailed table of positions and affiliations of the interviewees.

effectively gather relevant information. Given our intention of operationalising chain management strategies in the Ukrainian agribusiness, we assembled a sample of experts whose experience and expertise in this area can be regarded as salient. More specifically, our interviewees occupied the highest positions in their organizations and were qualified to represent the sectors of retail, food processing, agriculture, agricultural equipment as well as research and non-governmental institutions.

### *Retail*

Our interviewees from the retail sector included:

- two directors of the purchasing departments of the international retailers operating in Ukraine; and
- two chief executive officers (CEOs) in total quality management of the international retailers operating in Ukraine.

These experts represented two of the three international retailers that were operating in Ukraine at the time of the interviews. We selected the purchasing directors and the CEOs in total quality management because their departments were directly involved in the chain management initiatives according to their responsibility for procurement, quality and supply chain management. Provided that now quality management concepts are overlapping firm boundaries, we decided to pay attention to the various opinions along the whole food chain. Therefore, we also inquired experts from the upstream stages of the chain.

### *Food processing*

The interviewees from the food processing industry were:

- a managing director of an international meat processor;
- a director for work with major clients of an international confectionary company (indicated as an expert for supply chain management in Appendix 1); and
- two managing directors of local beverage and dairy companies, respectively.

These experts were chosen mainly due to their engagement either in chain management or in general management of companies developing products with short time span where quality plays a particular role. We asked them about the challenges their companies face in procurement and marketing. Both, foreign and local companies were included to account for potential differences in perceptions of the relevance of quality management.

### *Agriculture*

Interviewees representing the agricultural sector were internal audit directors of local agribusiness groups specialized in the production of cereals. Given their active participation in ongoing consolidation activities of their companies, we

questioned them about general management's perceptions of the supply chain collaboration and management.

#### *Agricultural inputs*

We also decided to inquire about the opinion of suppliers of agricultural inputs on chain management in Ukraine. Since agricultural input suppliers are normally concerned about the business success of their clients, they often put in a great deal of effort to enhance the functioning of supply chains. In this context, we interviewed an expert for supply chain management of a well-known international company specialized in agricultural equipment and operating in Ukraine with one of the highest market shares.

#### *Non-governmental and research institutions*

To enhance objectivity of the expressed views on the developments in chain quality management, we also interviewed non-business actors. Specifically, they included:

- two managing directors of international standardisation bodies;
- a project manager of International Finance Corporation (IFC) involved in a project on horizontal and vertical cooperation in the dairy industry in Ukraine (indicated as an expert for supply chain management in Appendix 1); and
- a managing director of an international retail institute.

These experts were selected similarly to the experts from business, so as to gain profound insights into the whole agri-food supply chain.

Following the theoretical background of this study, we grouped the questions of the interviews into seven blocks designed to evaluate the underlying hypotheses. These blocks are as follows:

1. Characteristics of transition economies. This block is designed to reveal country-specific problems that hamper the introduction and implementation of chain management. Particularly, the issues of infrastructure, marketing, and product quality are addressed. Provided that, in the 1990's, the Ukrainian economy has undergone significant reforms with re-orientation from planned economy towards market economy and changes in the property rights structure, we suggest that *one of the main problems of establishing well-functioning (quality) supply may be outdated infrastructure.*
2. Level of realisation and understanding of chain management issues in agribusiness. An overall aim of this group of questions is to determine to what extent the agri-food actors address inter-firm collaboration and its coordination. Additional questions ask how agri-food chain actors work together, who initiates this cooperative work, and how do actors perceive this cooperation. In the transformation period, the Ukrainian agri-food

sector faced a severe lack of finances and more market- than production-oriented competencies. Furthermore, frequent breaches of contract have contributed to persistent mistrust among local actors. Therefore, we expect that *vertical collaboration and chain management will be primarily addressed by foreign investors paying particular attention to selecting reliable local partners.*

3. Cooperation mechanisms in use. Since supply chain networks are to achieve certain goals by strategically driven but divergent inter-firm environments, the network members' interests have to be aligned. Moreover, as there are a number of available cooperation mechanisms, these questions deal with the tools used for cooperation in the sector. Additionally, the differentiation between formal and informal mechanisms is addressed. Actual mechanisms in use are inquired into, including the characteristics of their use (e.g. normal duration of contracts, sanctions, level of general cooperativeness among actors, etc.). Given the problems experienced by agri-food supply chain actors due to unfavourable institutional environment and weak contract enforcement, we anticipate that *solutions to cooperation problems will primarily involve informal mechanisms of the alignment of interests.*
4. Existing solutions to coordination problems. The objective of this group of questions is to explore how the actions of different network actors are aligned in order to achieve the network goals. Therefore, formal coordination mechanisms in use (e.g. quality standards, brands, etc.,) as well as informal ones (e.g. unofficial meetings and discussions) are questioned. In the light of prevalence of resource-constrained households in agricultural production and SME in the food processing industry, we posit that *coordination will lack certain mechanisms such as private quality standardisation and modern supply chain management techniques.*
5. Chain management issues at different network levels. In this block, the questions cover the tasks of procurement departments (if any) of agri-food actors. The objective is to define the extent to which the actors consider the different levels (firm, dyadic, and network) of supply chain collaboration. Previous research indicates that there is scope for all network levels to be considered in business models of modern retail formats (e.g. supermarkets, hypermarkets, etc.) and well-known brand manufacturers (Lindgreen/Hingley 2003). In particular, the interests and actions of numerous chain actors are taken into account on both sides, demand and supply. These business models involve implementation of consumer-driven replenishment programs, category management and enabling technologies for logistics and marketing. However, given undersaturated markets of modern retail formats and lack of foreign

investors in Ukrainian agribusiness, we suggest that *there will be little evidence of focusing on all network levels by agri-food actors.*

6. Quality management as sub-strategy of chain management. In particular, we focus on how the quality of supply chain is fulfilled (e.g. setting up quality labs, contract specification including credit support, input support, etc.). Furthermore, we inquired whether chain quality management is divided into operative and strategic chain quality management and, if it is, to what extent. Operative chain quality management implies treating quality systems as a means of maintaining parity with competitors. Because such initiatives as international (and private) quality standardisation are currently missing in the Ukrainian agribusiness, we suppose that companies introducing quality schemes will sustain their competitive advantage and, thus, *most approaches to quality management will belong to strategic rather than operative chain management.*
7. Use of known chain management concepts in Ukraine. This block is represented by questions about the extent to which agri-food actors are informed about and aware of business models such as Supply Chain Management, Total Quality Management, etc. Because these models are introduced by foreign investors, local agribusiness companies are well grounded in adopting (but not always in operationalising) strategic approaches, we expect that, *although actors are informed enough about existing chain management concepts, the widespread use of those concepts will be little evident in Ukrainian agribusiness.*

Due to their pivotal importance, questions about the managerial instruments used in business practice were brought to the forefront in the questionnaire. Additionally, the interviewees were given an opportunity to express their opinions without interruptions during the interviews so as to take full advantage of the exploratory nature of the interviews and obtain as much detailed information as possible<sup>3</sup>.

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<sup>3</sup> The applied technique makes sense, especially in view of the raised research questions. On the one hand, chain quality management, as well as networks, concern activities and processes that are not easy to quantify and may even be ambiguous or misunderstood. On the other hand, the addressed topics are particularly sensitive in emerging markets. Moreover, in those markets, we expect some unique and relevant developments, which must be efficiently worked out from a broad set of opportunities, while, at the same time, the respondents have to be left sufficient room for exploring general views (Patton 2002; Hanf/Pieniadz 2007).

## 5. Discussion of the results

Based on the interviews, our findings provide a general pattern of current verticalisation and chain management and reveal the influence of the business environment of Ukrainian agribusiness. All interviewees responded that they either have come across or have been strategically working on verticalisation issues themselves. The results clearly confirm that the issue of chain quality in the Ukrainian agribusiness is initially being addressed by foreign companies operating in the sector and by local export-oriented enterprises. The respondents acknowledged that (chain) quality management must be understood as a sub-strategy of (supply) chain management.

However, the survey also clearly shows that even though chain quality is relevant, its actual implementation is in its infancy. However, this does not necessarily imply that the importance of chain management is undervalued, but rather is perceived as a distant perspective. One reason for this is that most companies primarily try to arrange basic infrastructure.

As one of our interviewees, the managing director of an international standardization body, noted, “Quality issues in the Ukrainian agribusiness are mostly addressed by foreign investors. However, they face significant problems because local supply chains have old, rudimentary features”. To this effect, another respondent, the managing director of the local dairy, added that, “The dairy production seems to be in a horrible situation. Stables, houses and warehouses are run-down. There are no preconditions for any quality scheme. Even basic quality requirements are not in place because the whole dairy chain lacks appropriate infrastructure”.

One of the infrastructural issues that hinder the integration efforts in the food supply chain is connected with scale inefficiencies of agri-food enterprises. Due to planning during the times of command economy, production facilities often prove inconsistent with the newly established market conditions. As a result, production capacities are often underutilised. This situation is exacerbated by worsened communications (roads, transportation facilities, etc.). Additionally, due to the size of the enterprises and the prevalence of households in agricultural production, modern IT-infrastructure is seldom used; conditions that substantially impede procurement relationships between actors.

To overcome such obstacles, it is necessary to implement outsourcing strategies and concentrate on core competencies. However, these strategies require sophisticated logistics management and specific investments by firms. Because the majority of agri-food enterprises are small- and medium-sized, the costs involved, especially of introducing logistics management concepts, create a major barrier. In this context, the interviewees indicated that one result of outsourcing strategies is the emergence of logistics service providers. Furthermore, as the managing director of an international standardisation body

claimed, the emergence of huge agri-holdings can directly be related to outsourcing strategies. Besides planning, procurement, marketing, and sales, the responsibilities of the agri-holding management include mostly production operations.

Despite the increasing number of agri-holdings, the interviewees still see a need to integrate small and medium farmers (even households) and processors into the supply chain. Therefore, a number of consulting services has been established to provide SME with information on marketing requirements, above all on quality of supplies. Yet, as another interviewee, the managing director of an international retail institute, stated, "Evidence of international quality standardisation is still rare because of the atomistic structure of agriculture. Most agricultural suppliers do not focus much on achieving even basic quality because infrastructural issues are given first priority. Taking into account that most foreign enterprises have their own quality control and distribution divisions, many farmers may experience problems with marketing if they want to supply to foreign companies. In order to resolve such problems, horizontal cooperation between farmers is necessary, at least to provide them with appropriate information about the requirements their potential clients place on food products." Numerous efforts towards horizontal cooperation between farmers have already been made. They have resulted in creating service cooperatives to which farmers supply their production.

However, as another respondent, the project manager of IFC, noted, "In the transition period, a lack of liquidity in most cooperatives caused farmers to bypass the cooperation. Instead, they sold their products outside the network where prompt payments or better prices were offered. As a result, trustful relationships between cooperative members failed. Furthermore, mistrust of the potential members was increased as the formation of such cooperatives was initiated by local authorities." Accordingly, the interviewee stressed that formal incentives for cooperation must always go with informal ones, and vice versa. Moreover, informal incentives may play an even greater role in transition countries.

In this context, the foreign respondents particularly made reference to the reputation effect of big multinational brands on local partners. As one of the purchasing directors of an international retail company told, "Small- and medium-size suppliers are proud to work with us. In my opinion, they also like to cooperate with our company because they are confident that we will not renegotiate a contract." Furthermore, prompt payments are perceived as a benefit directly obtained from such relationships. The argument is that suppliers have very often experienced long delays in payment or even non-payment from local partners. Additionally, the reputation of being engaged in cooperation is crucially important and certainly perceived as advantage.

The respondents involved in retailing particularly indicated that chain management practices are in the process of being installed. One of our respondents, the CEO in quality management of an international retailer, stated that, “Our company follows a uniform strategic framework to work with suppliers all over the world. Ukraine is no exception in this respect. We are introducing our global IT-standards and supply chain management techniques.” Generally, the introduction of these practices differentiates international retailers from competitors. Additionally, cooperation deserves as much attention as coordination because it provides operational as well as strategic advantages for retailers. On the operational side, the availability of appropriate partners makes the introduction of supply chain management both less costly and time consuming. However, partnering with upstream actors primarily aims at achieving long-term competitive advantages within a sound chain quality. Therefore, what partnering pursues is a quality standardisation among local farmers and food processors that conforms to international quality standards. Talking about this issue, the purchasing director of an international retailer operating in Ukraine indicated that, “We are introducing quality standardisation in Ukraine based on such international quality schemes as GLOBALGAP, ISO 9000, and HACCP. Currently, GLOBALGAP is being translated by a working group at one of the local universities. Additionally, the university spreads information about the standard.” What is more, in so doing retailers help educating potential managers to learn the role of chain management.

In addition, another respondent, the managing director of an international retail institute, stated that, “The foreign retailers like to show that they have worldwide market presence and are able to use their global sources to easily substitute inadequate local supplies. In turn, suppliers try hard to stay in such favourable sales markets. They, therefore, are working hard to comply with the requirements of retailers.” Thus, as focal companies, retailers organise networks of firms that can conform to their requirements. All our respondents also agreed that the activities of international retailers have spillover effects on the retailers’ national competitors because they also urge their suppliers to take measures to ensure or improve quality.

## **6. Conclusions**

### **6.1. Implications**

Our results show that chain quality management concepts, driven by foreign investors, are emerging in Ukraine. However, because chain quality is a rather new approach, it is in its initial stage. Thus, as yet there is no clear distinction between operative and strategic chain management, even if strategic design of supply chain networks is generally acknowledged as basic chain quality. The interviewees inclined to emphasise that the few approaches found in Ukraine are

those of strategic chain management. Although these approaches are simple rather than sophisticated, they include all relevant elements of strategic chain management. An observation that leads to some implications.

First of all, focal firms entering transition countries are able (or are even required) to install the chain management concepts known from their home country. However, this task demands strong strategic capabilities. Unfortunately, these are constrained by an unfavourable external environment in which even basic infrastructural requirements are often missing. Additionally, due to past (rather negative) experiences with vertical coordination and forced cooperation, it is necessary to induce the willingness to cooperate, i.e. to build up a supply chain orientated way of thinking at supplier level. Moreover, these findings indicate the crucial importance of a general chain management framework. Only if all major elements (partnering and supply chain management strategies on all three network levels) are equally addressed, will chain management be successful. But the survey also highlights that this framework has to be interpreted within its environmental context as pattern and not as straightjacket, i.e. particularly in business environments that differ significantly from those of the home countries; existing chain management approaches have to be modified.

Furthermore, the interviewees indicated that local retailers and processors motivated by the success of their foreign competitors are starting to imitate these foreign business models. Thus, we daresay that, operative chain (quality) management will increase in importance in the future. We assume that, in the medium term, these approaches are likely to dominate the economic landscape, as for one thing, there will be only a limited number of consumers demanding high quality goods. For another, firms in those markets face high adjustment costs due to the changing market environment with legal and self-imposed requirements, as well as ongoing restructuring processes at procurement and distribution stages. Both effects may account for the tendency toward strict cost orientation of most firms and, hence, the willingness to apply operative chain quality management.

In our opinion, future research should be conducted to further investigate the impact of business environments on the implementation of existing strategic management concepts. Environments such as transition economies are suitable to clearly work out where modifications of existing concepts are required and which parts can be applied without changes as “real strategic” elements. Accordingly, particular attention should be paid to studies conducted at different transition stages. For example, with regard to our findings we suppose that operative chain quality management prevails in transition countries such as Hungary or Poland.

## **6.2. Limitations**

In this study, we attempted to review the state of chain management. However, the investigation suffers from some limitations due to the ample coverage of scientific literature in this field. Therefore, despite extensive literature study, relevant pieces of work might be missing. A further limitation stems from the limited number of respondents. However, as their views reflect those of focal actors, they properly represent supply chain networks with a multitude of network firms.

Moreover, the applied technique is appropriate in view of the above-mentioned research questions. Chain quality management includes processes that are difficult to quantify. Furthermore, because this topic is particularly sensitive in emerging markets, some unique and relevant developments have to be figured out first. The understanding of the peculiarities of the investigated sample is, in our view, crucial, since it allows refining of our theoretical assumptions, and, finally, a more correct interpretation of the findings.

## **6.3. Summary**

More strictly coordinated chain organizations have been studied in the context of buyer-supplier relationships for many years. The majority of such chain organizations are collaborative in nature. If this cooperation has a pyramidal-hierarchical structure, a focal firm coordinates the network firms in a hierarchical manner. In this managerial context, the coordination problems may persist despite cooperation. Thus, both the alignment of interests as well as the alignment of actions must be achieved simultaneously.

The review of chain management showed that, in addition to the inclusion of cooperation and coordination, management of networks must be realised at firm, dyadic, and network levels. Therefore, these aspects must be integrated into the strategic setting of chain management. Accordingly, the implemented collective strategy has to take into account cooperation, coordination, and the three network levels. As a result, 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 actions. Furthermore, this framework has to cover mechanisms for cooperation and coordination with regard to the three network levels.

To operationalise the chain management framework, e.g. by designing a chain quality management, the collective strategy becomes pivotal. Because strategies can be considered as instruments to achieving certain objectives, the quality goals are particularly meaningful in determining chain quality management. In other words, the first priority is either to gain parity regarding quality with competing networks or to acquire a competitive advantage through superior quality.

Thus, we have introduced two hypothetical types of chain quality management: operative and strategic. In the case of operative chain quality management, the quality strategy of the supply chain network aims at parity with competing supply chain networks, i.e. a certain level of (chain) quality is regarded as competitive necessity while other differentiating elements such as cost leadership are strategically used. However, the focal firm can try to apply the operative quality management system to create long-term competitive advantages by adding strategic components. In this case, the focal firm must convince specially selected partners to accept additional quality attributes and norms higher than the standards.

The findings of our review on chain (quality) management were evaluated in the agri-food business of Ukraine. To this end, we conducted fifteen in-depth interviews mainly with foreign investors and business experts that are operating or working in Ukraine. Because most often foreign (Western) investors “export” their business models, i.e. chain quality management, interviewing them provides deep insights into the general principles of chain management, as well as into the perceived need for adaptation to significantly different business environments. To ensure comparability of the results, we restricted the interviews to the agri-food business. Focussing on the agri-food business was favourable because in this sector food quality and safety not only are of high importance but also can be regarded as competitive necessities.

Our main findings can be summarised as follows. Despite a number of institutional challenges, there is clear evidence that chain management is being introduced in the Ukrainian agribusiness. The importance of the main elements of the general chain management framework has been clearly shown. However, companies engaged in chain (quality) management must consider some specific features of the transition economy. Primarily, they should build up an appropriate infrastructure as first step towards chain quality. Potential issues to be addressed include building access roads, providing cooling and expertise facilities, constructing warehouses, using modern IT-standards, etc. Another aspect is related to quality standardisation, in which some degree of successful activities is being observed at the moment. The promotion of trustful relationships with local partners is crucial to minimising environmental risks and providing substantial feedback to newly introduced business models.

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