Benchmarking Russian and Finnish food industry supply chains

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Abstract

Purpose – The purpose of this paper is to examine the differences between Finnish and Russian, namely Karelian, food industry supply chains. The main objective is to find out the reasons for low productivity in Russian food industry from supply chain management (SCM) point of view.

Design/methodology/approach – Case study method is used to compare the Russian and Finnish food industry supply chains. The comparison is carried out by using SCM scorecard. Furthermore, the comparison is supplemented with the data from non-structured interviews with Russian food industry company managers. Altogether data from eight food industry companies in the Republic of Karelia, Russia, are gathered and four managers are interviewed. The results of the companies’ SCM scorecard analysis are compared to the results of almost 100 Finnish food industry companies.

Findings – The research suggests that based on the SCM scorecard the differences between Finnish and Russian food industry companies’ operational methods are modest. The difference in productivity can be rather explained by the differences in operating environment and the level of technology in use. Logistics costs for companies in Russia are estimated to be double compared to Finnish companies. Poor road conditions and underdeveloped 3PL are considered as main reasons of high-logistics costs.

Research limitations/implications – Considering the relatively low number and small size of the companies interviewed and taken part in the scorecard evaluations, more systematic research in the field is required. In addition, it should be mentioned that all interviewees seemed to be suspicious about intentions of the Finnish interviewer. Two interviewees openly asked if the research was aimed at commercial spying.

Originality/value – Considering the state, size and growth potential of Russian food market, the lack of research in the field is remarkable. This paper aims to bring new valuable information for both practitioners and academics while creating ground for future research in the field.

Keywords Benchmarking, Food industry, Supply chain management, Russia, Finland

Paper type Research paper

1. Introduction

Russian food industry has undergone significant change during last three decades. To name but a few, big collective farms (kolkhoz) have ceased to exist or been reorganized; new small food producers have appeared; food retail market is experiencing rapid development. However, systematic knowledge on modern Russian food industry is missing. As Lorentz and Hilmola (2008) notice in a review of literature on supply chains in emerging market economies, only three publications discuss distribution-related issues in post-soviet Russia in a sample of 85 articles published in refereed scientific journals. Recently, few more papers by the same authors discussing Russian supply chain industry have been published (Lorentz et al., 2007; Lorentz, 2008).
This paper seeks to improve understanding of the food industry in Russia. It focuses specifically on the Republic of Karelia and describes a project initiated by a Finnish Association “Proagria”. The association provides consulting services for farmers in both Finland and Russian North-West. The project is aimed at knowledge transfer concerning supply chain management (SCM) from Finnish to Karelian food producers and food processors. The paper describes work-in-progress. At the moment of writing, an educational seminar was conducted as well as data on SCM was collected from eight Karelian food producers and processors with the help of a questionnaire. Additionally, interviews with the managers of four Karelian companies were conducted.

The paper outline is as follows. First, a case study context and background is given. It is followed by the methodological considerations, description of data collection and analysis. In a case study manner of representation these elements are not separated into different sections due to iterative relationships between data collection and choice of tools and theories. The final section provides tentative conclusions. This paper contributes to empirical body of research on supply chain benchmarking which is so far rather scarce (Wong and Wong, 2008).

2. Background for the research

Food industry supply chains consist of many interrelated units, namely food producers, food processors, wholesalers, warehousing facilities, retailing, transportation and customers (Taylor, 1994; Menkhaus et al., 2004). Below a short overview of Russian food producers, food processors, retail trade and logistics is given to provide with the study background.

It is necessary to begin with a brief description of the Russian Soviet economy because its influence is still traced nowadays. During the Soviet era the industry was divided into two categories: input goods and consumer goods. The priority was given to input goods because, according to the so-called “Marxists growth model”, centrally planned input goods production would lead to permanent economic growth (Ylä-Kojola, 2006). As a result, Soviet economy was characterized by the excess production of industrial and defense-related products whereas agriculture and services remained underdeveloped. Food industry supply chains in the Soviet economy were characterized by massive scale, centralized control and lack of competition (Taylor, 1994). Food distribution was channeled through relatively small number of big warehouses. Centralized vertical planning made decisions on whom to buy from and whom to deliver to. Such approach left no room for competition; consumer preferences were not taken into account.

During the first-half of the 1990s, after the collapse of centralized control, the Russian economy declined rapidly. Agriculture suffered from cut subsidies and decrease in state purchases (Kaipio and Leppänen, 2005). On the positive side, the number of private farms increased; food processing companies started to pay attention to such competitive factors as product quality and marketing.

Financial crisis of August 1998, gave incentive to invest in Russian economy. In 1998, more than one-third of the overall foreign direct investment took place in food industry (Ylä-Kojola, 2006). During the following years the share of food industry in foreign direct investment was decreasing: in 2000 it was 18.5 per cent, in 2003 the corresponding figure was about 5 per cent. In the beginning of the twenty first-century, Russian oil and mining companies, as well as the banking sector made investments into agriculture and food processing. In 1999-2003, food industry had the second fastest
growth rate of 39.6 per cent (Ylä-Kojola, 2006). Compared to 1991, the decline in food production in 2003 was 26 per cent (a little below average 28 per cent). In 2004, Russian food processing industry was still growing, though the growth rates were expected to decelerate (Ylä-Kojola, 2006).

At the moment, Russian agricultural sector is polarized: there are successful companies operating according to vertical integration as well as indebted ones in desperate need for investment (Kaipio and Leppänen, 2005). On a general level, according to World Development Report 2006, Russian food producers are characterized by low productivity. For example, Finnish food producers are 14 times more productive than those in Russia (Ylä-Kojola, 2006). The lack of quality raw material supply, especially in meat and milk processing, is a significant problem in food processing industry (Ylä-Kojola, 2006; Rinne, 2007; Lorentz, 2008).

Russian retail market is one of the most dynamic in the world (Roberts, 2005; GRDI Annual Index published by A.T.Kearney (available at: www.atkearney.com). As consumer boom continues, food retail is expected to experience further development (Businesspress.ru, 2008a, b). It is estimated that until 2010 food retail market will grow on average by 14.1 per cent annually (Retail.ru, 2008). By 2020, Russia may become the largest food and grocery market in Europe (Ylä-Kojola, 2006). Food consumption behavior varies between the Russian regions and depends on the level of income (Ylä-Kojola, 2006; Kaipio and Leppänen, 2005; Rinne, 2007). In poorer regions people buy only basic foodstuff; in bigger cities the demand for premium goods and value-added products is increasing. Of the overall spending on consumer goods in 2006, the Russians spend 13.1 per cent on meat and meat products, 6.8 per cent on bread and bakery products, 5.8 per cent on milk and dairy products (Goskomstat, 2007). The share of food products in overall retail turnover is gradually decreasing (Dpmoney.ru, 2007). It is estimated that by 2010 the share of non-food items in real disposable income will increase from 54 to 56 per cent (Retail.ru, 2008). This data supports a theoretical proposition that as the wages become higher the share of food in all purchases becomes smaller (Louhivuori, 2006).

Chain stores, independent stores, markets, kiosks, etc. (Retail.ru, 2008) are involved in Russian food retail. The share of chain retailers in food retail is not high; the exact figure varies depending on a source. According to Retail.ru (2008), in 2007 the share of chain retailers was no more than 10 per cent. However, it is estimated that the share will grow and in five-seven years may exceed 50 per cent. Compared to the growth rate of the whole food retail trade in monetary terms (32 per cent in 2007), retail chains segment is growing faster (40 per cent in 2007) (Product.ru, 2008a, b). Chain retailers typically concentrated in big cities (GAIN Report, 2007). In 2006 their share in St Petersburg was the highest in the country which suggests that the city has the best logistics and consumer environment. The following food retail chains formats are presented on Russian market: hypermarket, supermarket, cash and carry, discounter, and convenience store. In 2007, the biggest share of chain retail belonged to supermarkets and discounters: 64.7 per cent (Product.ru, 2008a, b). In the future, the biggest growth potential is expected in the number of hypermarkets and convenience stores (Retail.ru, 2008).

In the early 1990s, the liberalization of economy and foreign trade produced a messy distribution system (Kaipio and Leppänen, 2005). The wholesale was dominated by former state trade organizations; in retail the dominance of former state monopolies was partly broken. Distribution business was very easy to start and numerous
“one man and a truck” actors appeared. At that time managers did not consider themselves as a part of a supply chain; information technology (IT) was little utilized. As in other respects, the 1998 financial crisis was a watershed in the development of Russian distribution system (Kaipio and Leppänen, 2005). The number of actors in food distribution diminished quickly. Development of retail chains tightened competition which forced inefficient and opportunistic players out from the market.

At the moment, supply chains in Russia are still highly fragmented (Roberts, 2005) and characterized by the lack of logistics infrastructure (Lorentz, 2008). Logistics costs of Russian companies are estimated to be 20-25 per cent of their turnover whereas in Finland the corresponding figure is 11.5-13 per cent depending on the calculating method (Pursiainen, 2007). Distribution develops slower than in other countries with emerging markets in Central and Eastern Europe, such as Czech Republic and Poland (Lorentz et al., 2007).

From a theoretical point of view, existing distribution channels are a result of culture and traditions (Jain, 1996). Moreover, the structure of distribution channels reflects the economy’s level of development (Mallen, 1975; Mallen, 1977). The channel structures start from little specialization between distribution and non-distribution functions and gradually, through separation and specialization, develop towards vertical integration and more direct distribution channels. Russian food market demonstrates that the development of Russian distribution system indeed goes in this direction.

For example, in 2008 N.K.Krupskaja confectionary (St Petersburg) decided to stop working with distributors and made direct contracts with the biggest retail chains in St Petersburg (Businesspress.ru, 2008a, b). The confectionary continues to work with distributors to deliver products to other Russian regions as well as small retail stores in St Petersburg; however it is striving to eliminate intermediaries. A strong force which is reshaping distribution structure at the moment is retail chains. They prefer working with major producers directly. This diminishes the role of wholesalers and restructures distribution system towards echelon elimination (Kaipio and Leppänen, 2005).

Another aspect of food logistics infrastructure in Russia is that demand for modern warehousing is much higher than supply (Louhivuori, 2006). The main problems in warehouse development are lack of suitable land plots and long bureaucratic application process for land development permits. As a result, in some cities warehouse rent reaches world levels.

Russian market of logistics services is fragmented and not homogeneous (Rbcdaily.ru, 2007a). Most players focus on a single logistical operation, e.g. warehousing or transporting. Logistics management, i.e. services on business process optimization, takes less than 1 per cent of the entire market. In the future Russian logistic companies are expected to develop into integrated logistic service providers (Rbcdaily.ru, 2007b, c, d).

A systematic analysis which would take into consideration of all players in Russian food industry supply chains is, to the best of our knowledge, not reported in international scientific journals. Two articles (Rodnikov, 1994; Taylor, 1994) were written more than a decade ago. Few recent studies conducted after 1998 Russian financial crisis include that of Menkhaus et al. (2004), Roberts (2005), Lorentz et al. (2007) and Lorentz (2008). Menkhaus et al. (2004) describes evolution of food retailing and supply chains on a basis of one of the Russian million population cities, Saratov. Roberts (2005) adds to the knowledge of Russian food retailing landscape by
describing Russian retail internalization and emerging patterns of consumption, especially in the Russian capital of Moscow. Lorentz (2008) illustrates the role and significance of supply chain considerations in the decision making by providing a comparison between food supply chains in two Russian regions, Leningrad region and Krasnodar region. Lorentz et al. (2007) investigated into evolution of distribution structures in Central and Eastern Europe. As a part of their work, they conducted a case study of a subsidiary of an international confectionary manufacturer with a factory in St Petersburg which starts to enjoy advantages of more direct distribution channels vs traditional longer ones.

It should also be noted that different Russian regions have different developmental rates. Some regions (like those around Moscow or St Petersburg), receive more investment and, hence, are developed better than some Russian provincial areas. Moreover, food supply chains consist of many interrelated players (Taylor, 1994; Menkhaus et al., 2004). There could be a great variation between Russian regions in terms of their development.

Finland, as a country with a long history of business relations with Russia, has always paid considerable attention to Russian food market potential: food processing industry comes second in the list of stock Finnish investments in Russia in 1997-2005 (Lorentz, 2007). In line with this interest, Finnish Association “Proagria” initiated a project on food supply chain knowledge transfer from Finnish to Russian companies in the Republic of Karelia. “Proagria” was established in 2002; its mission is to improve competitiveness of Finnish food supply chain and rural enterprises. “Proagria” activities include knowledge transfer, joint marketing, and market researches for milk, meat and crop producers. The association has more than 60,000 customers. It also provides consulting services for the Republic of Karelia.

The Republic of Karelia is one of the federal areas which constitute the North-West Federal Okrug (zone) of Russian Federation. In the west, the republic borders Finland. Karelia occupies a territory of about 180,000 square meters. Its major natural resources include forest and iron ore (Kareliastat, 2007). The overall population is a little bit more than 700,000 inhabitants. Among the federal areas in the North-West Federal Okrug, the republic keeps the third place in land funds and the ninth place in the land usage (Nemkovich, 2001). Regarding food industry, two main areas of activity are meat and milk production and processing. The republic is also involved in fish- and fur-farming. Because “Proagria” deals mostly with meat, milk, and crop producers, these three areas were prioritized in the initiated knowledge transfer. To carry out the transfer, specialists from the University of Vaasa were invited.

The project started with the one-day introduction seminar organized by the University of Vaasa in Karelia. Directors as well as representatives of food producers and processors attended the seminar. They got information on modern approaches to logistics and SCM in Finnish companies. Examples of producers’ associations, that, despite being competitors, have developed and use standard cases for goods’ transportation, were presented.

Several discussion topics were also included into the seminar program. For example, “What kind of supply chain does your company have? How many levels?”, or “What can be said about your customers’ behavior? Does it have any peaks?” The discussions were heated; participants, however, did not follow the topics but slipped, instead, to the political problems of the Republic. After the introduction seminar, it was decided to proceed with benchmarking between Finnish and Karelian food producers and processors. Benchmarking as a tool could bring better understanding on which
areas were developed least and which, thus, would benefit the most from knowledge transfer.

3. Research methodology
3.1 Supply chain benchmarking

Research on benchmarking started in 1980s with, at first, just few papers published during the whole decade (Dattakumar and Jagadeesh, 2003). It was popularized later by the results of xerox’ successful implementation (Camp, 1989, 1993). Since then, other companies’ examples have shown that benchmarking is able to enhance organizational performance.

More than 40 definitions have been given to the term “benchmarking” (Wong and Wong, 2008). It can be said that the field of benchmarking lacks, to the large extent, the unifying theory (Yasin, 2002). A working definition adopted in this paper is that based on literature review and proposed by Wong and Wong (2008): benchmarking is “a management tool that can be defined as the systematic process of searching for best practices, innovative ideas and efficiencies that lead to continuous improvement”.

At its simplest, benchmarking process can be described with a help of a basic improvement cycle that is plan, do, check, act (PDCA) (Figure 1) (Deming, 1986; Pulat, 1994). “Plan” refers to decisions on what to benchmark and a type of benchmarking study. “Do” focuses on a self-study of selected processes as well as data collection from a benchmarking partner. “Check” refers to carrying out gap analysis on the basis of collected data. “Act” pertains to launching the projects on the basis of gap analysis’ results.

Some authors present more detailed descriptions of a benchmarking process. For example, Camp (1989), building on xerox example, distinguishes between five stages of benchmarking process:

(1) determine what to benchmark;

(2) form a benchmarking team;

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**Figure 1.**
The deming cycle
(3) identify benchmarking partners;
(4) collect and analyze benchmarking information; and
(5) take action.

In some cases a description of benchmarking process can be very detailed and a number of stages could reach as many as thirty three, as reported by Bhutta and Huq (1999).

Supply chain benchmarking has its own characteristics and is distinguished from other fields (Wong and Wong, 2008). A supply chain can be defined as “a system whose constituent parts include material suppliers, production facilities, distribution services and customers linked together via the feed forward flow of materials and the feedback flow of information” (Stevens, 1989). The key idea of the supply chain concept is that customer needs’ satisfaction depends on integrated efforts of suppliers, manufactures, and distributors; performance improvements of individual supply chain constituents may not be enough to achieve that goal.

Early supply chain benchmarking efforts emphasized internal performance metrics, i.e. metrics of individual supply chain members’ performance. Later on the focus shifted to the entire supply chain (Gunasekaran et al., 2001; Simatupang and Sridharan, 2004; Wong and Wong, 2008). Collaborative metrics which span all companies participating in the chain better represent interdependent nature of the relationships between supply chain members. However, from a negative side, it should be mentioned that extensive data collection required for a holistic supply chain benchmarking makes benchmarking exercise more difficult compared to that based on internal performance metrics.

As reported by Wong and Wong (2008), empirical research on supply chain benchmarking constitutes only 10 per cent of supply chain benchmarking literature. This research can be exemplified by works of Basnet et al. (2003) and Gilmour (1999). Basnet et al. (2003) investigated into SCM practices in New Zealand. They found that New Zealand firms, irrespective of their size, place high importance on on-time activities and determining future customer needs. Geographic proximity and information sharing agreements are not perceived as important. Basnet et al. (2003) note that these ratings are in close agreement with the results obtained in the earlier study conducted in the USA by one of the authors. Gilmour (1999) developed a framework to benchmark supply chain operations. That framework consists of 11 capabilities (six process capabilities, two technology capabilities and three organizational capabilities). Each capability is described with several components along five dimensions that are strategy and organization; planning; business process and information; product flow; and measurement. Each capability component is then assessed on the four-item scale of the component development sophistication. Level 4, the highest level, represents a benchmark which progressive logistics operations should have. Using this framework, Gilmour (1999) collected data from six packaged consumer product companies and four automobile manufactures in Australia. Analysis showed that Australian packaged consumer goods manufactures had a considerable room for improvement (their level of supply chain components sophistication was around 2.5). On the other hand, automotive companies were significantly higher in their scores of supply chain capabilities sophistication (with some capabilities reaching the benchmark level). Altogether, Gilmour (1999) concludes that the proposed framework can be used for supply chain benchmarking. At the same time, he notes that organizational context and strategy should also be taken into account.
3.2 Benchmarking on a basis of SCOR metrics

Despite acknowledged importance of holistic metrics for SCM, their practical application is still in its infancy. Internal metrics prevail in everyday supply chain benchmarking practice. Among them is supply chain operations reference model (SCOR). This model is a result of joint efforts initiated by two consulting firms Pittiglio Rabin Todd and McGrath and Advanced Manufacturing Research in early 1990s (Stewart, 1997). In 1996, they together with some leading US and multinational firms established the supply chain council which in 1997 released the first version of SCOR. Since then the model has undergone several modifications and at the moment of writing this paper ninth version of SCOR model was available.

SCOR model distinguishes between four levels of SCM. The first one, i.e. top level, describes five main processes: plan, source, make, deliver and return (first versions of SCOR consisted of only first four processes: plan, source, make and deliver). The second level, i.e. configuration level, provides finer description of the main processes by dividing them into categories. The third level, i.e. process element level, further decomposes processes into detailed process elements. The fourth level, i.e. implementation level, focuses on a company-specific implementation of the processes.

The main processes, broadly described at the top level, extend across all parts of the supply chain (SCOR Overview 2008). Plan process includes demand and supply planning and management. Source process pertains to sourcing for stocked, made-to-order, and engineered-to-order products. Make process defines production execution of make-to-stock, make-to-order, and engineer-to-order products. Deliver process describes order, warehouse, transportation and installation management of stocked, made-to-order, and engineered-to-order products. Return process includes return of raw materials and receipt of returns and finished goods. Each process in SCOR model has its own set of metrics corresponding to one of the SCOR levels.

As such, SCOR model provides standard process definitions, terminology, and metrics for SCM across different industries (Stewart, 1997). Already at the stage of metrics development, it was discovered that a big gap exists between the average company’s performance and that of the best-in-class companies in terms of SCOR metrics (Stewart, 1995). Nowadays, SCOR metrics are increasingly adopted as standard supply chain performance measures and used for benchmarking practices.

On SCOR downsides it should be mentioned that the model fails to address the issue of integration synchronization (Wong and Wong, 2008). Furthermore, SCOR model is reported to be rather rigid and not being able to reflect changing nature of dynamic supply networks (Samuel et al., 2004).

In Finland, SCOR model has been used by the Finnish Association of Logistics to gather SCM data from Finnish companies. Thus, benchmarks were already available for this study. To conduct required gap analysis, it was necessary to collect data from lagging Karelian companies.

SCOR Level 1 metrics, used by the Finnish Association of Logistics, were translated to Russian language and “broken down” into “basic” operational and financial characteristics required to calculate SCOR metrics. A Russian expert holding a position of a financial manager of a Russian investment company was contacted in order to get to know which data could be obtained from companies’ balance sheets and financial statements. According to the expert, among 17 “basic” operational and financial characteristics, only eight could be obtained from balance sheets and financial statements.
Availability of other data depends to a large extent on a specific company’s internal accounting practices. This pertains mostly to operational characteristics such as “number of items sold per day” or “amount of inventory in a number of items”. Small companies (for example, farmers) do not keep this type of records. In these circumstances, the use of SCOR metrics was not possible.

3.3 Benchmarking on a basis of supply chain management scorecard
Given that SCOR metrics data collection was not feasible in Karelian companies, it was decided to proceed with SCM scorecard developed on a basis of supply chain maturity model (Yaibuathet et al., 2006). The concept of process maturity is traced back to the capability maturity model developed by Software Engineering Institute at Carnegie Mellon. Five levels of maturity are recognized which differ on the extent to which the process is explicitly defined, managed, measured and controlled. In order of increasing maturity, the maturity levels are called:

1. **ad hoc**;
2. **defined**;
3. **linked level**;
4. **integrated**; and
5. **extended**.

Increase in process maturity is accompanied by process institutionalization via polices, standards, and organizational structures (Hammer, 1996). The higher the maturity level, the higher is a level of process capability defined in terms of control, predictability, and effectiveness (Dorfman and Thayer, 1997). A growing body of evidence shows that there is a relationship between higher levels of maturity and improved organizational performance (Grant and Pennypacker, 2006).

An application of a maturity model to SCM is presented by Lockamy and McCormack (2004). The maturity levels of SCM can be briefly described as follows:

1. **Ad hoc**. Supply chain processes are unstructured, ill-defined, and not measured. Process performance is unpredictable; customer satisfaction is low.
2. **Defined**. Basic SCM processes are defined and documented. Process performance is more predictable, however performance targets are still missed quite often.
3. **Linked**. The breakthrough level. SCM is employed with strategic intent. Teams that involve intra-company functions’ representatives, vendors, and customers are formed. These teams share common supply chain measures and goals that span horizontally across the supply chain. Process performance is more predictable; customer satisfaction is growing.
4. **Integrated**. The company, its suppliers and distributors cooperate on the process level. SCM measures and systems are deeply embedded. The company uses advanced SCM practices, such as collaborative forecasting and planning with customers. Process performance becomes very predictable; customer satisfaction becomes a competitive advantage.
5. **Extended**. Competition is based on multi-firm supply chains. Collaboration between different companies in the chain operates on routine basis. Trust and mutual dependency holds the members of the supply chain together.
A connection between maturity levels and SCOR processes is shown on Figure 2. Empirical evidence shows that a link between higher levels of maturity and performance is also true for SCM processes (Lockamy and McCormack, 2004; Polese, 2002; Yaibuahtet et al., 2006).

In this research, to measure SCM maturity level, the scorecard developed by Professor Takao Enkawa, Tokyo Institute of Technology, was used (Yaibuahtet et al., 2006; Suzuki et al., 2005). The Finnish Association of Logistics has also collected data from Finnish companies with this scorecard. In this way, the use of the scorecard in this study allowed avoiding tedious financial and operational data collection in Karelian companies and using already collected data regarding supply chain maturity of Finnish companies for benchmarking. On the other hand, the scorecard per se is a good tool that helps to assess the current state of affairs relatively in relation to the distant strategic goals (Kaplan and Norton, 1992; Kaplan and Norton, 1996).

The scorecard evaluation is based on 22 questions related to four categories:

1. strategy/organization;
2. planning/execution capabilities;
3. logistics performance; and
4. the use of IT.

Each question describes a specific company’s activity along five stages of maturity: from ad hoc to extended. Ad hoc level of maturity is given the lowest score, i.e. Score 1; extended level of maturity is given the highest score, i.e. Score 5. For example, question 1.1
describes activity “Corporate strategy regarding logistics and importance” in the following manner:

(1) **Score 1 (ad hoc maturity level)**. Top executives have not formulated a strategy or policy regarding logistics/SCM. No department has responsibility for logistics/SCM improvement or innovation.

(2) **Score 2 (defined maturity level)**. A department with responsibility for logistics system innovation exists, but action is limited to that department. Logistics/SCM strategy is not clearly defined. Top mgmt not actively involved.

(3) **Score 3 (linked maturity level)**. Under leadership of a top executive, there is a program for logistics/SCM innovation, but the program does not extend company-wide.

(4) **Score 4 (integrated maturity level)**. Supported by a clear corporate-level strategy, a top executive (managing executive director or above) leads efforts for logistics/SCM innovation. The innovation program is making progress.

(5) **Score 5 (extended maturity level)**. Under the CEO’s leadership and a clear corporate strategy, there is an company-wide system that supports rapid adaptation of the supply chain to environmental change.

A respondent is asked to define which level describes his/her company the best and write the corresponding score in the designated area. If the company is in between the levels (for example, it is in transition from the first to the second level), a respondent is asked to write the score which denotes this transition state (in the given example it is 1.5). The full list of questions, kindly granted by the Finnish Association of Logistics, is presented in the appendix.

The answers to the questions are then grouped along three main dimensions: SCM organizational ability, responsiveness, and IT utilization ability. SCM organizational ability describes the performance drivers, i.e. items pertaining to organizational issues necessary to build supply chain. Responsiveness is a performance dimension evaluating the supply chain’s agility and adaptability to market change. IT utilization ability stands for performance enabler dimension, i.e. it evaluates IT methods and their implementation.

Four categories of the scorecard have some elements in common with the five supply chain levers described by Geary and Zonnenberg (2000). Building on the analysis of the two-year SCM benchmarking study, Geary and Zonnenberg (2000) argue that the best-in-class performers have clear strategy built on the following elements. The first lever, configuration, defines the geographic scope of supply chain, supply base, and manufacturing and distribution sites. The second lever, enabling practices, creates the environment where customers drive the entire supply chain. This lever is close to “planning/execution capabilities” category of the SCM scorecard. The third lever, supply chain network, pertains to the choice of right strategic partners. “Strategy/organization” category is close to this lever. The fourth lever, centralized or decentralized organizational structure, should enable supply chain strategy. The last lever, IT architecture, should provide real time information sharing throughout the entire supply chain. This lever is similar to “the use of IT” category of the SCM scorecard.
4. Empirical results and analysis

4.1 Supply chain management scorecard

In this case study data from eight Russian companies were gathered. The average results were compared to the average of almost 100 Finnish companies already existing in the scorecard database created by the Finnish Association of Logistics. Data analysis produced rather counterintuitive results.

The comparison shows that there are no dramatic differences between the scores of Finnish and Russian companies (Table I). The most notable gap is about IT utilization ability. The scores 2.76 and 3.39 from Russian and Finnish companies, respectively, were somewhat anticipated by the researchers. For example, the main method of communication in Karelia is telephone; only a few companies use e-mail. However, the self evaluation method suggests that there are no vast differences in the level of organizational ability and responsiveness. The reliability of Russian companies’ results is somewhat hampered by the low number of companies and significant deviation of evaluation scores among the respondents. The researchers had no access to individual results of Finnish companies.

4.2 Interviews with managers

To supplement scorecard data, interviews with four companies representatives were conducted (Table II). The main interviewer was a Finnish researcher from the University of Vaasa. He was assisted by a Russian researcher from the same university who acted mostly as an interpreter. Each interview lasted between one and two hours. The interviews were unstructured. Company representatives were asked to describe companies’ current situation and explain how they saw the role of logistics in their businesses. All four companies have evolved out of companies existed during the Soviet era.

The general tone of the interviews was different in all four cases. Baking factory focused mostly on difficulties. On the contrary, milk farm and processing factory described only achievements and did not discuss any problems. Milk processing factory and meet producer had clear strategies and were positive about future of their businesses. Moreover, the director of the meet producing company was a strong leader.

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<tr>
<th>Russian companies</th>
<th>Finnish companies</th>
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<tr>
<td>SCM organizational ability</td>
<td>3.1</td>
</tr>
<tr>
<td>Responsiveness</td>
<td>3.41</td>
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<tr>
<td>IT utilization ability</td>
<td>2.76</td>
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<th>Type of a company</th>
<th>Position of interviewees</th>
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<tr>
<td>1 Baking factory</td>
<td>Director and deputy director</td>
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<tr>
<td>2 Milk processing factory</td>
<td>Director, production deputy director</td>
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<tr>
<td>3 Milk farm and processing factory</td>
<td>Director</td>
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<tr>
<td>4 Meet producer</td>
<td>Director</td>
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with a clear vision of how food industry should develop in the whole Republic of Karelia. He would also like to play a central role in this development.

Despite the different character of the interviews, several topics were touched by all interviewees. The first one is a bad state of roads in the Republic. Asphalt in many places is in poor condition. In some remote northern areas roads may literally disappear during spring time due to rising water level. This makes delivery difficult in several ways. First, transport vehicles need more maintenance and repairing. Second, up-to-date information on the state of the roads in remote areas is not available. Thus, it may happen that a company sends a delivery car to a region that turns out to be inaccessible. In this case the car should return back together with the not-delivered products. Third, delivery quantities to those remote areas need to be calculated not only on the basis of real demand but should also take into account accessibility/inaccessibility issue: delivery quantities should be more when areas are accessible to create a sufficient stock of goods.

The second topic of the interviews is the intervention of retail chains coming to the Republic from St Petersburg. These chains favor products produced in St Petersburg region. It is difficult for Karelian food producers and processor to get into these chains.

The third topic is that delivery of small products’ quantities to remote areas is not profitable because of high-transportation costs. In this situation a development of a joint logistics terminal or a third party logistics company that would combine orders from different food companies into one truck would solve the problem.

Regarding the quality of the data collected in these interviews, the following should be mentioned. All interviewees were suspicious about intentions of the Finnish interviewer. Two interviewees openly asked if the research was aimed at commercial spying. This position is understandable giving that big Finnish food processing companies (e.g. milk factory Valio) are coming to Russian market and some categories of customers switch to their products. However, this suspicious position suggests that interviewees might not give objective information on the state of their companies. This could be particularly true for the cases of baking factory and milk farm and processing factory. The former gave a negative picture; the latter presented an overly positive description of the business.

Regarding the possible knowledge transfer, all interviewees expressed the opinion that Finnish experience is not applicable in Karelia. This could be fully true if modern Finnish SCM practices had been intended to be copied into much less developed Karelia. The aim of the project initiated by “Proagria” is, instead, to transfer knowledge that could be applied in the Republic. Finland had the similar situation in the food industry after the World War II. Some recipes that worked those days could help to improve the situation in modern Karelia. This point, however, missed the attention of the interviewees.

Such attitude could be partly explained by the “top-down” nature of the benchmarking initiative: it was started by “Proagria”, not by the Karelian companies themselves. Typical benchmarking process, on the contrary, is started by a company that seeks the process improvement (compare to PDCA benchmarking cycle described earlier). Taking this into account, the negative opinion about applicability of Finnish experience could be described as a good example of non-invented-here syndrome reported elsewhere in relation to knowledge transfer (Lichtenthaler and Ernst, 2006).
5. Conclusions
The research problem of this paper was to find out the reasons for low productivity in Russian food industry from SCM point of view. Although some clear reasons can be depicted, the results of the scorecard analysis and interviews should be interpreted with certain caution. As mentioned, all interviewees seemed to be suspicious about intentions of the Finnish interviewer. Two interviewees openly asked if the research was aimed at commercial spying. It is to be noted that with the benchmarking process the researchers performed the gap analysis but did not implement any changes. The development suggestions that were the results of the study are all factors, which take a lot of time and effort to change.

Two factors standing out that are hindering the operational efficiency of food industry companies in Russia are road conditions and the low level of IT use. Besides, that, it can also be stated that the logistic service providers in general are underdeveloped in the Republic of Karelia. Many of the companies have their own transportation equipment and personnel because 3PL is unreliable. Co-operation in this field is also minimal.

The use of IT, or the lack of usage, can be partly explained by the infrastructure. Anyhow, compared to road conditions the improvements on this sector could be achieved in much shorter period of time. Given that information sharing is a vital part of successful SCM, the food industry operators in the Republic of Karelia could see great improvements in competitiveness with relatively low level of investments. To the researchers’ understanding it is more a questions of education and attitude.

Considering the relatively low number of companies interviewed and having taken part in the scorecard evaluations, more systematic research in the field is required. However, it is clear that if the local operators want to be part of Russia’s growing food sector, a systematic and long-term development plan needs to be in place. Analyzing and understanding the present state is the first step in this direction. In conclusion, considering the challenging research environment, the researchers were able to carry out an analytical and pragmatic case study of the food industry’s present state in the Republic of Karelia. The empirical results together with the comprehensive background data give new information, and also direction to future research, can be considered as the major contribution of this paper.

References


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