

Embedding sustainability into operations of SMEs in logistics industry

Logistics

Master's thesis

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ABSTRACT

Objectives of the Study

Sustainability becomes a significant part of today's business operations. More present in large corporations it nevertheless gains foothold in small and medium enterprises (SMEs) as well. When analyzing sustainable development academic literature focuses mainly on large multinationals and to less extent on SMEs. Empirical data on the sustainable development of SMEs is scarce. No frameworks and models that analyze sustainable development at SMEs and provide suggestions for improvements were found. Therefore, a gap in the research was noticed. The purpose of this thesis is to contribute to reducing of that gap. This thesis aims to create a framework for the analysis of SMEs and the model that suggests further development of sustainable practices in SMEs. This thesis provides empirical data regarding SMEs and sustainability. The study focused on SMEs in logistics industry in Finland and to some extent in Russia and the European Union.

Academic background and methodology

The study primarily used a qualitative method - a case study approach. This method was chosen for more agile information acquisition through the interviews with representatives of SMEs operating in logistics industry. It allowed to take a closer look at the details specific for SMEs as specific types of companies. Academic literature was used to study existing frameworks for the analysis of sustainable development as well as sustainability practices that can be applicable for SMEs. It was used together with other secondary data (such as for instance EU Commission directives) to make a theoretical framework for the analysis of SMEs from sustainability perspective. This framework was used to create a model with suggestions for sustainable development for SMEs in logistics industry.

Findings and conclusions

Theoretical framework was created that focused on the analysis of sustainable development of SMEs in logistics industry. Combining the theoretical framework with information gathered from the interviews of the case companies allowed me to make a model that provided a roadmap for SMEs in logistics on how to develop in a sustainable manner. The key results were that SMEs at this point do not have a clear strategy for sustainable development, nevertheless some of their operations can be described as sustainable. It was suggested for SMEs to cultivate a vision of sustainability, from which a sustainable development strategy can be formed and managed.

Keywords

Sustainability, sustainable development, SME, Sustainable Supply Chain Management

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ABBREVIATIONS:

3PL – 3rd Party Logistics

CIS – Commonwealth of Independent States

CLSC – Closed Loop Supply Chain

CRM – Customer Relationship Management

EC – European Commission

ECR – Efficient Consumer Response

ELV – End-of-life Vehicles

EMAS – Eco Management and Audit Scheme

EMS – Environmental Management System

ERP – Enterprise Resource Planning

GHG – Greenhouse Gas

GRI – Global Reporting Initiative

GrSCM – Green Supply Chain Management

IAS – International Accounting Standards

ICT – Information and Communication Technology

IFRS – International Financial Reporting Standards

IS – Information Systems

ISO – International Organization for Standardization

KPI – Key Performance Indicator

LLC – Limited Liability Company

LSP – Logistics Service Provider

NGO – Non-governmental Organization

Oy – Finnish equivalent of a limited company

SCM – Supply Chain Management

SMEs – Small and Medium Enterprises

SSCM – Sustainable Supply Chain Management

TBL - Triple Bottom Line

UNEP – United Nations Environment Programme

WBCSD – World Business Council for Sustainable Development

WRI – World Resources Institute

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1. INTRODUCTION

This section provides a short overview of the topic: the background and the reasons for choosing this subject. The research problem is presented and discussed in brief; research objectives are stated. The section is concluded with the research questions.

1.1 Background

Up to the twentieth century, human history was mostly associated with utilization of various resources (natural, human, digital etc.) to progress and develop. The twentieth century however started another stage: with resources becoming more scarce and continuous progress negatively affecting the atmosphere and climate, preservation of the environment became significant. Problems related to the environment and society have been getting a rising attention in the industrial countries for the last decades (Bask et al., 2013). Now, “the global regulatory environment is increasingly demanding of its corporate citizens” (Defee et al., 2009). The new concepts of development can be described by the term “sustainability”. “Sustainability has become a huge buzzword” in modern society (Carter and Easton, 2011). There has been an increasing interest in sustainable development for both academics and businesses; recent financial and energy crises further contribute to the significance of sustainable development as a strategic objective (Fabbe-Costes et al., 2011). Many scholars targeted the subject of frameworks for sustainable development (Fabbe-Costes et al., 2011; Defee et al., 2009; Carter and Rogers, 2008, Christopher and Holweg, 2011). They included extended versions of triple bottom line frameworks (Carter and Rogers, 2008), closed-loop supply chain framework (Defee et al., 2009), perception on management of supply chains in turbulent times (Christopher and Holweg, 2011). When studying those articles it was noticed that all of the companies chosen were large multinational companies such as Nokia, Dell, Zara, Toyota, Hewlett Packard, Starbucks Coffee, Wal-Mart (Christopher and Holweg, 2011; Carter and Rogers, 2008; Defee et al., 2009; Bell et al., 2012; Arguden, 2011). At the same time I have not noticed any companies that belong to the small and medium enterprise (SME) group. Academic literature does not focus much on small and medium enterprises and some studies even mention that some of their suggestions may not be applicable for SMEs (Morana, 2013). That means that there is currently a gap in the research regarding SMEs and sustainability initiatives. There is a lack of empirical data on the subject (Fabbe-Costes et al., 2011). Furthermore, there are no frameworks for sustainable development that specifically target SMEs. How are they affected by sustainability? Can they be as sustainable as large corporations? Are they developing

their sustainable initiatives? What is the best way for SMEs to develop in a sustainable manner? In my thesis I try to find answers to some of these questions, more specifically the objectives of the research will be covered in the next section.

1.2 Research problem and research objectives

My goal in this thesis is to narrow the research gap of SMEs and sustainable development. I aim to find out what vision and strategy for sustainability is currently present in the SMEs and how can it be improved, by introducing a model for sustainable development for SMEs in the logistics industry.

As the unit of the research is specifically chosen to be small and medium enterprise, it makes sense to start with discussion of the meaning of the term “SME”. European commission defines the term SME by the number of employees and either the turnover or the balance sheet. These numbers are defined by EU law – EU recommendation 2003/361 (Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises, [22.04.2014]) (Table 1).

Table 1. EC definition of the SMEs (European Commission: SME definition, 22.04.2014).

Company category	Employees	Turnover	or	Balance sheet total
Medium-sized	<250	≤ € 50 m		≤ € 43 m
Small	<50	≤ € 10 m		≤ € 10 m
Micro	<10	≤ € 2 m		≤ € 2 m

It can be noticed from Table 1 that SME is any company with the number of employees ranging from one to two hundred and forty nine that has a turnover of less or equal to fifty million Euros or the total Balance sheet less or equal to forty three million Euros.

SMEs have considerably less financial resources, when compared to large corporations. As a result they are less likely to be able to invest much into sustainable practices (Eggers et al., 2013). However, they can be more versatile and easier to change (Pinho, 2007). With that in mind, I decided to focus my research on sustainability in SMEs. What does sustainability mean for SMEs? Are they trying to be sustainable? How can it be measured? The aim of this research is to analyse the situation in the companies regarding sustainability: what is the vision and strategy of SMEs towards sustainable development, what actions are taken to be sustainable. To do that a framework will be created. Another important objective of the research is to provide a model with

suggestions of sustainable development for small and medium enterprises, primarily focusing on SMEs in logistics.

Sustainability practices can be good not only for the environment and the image of the company, but also for company's business processes (Lazlo and Zhexembaeva, 2011). This study aims to further research that topic. One of the suggestions will be focused on embedding sustainability into the company's operations (Lazlo and Zhexembaeva, 2011). If that is possible for SMEs, suggestions will be made that can be used by SMEs in the area of logistics and possibly other areas too on how to embed sustainability and at the same time increase profits and performance. Based on those suggestions I will make a model of how to embed sustainability into the operations of SMEs in logistics industry.

The research aims at both theoretical and managerial contribution. Based on the literature review a theoretical framework will be created, which will be designed specifically to analyse the SMEs sustainability plan. As far as managerial contribution is concerned, the end goal of this paper is to create a model that will help SMEs in logistics apply sustainability initiatives and develop them. I plan to apply the results of my thesis in the company Finn-Realty Oy, where I currently work. This company is one of the four companies chosen for this thesis.

1.3 Research Questions

The main research question is the following one:

What model can be created to embed sustainability into the operations of the SMEs in logistics industry?

In order to answer that question, four questions will be answered:

1. What frameworks for analysis of sustainable development in the companies exist already? What do they focus on? Can they be applied (or at least partly applied) to create a framework for SME analysis in regard to sustainable development?
2. What framework can be created for the analysis of small and medium enterprises in the logistics area regarding sustainable development?
3. Perspective on sustainability: what does it mean for Logistic Service Providers (LSPs) and their customers? What issues do they focus on? Are there differences?
4. What do companies currently do to be sustainable? What strategy for sustainable development do they have?

5. What improvements can be suggested to increase sustainability integration into the operations?

2. METHODOLOGY

This section describes research techniques used in this paper as well as the reasons for choosing them. "The research process is not a clear-cut sequence of procedures following a neat pattern but a messy interaction between conceptual and empirical world, deduction and induction occurring at the same time" (Karlsson, 2002, p.148).

The area of studies of my Master's degree is Logistics and Service Management and the logistics industry and its SMEs is the focus of the study. Having been working and studying in this area for the past three years, I am applying my experience to my Master's thesis. The four companies chosen are SMEs from logistics industry. I chose mostly Finnish companies due to these reasons. First, they are relatively easy to find and approach. Second, they may be interested in the research provided by the student of the local university. Third, there are a lot of logistic service providers (LSPs) in Finland that vary in size and include small and medium sized enterprises. Finally, Finland is a significant hub in the trade between European Union, North America and the Russian Federation. Cargo arrives by trucks, planes and sea vessels and goes through the border to Russia (and sometimes other CIS states) (Laisi et al., 2012). Four companies were chosen: three of them Finnish and one Russian that does a significant part of its business in Finland. While the thesis will mostly focus on Finland, it will also cover Russia as an important trade partner and the European Union as the structure that can significantly affect sustainability initiatives of the businesses in Finland.

2.1 Research Methods

In the need to capture detailed and practice-related data, a case study approach was used in the research. "Case studies provide holistic and in-depth investigations" (Fabbe-Costes et al., 2011). It can be described as "using a limited number of units of analysis within their natural conditions" (Jonker, 2010, p.83). Case study approach is often used in the SSCM literature with twenty-three percent of the studies applying it in 2001-2010 years (Carter and Easton, 2014). Four SMEs were interviewed and analysed in terms of sustainable development. Interviews were the main source of getting qualitative data. One of the main ideas behind qualitative research is to study the specific aspects and structure of the problem analysed in its usual context (Jonker, 2010). That was one of the reasons why this method was chosen - it allowed to know the specific details better. Another reason for choosing interviews is due to the versatile means of getting information. During the interview it was possible to ask additional questions regarding

specific details that were important. As it was mentioned earlier many academic articles that focused on sustainability and suggested frameworks for the analysis of the sustainable development used large multinational companies (Christopher and Holweg, 2011; Carter and Rogers, 2008; Defee et al., 2009; Bell et al., 2012; Arguden, 2011) as examples or as targets for the studies. Due to lack of empirical data regarding SMEs in logistics and sustainable development (both the analysis of it and suggestions for further development) case study method was chosen. It allowed to gather empirical data on this particular subject and fill the gap.

Academic literature was used for several purposes. The main purpose was to create the framework for the later analysis of the case companies and to use ideas and examples in the practical model, answering the main research question. Another aim of the research literature was to get better acquainted with the subject of research – sustainable initiatives and SMEs and to contribute to the interviews structuring. The materials that were collected from the academic literature were then reorganized in a structured way, in line with the research questions.

2.2 Data Collection

Data collection occurred through the search of academic journals databases (mainly Emerald), library collections of Aalto University, analysis of the interviews of the case study firms. It took approximately five months, due to the busy schedules of the interviewees as well as the need to find extra academic literature on the subject. Preparation for the data collection took one month, which involved finding companies and preparing interview questions.

Data for the literature review included the studying of various sustainability frameworks that were taken from academic articles (Fabbe-Costes et al., 2011; Defee et al., 2009; Carter and Rogers, 2008, Christopher and Holweg, 2011). It contributed to the development of the framework targeted at SMEs in logistics specifically.

Four interviews were conducted during the research. The interviews were held with representatives of the companies that were studied. Three interviews were conducted via Skype and recorded on the audio recording device, as the company representatives were located away from Helsinki. They were located in Kouvola, Kotka and St.Petersburg. The last interview was conducted in person. Interviews were semi-structured to allow comparison of data and better classification of data (Appendix 1, Appendices 2-5). Interviews were complemented by a small questionnaire (Appendix 1). It further

allowed comparison of the four case companies. The questionnaire focused on the clients of SMEs and how company representatives see the requirements of their clients, what they think are the reasons for their clients to choose them and what their clients' priorities are. Sustainable aspects were mixed with other aspects such as cost or flexibility, which were used to provide the precise picture of what the current needs and priorities of SMEs in logistics are.

The company I work for, Finn-Realty Oy, helped me to set up the interviews and all were conducted with Finn-Realty partners. All of the interviews were conducted in Russian, as the interviewees were more comfortable speaking that language and allowed me to get the most information out of each interview. All of the interviews were then translated to English. All four of the company representatives have given permission to use company names, information and their own names.

The companies were chosen for the research based on their size and turnover. The definition of SMEs presented in the introduction (size less than 250 people and turnover less or equal to 50 million euros) was used to assess company's eligibility for the study. Companies' policies regarding sustainability were not known before the beginning of the research (Companies were not chosen based on the level of their sustainable practices). The only exception was my employer Finn-Realty Oy.

3. LITERATURE REVIEW

This section focuses on the analysis of the academic literature relevant to the research questions. It serves two main goals: to gather information to be used in the theoretical framework and to provide information for the practical model.

Literature review studies the frameworks for measuring sustainability that were introduced in the last decade. Furthermore, it provides an overview of sustainability and examines the issues that are considered significant in academic literature. It contributes to the understanding of sustainability, the current environment, vision of sustainability and sustainable approaches that are used.

Literature review then examines strategic and managerial implications that can be used as suggestions to logistic SMEs for sustainable development. Managerial aspects are divided into two sections: legal issues and operational issues. Legal issues focus on emissions in contracts and environmental standards. Operational issues analyze beneficial steps in operations.

3.1 Sustainability and current sustainable development frameworks

During the last twenty years, environmental aspects of supply chain management were the top subject for the research. “To some degree as well, the terms “sustainability” and “environment” have been used interchangeably, both by researchers and by managers. This misunderstanding was particularly prevalent during the early conceptualizations of sustainability” (Craig and Easton, 2011).

I will start with defining the terms “sustainability” and “sustainable development”. According to the UN Report “Our Common Future”, sustainable development “is a development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations website, Our Common Future, Chapter 2: Towards Sustainable Development, [30.11.2013]). Carter and Rogers (2008, p.368) define sustainability as “strategic, transparent integration and achievement of an organization’s social, environmental, and economic goals in the systematic coordination of key inter-organizational business processes for improving the long-term economic performance of the individual company and its supply chains.”

While the definition of sustainability can be universal for any group of stakeholders or for a company of any size, the frameworks for sustainable development differ

depending on industry, size and other factors. In the last decade, there was a significant amount of sustainability-focused academic studies in supply chain management. In the seven top-tier logistics and supply management journals, twenty-five percent of the papers included sustainability (Carter and Easton, 2011). I will analyze some of those frameworks from the SME perspective: do they fit for SMEs or should a new framework be made specifically for the analysis of sustainable initiatives in small and medium enterprises?

3.1.1 Triple bottom line

Triple bottom line (TBL) represents the broad level of organizational sustainability. The idea of the approach is that businesses need to include their impact on environment, society, and economy when evaluating their financial performance (Savitz, 2013). Nowadays, many companies are willing to implement business models that focus on TBL (Fry et al., 2013). TBL (Figure 1) is a simple, yet effective measure for the analysis of sustainable development. It includes all the key components of sustainability – environment, economy and society. TBL is visually represented below (Figure 1).

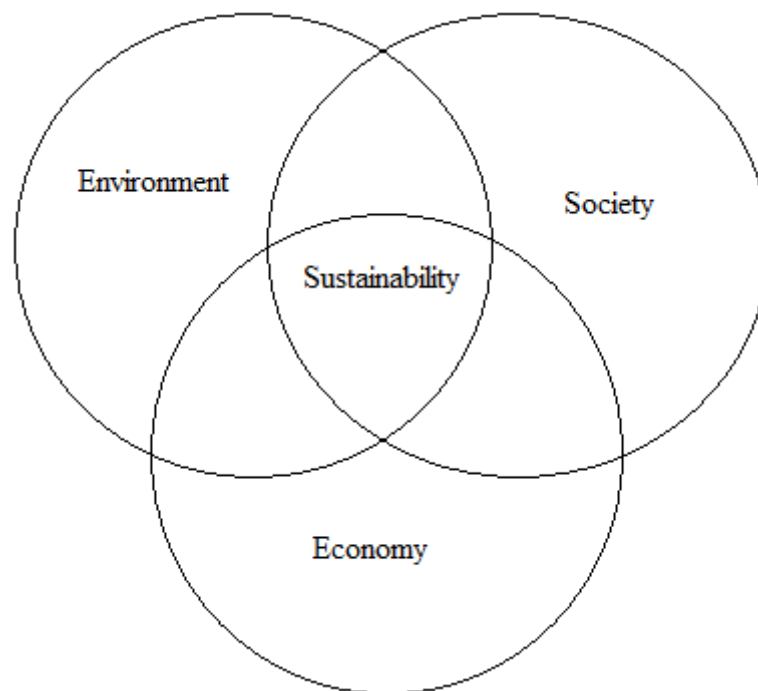


Figure 1. Triple bottom line.

However, it is not the best framework for the analysis of the SMEs in terms of sustainable development. The sections that form triple bottom line are very broad and need to be narrowed down when approaching a company where two or three people work.

3.1.2 Sustainable Supply Chain Management

Sustainable supply chain management (SSCM) incorporates the three main components TBL approach: economic, social and environmental. It is defined as "the management of material, information and capital flows as well as cooperation among companies along the supply chain while taking goals from all three dimensions of sustainable development, i.e. economic, environmental and social, into account which are derived from customer and stakeholder requirements" (Morana, 2013, p.xiv). Cuthbertson (2011) makes his contribution by defining sustainable supply management in the following way, putting emphasis on the "realistic" aspect. "Supply chains are not sustainable unless they are realistically funded and valued. Thus, a real definition of sustainable supply chain management must take account of all relevant economic, social and environmental issues" (Cetinkaya et al., 2011, p.3). SSCM has become increasingly important as firms and SCs search for new operational and managerial practices to reduce impact on the environment (Bask et al., 2013).

Carter and Rogers (2008) introduce SSCM framework (Figure 2) that besides standard TBL approach includes other aspects of sustainability: risk management, transparency, strategy, and culture.

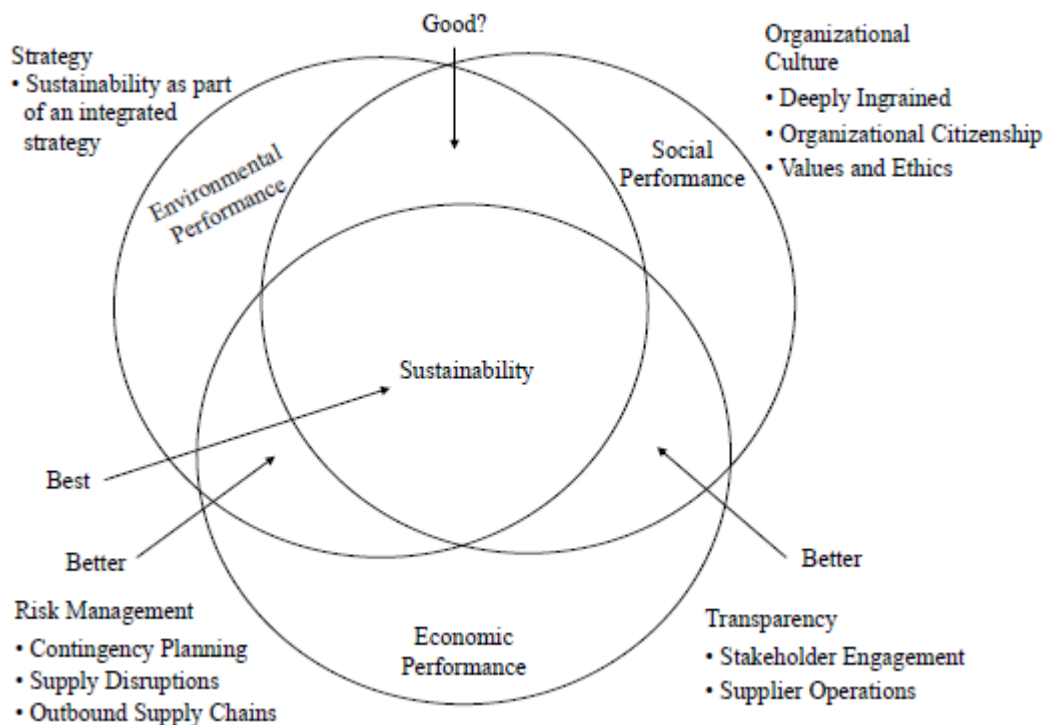


Figure 2. Sustainable Supply Chain Management (Carter and Rogers, 2008).

As it can be noticed from the framework (Figure 2), authors consider intersection of all three TBL aspects to be the best situation. It is also implied that the presence of

economic performance factors are crucial, therefore combinations of economic and social performance and environmental and economic performance are tagged as “better”, compared to the combination of environmental and social performance that is only marked as good with a question mark. That means economic performance is the most significant impact. Sustainability initiatives should not destroy economic performance, otherwise they cannot be sustained. This idea will also be applied when suggestions will be made to the SMEs in logistics industry regarding sustainable development.

This framework (Figure 2) is a good tool for analyzing sustainable development at the firm: it builds upon the core triple bottom line framework and takes into consideration “supporting facets” (Carter and Rogers, 2008) that are relevant for most of the firms and highlight important aspects of sustainable development. Ideas from this framework can be used when making a framework for the analysis of the case companies, as well as other SMEs in the logistics industry. While the whole SSCM framework suits the purpose for analyzing company’s sustainability, it might be too sophisticated for small and medium enterprises. For that reason, the framework will be modified to answer the requirements of this research.

Morana (2013) introduces another framework for sustainable supply chain management (Figure 3) with the primary objective to “facilitate the implementation of the elements of each of the approaches”, economic, environmental, and social. The second aim of the framework is to make it possible for the reader to carry “audits and diagnostics for each component” (Morana, 2013, p.xvii). The framework (Figure 3) is similar to Carter and Rogers (2008) framework in the sense that it is also based on triple bottom line. Nevertheless, there are differences. Carter and Rogers in their framework outline four “supporting facets” that were outlined through interviews with industry representatives and literature review. Morana (2013) in her book gives a detailed review to each section of SSCM, providing detailed tiers of each of the aspects. Among other issues, Green Supply Chain Management (GrSCM) is included. Bask et al. (2013) defines GrSCM as SCM with environmental thinking taken into consideration and that includes “product design, material sourcing and selection, manufacturing processes, delivery of the final product to the consumers as well as end-of-life management of the product after its useful life”. While GrSCM is not relevant for the framework for the analysis of the sustainable practices of SMEs, it is an approach to consider, when making suggestions on further sustainable development of SMEs.

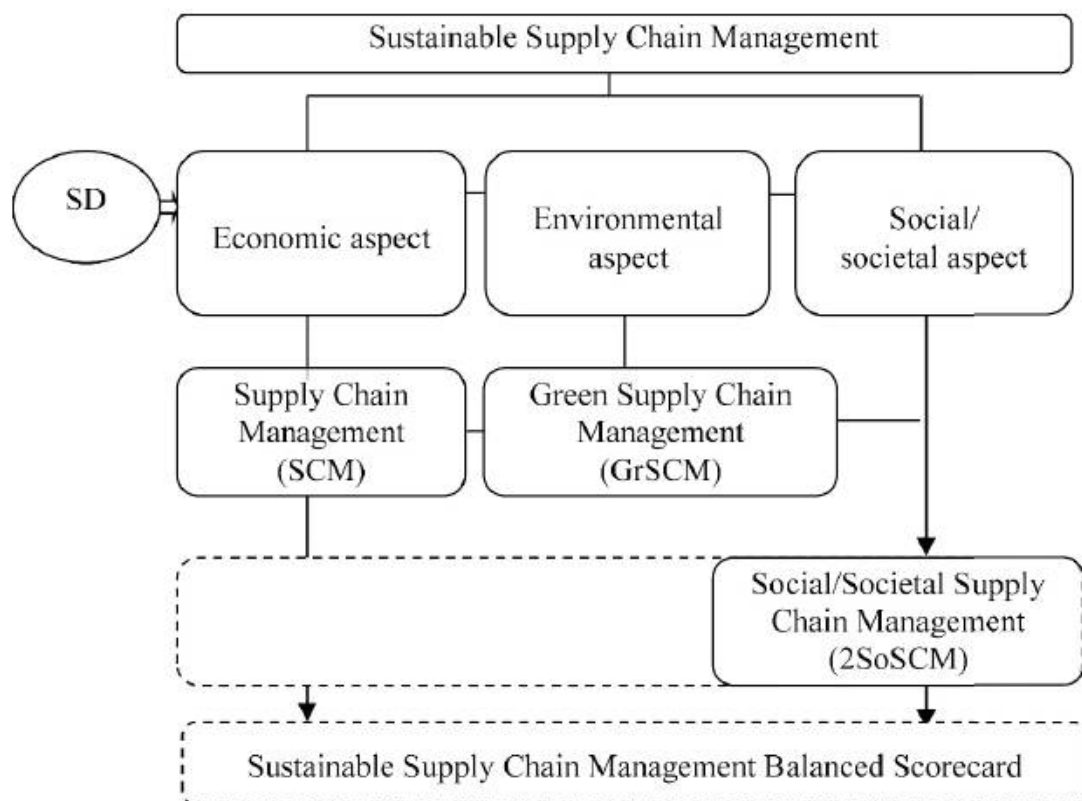


Figure 3. Sustainable Supply Chain Management: top tier of the framework (Morana, 2013). SD stands for “sustainable development”

The framework (Figure 3) is very detailed about every aspect, covering many issues that are not relevant for SMEs. Moreover, the framework seems to be more focused on the suggestions for the development of SSCM rather than the analysis of it. While it can be used for both purposes, the level of complexity it provides is not needed when analyzing case companies. This framework will not be considered when developing a framework for the analysis of SMEs. At the same time, some ideas, expressed in the lower detailed tiers of the framework can be applied when making suggestions for further sustainable development of SMEs.

3.1.3 Closed-loop Supply Chain

Defee, Esper and Mollenkopf (2009) introduce the idea of closed-loop supply chains. The concept of a closed loop supply chain implies consideration of both forward and reverse supply chains and “the need to integrate both strategic and operational decisions” across those chains (Defee et al., 2009).

Closed loop supply chain (CLSC) is an interesting concept, it stresses the increasing importance of reverse logistics. At the same time, CLSC perspective is not relevant when analyzing the sustainable development of SMEs. Therefore, this approach cannot be applied in the analysis framework. Nevertheless, CLSC is the idea that potentially could be suggested for future implementations for the model of sustainable development. While it is possible, CLSC will gain popularity, it is still doubtful that this initiative should be suggested to SMEs. As “CLSC management requires the presence and support of multiple organizations across the supply chain, leadership is also required from the acknowledged supply chain leader firm that is attempting to drive the changes throughout the supply chain” (Defee et al., 2009). SMEs are unlikely to be the leading firm in the supply chain, therefore it is unlikely that an SME will initiate such a large process of change.

3.1.4 The Sustainable Scanning Framework

Fabbe-Costes, Roussat and Colin (2011) develop a scanning approach for a sustainable supply chain (Figure 4). The authors suggest a scanning framework that provides “a wide, multi-level, scanning scope and suggest that “sustainable scanning” cannot rely on a single organization given that it has proved necessary to scan it at network level with a supply chain orientation” (Fabbe-Costes et al., 2011).

The sustainable scanning framework (Figure 4) starts from the individual (people) level. This level focuses on SC managers and can be associated with leadership (in either firm, chain or network) and promotion of new ideas, frameworks or experiences that further contribute to change at all levels. Function level comes next (Figure 4). It includes technologies (such as recycling or alternative distribution models) and technical innovations in logistics or manufacturing. Firm level comes after function level (Figure 4). It reflects the level of company’s development in terms of logistics, SCM and sustainable development thinking. It also includes the firm level strategies towards sustainable development as well as the attitudes towards specific aspects of sustainability (CO2 emissions reduction for example), willingness to introduce new technologies or tools for further analysis related to sustainable development. Chain level follows the firm level (Figure 4), focusing on both the partner and competitor chains’ strategies. This level can be associated with various activities in the scope of a supply chain: information sharing aiming to improve sustainability, partnerships to develop common sustainable solutions, appliance of information systems and other issues. Network level stands above the chain level (Figure 4). It can be the “industry” or “cross-industry” level where the collective development of labels, standards and norms takes

place. This level includes such issues as private sector initiatives for self-regulation, partnerships to develop common sustainable solutions, and pioneering experiences.

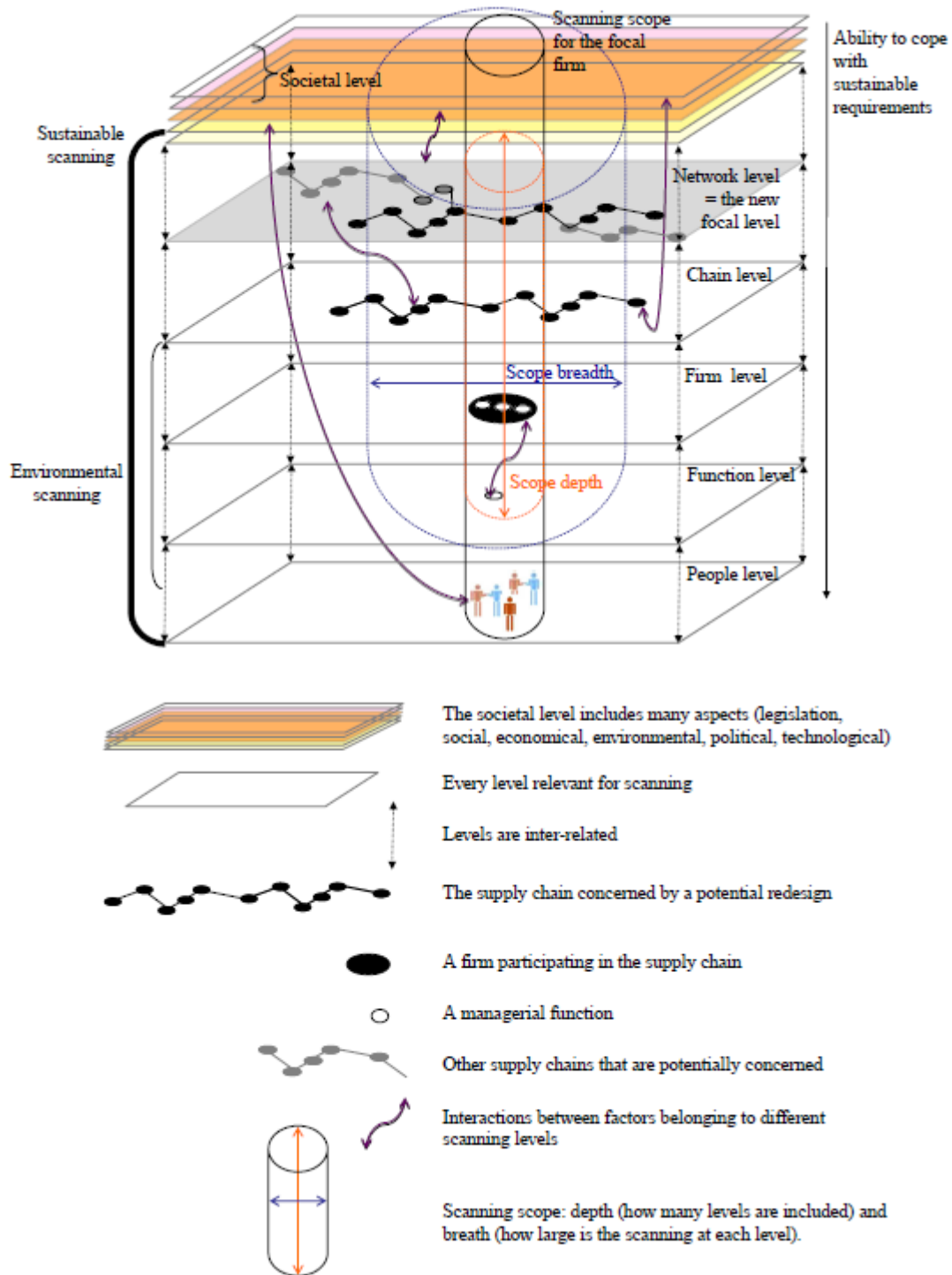


Figure 4. The sustainable scanning framework (Fabbe-Costes et al., 2011).

Finally, the top level is societal level (Figure 4). It includes legal, social, economic, environmental, political and technological aspects. Being the highest and the broadest level, societal level embraces the whole world, including in it the level of local

governments as well as higher tiers of international organization – regional (European as an example) and international regulations.

The scope of the framework (Figure 4) starts from the people level and expands outwards with every level, reaching the broadest stance at the societal level. All the levels in the framework are inter-related. As it is concluded by the authors of the framework from their field materials analysis, there is a “need to combine multi-level inter-related analyses, considering potential developments, evolutions, changes and/or innovations” (Fabbe-Costes et al., 2011).

The sustainable scanning framework (Figure 4) provides a very detailed and concise guide for the analysis at any desired level. Its “modularity” makes it possible to stop at a specific level and not go further. This framework can be very useful when analyzing the case companies. Some of the levels will not be analyzed as those levels pertain to large companies. Several of its levels, namely firm level, function level and to some extent, the people and chain level will be very useful. Sustainable scanning framework (Figure 4) nevertheless is a little too broad. While it does cover all the important issues, it has many levels that at this point will be irrelevant for this particular study. A specific framework for the analysis of SMEs is needed.

As the current frameworks have been reviewed, a closer look at the current environment can be taken. It can be viewed as a “foundation” for future suggestions on the development of sustainable practices in SMEs. Below, an overview of the current environment is provided.

3.2 Sustainability today

Sustainable ideas show an increasing popularity in the academic and business world. In the last few years, there has been a growing understanding of the need for symbiotic development of the economy, society and environment, a practice that is known as "sustainable development" (Anninos and Chytiris, 2012). Sustainability gains more importance in supply chains, especially in the supply chains of highly competitive industries (Flint and Golicic, 2009). Organizations now face the challenge to be economically successful and at the same time to answer the requirements of society and environment (Defee et al., 2009). Environmental aspects can be sources of either risks or opportunities and they can make a significant impact on the business (Savitz, 2013). In the logistics academic literature, the studies of sustainability rose from 0% in the 1991-2000 period to 25 % in 2001-2010 period (Carter and Easton, 2011).

Nowadays, three megatrends stimulate the need for sustainable development, declining resources, radical transparency and increasing expectations. These trends become a significant market force that alters competition (Lazlo and Zhexembaeva, 2011). Declining resources provide a new view of competitive advantage: security of the value chain and the ability to innovate in order to be less dependent on a particular resource. Radical transparency is another factor that influences business environment. It became increasingly important with the development of the civil sector and information technology. “To maintain legitimacy and build reputation, therefore, companies may need to open their operations to greater public scrutiny” (Carter and Rogers, 2008). It may be either an opportunity or a threat, depending on the attitude of the business towards this trend. Increasing expectations mean new pressure from various stakeholders, which can be a chance for profit and growth (Lazlo and Zhexembaeva, 2011).

3.3 Strategic implications

This part of the literature review covers ideas that can be useful for the development of sustainable strategies in logistic SMEs. Even though the ideas presented below are not directly connected to one another, they all serve the same purpose of integrating sustainability in the SMEs’ strategy.

Morana (2013) stresses the importance of inter-organizational connections, which are part of SSCM, as they mean the increase in efficiency on the one hand and better communication of sustainable initiatives on the other hand.

Another suggestion in relation to SSCM is strategic management of transport and of logistics providers. It involves the management of the vehicles themselves, which is significant when reforming organization in a more sustainable, efficient and eco-friendly manner. The management of logistics providers can range from increased communication to steps that are more specific. These can be discussing emissions and putting sustainable requirements in the contracts with LSPs. (Morana, 2013)

Using previously accumulated knowledge can be quite helpful. While this approach can be applied to different spheres of business, this study will focus on sustainable practices. One example that is given by Cuthbertson et al. (2011) relates to truck loading. If the transportation is done by the road transport, it is likely to be a source of pollution. To reduce the amount of pollution the author suggests packing a vehicle more densely, which “can reduce both congestion and pollution”, contributing to a more sustainable

supply chain (Cetinkaya et al, 2011, p.3). That particular practice can be one example that many SMEs can consider. Cuthbertson et al. (2011) further notes that “best practices are both relative and transitory”. So, it should be kept in mind that those practices are just good for some particular period of time, but that does not necessarily mean that the same practices are universally good all the time and can be applied in every situation the same way. They are “best” only at one specific moment. While not universal, they still can be learned from and the process of learning from best practices can help SMEs in logistics to become more sustainable. The importance of “best practices” is further noted by Fabbe-Costes et al. (2011) discussing the need to pay attention to untraditional factors related to SCM and networking issues.

Cetinkaya (2011) adds that a company cannot only learn from the best practices of the others, but it can also learn from the “worse” ones. Learning from failed cases can be as important as learning from the successful ones. Moreover, it helps to learn from the past, even if the past is not ideal.

Introduction of Environmental Management System (EMS) is suggested by Morana (2013) as part of the eco design approach. The aim of the system is to “develop and implement [...] environmental policy and manage [...] environmental aspects”. The system is thought to provide the company with both internal and external advantages. The internal ones include rationalization of production/reduction of costs, respect of environmental laws/legal security, technological innovations/pollution prevention and motivation of collaborators. The external ones are improved competitiveness/competitive advantage, better image in the eyes of the customers and the public, better relations with the authorities, greater transparency to shareholders, banks, insurers, etc. As far as SMEs are concerned, however, it may not always be reasonable to implement the system. As Morana mentions in the discussion of EMS “it is not appropriate for SMEs/SMIs” (Morana, 2013, p.61). Nevertheless, the idea of introducing EMS in SMEs should not be completely discarded: technology develops quite fast nowadays, it gets easier and cheaper and perhaps soon, even SMEs will be able to benefit from an EMS, provided they need those systems.

Eco design approach deals furthermore with the recycling of vehicles. This part may be significant for those SMEs that own trucks, while for the rest it may not be as valuable. In September 2000, EC directive 2000/53/EC on end-of-life vehicles (ELV) set the objectives to be achieved by 1 September 2015. The obligations include: “to reuse and draw value from at least 95% of vehicle parts (in terms of average weight per vehicle

per year); to reuse and recycle at least 85% of the vehicles” (Morana, 2013, p.61). With those directions in mind, it makes sense to the owners of the vehicles to start planning their future purchasing decisions. Aiming for a more recyclable vehicle will mean several advantages, including:

- Proactive approach towards regulating;
- Reduction of costs through recycling;
- Possible competitive advantage and benefit in stakeholder/partner relationship.

Green transport is another part of SSCM described by Morana (2013). The idea behind green transport is to use different means of transportation to minimize harm to the environment by applying the principles of multimodality. For example, using railroad when possible over trucks or planes can help to reduce pollution significantly (Morana, 2013). Morana (2013) mentions last-mile logistics within the context of green transport. However, since companies in this research are not directly involved in the last-mile logistics, it is considered out of scope.

As some measures may take time and money to implement, waiting for the result for too long may discourage all the stakeholders (mainly employees of the company and probably company partners) from further progress. However, sustainability strategy implementation can start from short-term goals and measures. These “easy victories” will demonstrate the progress and encourage further changes (Cetinkaya et al., 2011, p.66). It is important not to set too ambitious goals and be realistic – that way moments of discouragement can be avoided, as more goals will be likely to be met and the whole strategy implementation will go more smoothly.

Innovations (especially disruptive) can be a factor that either improves or hurts the performance of the company (Lazlo and Zhexembaeva, 2011; Christopher, 2011). Radical innovation, which is one of the seven sources of business value described by Lazlo and Zhexembaeva (2011), can be good as a mindset when applying sustainability initiatives. For instance switching from trucks to railroad can be an example of radical change aimed at reducing environmental impact that can also bring value to the company if planned and managed well. Another example of the radical innovation approach is the Swedish company Movebybike. This firm arranges transportation of cargo of up to 300 kg by bikes. It is eco-friendly, fast (since the transportation takes place in urban environment) and cheap. The services of the company became increasingly popular, giving it opportunity to expand from Malmo to Stockholm and

Gothenburg (<http://www.movebybike.se/sv/Boka>; Movebybike social network coverage, [30.03.2014]). Furthermore, radical innovation as the mindset means flexibility, openness to new ideas, willingness to implement new changes, to move further. This fits well with embedding sustainability into core activities of the company.

Sustainable practices can contribute to risk reduction. Addressing long-term sustainability issues (scarcity of resources, fluctuations of energy costs) companies better manage these risks. Furthermore, proactive adaptation of sustainable initiatives can help with management of new costly regulations (Carter and Rogers, 2008).

Being sustainable implies being able to improve safety and ecology standards, which can include using safer vehicles, using more ecological types of fuel or having a requirement for the vehicles to reduce emissions stated in the contract. That will help to address possible risks, such as certain dangerous situations that arise during the transportation (due to the age or poor value of the vehicles used) or new requirements from the government, which the company will be likely to answer already owing to its proactive approach.

3.4 Management, legal initiatives

The large increase in the concentration of greenhouse gases (GHGs) in the atmosphere is now acknowledged as one of the main sources of global warming. "Among these GHGs, carbon dioxide is the most important and arises mainly from the combustion of fossil fuels" (Crocchi et al., 2011).

In order to evaluate GHG emissions, several approaches can be used. Below are some of the approaches that Morana mentions in the book Sustainable Supply Chain Management:

- Accounting with IAS-IFRS standards;
- Global Reporting Initiative (GRI);

IAS-IFRS represents IAS – International Accounting Standards or IFRS – International Financial Reporting Standards, which are generally combined under IAS-IFRS term. It was introduced in 1973. The environmental data is consolidated based on “entities integrated globally and proportionally” (Morana, 2013, p.99).

GRI emerged in the US in 1997 at the initiative of the “United Nations Environment Programme” (UNEP). The initiative focuses on “the concepts of control and notable

influence and/or concept of significant impact on the environment” (Morana, 2013, p.100).

Cetinkaya (2011) stresses the significance of measuring emissions, stating that “when analyzing company impact there is a need to look how company activities influence the environment”. According to Cetinkaya (2011), CO₂ measurement is at the development stage. Measuring CO₂ emissions cannot only be done by the companies – it can be included in the contracts and in that way “legally bind” this sustainability initiative. Bjorklund and Forslund (2013) studied that topic in the paper “The inclusion of environmental performance in transport contracts”. According to Bjorklund’s and Forslund’s (2013) findings, firms that include environmental performance in the contracts do not necessarily think how to measure the environmental performance and how to address non-compliance issues. CO₂ emissions and energy use are two most common performance metrics in the contracts. A higher degree of the involvement of the managers of the company tends to lead to higher inclusion of environmental performance. Findings also indicate that transportation managers play a significant role in inclusion of environmental performance in the contracts” (Bjorklund and Forslund, 2013, p.214). According to studies of Bjorklund and Forslund (2013), 50 percent of the 103 shippers that participated in the research include environmental aspects in the contracts, 13 per cent include how to measure them and 2 per cent discuss the handling non-compliance (Bjorklund and Forslund, 2013, p.217).

Globally, there is a rising adoption of stronger environmental legislation, environmental management and reporting standards (Owen, 2013). Businesses face other challenges such as legal environmental demands and regulations and new standards and reporting requirements (Wittstruck and Teuteberg, 2012). Environmentally friendly development of the company can be further enhanced by applying or answering the requirements of different standards. Satisfying the requirements for a certain standards can be proof for external stakeholders that the company shares concern for the environment. Internally it may mean successful implementation of the initiatives of sustainable development. Below several such standards will be mentioned and briefly discussed.

The ISO 14000 standard deals with certification of environmental management. One of the standards here for example is ISO 14001 of 2004, which provides the requirements for EMS. Morana provides a brief overview of certification by this standard globally, mentioning that “at the end of December 2011, at least 267 457 ISO 14001 certification has been awarded in 158 countries, which represents two additional

countries and 15 909 additional certifications (+6%) in relation to the previous year” (Morana, 2013, p. 87).

EMAS (Eco Management and Audit Scheme) is a programme set by the European Commission. The regulation helps to evaluate the environmental performance of the firm. Additionally, it can help to improve that performance. If the company is certified by ISO-14001, it can be given an EMAS certification, if it publishes an environmental declaration in line with EMAS criteria (Morana, 2013, p.93).

3.5 Management, operational initiatives

This part focuses on the operational part of managerial implications. Communication can be perceived as part of the strategy and part of the management. As more and more supply chains will be reorganized in a sustainable manner, it can be a strategically important aspect and the unit that will deal with will not be an individual company, but instead a network of firms (Fabbe-Costes et al., 2011). Networks that apply SSCM principles and can communicate them to their customers have higher chances of retaining those customers (Wittstruck and Teuteberg, 2012). Communication is important in the managerial sense too. Yee (2013) notes that “to achieve supply chain profitability, all the supply chain members should work together using close and effective information sharing”. Fabbe-Costes et al. (2011) further adds that sustainable development issues cannot be solved at the level of an individual company; it requires a cooperation between supply chain members as well as other stakeholders of the network such as regulatory bodies for example. Communication is an important aspect in developing that cooperation. It can be concluded that effective communication is crucial at every stage of sustainable development, from the very beginning.

In order to function better, these ideas can benefit from a developed information system (IS). An IS can be viewed as “an organized set of resources: hardware, software, HR, data and procedures, to acquire, process, store and communicate information (in the form of data, texts, images, sounds, etc.) in organizations” (Morana, 2013, p.44). Information and communication technologies (ICT) can provide better communication. Generally, ICT is likely to improve communication in the supply chain, further contributing to the efficiency and in that way having an opportunity to contribute to sustainable development as a whole. More specifically, such systems as ERP (Enterprise Resource Planning) and CRM (Customer Relationship Management) can make a significant impact on optimization. CRM for instance can: 1) reduce the number of people needed – therefore reducing costs and allowing more resources to be spent on

sustainable development 2) dramatically reduce the amount of paper used, digitalizing data and contributing to “greener” use of the resources.

Another important managerial aspect is resource management. Reduction of resources and waste is a significant part of the sustainable development for SCs nowadays (Defee et al., 2009). Resource management can be crucial for any firm that aims at sustainable and efficient development. In the context of SMEs it can also be a good starting point from the operations perspective: every company uses some common minimum of resources such as electricity or paper. Initiating saving practices, even with minimum of resources can bring positive results.

Transport pooling is another managerial implication that can be beneficial for SMEs. It can be perceived as the efficient management of the available resources. It is described as “a type of inter-company collaboration characterized by a pooling of resources between two or more actors (who may or may not be competitors) with the aim of better rationalization of transport flows. By rationalization of transport flows, we mean any means (economic, technological, human, organizational, etc.) by which one can improve the delivery of a good or service to the point of its final consumption” (Morana, 2013, p.33).

4. FRAMEWORK

Applying information from the literature review, this section will provide a framework for analysis of the case companies. Framework will be constructed with the qualitative nature of the companies' studies in mind. Each section of the framework will be discussed separately and then a combined representation will be provided.

The framework focuses on the analysis of small and medium companies in logistics only regarding sustainable practices. The framework applies the ideas from previous frameworks on the subject of sustainable development, namely Sustainable Supply Chain Management Framework (Carter and Rogers, 2008) and The Sustainable Scanning Framework (Fabbe-Costes et al., 2011).

Creating a separate framework for this case study is justified by the lack of the framework targeted specifically at small and medium enterprises in general and in the logistics area. While Fabbe-Costes et al. (2011) provide a very holistic, detailed framework that can be applied for SMEs, it implies that the company has already developed some sustainable initiatives and can benefit from the analysis of all the layers presented. SMEs in question may not have many sustainable initiatives present, therefore some levels such as network level or societal level that are included in the sustainable scanning framework will not bring much benefit for the research. Sustainable Supply Chain Management Framework by Carter and Rogers (2008) seems to be too general for the specific need of the analysis of the SME in logistics. Due to the reasons above a new rather simple framework will be created. Elements of previous frameworks will be present in this framework.

In the literature review, Fabbe-Costes et al. (2011) suggested that the sustainable scanning framework should not be used at the level of the individual company. My framework, however, will be using an individual company as the most focused unit. That is due to the size of the companies in study: three out of four have less than five people working in the companies; that issue may also potentially mean that some levels will overlap: if two people work in the firm, people and firm level can be very close. Moreover, the sustainable initiatives are unlikely to be highly developed (based on the experience of the company I work in). All those issues contribute to the decision to use firm as the central focus.

4.1 Vision

Vision in this framework refers to the vision of sustainability by SMEs. It implies the understanding of sustainability by the companies, interpretation of this term with relation to the business of the company. Vision shows how firms see sustainability and whether or not they define this term in some specific way. Fabbe-Costes et al. (2011) note vision as a significant driver for innovation. Vision analysis will contribute to positioning of the case companies based on their view of sustainability.

Vision is unique for this framework, it is not used specifically in the two frameworks mentioned above - Carter and Rogers (2008) and Fabbe-Costes et al. (2011).

4.2 Strategy

Strategy is the plans companies have in regard to sustainability and sustainable development. Together with the vision, strategy adds the information about companies' perspectives of sustainability. Strategy allows case companies to understand what steps should be taken in the sustainable direction and how they plan to develop sustainable aspects in their business. Strategy part aims to study specific ideas and aims that the companies have in relation to sustainability. It also aims to see the "big picture" of sustainable development in the SMEs.

Strategy has elements described in Carter's and Rogers' (2008) SSCM framework: the relation (or lack of it) of sustainability strategy and overall corporate strategy is analyzed. Strategy aspects also covers the firm level of sustainable scanning framework. It targets individual strategy of the companies: "resources, competences, and activities development aiming at improving supply chain sustainability" (Fabbe-Costes et al., 2011).

4.3 Management

Management includes the analysis of two types of initiatives: operational and legal. Legal initiatives refer to the contracts that companies make as well as the regulations they follow. The aim of the legal initiatives analysis is to see how (and if) sustainability is included in the contracts, are there any regulations or standards that companies require or answer themselves; how that relates to the vision and the strategy of the company. Operational initiatives attempt to analyze what actions are taken on the operational level to be sustainable, how the sustainability strategy is executed.

Management aspects partly relate to the function level of the sustainable scanning framework (Fabbe-Costes et al., 2011). As the function level of sustainable scanning

framework, management aspects focus on technologies (such as recycling), technical innovations in logistics or manufacturing and management of the firm's resources. It also includes some of aspects mentioned in the firm level of the sustainable scanning framework such as attitudes regarding the demands of sustainability (CO2 emissions reduction for example) (Fabbe-Costes et al., 2011).

4.4 Integrated Framework

The framework below in figure 5 is based on the elements discussed earlier. It aims to be a tool in the analysis of the case companies, to assist in collecting the data that will provide the holistic view of the firms' vision of sustainability as well as the actions taken by the firms to be sustainable. Building on the information received from the framework a model suggesting sustainable development for SMEs in logistics will be created.

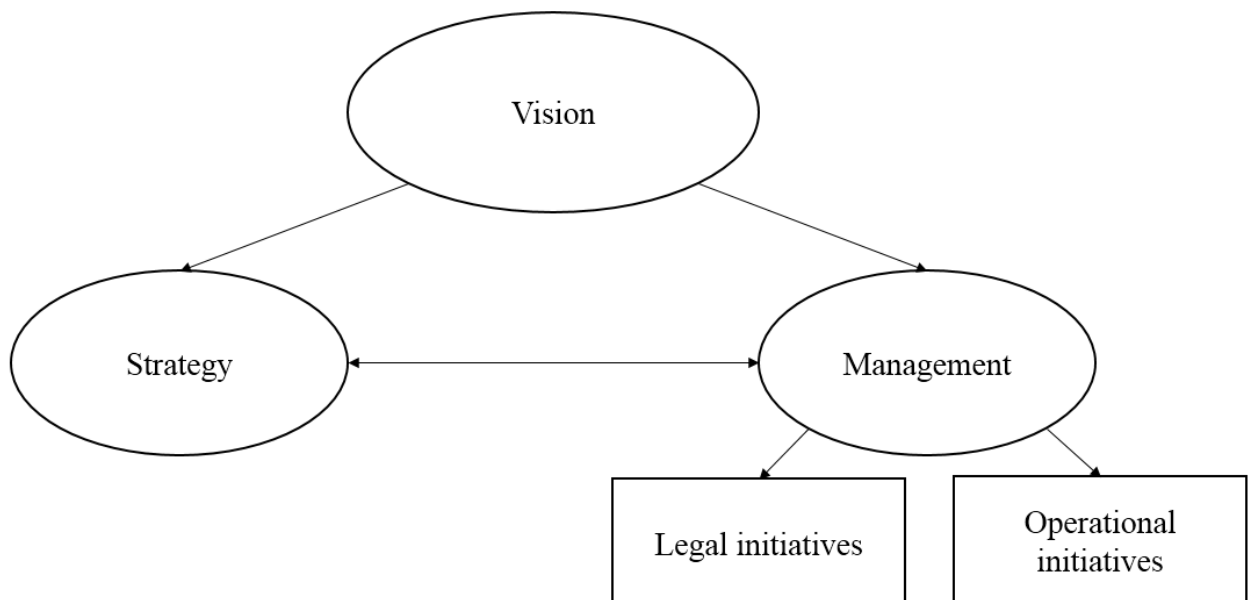


Figure 5. Framework for analysis of the SMEs in logistics regarding sustainable development.

The framework was developed to analyze four case companies. The framework targets SMEs in the logistics industry. It is hoped that this framework can be used beyond this study: firstly, applied to other SMEs in the logistics area and, secondly, applied to the SMEs in other industries.

5. ANALYSIS AND DISCUSSION

This section discusses the answers to the research questions, with the theoretical framework taken into consideration. Logistics service providers that took part in the research were small and medium businesses. Even though they are a small sample of the population, my conclusions will be based on this sample. Therefore, since the focus of my study is small and medium sized companies, by LSPs I will mean LSPs of small and medium size.

5.1 Companies in a nutshell

Four companies have participated in the study: Finn-Realty Oy, Solid Way Oy, Avangard Direct LLC and NMD Freight Partners Oy.

5.1.1 Finn-Realty Oy

Finn-Realty Oy is a very small firm. Currently it has two employees and one trainee. Its turnover for 2012 was 301 000 Euros. Finn-Realty provides services in freight forwarding, warehousing and transportation. (Appendix 3) It does not own any trucks but outsources that to the transportation companies when needed. It is located in Helsinki.

The company operates globally; however, its major market is the Russian Federation. Below is the distribution of clients according to the CEO of Finn-Realty Oy (Appendix 3):

- Russia - 80%
- Finland - 15%
- Europe - 5%

5.1.2 Solid-Way Oy

Solid-Way Oy is a similar company, located in Kotka. The personnel is three people and the turnover was 2 000 000 Euros in 2012. Solid Way, according the owner and CEO of the company, provides the following types of services to its customers “air and sea freight, transportation by road, groupage cargo, transit declarations, export declarations, provision of CMR/TIR documents.” Solid Way does not own any vehicles. (Appendix 2)

5.1.3 NMD Freight Partners Oy

NMD Freight Partners Oy is a company located in Kouvola. It is a small firm with two people working in it. The turnover for 2012 was 1315000 Euros (NMD Freight Oy –

Commercial Search, [01.03.2014]). The company focuses on railroad transportation and owns over 90 train cars to conduct its operations. Furthermore, NMD Freight Partners does door to door delivery and customs clearance. (Appendix 4)

5.1.4 Avangard Direct LLC

Avangard Direct LLC is a medium-sized Russian company that conducts business globally, with Finland being one of the important countries. The personnel is 90 people (Appendix 5). The turnover of the company was not revealed. Avangard Direct offers customers full management of their supply chain, plus such services as customs clearance. Avangard Direct uses the services of third party logistics in its operations.

5.2 Vision of sustainability

Generally, few LSPs are acquainted with the term sustainability. While there are sustainable initiatives present, the exact term “sustainability” is not applied. The concept of sustainability was new to most of the interviewees and therefore it was not possible to get the full perspective the companies had on sustainability. However, it became obvious from the interviews that for now, the most significant aspect of sustainability that companies consider is ecology. This reflects the ideas discussed in the literature review of managers and researchers using terms “environment” and “sustainability” interchangeably (Craig and Easton, 2011). This also proves the point mentioned by Craig and Easton (2011) regarding that misunderstanding being widely spread during the early stages of sustainability conceptualization. Being green, whether or not it is part of the company practice, is associated with being sustainable. In order to make it more visible as well as to allow cross-company comparison, a table was made to compare the vision of sustainability of four case companies (Table 2).

Table 2. Vision of sustainability by case companies

Finn-Realty Oy	Solid Way Oy	NMD Freight Oy	Avangard-Direct LLC
Sustainability is acknowledged, however, it is not focused. No definition or discussion of sustainability /	No focus on sustainability. Sustainability is not given any attention.	Sustainability vision is present, however, it is not yet at the point where that vision is embedded into a specific sustainability	No focus on sustainability. The term sustainability as well as the idea of sustainable development are not part of the focus.

sustainable development is present.		strategy.	However, the idea of getting there in the future was mentioned.
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(Appendices 2-5)

Most of the companies that were studied did not have their own fleet of vehicles and used third party logistics companies for the transportation services. The only exception was the firm that focused on railway transportation, NMD Freight Partners Oy. However, even that firm only owned train cars and not the locomotives themselves. That fact directly affected LSPs' vision of sustainability. The companies do not influence the ecology directly by themselves, as they use third parties to organize the transportation, hence, they leave sustainability questions open for third party companies that take care of the transportation. As several interviewees mentioned, if there were no regulations regarding some particular issues such as gas emissions or the required standards for the trucks (like Euro – 5 class for instance) (Appendix 2), they lacked the incentives to add those extra requirements by themselves. As it was explained the reason for that lay in the economic factors: some SMEs are still recovering from the economic stagnation of the last years and do not have extra money to invest into sustainability (Appendices 2,3). Moreover, some of the interviewees mentioned that they had to work with companies that were available on the market and did not have the luxury to be very choosy (Appendix 2). It can be noted that management of resources, mentioned in the literature review under managerial suggestions, should become very important for the SMEs if they choose to move into a sustainable direction. Companies have limited resources and they will benefit greatly from efficient management of those resources.

Clients of LSPs have also made an impact on the companies' vision of sustainability. In the table below (Table 3), clients of the four companies are compared. In three of the four companies interviewed, there is little interest on the client's side towards sustainability (Table 3, Appendices 2-5).

Table 3. Case companies clients' perspective/requirements on sustainability.

Company name	Sustainable requirements present	Clients' view/requirements on sustainability
Finn-Realty Oy	No	Only present in the context of concern for safety when transporting ADR cargo. Otherwise, clients have not expressed any views on sustainable development.
Solid Way Oy	No	None of the clients expressed any concerns regarding sustainability.
NMD Freight Oy	Yes	Due to specifics of the company (operating the fleet of train cars), there are no direct ecology-related requirements. Nevertheless, all the transportation units (train cars) answer to the standards from the assembling factory perspective. Eco standards: ISO 9001, ISO 14001, OHSAS 18001 and some others are required by the clients and NMD Freight Partners Oy only works with the firms that can provide those.
Avangard-Direct LLC	No	No real requirements from the clients regarding sustainability. The only possible scenario mentioned was "safety issues" when transporting dangerous cargo.

(Appendices 2-5)

Nevertheless, there is an example of NMD Freight Oy (Table 3), which is required by its customers and in turn requires its partners to answer some eco standards like ISO. This proves the literature review that businesses increasingly face new environmental demands and regulations, new standards and reporting requirements (Wittstruck and Teuteberg, 2012). The lack of interest on the client's side towards sustainability may be not true for the whole population and this particular sample can bring biased data. The Russian Federation plays a significant role in their businesses for all four companies. "Local dimensions are to be considered as a regional effect should be expected as a

result of the different levels of environmental laws and environmental awareness of local consumers and business managers” (Fabbe-Costes et al., 2011). This statement can be illustrated by the examples of the case companies (Table 4).

Table 4. Companies partners’ geographical location

Company name	Europe/ World	Russia
Finn-Realty Oy	Yes (approx. 20%)	Yes (approx. 80%)
Solid Way Oy	No data	Yes (most of the clients)
NMD Freight Oy	Yes (large multinationals)	Yes
Avangard-Direct LLC	No data	Yes

(Appendices 2-5)

Several interviewees stated that Russian customers are not particularly interested in sustainability initiatives as they assume it does not bring benefit. In Russia, according to the people interviewed there is generally no culture of sustainability-promotion. This may be partly due to the government position regarding sustainability. There are some significant international agreements that Russia has signed, such as Kyoto Protocol. However, since 2012 Russia has not set up any new targets for emissions (Doha amendment to the Kyoto Protocol, [25.02.2014]). On the legislative level, there are also various initiatives. For instance, Federal Law regarding the protection of air in the atmosphere, dated second of April 1999 states that “transport vehicles that negatively affect the quality of air in the atmosphere are to be checked on regular basis to comply with the current norms for the emissions in the way that is established by the Government of the Russian Federation”. Federation of American scientists (1999) mentions in its paper “The Environmental Outlook in Russia” that “Russia has a comprehensive legal and regulatory framework in the environmental area, but government institutions responsible for environmental protection lack the authority and capability to enforce legislation”. Based on the info above as well as on personal experience as a Russian citizen, I can conclude that currently sustainability is not very popular in Russia. Large Russian multinationals like Gazprom (www.gazprom.com, [05.03.2014]) do have precise and detailed sustainability strategies, but as far as small and medium enterprises are concerned, many of them are not familiar with the term.

Sustainability for now is more influenced by external factors, rather than internally from the country. As long as there is no concern and pressure from the stakeholders on the businesses to be sustainable, sustainability will continue to be affected mostly by external factors.

In order to finalize the vision of the sustainability part, the analysis of the case companies' perspectives on what their clients expect and why their clients choose them. What the most important features for the client when choosing a company are. While it does not focus solely on sustainability issues, it allows to view sustainability in the context of other issues and to see the current priorities that the clients have according to the SMEs that participated in the study.

Four companies that participated in the interviews were asked questions about the reasons for their clients to choose them, what priorities and to which degree of importance. Results are shown in the Table 5. Table 5 uses the scale from zero to seven, with zero meaning the question is irrelevant, one meaning the lowest amount of agreement (e.g. completely disagree) and seven meaning the highest amount of agreement (e.g. totally agree).

Table 5. Reasons for customers to choose your company. (Scale: 1=not significant, 7=very significant, 0 = not relevant)

Reasons for customers to choose your company	Companies						
	Finn-Realty	Solid Way	NMD Freight	Avangard	Average	Min	Max
Infrastructure	1,00	4,00	0,00	7,00	3,00	0,00	7,00
Costs	7,00	7,00	7,00	7,00	7,00	7,00	7,00
Time constraints	7,00	6,00	4,00	6,00	5,75	4,00	7,00
Environmental issues	4,00	1,00	3,00	2,00	2,50	1,00	4,00
Flexibility	7,00	6,00	7,00	7,00	6,75	6,00	7,00
Reliability	7,00	7,00	7,00	7,00	7,00	7,00	7,00
Geographic coverage	7,00	6,00	4,00	6,00	5,75	4,00	7,00
Easiness for customers to use	7,00	6,00	7,00	7,00	6,75	6,00	7,00

(Appendices 2-5)

To better illustrate the difference in the minimum and maximum values, a separate graph with those values was made (Figure 6). Horizontal numbers represent the reasons

with one being "infrastructure", two being "costs" and so on with the eight being "easiness for customers to use".

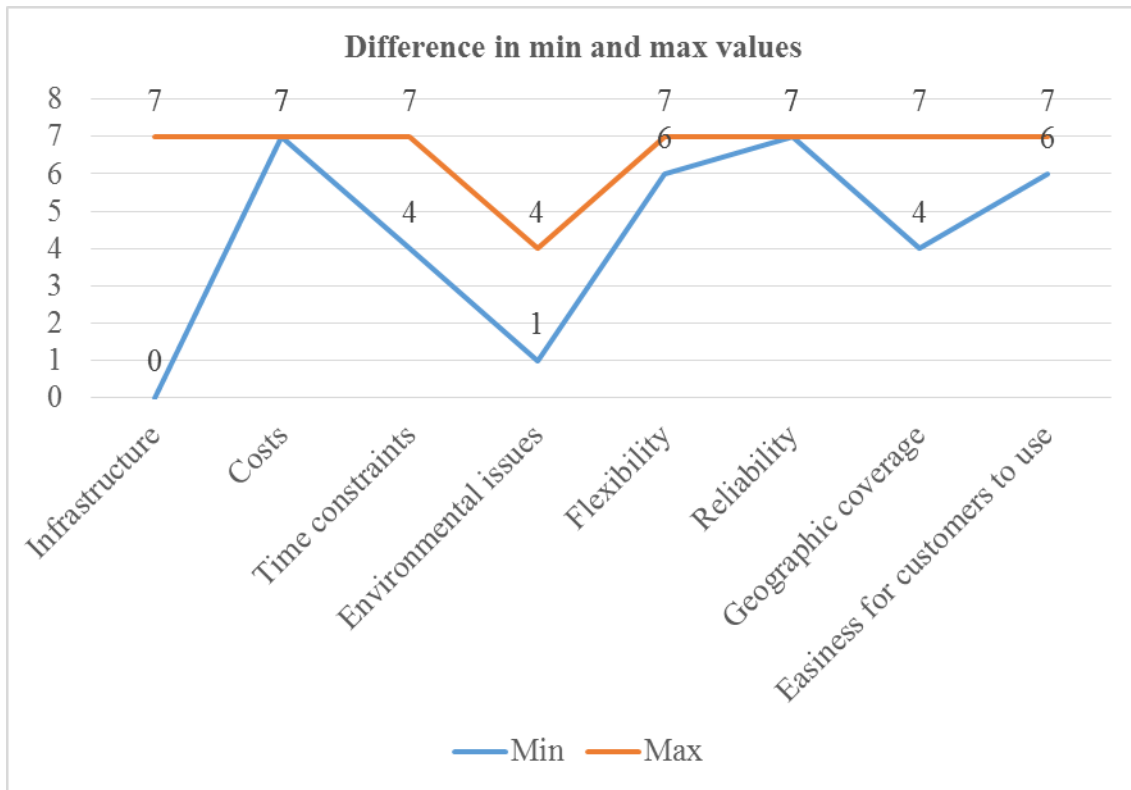


Figure 6. Difference in the minimum and maximum values (based on Table 5)

Cost and reliability were the two characteristics that received the highest scores: both in relative comparison and in absolute comparison, they were the two characteristics with minimum and maximum equal to seven – the maximum score (Figure 6). That means that businesses that participated in the interviews believe that their customers most of all are interested in reliable partners and low prices. It also means that sustainability has to be profitable for the SMEs to consider implementing sustainable development. Therefore, the emphasis should be on those practices that will help to reduce the costs of business and the result of which can be felt soon after implementation. For example, energy saving is one of such practices that can serve as a “foundation” for further sustainable development. As for reliability, sustainable practices imply the focus on safety, which is a synonym to reliability. At the same time, flexibility and easiness for customers to use also scored high: the average being 6,75 and the minimum and maximum being six and seven respectively for both (Figure 6). This is logical since most of the customers outsource logistics to LSPs, they want it to be as easy as possible, and at the same time, and they want it to be flexible if there are any changes to the plan. Time constraints and geographic coverage scored reasonably high. The average was

close to six: 5,75 (Figure 6). At the same time, the minimum was equal to four, which means that time constraints and geographic coverage are not always number one concern. What does that imply according to sustainability? It might be possible and acceptable for the clients (at least to a certain percent of the clients) to choose a longer but more environmentally friendly route. As time is not always the issue, railroads for instance could be used more extensively. In addition, different planning practices can be introduced that will aim for a higher truckload and more efficient use of one truck (loading it both ways, from point A to point B and from point B to point A). Infrastructure did not score high (Figure 6). One of the reasons can be differences in interpreting the term. If by infrastructure the quality of such pieces of infrastructure as roads was understood, then companies (that are mostly LSPs) are not affecting it in any case, hence their customers do not relate the quality of infrastructure to the LSPs. If by infrastructure, it was meant the global coverage and the quality of that coverage, then there are several possible assumptions. One is that interviewees mentioned their views on that question in the “geographic coverage” part. Another is that they do not consider infrastructure important, as long as that infrastructure allows running flexible and inexpensive operations. That may indirectly show their possible attitude towards sustainability, which is likely to require modern infrastructure to be at maximum efficiency. It can be seen from an “environmental issues” average (Table 5), that sustainability at this point is not considered by SMEs in logistics industry important from the point of view of their customers. The average equals to 2,5. The minimum equals to one and the maximum given rating is four (Table 5). That proves that currently SMEs in logistics do not see a demand from their customers for sustainable practices. Nevertheless, by highlighting the significance of other characteristics such as cost and reliability, SMEs show that if sustainability can contribute to improving those characteristics, they are likely to start applying those practices.

To finalize those findings, another table was studied. Four characteristics were compared. Those characteristics were to be given a percentage that represented their importance from the perspective of the companies' customers when choosing a transportation solution. (Table 6)

Two things can be noticed from the averages. Price received the highest rating, proving again that cost is the most important determinant for choosing partners. Environmental effects came as the least important feature with only 2,1 per cent average. This contributes to the fact that environmental effects in general and CO2 emissions in

particular are not yet a popular issue among SMEs in logistics. Another two characteristics, which were “door to door transportation” and “pick-up and delivery within agreed time window” can be associated with comfort and customer focus. Those two scored average, being second in importance after the price. (Table 6)

Table 6. Divide 100 percent for the features below based on their importance when your company’s customer is choosing the transportation solution

Divide 100 percent for the features below based on their importance when your company's customer is choosing the transportation solution					
	Finn- Realty	Solid Way	NMD Freight	Avangard	Average
Price	50,0	40,0	80,0	35,0	51,3
Door to door transportation	20,0	30,0	2,5	25,0	19,4
Pick-up and delivery within agreed time window	30,0	29,0	15,0	35,0	27,3
Environmental effects (presented by CO2 emissions)	0,0	1,0	2,5	5,0	2,1
Sum	100,0	100,0	100,0	100,0	100,0

(Appendices 2-5)

5.3 Sustainable development strategy

Analysis of sustainability strategy was the second step in the review of the case companies. It was found out that LSPs did not have a well-defined vision of sustainability in the most cases. This affected strategy section. Table 7 illustrates this issue by comparing four case companies.

Table 7. Case companies' strategy regarding sustainability

Finn-Realty Oy	No specific sustainability strategy is present. Sustainable initiatives that are present are not following any pattern, being instead single independent actions.
Solid Way Oy	Sustainability is not present in any form in the strategy of the company.

NMD Freight Partners Oy	Sustainability name is not present on the strategy list, however, many strategic decisions are sustainable. Company constantly keeps the fleet of the cars new, contributing to safety and efficiency. The firm requires such certificates as ISO 9001, ISO 14001, and OHSAS 18001 from the companies it works with.
Avangard-Direct LLC	No sustainability strategy.

(Appendices 2-5)

None of the firms truly incorporates a dedicated sustainability strategy (Table 7). There are sustainable actions, however, those are not connected to any plan. They will be discussed in more detail in the management part of the analysis.

Currently small and medium enterprises in Finland (and partly Russia) in the logistics area seem to lack motivation for the sustainable development. Gaining such motivation can be achieved via two means:

- Demand for more sustainable practices from the clients;
- A clear indication of extra profits from choosing to go sustainable.

Interviewees from the case companies stated that currently most clients except for large multinationals do not require any form of sustainable practices from partners (Appendix 4). Demand from the clients is unlikely to be the main incentive in going sustainable and embedding sustainability in the firm’s operations. The extra profits on the other hand should be a strong incentive for all the SMEs to reconsider their approach towards sustainability. “Cost” and “level of service” are the top two characteristics that SMEs representatives outline as the most important for their clients. Cutting expenses and being able to offer compatible prices with the extra high quality (more sustainable, safer, and likely more efficient) should make companies reconsider their current approach towards sustainability and motivate them to start developing sustainable development strategies.

This study can be used as a starting point for the development of sustainability strategy, taking into consideration the model for sustainable development of SMEs.

5.4 Management / Execution

Management or execution of sustainable initiatives was another part of the framework for the analysis of the case companies. It was interesting to find out that while the firms lacked a clear, "institutionalized" vision of sustainability and did not have a clear strategy for sustainable development, there was a number of sustainable activities present. All the initiatives were divided into two groups:

- Legal. The aim of this part was to check how (and if) commitment to sustainable development is reflected in the contracts and generally the legal field of business of SMEs with their partners and clients.
- Operational. These initiatives included all sustainable actions the case companies mentioned in the interviews.

5.4.1 Legal initiatives

One aim was to see how sustainability is mentioned in the contracts. Are there any norms for emissions; are there other conditions that focus on sustainability and ecology; are there penalties for non-compliance and if so what are they. Three of the four interviewees stated that sustainability is not included in the contracts. For better visual representation, a table is provided below (Table 8).

Table 8. Sustainability in the contracts of case companies

Is sustainability included in the contract agreements?			
Finn-Realty Oy	Solid Way Oy	NMD Freight Oy	Avangard-Direct LLC
No, sustainability is not included.	No, sustainability is not included.	Yes, sustainability is included.	No, sustainability is not included.

(Appendices 2-5)

NMD Freight Partners Oy could not give out of the details, so it can only be mentioned that sustainability is included in the contracts for at least some of NMD Freight customers (Appendix 4). These findings can be compared to Bjorklund's and Forslund's (2013) findings mentioned in the literature review. According to Bjorklund and Forslund (2013), fifty percent of the shippers include environmental aspects in the contracts. In this study, only twenty-five percent of the sample included environmental aspects in the contracts. However, this may be different for the whole population as the

sample size was too small and too specific (with many companies having rather close ties to Russia). At the same time, these findings correspond to those of Wolf and Seuring (2010) who mention that the number of firms interested in the environmental aspects is still relatively small.

The results of the table (Table 8) regarding sustainability being included in the contracts can be illustrated by the part of the questionnaire case companies answered. Interviewees were asked to comment with "yes" and "no" answers on the list of requirements that either were or were not set in Request for Quotation (RFQ) of the companies' customers (Table 9).

Table 9. What requirements are set in your customers' RFQ

What requirements are set in your customers' Request for Quotation (RFQ)				
	Finn-Realty	Solid Way	NMD Freight	Avangard
Environment certification e.g. ISO 14001	No	No	Yes	No
Can offer intermodal transportation	Yes	Yes	Yes	Yes
Sustainability or environmental reporting	No	No	No	No
Use of other kinds of fuel than diesel, e.g. biofuel, gas	No	No	No	No
Use trucks with high environment class	No	No	No	No
Offering of eco services with smaller environmental loading	No	No	No	No
Other	No	No	No	No

(Appendices 2-5)

It can be noticed that intermodal transportation was the only requirement commonly shared by all four companies (Table 9). It is the requirement that is hardly connected to sustainable development, when compared to the other requirements in the list. Nevertheless, it is still valid. Moreover, multimodality, which was discussed in the literature review section, mentioned by Morana (2013) can be a starting point for the development of green transport. One company – NMD Freight Partners Oy had environment certification set in customers' RFQ (Table 9).

So, why do the companies not include sustainability in the contracts? I will describe and analyze the reasons that were stated for not including sustainability into contracts. One interviewee commented that “unfortunately, none of the clients have expressed any concerns regarding ecology so far. I think it is a big problem that in Russia nobody cares about environment”. Here are some more answers of one of the company representatives regarding adding sustainability into the contracts. “As far as the contracts are concerned, I guess my answer will be "no" for all of them (questions), as we don't have sustainability included in any form into the contracts... as I have mentioned before now it is not the best time to focus on ecology. Right now, we do not have anything like that. I do not know if we will. Perhaps when we increase the volumes” (Appendix 2). In my opinion, this attitude shows that SME representatives do not see all the possible benefits that sustainability initiatives can bring to them, to the LSPs (if transportation is further outsourced) and to their clients. By agreeing to reduce the amount of CO2 emissions, the firm has the opportunity to achieve two goals: invest in the value of its brand and reduce the cost of transportation (long term) by modifying the fuel or the means of transportation to answer the ecological requirements. At this moment, many SMEs do not include sustainability in the contracts (Table 8). It also seems in this case that the term sustainability was never mentioned by the clients and the interviewee has misinterpreted the term: when asked regarding sustainability in the contracts, the interviewee focused on ADR cargo example rather than CO2 emissions or other eco-friendly initiatives (Appendix 3). Most of the interviewees mentioned the lack of interest on the client’s side and lack of discussions with the client regarding sustainability to be included in the contracts.

Including sustainability in the contracts can be beneficial for SMEs. I will try to outline the reasons why sustainability should be included into the contracts by all the SMEs in logistics industry. If the current customers are not interested, whether or not their partners have any kind of sustainable initiatives, other stakeholders can be considered. One of such stakeholders is the government. Both the Finnish government and the European Union. Over the last two decades, both government structures have developed environmental protection laws significantly. With that in mind, it is likely that new regulations can be introduced in the following years and acting proactive will mean:

- Pioneering the industry, being able, regardless of the size to be considered in the top of sustainable logistics service providers of Finland and perhaps become more globally recognized from sustainable standpoint.

- Reducing costs, as other companies are likely to start adaptation to the new norms, having time constraints and therefore likely having higher costs to implement the changes, SME that have been proactive will already have all the necessary compliances. That means no fines and no extra costs for changing the strategy, partners or technology. The studies of Lazlo and Zhexembaeva (2011) support this point.
- Investing into brand. Having a history of sustainable development with sustainability being one of the rising trends globally will make a firm attractive for new customers, especially large multinational companies that have sustainable practices established. Moreover, with the appearance of eco-friendly, sustainable SMEs like all-organic food shops, sustainable logistics services will gain in popularity.

5.4.2 Operational initiatives

There are sustainable operation initiatives where the case companies are involved. A table below provides a summary of those initiatives (Table 10). These initiatives are not part of sustainability strategy.

Table 10. Sustainable initiatives of the case companies

Company name	Sustainable initiatives
Finn-Realty Oy	<p>Divided waste disposal: waste is sorted so that paper goes with paper, while some organic or energy items go separately.</p> <p>Growing plants in the office. Even though this was mentioned more like a joke, I thought it would worth to include it here for several reasons. Firstly, being limited on “sustainability activities” it was a good idea to think of this action – it is good for the environment, even though its input for the ecology is not big. Secondly, when the resources are limited and not much can potentially be done, as it is the case with the starting businesses, every single bit counts. In “Embedded Sustainability” the concept of skyscrapers being used as “vertical farms” is discussed (Lazlo and Zhexembaeva, 2011). This can be seen as the “current reflection” of the idea, with the resources of a small</p>

	recently started company taken into account.
Solid Way Oy	No sustainable initiatives were mentioned.
NMD Freight Oy	<p>Recycling: items, such as printing machines or batteries are being delivered to the special recycling centers.</p> <p>The train car park of the company is renewed every 2 years. That contributes to safety and efficiency, minimizing the risk of the accidents.</p> <p>The company is concerned with the well-being of workers, signing contracts with companies that provide good conditions for its employees. For instance, it was mentioned in the interview that “labour protection is of high significance for us. Even when we load oversized cargo, we do it in the terminals with a roof and not on the street, while most of the firms in Finland do not have that practice. That is why we are very meticulous about our partners. Here we can affect sustainability” (Appendix 4).</p>
Avangard-Direct LLC	No sustainable initiatives were mentioned.

(Appendices 2-5)

Nevertheless, they can be very valuable as they indicate that already at this point SMEs act sustainable. “Activities such as reducing packaging, improving working conditions in warehouses, using more fuel efficient transportation, and requiring suppliers to undertake environmental and social programs, as just a few examples among many, can reduce costs while also improving corporate reputation” (Carter and Rogers, 2008). There is good potential for the development of sustainable initiatives in small and medium enterprises. In order to develop that idea, some problems should be solved. Based on the interviews two issues can be identified as the ones concerning SME representatives the most:

- Motivation and knowledge
- Cost

As far as motivation and knowledge is concerned, the problem can be summed up in the following statement: people do not know about sustainability and do not think about embedding it into company's daily activities. Partly that might be because most of the companies that took part in the interviews do a large share of their business in or with Russia, where sustainability initiatives at this point can predominantly be found in large international businesses (like Gazprom), but the internal market and the government are not discussing sustainability much (www.gazprom.com, [05.03.2014]). That goes in line with the idea of regional effect that implies that different regions have different level of sustainability awareness (Fabbe-Costes et al.,2011). Since companies do not know about sustainability there is little action going on. However, knowledge alone is not likely to be a good enough incentive for many businesses to go sustainable. Therefore, all the advantages of sustainable development of the business should be laid out in front of the SMEs.

Another issue that is seen as a problem by representatives of SMEs is the cost of sustainability. Some of the interviewees stated that currently there are no extra funds to be allocated to the sustainable development. However, the question is: does embedding sustainability into the company's activities require a large investment of resources? Some experts like Michael Porter and Claas van der Linde state that "the costs of addressing environmental regulations can be minimized, if not eliminated, through innovation that delivers other competitive benefits"(Lazlo and Zhexembaeva, 2011, p.62). It is argued that sustainability is a "proactive" force that cannot only bring extra profits, but also can actually prevent huge damages and therefore save money to the company. This statement can be true for the logistics industry: extra care when handling dangerous cargo can be the reason it is safely delivered, less emissions by the transportation vehicles will mean better environment state and readiness to fulfill new government regulations in the ecological field. As Lazlo and Zhexembaeva (2011) note in describing the economic value of pollution prevention "by increasing throughput, lowering rework rates and scrap, and using less material and energy per unit of production, a company can save money, enhance efficiency and become more competitive". While those scholars have a point and sustainability can be "affordable", there is still an investment to be made: new vehicles for instance may require quite a lot of resources. This point is supported by Carter and Rogers (2008) who provide opinions that sustainability is expensive and may require investments to be effective.

5.5 Previous research

As far as previous research is concerned, there was little data found on this specific topic, small and medium enterprises, which was one of the reasons to make this paper. Nevertheless, some findings can be compared. From the interviews, it could be understood that generally sustainable development was not at the core of the strategy of the interviewed firms. Some interviewees were positive about introducing more sustainable practices but named a number of reasons why it had not happened and may not happen anytime soon. Economy slowdown, lack of interest from the clients and extra costs were among the reasons mentioned. These reasons are reflected in the Harvard Business Review article that reflects the results of the survey on sustainable development practices in SCM. It is stated there that managers often cannot act in a sustainable manner due to forces beyond their control. Furthermore, such reasons as "cost, complexity, lack of information and know-how and the sense that customers and investors are not deeply concerned about the issue" are given (Harvard Business Review, 2010, p.74).

The fact that not many companies among SMEs are acting sustainable yet and do not often put sustainability into contracts corresponds to the findings of Wolf and Seuring (2010) who admitted that companies interested in the environmental impacts of transportation were still few in numbers.

As far as the framework is concerned, several previous research papers make a significant contribution into measuring sustainability. In this thesis studies of Carter and Rogers (2008), Fabbe-Costes et al. (2011), Morana (2013), Defee et al. (2009) were analyzed for the analysis of sustainable development. While some frameworks (like closed-loop orientation by Defee et al. (2009) were not applicable in this case, others provided a lot of valuable information. My framework for the analysis of SMEs in logistics tries to build on the previous research of Fabbe-Costes et al. (2011) and Carter and Rogers (2008), taking the ideas applicable for the analysis of the four case companies studied in the thesis and more broadly than other similar companies. In terms of framework, previous research has made a valuable contribution into my research.

6. SUGGESTIONS

This section combines the information from the literature review, the framework and analysis and discussion. The aim of this section is to provide SMEs in logistics with a coherent plan of action. This section will be finalized with a model for sustainable development of SMEs.

Embedding sustainability into the company's operations can be a long process. As interviews show for most of the companies, the idea of sustainability is relatively new (Appendices 2-5) and the process should start from the very beginning. Small and medium size companies, however, have a number of advantages when integrating sustainability. While their resources are more limited when compared to large corporations, their speed of change and flexibility is much more higher when compared to the latter.

6.1 Creating vision of sustainability

When starting from scratch it is recommended to gather some information first. Going sustainable is no exception. Assessing current environment refers to understanding what is going on worldwide with sustainability. Lazlo's and Zhexembaeva's (2011) megatrends are one way to create a "big picture". Those are: declining resources, radical transparency and increasing expectations.

If the concept of sustainability is completely new to the company, some basic definitions will help to understand the concept and contribute to formulating a vision later on. When SME is familiarized with the concept of sustainability, the next logical step is to formulate the vision. Vision of sustainability defines specifically what sustainability means for that particular firm. Moreover, vision can be viewed as a foundation for the sustainable strategy, as it highlights the aspects important for the company that created the vision.

6.2 Sustainable development strategy

After the environment is assessed and the vision is formulated, strategy (and its later execution), development can begin. Sustainable development strategy suggestions provided here will be primarily aimed at small and medium enterprises in logistics, however, it is possible that they will be applicable in other industries and for other company sizes as well.

To be sustainable it is recommended to work together with other members of a supply chain. As Yee (2013) notes that “to achieve supply chain profitability, all the supply chain members should work together using close and effective information sharing”. This can be achieved by investing (effort, resources) into communication. Solving sustainable development issues requires a cooperation between supply chain members as well as other stakeholders of the network (Fabbe-Costes et al., 2011). The aim of communication for sustainable development strategy is to define sustainability, provide a common understanding of sustainability for all the members of the supply chain, discuss possible common interests and possibly form a sustainability strategy that will be beneficial for all the members of the supply chain. As noted by Morana (2013) development of communication will contribute to the efficiency and development of sustainable initiatives.

The logical continuation of defining sustainability as a term and setting a common vision will be discussing what differences are present for all the members of the supply chain. While the vision and understanding of sustainability might be driven to the consensus, different companies are likely to have different priorities or different types of contribution to sustainable development, depending on their activities. Understanding the differences can make communication more effective overall.

Several milestones can be suggested to aim for when interacting with the entire supply chain:

1. Working on a common understanding of sustainability, sustainable development.
2. Setting priorities for different members of the supply chain, discussing potential problems.
3. Finding areas of common interest and working on developing a plan of action.
4. Developing an integrated sustainability strategy that will be like an umbrella for the entire supply chain.
5. Committing to the integrated sustainability strategy.

Generally, setting milestones of sustainable development can help to keep track of the progress of sustainability implementation. It is recommended to set short-term, mid-term and long-term goals. Short-term goals will provide “easy victories” when accomplished and will motivate employees to move further (Cetinkaya, 2011; Lazlo and Zhexembaeva, 2011). Mid-term goals generally will serve the same purpose,

strengthening the development of sustainability strategy. Finally, long-term goals will provide the most benefits and will continuously develop sustainability strategy.

Taking into consideration successful experiences as well as the failures made by other firms can bring in new ideas that have already been tested. This approach can also help in avoiding repeating of the mistakes made by other companies, as suggested by Cetinkaya (2011) in the literature review. Learning from the others' experiences can be a cheap but effective means of acquiring new ideas for sustainable development.

Radical innovation is another approach that can be used as part of sustainable development strategy (Lazlo and Zhexembaeva, 2011). It can be associated with having an open mind for significant changes to the business model. While radical innovation is not necessarily applicable in every case, the mindset itself that admits the possibility of disruptive change can be very beneficial when building a sustainable development strategy. It contributes to flexibility and can be a source of new opportunities that previously were not considered.

Eco design is another part of the sustainable strategy to consider by SMEs. It may not be applicable to all of the companies, or at least not applicable in the short term. In this thesis, only part of eco design was discussed in the literature review, which leaves implications for further research of the topic about SMEs. As Morana (2013) suggests part of eco design approach focuses on the recycling of the vehicles. This idea can be useful to the owners of the trucks that want to follow EC directive 2000/53/EC on end-of-life vehicles (ELV) . Being proactive regarding regulations can be an extra source of competitive advantage and will mean reduction in costs through recycling.

Risk Management is another strategic suggestion. Noted by Carter and Rogers (2008) in SSCM framework, the idea was further discussed in the literature review. Targeting long-term sustainability issues can help SMEs in better management of the risks. Proactive adaptation of sustainable initiatives can help with management of new costly regulations (Carter and Rogers, 2008).

Sustainability should be embedded into "the DNA of the company" (Lazlo and Zhexembaeva, 2011). It should be present in all the spheres of the company's activities, the company employees should think sustainable when approaching every aspect of their job, the company should always encourage sustainable thinking.

6.3 Management of sustainable development

Suggestions for the management were divided into two categories, legal initiatives that cover issues such as emissions measurement in the contracts and compliance with environmental standards and regulations; and operational initiatives that focus on “activity-related” issues.

6.3.1 Legal initiatives

The legal obligations taken by the SME or 3PL will contribute to the long-term increase in transportation efficiency, decrease in costs and pollution level. When including sustainability into contracts the most common subject is emissions.

Including emissions in the contracts is a worldwide practice, however, it is not yet equally popular everywhere. With the rise of sustainable development as one of the core initiatives in many companies, the situation may change in the next decade. Already, there are examples of such companies. Wolf and Seuring (2010) present two examples: one company (American athletic footwear) trying to add agreements concerning the costs of the CO₂ emissions in the contract. Another (American IT company) set the goal to reduce CO₂ emissions in the contract and in case of non-compliance to fine, or even terminate the contract. In the study of Bjorklund and Forslund (2013), it is noticed that “the share of companies with environmental performance included in transport contracts is 52 per cent, which corresponds perfectly to the 50 per cent share found by Bjorklund (2005)”.

Another possibility as far as legal initiatives are concerned is environmental standards. Having some environmental certificates such as ISO or EMAS can provide a competitive advantage. Nevertheless, companies should consider all the pros and cons when deciding on this option. It can require many resources, which SMEs do not always have.

As globally there is an increase in requirements to comply with certain environmental regulations and standards (Owen, 2013), it is suggested for SMEs to seriously consider this alternative. As it can be seen from the case companies, some SMEs already work with environmental standards, requiring partners to comply with ISO 9001, ISO 14001 and OHSAS 18001 (Appendix 4).

6.3.2 Operational initiatives

While most of the suggestions are provided under a strategy tag, I decided to put some under management/operational initiatives as they require specific actions and while they are also part of the strategy, they can be associated with its execution.

One of the initiatives in the literature review that can be suggested for the implementation by SMEs, is information systems development. The idea of application of information systems is discussed by Morana (2013) as a source to further develop communication and process optimization and by Fabbe-Costes et al. (2011) as a feature of the “chain level” in their sustainable scanning framework (one level higher than a firm level). It should be noted however, that implementation of various information systems, such as ICT, ERP or CRM may be too expensive for a small firm and may not be justified.

Another initiative, which contrary to the implementation of information systems can be beneficial for every SME is resource management. Reduction of resources and waste is a significant part of the sustainable development for SCs (Defee et al., 2009). Resource management can bring benefits to companies of every size. Furthermore, it can be a good place to start for SMEs that do not have much free resources. Most of the companies use at least electricity, paper and perhaps some other resources, that can be aimed to be managed properly. This in turn, besides reducing costs, can contribute to an aspect discussed in the strategy section “setting milestones”. More efficient management of the resources is likely to be reflected in the immediate reduction in costs, which can be considered a small easy victory as suggested by Cetinkaya (2011). Another example of resource management that can be put into suggestions section is the concept of transport pooling. This idea described by Morana (2013) implies collaboration between several companies that aims at uniting the resources in order to improve delivery of some units.

6.4 Model for sustainable development of SMEs in logistics

Throughout the thesis, I was answering questions in order to answer the main one: What model should be created to embed sustainability into the operations of the SMEs in logistics industry? The model in figure 7 is a visual representation of the suggestions mentioned earlier in this section.

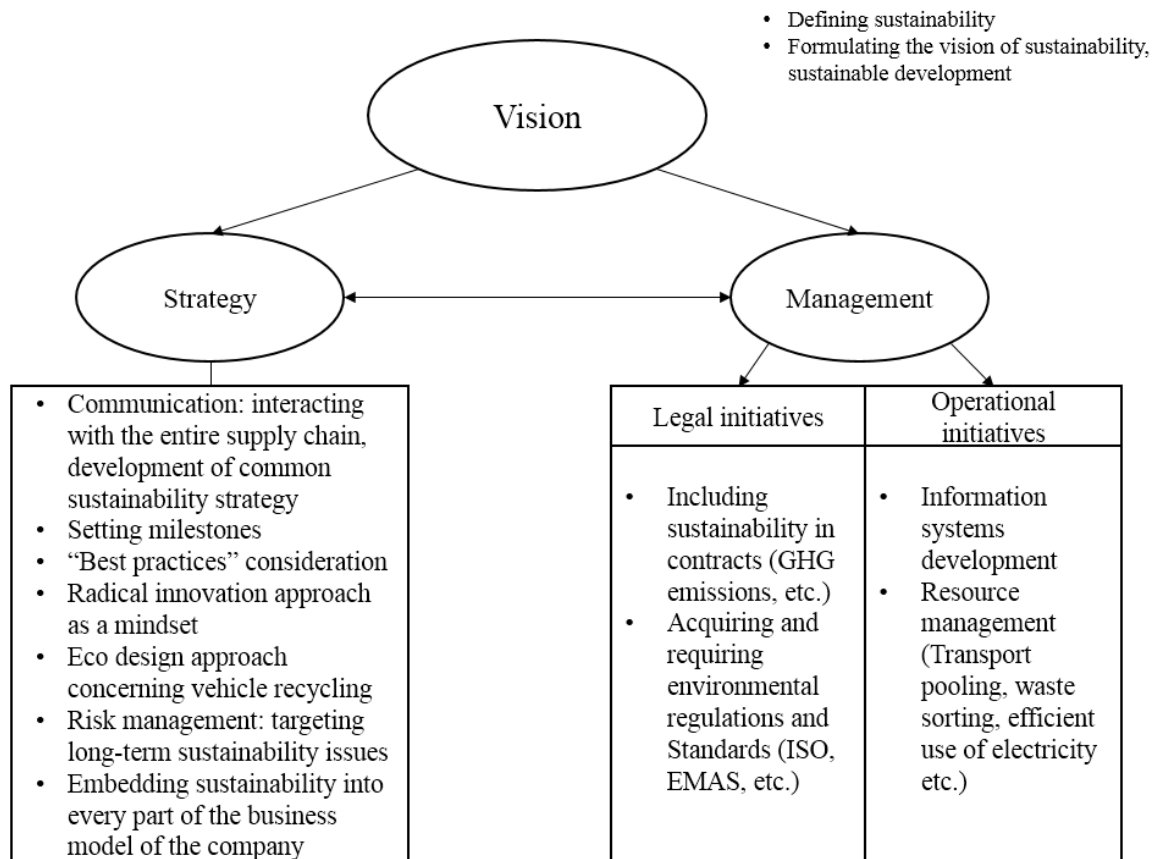


Figure 7. Model for sustainable development of the SMEs in logistics industry.

The model can be described shortly by the following statement: “create a sustainable vision, make a strategy and execute it”. The model aims to provide specific details regarding each of the aspects. Vision is placed at the top, as it is the starting point. Vision includes defining sustainability, if it has not been defined by the firm. This is crucial if the company is new to the subject. After that formulating, the vision takes place.

Strategy development is the next step after sustainability has been defined, company managers are familiar with the sustainable environment (such as for instance three megatrends by Lazlo and Zhexembaeva,2011) and the vision was created. Sustainable strategy development suggestions include: communication, setting of milestones, consideration of “best” practices (and generally learning on the experiences of the others both positive and negative), radical innovation, eco design approach, risk management and as the “motto” – embedding sustainability into every process in the company.

Management implies execution of the strategy and additional focus on some issues. They are divided into legal and operational initiatives. Legal initiatives deal with

sustainability in the contracts (such as putting emissions regulations in the contracts) and environmental regulations and standards (ISO, EMAS, OHSAS and others). Operational initiatives add resource management and implementation of information systems.

Vision, Strategy and Management parts of the model are all interconnected. The model itself is based on the framework developed in this thesis, which in turn is partly based on the frameworks suggested by Fabbe-Costes, Roussat and Colin (2011) and Carter and Rogers (2008). The model takes into consideration the analysis part of the thesis and therefore aims to assist case companies to develop sustainability initiatives. It can also be used by other small and medium enterprises from the logistics industry and other industries. It should be noted that if the model is used by the SMEs from other industries some of its parts might not be relevant (such as GHG emissions tracking for example).

7. CONCLUSIONS

Small and Mediums Sized companies play a significant role in life for both Finland and the European Union (2013 SBA Fact Sheet: Finland, [22.04.2014]). Therefore, it is very important that these companies embed sustainability into their operations.

This research was aimed on the one hand to study the current state of affairs regarding sustainability for SMEs in logistics and to create a theoretical framework (Figure 5) for the sustainability analysis of SMEs. On the other hand, my research was aimed at creating a practical model (Figure 7) that would allow SMEs to embed sustainability into their daily operations. Both of the goals were achieved. The key results are the following: SMEs do not have a clear strategy for sustainable development; twenty-five percent of the SMEs studied have legal initiatives towards sustainability, discussing sustainability in the contracts; SMEs are already involved in acting sustainable, but currently it is not systematic. The key suggestions are to develop a vision of sustainability by defining it and understanding the sustainable environment; creating a strategy for sustainable development and managing it. When making a strategy, the key idea should be embedding of sustainability into the “DNA” of the company (Lazlo, 2011). Strategy is suggested to focus on such issues as communication (interaction with the entire supply chain), setting specific goals (both short-term and long-term), using radical innovation approach and applying the principles of risk management. For the management part it is recommended to consider both operational (resource management, information systems development) and legal (including sustainability in the contracts, acquiring and requiring environmental standards) issues.

I hope that my research will assist SMEs in introducing or developing sustainability initiatives with both improving their financial performance and making a positive or at least less negative impact on the environment.

7.1 Limitations

It should be mentioned that there might be several limitations and biases in the research. Most of the companies interviewed dealt with Russian or CIS market to some extent. That might mean that the demand from the companies of those countries (Russia and CIS) might have some specifics. One of such specifics according to the representatives of the companies interviewed is the lack of interest in sustainability initiatives. In order to check the situation with Russian companies in general, the websites of well-known international players such as Gazprom, Lukoil and some other companies were studied

(www.gazprom.com, <http://www.lukoil.com/>, [05.03.2014]). On the websites there was a lot of information regarding sustainable practices, so it was possible to assume that in the Russian market (which is mirrored by CIS countries, such as Kazakhstan, Ukraine, Belarus and others) small and medium enterprises were behind large multinationals in sustainable development (probably due to lack of knowledge and lack of motivation).

The small number of the companies interviewed makes it hard to apply that information to the whole population without admitting possible inaccuracies. Therefore, generalizability of the results suffers due to the small sample size (Carter and Easton, 2011; Chalhoub-Deville et al., 2006).

As far as sustainability is concerned, this research mostly covered two parts, ecological and economic, with less focus on the social part. As a result it is admitted that the research can be biased for not fully acknowledging the impact of social aspect of sustainability.

7.2 Suggestions for further research

Social aspects of sustainable development were not included for this research. It would be interesting to see the results of the study that included social aspects - whether or not the results will differ and to what extent.

This research was qualitative in nature, quantitative methods were not used. There is an opportunity to conduct the research that involves a larger sample using quantitative methods. That may provide more accurate data for some questions.

Another possible suggestion may be a comparison over time: how sustainability develops worldwide and how it develops in logistics sector for SMEs. Research could be conducted every five or ten years and compared to the previous research.

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APPENDIX 1: Interview questions and questionnaire

Background information:

Company name: _____

Company turnover: _____

Number of personnel: _____

Name of the interviewee: _____

Position: _____

Date of interview: _____

- **What type of logistics services do the company provide for their customers**
- **Your typical transport destinations (domestic, international) and location of other services**

- **Please describe what kind of customers do company have? manufacturers, retailers, other logistics service providers**

- **Perspective on sustainability: what does it mean for Logistic Service Providers (LSPs) and their customers? What issues do they focus on? Are there differences?**
 - **What kind of expectations or requirements for sustainability does your customers have?**
 - Generally, what does sustainability mean for your company? (Is there a definition given to this term?)
 - What sustainability aspects are most important for the company? Are there any priorities that are focused on?
 - Is it possible to track when the ideas of sustainability became important and were embedded into the company's culture and activities? What was introduced and when did it happen?
 - Is sustainability defined and described in some sources available for the stakeholders of the company such as a website for example? Is there also some kind of coverage for internal use by the employees?
 - Are there any corporate actions aimed at implementing and maintaining sustainability initiatives ?
 - Does company have strategy/vision for the sustainability? How it is linked to overall strategy of the company
 - Do your company have a registered environmental management system, for example ISO 14000 or EMAS or use LCA (life-cycle assessment tool)?
 -

- **Do LSPs and their customers have sustainability included into their contracts? Is it measured? Are there terms/penalties for non-compliance?**
 - Is sustainability included into the contracts? If yes, how it shows. If not, why.
 - What is the importance of sustainability in the contracts?
 - What are most important/typical features of the contract in general (first, second, third ...)
 - Is sustainability measured?
 - How?
 - Are there terms/ penalties for non-compliance? What are they?
 - How much stress is put onto sustainability in the contracts?

Is sustainability important in your network relations (yoursuppliers)?

- Are sustainability-related issues included in your contracts with your subcontractors? What kind of issues? Why / why not?
- Do you ask for measurements of sustainability from your subcontractors? Do you require ISO 14000 or EMAS etc. from your subcontractors
 -
- **What do companies currently do to be sustainable?**
 - Are there any specific sustainability programmes in the company? If yes, what are they?
 - How is sustainability integrated into the daily life of the company? Is there a specific department or rather some sustainability perspective, shared and followed by the entire company?
 - Have sustainability initiatives of the company gained recognition from the external stakeholders? Are there any awards and certificates / documents?
 - Is there any publicity related to the firm’s sustainability practices?
 - Is there any kind of sustainability strategy and what aspects does it focus on?
 - Long term
 - Short term

How important are the following reasons for your customer using your company as a primary transportation company? **Mark your answers by using the scale below 1 = not significant and 7 = very significant.** If some constraint is not relevant at all, mark “not relevant”.

	Not relevant	1	2	3	4	5	6	7
Infrastructure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Time constraints	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flexibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reliability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Geographic coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Easyness for the customers to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What requirements are set in your customers' Request for Quotation (RFQ) ?

- Environment certification e.g. ISO 14001
- Can offer intermodal transportation
- Sustainability or environmental reporting
- Use of other kinds of fuels than diesel, e.g. biofuel, gas
- Use of trucks with high environment class
- Offering of eco-services with smaller environmental loading
- Other:.....

Divide 100 percent for the features below based on their importance when your company's customer is choosing the transportation solution.

Price%

Door-to-door transportation%

Pickup and delivery within agreed time window
.....%

Environmental effects (presented by CO2 emissions)
.....%

Sum *100 %*

Comments:

APPENDIX 2: Interview with Anatoliy Pugach; Solid Way Oy

Background information:

Company name: Solid Way Oy

Company turnover: 2000000

Number of personnel: 3 people

Name of the interviewee: Anatoliy Pugach

Position: owner and CEO

Date of interview: 31.01.2014

What type of logistics services do the company provide for their customers?

Air and sea freight, transportation by road, groupage cargo, transit declarations, export declarations, provision of CMR/TIR documents.

Your typical transport destinations (domestic, international) and location of other services

The main destination is of course Russia. We have some deliveries inside Finland too, but most of them eventually go to Russia.

So, does it mean they are international mainly then?

Yes. We also have such destinations as China - Finland, as well as Europe - Finland, from countries like Spain and Italy for instance. First cargo arrives in Finland, then it goes to Russia.

Please describe what kind of customers do company have? Manufacturers, retailers, other logistics service providers

We mainly have Russian forwarders and customs brokers, which are also now called "customs representatives". We also have some Russian retailers we work with directly.

Perspective on sustainability: what does it mean for Logistic Service Providers (LSPs) and their customers? What issues do they focus on? Are there differences?

What kind of expectations or requirements for sustainability does your customers have?

Unfortunately, none of the clients has expressed any concerns regarding ecology so far. I think it is a big problem that in Russia nobody cares about environment. How can we possibly affect that? - For instance, we can work with those transportation companies that have new vehicles that have fewer emissions. But unfortunately, now is not the best time to pick and choose. We have to work with those who are willing to do so. There is one line that stresses the importance of environment even in the name of its brand, however, that did not bring them any more clients in Russia. Perhaps other European countries are concerned about it, but here it doesn't really matter. It more depends on the government policy. For example, Finnish government could deny access to Finland to all the vehicles that do not answer Euro-5 standards. But as long as they are allowed here, we will be working with them.

Generally, what does sustainability mean for your company? (Is there a definition given to this term?)

To be honest, we don't really focus on sustainability (no definition is given to it in the company).

What sustainability aspects are most important for the company? Are there any priorities that are focused on?

-

Is it possible to track when the ideas of sustainability became important and were embedded into the company's culture and activities? What was introduced and when did it happen?

-

Is sustainability defined and described in some sources available for the stakeholders of the company such as a website for example? Is there also some kind of coverage for internal use by the employees?

I will have a short answer here: "No".

Are there any corporate actions aimed at implementing and maintaining sustainability initiatives?

I guess now it is the time when both small firms and large companies are more concerned about staying afloat, rather than focusing on improving environment, so my

answer here is negative. Perhaps I would love to do more about sustainability, but I have no possibilities to do it right now.

Does company have strategy/vision for the sustainability? How it is linked to overall strategy of the company

-

Do your company have a registered environmental management system, for example ISO 14000 or EMAS or use LCA (life-cycle assessment tool)?

No.

Do LSPs and their customers have sustainability included into their contracts? Is it measured? Are there terms/penalties for non-compliance?

Is sustainability included into the contracts? If yes, how it shows. If not, why.

We have no contracts where sustainability is included.

What is the importance of sustainability in the contracts?

As far as the contracts are concerned, I guess my answer will be "no" for all of them, as we do not have sustainability included in any form into the contracts.

What are most important/typical features of the contract in general (first, second, third ...)

The subject, who is the client, who is the carrier, responsibilities of the carrier, responsibilities of the client, force major is a must, conditions of payment, penalties for failing to fulfil the conditions.

Is sustainability measured? How?

No.

Are there terms/ penalties for non-compliance? What are they?

-

How much stress is put onto sustainability in the contracts?

Zero.

Is sustainability important in your network relations (your suppliers)?

Are sustainability-related issues included in your contracts with your subcontractors? What kind of issues? Why / why not?

To be honest I have never seen us include any of those. Well, we do have some Finnish carriers and perhaps they have something like that in the contracts. But I don't pay attention to those things when reading the contract, I focus on the delivery terms, pick-

up and delivery locations, and the rest of the info doesn't contain anything significant for me.

Might it be the case, that due to the specifics of the company not much attention is paid to sustainability? If we for instance compare you to the truck owners? Or that doesn't affect anything?

As far as Finnish companies are concerned, both suppliers and carriers, they take those things into consideration. But we are a small firm, we don't have the volumes to affect ecology in a major way.

Do you ask for measurements of sustainability from your subcontractors? Do you require ISO 14000 or EMAS etc. from your subcontractors?

No, we don't require those.

What do companies currently do to be sustainable?

Are there any specific sustainability programmes in the company? If yes, what are they?

No, as I have mentioned before now it is not the best time to focus on ecology. Right now, we do not have anything like that. I do not know if we will. Perhaps when we increase the volumes.

How is sustainability integrated into the daily life of the company? Is there a specific department or rather some sustainability perspective, shared and followed by the entire company?

-

Have sustainability initiatives of the company gained recognition from the external stakeholders? Are there any awards and certificates / documents?

-

Is there any publicity related to the firm's sustainability practices?

-

Is there any kind of sustainability strategy and what aspects does it focus on?

Long term

Short term

-

How important are the following reasons for your customer using your company as a primary transportation company? **Mark your answers by using the scale below 1 = not significant and 7 = very significant.** If some constraint is not relevant at all, mark "not relevant".

	Not relevant	1	2	3	4	5	6	7
Infrastructure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Time constraints	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Environmental issues	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flexibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Reliability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Geographic coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Easyness for the customers to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other: ability to provide credit, wide range of services, availability 24/7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What requirements are set in your customers' Request for Quotation (RFQ)?

- Environment certification e.g. ISO 14001
- + Can offer intermodal transportation
- Sustainability or environmental reporting
- Use of other kinds of fuels than diesel, e.g. biofuel, gas
- Use of trucks with high environment class

- Offering of eco-services with smaller environmental loading
- Other:.....

Divide 100 percent for the features below based on their importance when your company's customer is choosing the transportation solution.

Price	40%	
Door-to-door transportation	30%	
Pickup and delivery within agreed time window		29%
Environmental effects (presented by CO2 emissions)		1%
Sum	100 %	

APPENDIX 3: Interview with Victoria Taganova; Finn-Realty Oy

Background information:

Company name: Finn-Realty Oy

Company turnover: 301000

Number of personnel: 2

Name of the interviewee: Victoria Taganova

Position: owner and CEO

Date of interview: 16.12.2013

Questions

What type of logistics services do the company provide for their customers?

All types of logistics services from airfreight to warehousing. They also include railway transportation, air cargo, delivery by truck and document clearance. To sum it up all the logistics-related services.

Your typical transport destinations (domestic, international) and location of other services

Generally, they are Moscow and St. Petersburg. Those are the main destinations. After the cargo arrives to Moscow or St. Petersburg, local vehicles deliver that cargo in smaller batches to different cities.

So, your main transport destinations are international ones?

Yes, that's correct.

Please describe what kind of customers do company have? Manufacturers, retailers, other logistics service

Mainly they are forwarding agents and logistics companies. Also they might be direct clients or consignees - factories in Russia, they can be consignors as well, from Finland for instance, mostly factories. Yes, also they can be intermediary logistics firms.

Perspective on sustainability: what does it mean for Logistic Service Providers (LSPs) and their customers? What issues do they focus on? Are there differences?

What kind of expectations or requirements for sustainability does your customers have?

Could you elaborate what you mean?

What do I mean by sustainability? I mean first of all are there any requirements regarding the ecology, as a large part of the logistics is related to transportation, ecology is probably the most important sustainability-related issue that can be found here.

As far as Finland is concerned, they have regulations for it here. For instance regarding CO2 emissions. We can take Finnish airlines as an example, like Finnair. They use eco fuel. I have seen it several times in the airport, they even have special signs.

What about the clients? Has any firm stated that they were interested in such things? Or negotiations usually focus on the transportations themselves, without...

Without the focus on ecology, that's right. I believe that the thing you ask me about is more relevant in cases of ADR cargo or bulk cargo. For example, they ship quite a bit of engine oil from Turku. To do that they need various certificates, but all that concerns only specific types of cargo. If you ship boots or some equipment, it is pretty simple - the truck carries it from point A to point B. But when you ship some cargo that can be dangerous for the environment that is a different kind of transportation that requires special permissions and documents. That is negotiated separately by the clients and the factory.

Generally, what does sustainability mean for your company? (Is there a definition given to this term?)

Well, we sort out trash into different types. For instance paper goes separately, printer cartridges - too. A small thing, but still. Growing some

flowers in the office (laughing). We work in a small office and don't have our own cars.

Is it possible to track when the ideas of sustainability became important and were embedded into the company's culture and activities? What was introduced and when did it happen?

I can again use printer as an example. Let's say refilling the cartridge. I admit that in Russia or the Baltic that practice is perhaps viable. But in Finland new ink costs 70 euros and refilling is 60 euros. That's why I don't think it is a good idea to refill it.

Is sustainability defined and described in some sources available for the stakeholders of the company such as a website for example? Is there also some kind of coverage for internal use by the employees?

No, I don't think that there is. But if we are talking about the warehouses, there are specific rules there.

No, here I meant the info that some average user could find on the website for instance. If there is no such an info, then there is none.

I think we don't have such info.

Are there any corporate actions aimed at implementing and maintaining sustainability initiatives?

Are we taking into consideration new ideas? Definitely. New ideas are always welcome.

Does company have strategy/vision for the sustainability? How it is linked to overall strategy of the company

No, I don't think so.

Do your company have a registered environmental management system, for example ISO 14000 or EMAS or use LCA (life-cycle assessment tool)?

I think that this is more common to have for factories. We don't have our own fleet of trucks and I guess this relates more to those who have.

Do LSPs and their customers have sustainability included into their contracts? Is it measured? Are there terms/penalties for non-compliance?

Is sustainability included into the contracts? If yes, how it shows. If not, why.

Well, if for instance we get an order for the ADR cargo, we organize it. We contact the sender, clarify all the details regarding the transportation, such things as what type of dangerous cargo it is, which... on the dangerous sites for example special shows must be worn. All these details have to be discussed beforehand, so that the truck leaves prepared. And all that is reflected in the contract in the carrier's request.

Are there any requirements for the CO2 emissions or the usage of some specific fuel?

I think this concerns more the transportation companies. I think they should have it.

And who signs the contract with transportation companies?

We do. But this thing is not negotiated there. I think that the carrier himself should monitor that as well as some special services such as TraFi.

So, the transportation companies did not have such initiatives?

No.

What is the importance of sustainability in the contracts?

What are most important/typical features of the contract in general (first, second, third ...)

Contracts are the most important part, both client's and ours. Secondly, if there are some special terms for the transportation, they are described in a detailed way. Other things discussed include the price, conditions of payment, and conditions of transportation. Generally, those ones. Of course, force major is also mentioned.

Is sustainability measured?

How?

No, it's not measured.

○ **Are there terms/ penalties for non-compliance? What are they?**

No.

○ **How much stress is put onto sustainability in the contracts?**

When I receive the request for the cargo transportation, I always require a written form and before the loading I try to discuss all the details. So that if there are some special conditions regarding the transportation, they won't come out as a surprise.

Actually, here it was asked how much emphasis on sustainability the contracts have.

Ah, in that case there is not much emphasis on sustainability in the contracts.

Is sustainability important in your network relations (your suppliers)?

Are sustainability-related issues included in your contracts with your subcontractors? What kind of issues? Why / why not?

No, they are not included, because our responsibilities are safe delivery of the cargo, and the transportation companies or the clients have some obligations before the government, ecological and such.

So, the clients aren't interested in these issues if they don't discuss them?

Look, the factory makes the product. It has some obligations before the government. It generates various dangerous emissions, so it has to use some filters. The carrier truck that comes to pick up the cargo emits CO2 - it is carrier's responsibility to monitor that. The factory should monitor their own emissions into the atmosphere. Our job is to deliver cargo from the factory to the buyer. Throughout the route from the factory to the buyer the carrier is responsible for the cargo's safety.

I thought about it this way. There is a company that produces something. So it finds some factories and transportation firms that answer its requirements. Let's say they have strict rules regarding ecology. So, they say: "We are looking for the company that will emit not more than this amount of CO2 and we want to include it in the contract."

I don't think we have such cases, because the receiver of the cargo, who is the buyer makes the contract with sender, the seller.

Do you ask for measurements of sustainability from your subcontractors? Do you require ISO 14000 or EMAS etc. from your subcontractors?

No.

What do companies currently do to be sustainable?

Are there any specific sustainability programmes in the company? If yes, what are they?

One example can be waste recycling. This is the minimum that we currently can do, the rest lays more on consignors and consignees.

How is sustainability integrated into the daily life of the company? Is there a specific department or rather some sustainability perspective, shared and followed by the entire company?

It is followed by the entire company.

Have sustainability initiatives of the company gained recognition from the external stakeholders?

No.

Are there any awards and certificates / documents?

No, but we have no fines either.

Is there any publicity related to the firm's sustainability practices?

Don't think so, no.

Is there any kind of sustainability strategy and what aspects does it focus on?

- **Long term**
- **Short term**

We do not have any specific sustainability strategy.

How important are the following reasons for your customer using your company as a primary transportation company? **Mark your answers by using the scale below 1 = not significant and 7 = very significant.** If some constraint is not relevant at all, mark "not relevant"

	Not relevant	1	2	3	4	5	6	7
Infrastructure	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Time constraints	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flexibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Reliability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Geographic coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Easiness for the customers to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other: our availability 24/7 is very significant for the clients; we also take part of the client's responsibilities for providing information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

What requirements are set in your customers' Request for Quotation (RFQ)?

- Environment certification e.g. ISO 14001 - **no**
- Can offer intermodal transportation - **yes**
- Sustainability or environmental reporting - **no**
- Use of other kinds of fuels than diesel, e.g. biofuel, gas - **no**
- Use of trucks with high environment class - **no**
- Offering of eco-services with smaller environmental loading - **no**
- Other:..... - **no**

Divide 100 percent for the features below based on their importance when your company's customer is choosing the transportation solution.

Price	50%	
Door-to-door transportation		20%
Pickup and delivery within agreed time window		30%
Environmental effects (presented by CO2 emissions)		0%
Sum	100 %	

Comments:

Out of interest how approximately are clients distributed geographically in percentage?

Russia - 80%

Finland - 15%

Europe - 5%

APPENDIX 4: Interview with Nikolai Kuhharuk; NMD Freight Partners Oy

Background information:

Company name: NMD Freight Partners Oy

Company turnover: 1,4 million EUR

Number of personnel: 2

Name of the interviewee: Nikolai Kuhharuk

Position: owner and CEO

Date of interview: 05.02.2014

What type of logistics services do the company provide for their customers?

Our company provides a variety of services but mainly focuses on railway transportation. Additionally we do more complex services such as door-to-door delivery, customs clearance, if our clients require so. Still our core business relates to providing train cars for cargo transportation to terminals and companies. If the client does not have a terminal to use, we are always willing to take care of that.

Your typical transport destinations (domestic, international) and location of other services

Finnish laws prohibit us to use Russian or Baltic train cars inside Finland, so we can only use them for export transportations. Therefore, we transport to Russia and CIS states.

So, the destinations are international, I take it.

Yes, they are international.

Please describe what kind of customers do company have? Manufacturers, retailers, other logistics service providers

We have many different firms in our client base. There are manufactures and consumers; there are terminals, which focus on loading and unloading.

Perspective on sustainability: what does it mean for Logistic Service Providers (LSPs) and their customers? What issues do they focus on? Are there differences?

What kind of expectations or requirements for sustainability does your customers have?

They do not have any, as the train car does not harm the environment itself. So, there are no requirements for the cars specifically, except for the fact that they should answer all the standards when being assembled in the factory. They are not locomotives, which do need to answer specific requirements. We buy locomotive services from the governments and usually they have monopolies in the market: Russia has Russian Rail Roads; Finland has VR, which, according to their website, "use only wind energy". That is why we do not have requirements regarding the ecology specifically.

So, as far as I understood, since the governments are monopolies in the market there is not really much choice.

Yeah, there seems to be no other way. Actually, in Finland two alternative companies have registered recently in that area of business. One has already received the necessary certificates, another one is getting them. But the thing is even with the monopoly applied we still have equal conditions for all the competitors in the Finnish market, since the carrying cost is the same for everyone. The only thing that makes an impact is that one can carry 50 cars in one go while another can only carry one. So monopoly has to adopt in order not to get fined by antimonopoly courts. Therefore, the price is the same for all the players in the market.

Generally, what does sustainability mean for your company? (Is there a definition given to this term?)

The only way we can affect sustainability is through the train cars. The ones we have in our inventory - and that is over 90 cars - their age does not exceed two years. They aren't damaged or old as that may cause accidents. I consider that also as part of sustainability: to be able to serve clients with new reliable cars. There are not many equal companies in the market at the moment. As for ecology, I try to consider several things here, client's

comfort being the primary objective. Let's for instance take a situation where either an eco-friendly railroad or a truck should be used: transportation to St.Petersburg. Due to economic reasons a truck is a preferred option here. If Moscow is a destination, the situation is the same: railroad is more expensive. Ecology is important, but price is the priority for the clients. Here is another example. Recently Victoria and I were discussing how we would transport the goods from Austria to Kyrgyzstan. I realised that transportation by sea will take too long - 55 days, and I can move the cargo in 26 days if needed. For that, I would use a truck to deliver goods to Estonia and then I would use a railroad.

Recently, I have read in newspaper Lenta.ru that cargo trains are really slow in Russia. I wonder if that in any way affects the preferences of the clients.

That is not true. It takes 28 days to get from the Finnish border to Vladivostok. Time is mostly wasted on the sorting stations. But one should keep in mind that one can load the train car up to 60 tons while the truck can only be loaded up to 20. Railway is slower than the truck, but on the long distances it is more economical.

What sustainability aspects are most important for the company? Are there any priorities that are focused on?

Let's say that we are not so green and we are not so black either. When the company was founded, a decision was made to work only with those terminals that answer certain requirements, for example the ones I can see below in your questions: ISO 14000 among them. Also, labour protection is of high significance for us. Even when we load oversized cargo, we do it in the terminals with a roof and not on the street, while most of the firms in Finland do not have that practice. That is why here we are very picky about the partners we work with. Here we can affect sustainability.

So, you choose those partners that answer the standards?

Yes, because as you have mentioned, large multinational or European companies require certain certificates from the terminals. For instance Borealis, they won't work with the terminal if it doesn't have a necessary certificate.

Do LSPs and their customers have sustainability included into their contracts? Is it measured? Are there terms/penalties for non-compliance?

Is sustainability included into the contracts? If yes, how it shows. If not, why. What is the importance of sustainability in the contracts?

It is all written down. There is a special place, where all those requirements are written down. Usually manufacturers do that. If a buyer does it, then it is a different story as the terms of delivery change in this case. Because then the buyer is taking the cargo under FCA agreement, and all the responsibility moves to the consignee or the intermediary. Usually the companies require a minimum of certificates, like ISO standards and so on.

What are most important/typical features of the contract in general (first, second, third ...)

I can't name them as I am not responsible for the contract part - my partner is. I can show you the contract of one large company, but you shouldn't use any info that is directly related to that firm.

Of course, I will not use their name, as they did not give me permission to do so.

Yes, as I am not sure if that is allowed to be done. You can look at this contract of intermodal transportation. But don't write whose contract it is.

Are there terms/ penalties for non-compliance? What are they?

Yes, there are penalties. For instance, we have a company; they require 0 ppm for all the workers. In case the opposite happens, the contract becomes void.

How much stress is put onto sustainability in the contracts?

Is sustainability important in your network relations (your suppliers)?

Are sustainability-related issues included in your contracts with your subcontractors? What kind of issues? Why / why not?

We don't have this thing as we already know which terminals answer which standards. We don't have to write it down separately.

What do companies currently do to be sustainable?

Are there any specific sustainability programmes in the company? If yes, what are they?

We do not have such programmes as we have no need for them. We aren't producing anything in the first place. Well, the only thing we do is we sort the garbage, - that is pretty much the only thing we can do. We also bring the office machines to the special recycling places and do not just throw it away.

How important are the following reasons for your customer using your company as a primary transportation company? **Mark your answers by using the scale below 1 = not significant and 7 = very significant.** If some constraint is not relevant at all, mark “not relevant”.

	Not relevant	1	2	3	4	5	6	7
Infrastructure	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Time constraints	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flexibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Reliability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Geographic coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Easyness for the customers to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other: brand image, work experience, client base	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What requirements are set in your customers' Request for Quotation (RFQ)?

- + Environment certification e.g. ISO 14001
- + Can offer intermodal transportation
- Sustainability or environmental reporting
- Use of other kinds of fuels than diesel, e.g. biofuel, gas
- Use of trucks with high environment class
- Offering of eco-services with smaller environmental loading
- Other:.....

Divide 100 percent for the features below based on their importance when your company's customer is choosing the transportation solution.

Price	80%	
Door-to-door transportation		2,5%
Pickup and delivery within agreed time window		15%
Environmental effects (presented by CO2 emissions)		2,5%
Sum	100 %	

Comments:

Certificates that the companies they work with use:

Iso9001, ISO 14001, OHSAS 18001, and "SQASH" - I wasn't able to catch the exact letters in the abbreviation.

APPENDIX 5: Interview with Elena Korotkova; Avangard Direct LLC

Background information:

Company name: Avangard Direct

Company turnover:

Number of personnel: 90

Name of the interviewee: Elena Korotkova

Position: head of customer service department

Date of interview: 13.02.2014

What type of logistics services do the company provide for their customers?

Firstly, we provide customs clearance; secondly, we offer our customers full management of the supply chain: worldwide delivery by any means of transportation.

Your typical transport destinations (domestic, international) and location of other services

Moscow and St.Petersburg.

If we take supply chain as a whole, will it be international or country specific?

International of course, we do not work inside one country (Russia is assumed to be that country, as the company is Russia-based). We do either import or export, even though the latter is a rather small figure.

Please describe what kind of customers do company have? Manufacturers, retailers, other logistics service providers

Manufacturers, retailers and logistics service providers.

Perspective on sustainability: what does it mean for Logistic Service Providers (LSPs) and their customers? What issues do they focus on? Are there differences?

What kind of expectations or requirements for sustainability does your customers have?

We can actually skip the next two pages of questions (sustainability-related ones are meant here), because so far our company does not give much attention to sustainability, we aren't focusing on it. We still have to get there.

Even your large company partners don't require a certain degree of sustainability?

No. I can theoretically make up a case where we can face some sort of ecology related issues, but that totally depends on our clients: If we transport some equipment or dangerous cargo. But we as a company have nothing to do with it.

How about little things? Like a strategy let's say to save electricity or sort waste?

No.

Are sustainability-related issues included in your contracts with your subcontractors? What kind of issues? Why / why not?

No, sustainability is not included.

What does your company currently do to be sustainable?

Nothing, I am afraid.

How important are the following reasons for your customer using your company as a primary transportation company? **Mark your answers by using the scale below 1 = not significant and 7 = very significant.** If some constraint is not relevant at all, mark “not relevant”.

	Not relevant	1	2	3	4	5	6	7
Infrastructure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Costs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Time constraints	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Environmental issues	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flexibility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Reliability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Geographic coverage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Easyness for the customers to use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What requirements are set in your customers' Request for Quotation (RFQ)?

- Environment certification e.g. ISO 14001
- + Can offer intermodal transportation
- Sustainability or environmental reporting
- Use of other kinds of fuels than diesel, e.g. biofuel, gas
- Use of trucks with high environment class
- Offering of eco-services with smaller environmental loading
- Other:.....

Divide 100 percent for the features below based on their importance when your company's customer is choosing the transportation solution.

Price	35%
Door-to-door transportation	25%
Pickup and delivery within agreed time window	35%
Environmental effects (presented by CO2 emissions)	5%
Sum	100 %
Comments:	

APPENDIX 6: Finn-Realty Oy – About the company

About

the

Company



Finn-Realty Ltd is dedicated to the trucking and logistics industry.

Headquartered in Finland we provide our services in Europe, particularly in Baltics and Russia, as well as all over the world. Our main route is from Finland to Russia, covering all the regions. We aim to combine the global reach our company provides with the personal approach to every customer that we have.

Mission

Our major mission is to provide excellent transportation solutions and to foster a profitable, disciplined culture of safety, service, and trust.

Vision

To achieve the stated mission we have developed a set of goals.

Quality: We aim to deliver our beyond customer' expectations, be proactive and flexible.

People: Our qualified and experienced personnel, which we consider one of the main assets of the company, will always advise and find the best solutions and options.

Partners: Creating and sustaining a winning network of partners and building mutual loyalty

Finn-Realty Company Values

We associate the following values with our company:



Services

Finn-Realty provides a full range of logistic services:

- **Road trucking**
We provide road trucking mostly on the territory of the European Union and Russia.
We can offer the following kinds of trucking:
 - Truck for container size of 20 DC ,40 HC, 40 DC and 45 HC
 - Tents from 82 m³ – 160m³
 - Vans 1-50m³, with 7 ton of lifting capacity.
- **Sea freighting**
We will control the situation during the sea route on the vessel and will take care of all the required documentation for the transportation. Furthermore we can arrange multimodal sea freights ranging from groupage cargo to oversized cargo. We can both send and receive cargo in the following ports: Kotka, Hamina and Helsinki in Finland, as well as in Tallinn in Estonia.
- **Air freighting**
Finn-Realty aims to provide air freight transportations in the shortest time possible.
- **Railway freighting**
We provide railway transportation throughout Europe and CIS.

As far as all types of freighting are concerned, we arrange the following types of services:

- Groupage freight
- Oversized freight
- Escort for oversized freights
- Special permission for oversized and ADR freights

Our company can organize all the required documents for the transportation. We can set up a storage service for the cargo in the European Union and Russia.