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GLOBAL SUPPLY CHAIN RISK MANAGEMENT STRATEGIES:

A CASE STUDY

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ABBREVIATIONS

APICS – Association for Operations Management

SC – supply chain

SCM – supply chain management

SCRM – supply chain risk management

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ABSTRACT

Growing complexity of the global environment and the appearance of new risks in a supply chain increase the uncertainty of companies' operations and the possibility for failure in performance. However, many companies nowadays are not well prepared to handle risks that may become an obstacle to their goals. As a result, company managers are searching for strategies to overcome difficulties. Supply chain risk management is one of the fastest growing fields of logistics research aimed to create innovative methods to risk mitigation and prevention, improve the financial performance and bring the competitive advantage. Thus, the purpose of this study is to provide explanation for significance of risk management integration in company operations and demonstrate how the choice of appropriate risk management strategy should be made in order to mitigate possible consequences and predict adverse events.

The author built the theoretical framework for the SCRM system upon the literature overview for the company with international suppliers. It includes ten steps from risk identification and evaluation to the possibility of cooperation with partners in a supply chain for mutual efforts. The study is of qualitative type with in-depth analysis of a single case. The empirical data have been collected through 7 face-to-face semi-structured interviews with managers from the case companies and 11 questionnaires answered by managers from the supplier companies. The findings suggest that demand and operational risk types are the most important for the trading company operation and should be controlled primarily. Despite only few companies have established the full-size SCRM system, they are aware of risk consequences and implemented the range of strategies to mitigate risks and forecast their appearance in the future. The author contributed to the field by developing the list of SCRM strategies relevant to risk types they can handle.

KEYWORDS: risk management, global supply chain, strategy implementation, theoretical framework, single case study

1. INTRODUCTION

Many companies nowadays operate in a global environment; they try to achieve all possible benefits from dealing with a wide range of superior and well-reputed suppliers both from developed and developing countries. A company with international operations is part of a complex supply chain. Global supply chains are known as a source of competitive advantage over other market players (Manuj and Mentzer 2008 A). The existence of the company in the global environment provides access to cheap labor, components and raw materials, higher opportunities for increase in profitability, better product markets' share, arbitrage opportunities, and additional incentives, which can be offered by host governments for foreign capital attraction.

However, beside these benefits that force firms to operate globally are the uncertainties and risks that companies and their management can face in global supply chains. Severe supply chain disruptions are documented in a variety of industries with examples from such huge companies as Toyota, Nokia and Ericsson, Sony and Nike, Dole, Dell, and Apple, among others (Belloa and Bovell 2012).

PrasannaVenkatesan and Kumanan (2012) state that supply chain risks are growing significantly and supplier failure is one of the top supply chain risks. Supplier failure results in the growth of total costs, downtimes in production, poor customer service, and loss of profit or even a market share. According to Manuj and Mentzer (2008 B), there are several concerns in operating globally, including economic, political, logistical, competitive, cultural, and infrastructure.

For over a decade, there is a witness of dramatic increase in speed, quantity and complexity of international business operations (Belloa and Bovell 2012). The reason is the growing complexity of modern supply chains that results in the parallel existence of many flows of goods and information that occur in order to ensure that products are delivered in the right amounts, to the right place of destination, and with minimal costs paid from the company side.

However, Son and Orchard (2013) claim that in this fast changing global business environment where such parameters of partners' relationships as responsiveness and coordination receive more attention and development, supply chains are getting more sensitive to various unforeseen events that can lead to supply disruptions and failure in performance. Furthermore, the tendency to higher efficiency of the supplying process emerging in last years has ended up with increased vulnerability to any risks occurring in supply chains (Manuj and Mentzer 2008 A). Tang (2006) suggests that companies in order to gain the competitive advantage among other market players implement various practices such as cooperation with suppliers globally or outsourcing of non-strategic operations that increase the possibility of any unforeseen event becomes dramatic for the whole supply chain. Disruptive events in the supply chain are not only increasing in frequency, but their impact can be more costly and potentially cause the damage for the tiers in the supply chain.

Finally, it resulted in individuals, international corporations and small growing enterprises becoming aware of the need for contingency planning and management of risks, both in a long and short-term perspective. Thus, many companies are aware of risk and ready to conduct audit procedures in relation to existing formal risk and seek other methods to manage such events (Jüttner 2005). Hence, too many companies are not well prepared to deal with the supply chain risks and overcome their consequences that may result in some obstacles to their goals – even though most managers recognize the growing threat from the side of supply chain risks. A recent study revealed that among companies with less than $500 million in annual revenue, only 25 percent adapt a proactive approach to risk management (Schlegel and Trent 2012).

The high level of all flows coordination, such as goods and services, money and information is required in global supply chains operating locally or on the international arena. The article written by Manuj and Mentzer (2008 B) claims that maximization of the profit in the global environment is connected with sourcing from regions and suppliers that can offer the lowest net prices for goods and materials together with total cost, products' manufacturing and assembling in countries that can offer the lowest cost, and marketing campaigns in the markets with the highest potential demand.

Ghadge, Dani and Kalawsky (2012) state that managing a company's risks on both strategic and operational levels in the modern environment is becoming an incredibly difficult task, primarily because of uncertainties in supply and demand, global outsourcing and short product life cycles. However, traditional approaches to the concept of risk management that is based on a single company perspective cannot ideally meet the requirements of the whole supply chain context. Jüttner (2005) argues that suppliers are the essential and significant part included the company's environment and should be taken into consideration in the evaluation process.

1.1. Background information

The growing complexity and abundance of unanswered questions from companies' managers make supply chain risk management (SCRM) attractive as a research area to academics who want to make a contribution to business. Additionally, SCRM is one of the fastest growing areas in logistics research (Schlegel and Trent 2012; Tang 2006). In a recent supply chain survey among CEOs, more than two-thirds of the respondents reported increasing risk over the past three years, and nearly the same amount expect that risk will continue rise (Wieland and Wallenburg 2012).

Over the last decade, researchers in this academic field have been able to establish a fairly base. Today both academics and practitioners pay closer attention to examination of the SCRM topic. Hence, Sodhi, Son and Tang (2012) along with others declare that the area is still emerging and has rather unclear boundaries and no commonly used definitions in the field.

Increasing complexity and occurrence of newer risks in operations have created a necessity for innovation in the ways of complexity adjustment as a certain tool for risk management in global supply chains. In the article by Manuj and Mentzer (2008 B) there is an evidence that managers at the strategic level of the company focus on risk management mainly regarding to identification and assessment of risk sources and their consequences as well as selection of risk strategies appropriate for the certain situation to reduce the probability and losses associated with such events. Risk adjusted supply

chain management can translate into improved financial performance and competitive advantage for the whole company (Manuj and Mentzer 2008 A).

Belloa and Bovell (2012) suggest three critical areas for successfully managing supply chain disruptions: disruption discovery, disruption recovery and supply chain re-design. Successful recovery depends on firstly becoming aware of potential risk whether later elimination of the potential negative consequences or their reduction will be achieved. Company should implement effective methods of discovering supply chain disruptions as well as strategies to prevent and mitigate them. It is discovery of disruption (in other words, identification of risk) that leads to the ability of companies to overcome consequences of disruption and in accordance with them to modify the supply chain. Social capital, the closeness of relationships between partners can facilitate mutual problem solving and satisfying solutions by allowing supply partners to quickly identify problems (Jüttner 2005).

Additionally, to achieve this primary goal, managers should look at the entire supply chain, across all countries, when selecting and implementing risk management strategies, and understand their variety and interconnectedness. According to Tang (2006), to mitigate supply chain disruptions associated with various types of risks (uncertain economic conditions and consumer demands, unpredictable natural and other disasters); many researchers have developed different strategies for managing supply chain risks.

Without appropriate strategies in place to deal in a constant manner with these risks, companies could become vulnerable to any, even a small, possibility of disruption occurring in any part of their supply chain around the world (Son and Orchard 2013). The importance of risk assessment by a means of specific programs and software is recognized by the majority of companies. For this purpose (to assess supply chain risks), they apply various methods, ranging from formal quantitative models to informal qualitative plans, (Tang 2006). However, most companies in a supply chain are not ready to invest heavily funds or their time in order to mitigate detected risks.

Managers adjust effective strategies to their companies' operations and specifics so that to find the balance between efficiency and effectiveness in materials, components and ready goods relocation between countries' borders in a just-in-time manner with the ultimate goal to achieve higher profitability for the whole supply chain. All range of these strategies to a certain degree are applied in the companies' activities. It is noted by Belloa and Bovell (2012) that a company has no limits in the choice of the strategy; it can use and frequently does implement a combination of several tactics and tools that, in their opinion, is the appropriate strategy for managing risk.

The literature review presents a fairly full description of these strategies (Jüttner 2005); however, previous studies do not present how managers select among them (Manuj and Mentzer 2008 A). Moreover, there is a lack of information on how to address them in the reality of the instable world, how the choice of the exact global supply chain risk management strategy should be determined and influenced by an environment and conditions in the company, how to predict future consequences and appropriateness of this decision for the company.

1.2. Research question and objectives

The purpose of the study is to fill the gap between the theoretical framework based on existing academic research on supply chain risk management strategies for preventing and mitigating disruptions and empirical evidence about their implementation and consequences in a real global business environment collected from logistics managers and practitioners.

Therefore, the research question of the thesis is: Why risk management is the significant part of company operations and what strategies should be implemented to avoid disruptions within a supply chain?

The research objectives of the study which can help to find the answer on the research questions are:

- to describe the unique dimensions of risk and risk management in a global supply chain, methods and tools of dealing with uncertainties;
- to build the theoretical framework for SCRM for the company with international suppliers;
- to come up with conclusions from empirical research in the area of SCRM strategies' implementation presenting practical recommendations for the case company's situation.

1.3. Delimitations

As an employee of one Russian middle-size company, it makes easier for the author to obtain information and arrange interviews with key players of the company who take part in decision making process and everyday communication with the first tier suppliers and partners. The research is based on analysis of the relationship between managers in the company and its suppliers, but the author implements the company's point of view.

Despite the fact that the concept of risk is widely discussed in various scientific fields, the aim of this study is to bring the novelty to the management area, especially in its part specialized on control under operations within a supply chain. Additionally, the perspective of both sides is too broad but still helps to bring advantages of in-depth analysis, so the author has decided to add several points of view from the suppliers' side using questionnaires.

The choice of one company's case with local and global suppliers from developing and developed countries creates the base for analytics and description, gives the opportunity to come up with fruitful outcomes and practical suggestions. Despite the small sample in the empirical part of the study, it remains sufficient for investigation of the issue by a means of in-depth analysis: 7 face-to-face interviews and 11 questionnaires. Hence, the generalization of the findings would be inaccurate.

Additionally, some limitations connected with the choice of the case company should be mentioned. First, it is the specifics of the automobile industry with its seasonal

assortment and a variety of products with short life cycle (the fleet of the transportation company is changes once in several years). Secondly, the company has international suppliers and partners; however, the main market for its sales is in Russia. Therefore, the author cannot gather information analyzing operations of the case company about demand risks in the international environment. The findings could be based only on suppliers' experience and comments. Thirdly, the case company is not the producer; it plays a role of the third party between producers and end customers, like a trading company that includes own specifics. Lastly, suppliers of the case company have the certain geographical position: they are mainly from Europe, Turkey and China. The regions of North and South America as well as Africa are not reviewed in the research.

The author has overviewed and adapted definitions and concepts from previous academic papers in the field of supply chain management and logistics. The main difference is the context of building mutual and beneficial relations not only between two parties, but also among several partners creating the global network, which can achieve the synergy effect and higher profit. To build the structure of the research and focus just on core operations of the company, the author implements in-depth analysis for the particular situation and an examined field (van Weele 2009).

Finally, the study is focused on the novel findings in the area as well as on fundamental concepts built during last decades while the supply chain risk management topic has received curious study from both practitioners and academics in numerous industries and from various points of view. It has become possible due to the examination of the special editions of highly ranked journals, which presents articles with the ideas of the most cited authors and their conceptual models in the area of production and operational management, supply chain management and business logistics.

1.4. Structure of the study

The thesis is divided into six chapters. In accordance with guidelines, existing for business students in the University of Vaasa (2011), the structure of the thesis is presented further (See Table 1). The first chapter includes an introduction part for the

study with background information, the research question and objectives together with delimitations and the explanation of the structure.

The second chapter is devoted to theoretical concepts related to risk and discussed in the study. Various definitions and classifications are used to describe the phenomena. Then, the discussion turns from one company perspective to risks that can be faced by companies in the supply chain. The factors, sources and risk outcomes are reviewed. In the last part of the chapter, an overview of risk management is provided describing the concept from various points of view.

Table 1 Structure of the study

Introduction part	- Background information - Delimitations - Research question and objectives
Theoretical part	- The concept of risk and classification - Risk management and its specifics - Management of risk in a global supply chain - Theoretical framework
Empirical part	- Research methodology - The analysis of empirical data from interviews and questionnaires
Conclusion part	- Summary of key results and findings - Theoretical and managerial implications - Limitations

The third chapter describes risk management practices in a global environment. Starting from the concept for a supply chain the discussion comes to the issues of risk management in the company with international operations. Further, the author pays attention to regional specifics existing in the age of open borders and globalization. The main part of the chapter presents the theoretical review of methods and tools implemented for risk prevention and mitigation, supplemented by strategies tested in the business reality. The chapter ends with the presentation of the theoretical frame for

SCRM system that includes all business processes in the company for uncertainty reduction and the high level of control.

The fourth chapter outlines methods for research design, collection of empirical data and their analysis, and assurance for obtained results validity and reliability.

The findings and practical examples from conducted interviews and questionnaire as well as results of their discussion are investigated in the fifth chapter. The chapter starts in the case company background and specifics, then the discussion comes to top and linear management experience, the current situation with risk management system and used strategies. Moreover, the ideas shared by managers from suppliers' side supplement the previous findings.

Finally, the sixth chapter presents the summary of key findings from the previous chapters, their theoretical contribution to the field of supply chain risk management and its managerial implications in the modern business reality. The chapter end with the study limitations.

2. DEALING WITH RISK

The section presents the review of main definitions and classifications of risk and, particularly, strategies in the field of risk management. Later, these concepts will be used in investigation of empirical data collected using interviews with company's managers and questionnaires answered by suppliers from various regions around the globe.

2.1. Definition of risk

The existence of any undesirable events can be described using various, often overlapping concepts: "risk", "disruption", "vulnerability" and "uncertainty". In the literature review conducted by Colicchia and Strozzi (2012), the authors claim that terms of risk and uncertainty frequently are used interchangeably, hence they have a little difference in the meaning: risk can be measured while uncertainty cannot and the probabilities of its outcomes are not known. Khan and Burnes (2007) distinguish the concepts of "uncertainty" and "risk" where the former is the key driver of risk and may not be measurable by managers; and the latter can be measured and manageable through strategy development in prevention, mitigation and recovery.

According to Manuj and Mentzer (2008:196 A), uncertain events which lead to the existence of risks are called "risk events". Ghadge et al. (2012) give the definition of risk as the potential for unwanted negative consequences that arise from an event or activity. Additionally, they define vulnerability as an exposure to serious disturbance arising from risks (external and internal risks in the supply chain in the classification by Karbalaee, Nourbakhshian, Hooman and Rajabinasr 2013).

In the article by Jüttner (2005), classical concept of risk is presented as variation in the distribution of possible outcomes, their probability and subjective values. Hou, Zeng and Zhao (2010) discuss risks connected with company's partners and define supply disruption as the sudden non-availability of supplies due to an unexpected event making one or several sources of supply unavailable. Khan and Burnes (2007) stress the

negative sides of risk and summarize its consequences: severity of adverse effects, high likelihood of unwanted and uncertain events, and expectation of loss.

There is an enormous amount of definitions of the term risk that are related to specific decision contexts. In the literature review by Ritchie and Brindley (2007 B), authors summarize various definitions of risk from previous studies in common one: *"the extent to which there is uncertainty about whether potentially significant and/or disappointing outcomes of decisions will be realized"*. In addition, they focus on the three components of risk: the magnitude of losses, the chance of loss and the potential risk (exposure) of loss. Moreover, three dimensions are found in the majority of their sources: likelihood of occurrence for a certain event or outcome; consequences of the particular event or outcome occurring; and reasons and circumstances leading to this event.

Manuj and Mentzer (2008 B) prove the idea that risk definition vary as well in different fields of the study and show some examples. Initially, the finance literature looks at risk in terms of probabilities of outcomes; variability of returns on a portfolio of investments; risk of bankruptcy. However, in the strategy literature, risk has been defined by using risk-adjusted rates of return on capital investment, variability of returns, risks of doing business with incompetent partners, and relational risks such as opportunistic behavior.

Next, academics in marketing study risk in terms of customer behavior, the nature and importance of buying goals, and failure in meeting them. In conclusion, management and psychology literature deals with managerial preferences and explores the connection between individual disposition to risk, probabilities of outcomes and their values.

2.2. Risk in supply chains

The biggest threat for the supply chain is that risk destroys flows between connected organizations. These flows can relate to information, materials, products and money remaining interdependent of each other. This fact is proved by Jüttner (2005:122) who states that a key feature of supply chain risk is that it extends beyond the boundaries of

one company; moreover, such blurred boundaries can become a source of supply chain risks.

Risks in supply chains can come from a number of sources. Trkman and McCormack (2009) summarize several trends that can increase risk exposure, such as globalization, a growing share of companies using outsourcing, reduction of the suppliers' base and reduced buffers, increased demand for just-in-time deliveries and shorter lead-time.

According to Karbalaee et al. (2013), risk can have five various origins both from the supply and demand sides. These origins are not related to each other and can be routed in the infrastructure or have catastrophic, bureaucratic, regulatory or even legal nature. Cucchiella and Gastaldi (2006) divide sources of supply chain uncertainty into two groups: internal and external. Internal sources include availability of production capacity, disruption in the information flow, and compliance to existing regulations. External sources include activities of competitors, political instability, and fluctuations in the price level on the market, extra costs, and the quality of suppliers.

The work by Belloa and Bovell (2012:78) presents two definitions of supply chain disruptions: "*unanticipated events that interfere with the normal flow of goods and/or materials in a supply chain*" and "*an unplanned event that might affect the normal and expected flow of materials, information, and components*."

Khan and Burnes (2007) highlight two main types of supply chain risks which companies can suffer from: technologic risk when the company mainly relies on a single (or limited) product source / technology; and strategic risk with high level of dependence from a limited number of suppliers. If the company does not try to change the existing situation, it increases the possibility of such risk exposure with further results in business failure.

Christopher and Peck (2004) classified supply chain risk into five categories: process risk, control risk, demand risk, supply risk and environmental risk (see Figure 1). Li and Lin (2006) present further division of environmental risks in terms of suppliers and customers uncertainty and technology development. While Trkman and McCormack

(2009) separate sources of uncertainty into two groups that influence the whole approach of dealing with risks: endogenous with the source of risk inside a supply chain leading to the relations' change among tiers (e.g. turbulence on the market and technological progress); and exogenous where the source of risk can be found outside the supply chain with further dividing on discrete (workers' strike) and continuous (exchange rate fluctuation) events.

Furthermore, Manuj and Mentzer (2008:196 – 197 A) discuss four main risk dimensions, namely probability, impact of losses, their speed and frequency. Further division of the speed dimension is following: the rate at which the event leads to loss occurrence, at which losses themselves happen, and the speed of the risk event detection. Supplemented with such issues as increased lead-times and their instability, the physical distance between the company and risk sources, and the reduced level of control over the supply chain, it increases the frequency and consequences of risk events globally.

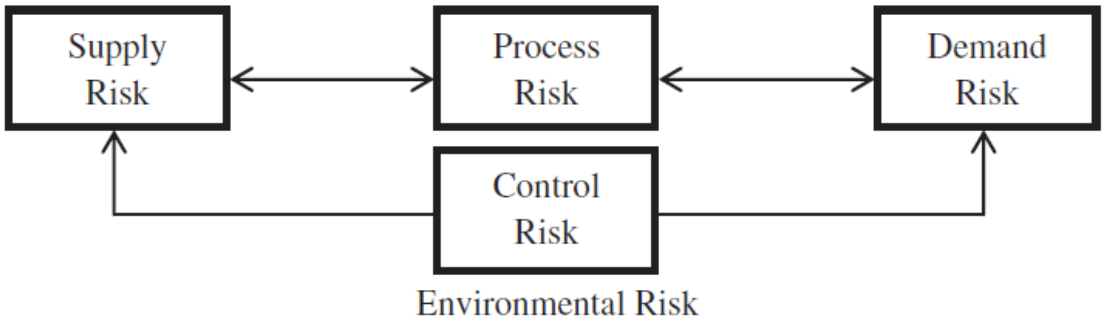

Figure 1 Sources of risk in a supply chain (adopted from Christopher and Peck 2004)

Berger, Gerstenfeld, and Zeng (2004) are the first who have incorporated the risk of supplier disruption in supplier selection, assessment and evaluation. They introduce three types of events that can cause disruptions in the supply chain: (1) Unique events, an event associated with a particular supplier that disrupts the everyday operations of one specific supplier; (2) Super events that can affect all suppliers at the same time; (3) Semi-super events that cause harm to more than one supplier at once, but not to all of them. The probabilities of these events can be determined using a decision tree where

the financial loss caused by disasters and the operational cost of working with multiple suppliers should be taken into consideration during the analysis.

While no standard risk topology exists, a majority of authors are trying to bring their contribution. Schlegel and Trent (2012:14 – 15) use one of the more straightforward categorizations and four types of risk are provided: hazard risk that leads to random disruptions such as hurricanes, accidents or even the truck theft as an example; financial risk which receives increasing attention in many organizations today and includes internal and external financial challenges; operational risk that associates with the tactical activities with some examples including poor supplier quality, late deliveries, safety issues and others; strategic risk which relates to decisions made by executive management (mergers and acquisitions, liquidity).

In another classification, four categories of risks are distinguished: supply, demand, operational, and security risks (Manuj and Mentzer 2008 A). Supply risk is the distribution of risk consequences regarding to events in the supply chain that affect the company's ability to meet demand from the customer side or situations that may threaten to the end customer. Operations risk is the distribution of risk consequences regarding to unwanted situations inside the company that affect its ability to manufacture good and provide services, maintain the quality of production, and company's profitability. Demand risk is the distribution of risk consequences regarding to events in the flows connecting the focal company and its customers that affect the frequency of customers' orders placing, and/or variance in the volume and desired assortment to meet their requirements. Security risk is the distribution of risk consequences regarding to events that may become dangerous for human resources, the quality of executed operations, and information systems and databases (stolen data, vandalism).

Later, PrasannaVenkatesan and Kumanan (2012:326) come up with own classification of supply side risks. They divide them into five groups: capacity related, technology related, supply related, currency related, and disasters related. Finally, adapting the classification of Ghoshal, Manuj and Mentzer (2008 A) divide risks as: macroeconomic risks related to economic shifts; policy risks that include unexpected actions of

governments; competitive risks related to the existing uncertainty about later competitors' actions; and resource risks associated with the unexpected gap between available and required resources.

2.3. Risk management

Expansion of supply chains has helped many companies to survive intense competition in order to take advantage of new markets and reduce production costs of production. Such change in the companies' structure has led to more complex and developed global supply chains. In the work by Kamalahmadi and Mellat-Parast (2016), the authors explain that managing supply chains globally is a rather challenging task because of a complex and dynamic environment that can cause risk of disruption for the company operations.

Aven (2016) associates risk with the process of constantly keeping balance between various factors surrounding the company: various uncertainties, concerns about the profitability, reputation and customers' loyalty. The risk management can be presented as a set of certain alternatives for the choice where their advantages and disadvantages should be evaluated and the final decision depends on personal characteristics of the decision maker, his or her values and priorities in business.

Khan and Burnes (2007:201) summarize the findings from the previous research and present the full definition of risk management. Starting with identification, analysis and control of existing risks that can be harmful for the company (its assets and earning capacity), the concept evolves into the management function with the aim of assess and address risks (arguing if it is an everyday part of the organization routines or something that should be used as and when it is necessary). Finally, nowadays risk management is seen as a continuous and developing process that must be integrated in the company's culture and implemented in its structure. It should translate the company's overall strategy into day-to-day tactics and common objectives for all involved parties. This tool can help other activities of management to achieve company's goals without great losses. The process of risk management is influenced by two factors: likelihood of specific events occurring and their consequences.

Doing business on the global market has benefits as well as challenges. Cho and Kang (2001:542) identify three benefits factors for extending supply chains such as competitive advantage over companies at the same niche, quality assurance because company managers can find the great variety of options for price/quality ratio and service enhancement via better availability of products. All these benefits may greatly vary depending on the product type and company size, its experience and regions of operations. Besides listed benefits, global sourcing is connected with following challenging factors divided into groups: logistics, international and local regulations, differences in culture and country uncertainty (see Table 2). Longer distance means longer lead-time, need for more inventories and intermediaries, possibility of delays and higher uncertainty are the part of everyday operations. Language and cultural differences even worsen the situation leading to miscommunication and difficulty in maintaining relations between business partners.

Table 2 Analysis of main challenging factors for global sourcing

Perceived challenge	**Type of risk**
Regulations	Quotas, tariffs Trade restrictions
Logistics	Inventory management Border-crossing procedures Transportation delays
Cultural differences	Language barrier Different customs Different business practices
Country uncertainty	Foreign exchange fluctuations Political instability

As a result, companies nowadays are interested in risk management trying to reduce consequences and losses for their business. At the strategic level, risk management is focused on identifying and assessing the probability and consequences of every possible risk, selecting appropriate risk strategies to mitigate or completely avoid losses associated with any undesirable events. Additionally, global sourcing has been shown to

create obstacles and add complexity in the supply chain leading to negative impacts on process, product and service quality (Subramanian, Rahman and Abdulrahman 2015:270).

Wagner and Bode (2008) state that the redesign of the supply chain from the scratch is the starting point for creation of the mechanism for a fruitful risk management in the company. Many companies are not prepared for the challenging events they have to face nowadays. Therefore, an alignment of the supply chain strategy and its design to the new context of everyday operations is unavoidable.

To ensure supply chain safety, Olson and Wu (2011:402 – 403) advise companies to implement supply chain control, relying on traceability, transparency, testability, time, trust, and training. They label the first step of the process of risk management is to identify risks associated with a specific operation. These can arise from the environment, and can be specific to particular industries. Furthermore, implementation of quick response, just-in-time systems together with improved warehouse management can help companies to overcome facing obstacles.

Strategic sourcing as a separate area of sourcing operations in the company has emerged because of intensive global activities and necessity to manage the extended supply chain in the reality and wide variety of supply chain risks, and possibility of disruptions (Kotula, Ho, Kumar Dey and Lee 2015:238). Risks such as wars, finance crisis, political instability and product recalls have consequences in the long-term period and have led companies to switch from a single to multiple suppliers. The decision about the global strategy of strategic sourcing additionally influences the possibility to reach the competitive advantage and improve the business performance of the company combining trust and information sharing between partners, higher flexibility and better choice for suppliers' selection. Unless the company neglects the benefits of this strategy, additional risks from the suppliers' side may occur and affect directly not only business operations, but also reputation, brand value and its reliability.

Manuj and Mentzer (2008:141 – 142 B) suggest three motives for businesses to manage risk. First, there is the evidence that relatively low risk firms have a low value

proposition. Therefore, managers consider both market and business risk, but company's shareholders care only about market risk because they can diversify their portfolios to obtain protection from risk to business. Second, higher cash flows are associated with lower business risk. In a stable environment, all operations in the company are efficient and facilitate lower earnings volatility. Third, a positive relationship exists between rate of return and business risk. However, because of transaction costs such as time costs, shareholders are willing to accept stocks with lower risks.

Thus, Schlegel and Trent (2012:13 – 14) serve the definition of risk management by the Association for Operations Management (APICS): "*In the context of supply chain management, risk management involves dealing with uncertainty in supply, transformations, delivery, and customer demand*". These uncertainties can result in various forces such as yields, timing, pricing or catastrophic events.

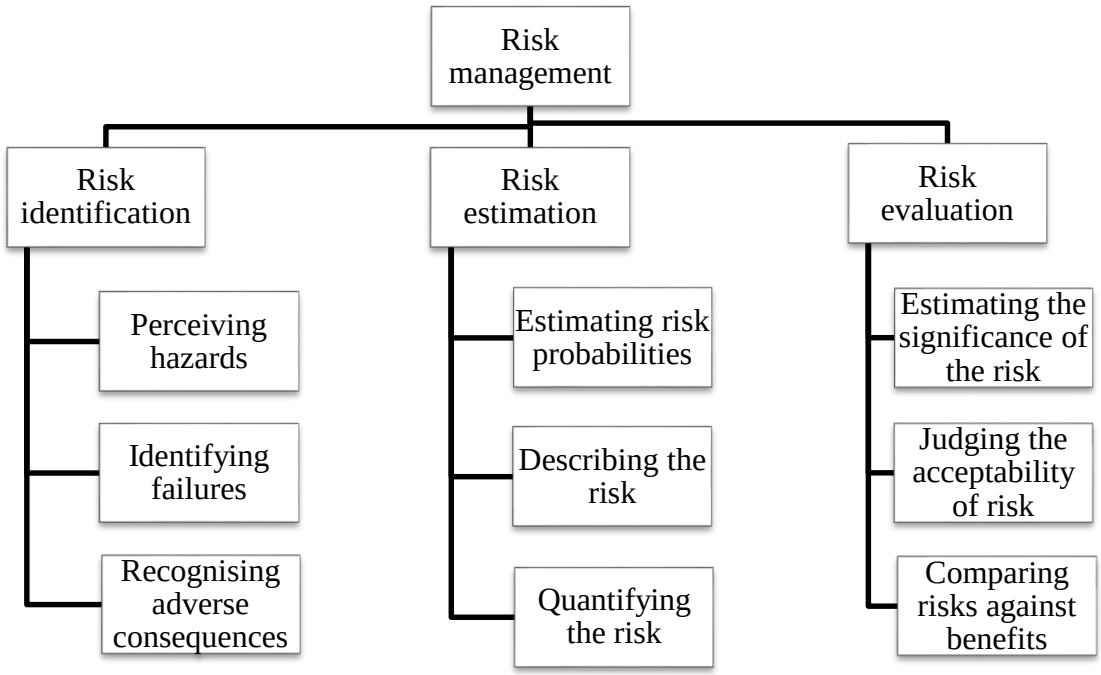

Figure 2 The risk management process (adopted from Khan and Burnes 2007)

The process of risk management consists of three critical stages (Khan and Burnes 2007:202 – 203): risk identification (to determine risk factors that can occur), risk

analysis (to understand the likelihood and severity of main risks for the company), and risk evaluation (to decide about the most appropriate strategy for response for each risk separately or for the group of risks) (see Figure 2). Simon, Hillson & Newland (1997) separate all techniques available for undertaking of risk management process into three groups named qualitative techniques (they seek to identify, describe and analyze risks), quantitative techniques (they seek to build a model in order to quantify effects of risks) and control techniques (they seek to find the respond for identified risk and the solution for risk minimization).

Success or failure in international business largely and directly depends upon how well companies manage mentioned obstacles using information about types and degree of risks around them (Cho and Kang 2001:558). A role of a manager is the main in this process; his or her results vary from personal characteristics and experience. Likewise, companies with a large share of import may obtain more enhancement in service because of better bargaining position and closer communication between a buyer and seller. Hence, such companies suffer more from various regulations because of higher product turnover.

To conclude the chapter, the author summarize the main aspects and findings from risk's studies. The concept of risk is widely discussed in the research field and it includes overlapping terminology that has various meanings and denotations from the author to the author. The concept of risk has both subjective and objective nature, and actions taken in order to overcome or prevent risk consequences depend on managerial attitude to risk. Depending on sources, risks can be divided in groups, hence, there is no unified classification and each author presents own view.

The risks influencing a supply chain should be identified, studied and, if possible, prevented (or mitigated) because their consequences can have negative outcomes for company's operations and prosperity in the future. However, risk is the part of an instable global environment where today companies are doing business with the aim to bring the profit. Knowledge about risk and its nature can help to receive benefits in the battle with competitors. Risk management has become the integrated part of business

operations. In order to control and manage risks, the company should implement the whole process of risk management with further division on separated stages.

3. RISK MANAGEMENT IN A GLOBAL SUPPLY CHAIN

3.1. Supply chain

Often supply chains are shown as oversimplified, linear and static chains reaching from source to the end customer including the suppliers' suppliers and the customers' customers. However, Wieland and Wallenburg (2012:890) claim that a supply chain represents a web with following parameters: complexity of the environment and susceptibility to change that combined with the capability of companies to adapt and respond to such changes.

Mentzer, DeWitt, Keebler, Min, Nix, Smith and Zacharia (2001:3) in the study on the supply chain's concept define it as a set of companies gathering for further regulation of the flows and movement them forward. Normally, several companies become involved in product manufacturing and delivering to the end user – producers and assemblers, wholesalers and retailers as well as transportation companies are all members of a supply chain. In other words, a supply chain is the alignment of firms that brings the product or service to market.

The same authors create another definition of a supply chain: the network of interrelated through upstream and downstream connections companies, which activities are aimed at production of value expressed in products and services for further delivery to the customer (Mentzer et al. 2001). Otherwise, a supply chain includes several companies, both suppliers and distributors, and the end consumer. To sum up, a supply chain is characterized as a set of more than three companies, sometimes individuals being involved in the flows passing from an initial source to an end customer (products and services, cash and/or information).

3.2. Supply chain management

The term "supply chain management" (SCM) presents a source of confusion due to the huge variety of definitions from authors in the field. Tang (2006:453) introduces the definition of supply chain management which is created with consideration of the

literature review carried out by the author: *"the management of material, information and financial flows through a network of organizations (i.e., suppliers, manufacturers, logistics providers, wholesalers, distributors, retailers) that aims to produce and deliver products or services for the consumer"*. It includes the coordination of activities across different functions such as marketing, sales, production, product design, procurement, logistics, finance, and information technology.

Trkman, Budler and Groznik (2015:588) distinguish the advantages as well as challenges of SCM. As the former can be mentioned flexibility of the whole supply chain, ability to design the effective strategy of operations and cooperation among different tiers. The latter includes information sharing (e.g. specific knowledge, company experience and technologies), difficulties in coordination of flows and integration of business processes of partners as the most crucial ones.

A main process determining stability of a supply chain is a preliminary assessment of potential partners in terms of both total cost and the possibility of other risks occurrence (Olson and Wu 2011). These risks can include failure in the product quality and availability, in reliability of the manufacturing company (e.g. bankruptcy), and risk connected with the political instability and exchange rate fluctuation.

Connelly, Ketchen and Hult (2013:227) claim supply chain management has received wide publicity during several last decades; however, it deserves further attention because of globalization influence and transformation of its definition due to scholars' research. The global activities has changed the entire system of the company's operation: from raw materials to end users, making it more complicate and unpredictable. The suppliers, partners as well as customers are not located at the same place anymore. Attempts of partners to build trustful relations across countries' boarders bring more uncertainty (economic, political and even cultural) in operations on a daily basis and increase the future possibility of risk. Balancing of strong and weak ties in a supply chain brings flexibility and reliability that are necessary to operate in a hectic global environment.

Although definitions can differ among sources, Mentzer et al. (2001:5 – 7) classify into three categories: a management philosophy, implementation of a management philosophy and a set of management processes. As a philosophy, SCM views the supply chain as a single entity with each performing own function. It extends the concept of the partnership into an effort of several companies to manage the flow of goods through the entire supply chain. SCM as a management philosophy looks for synchronization of internal and external operational and strategic capabilities into a unified market force.

According to another approach, to be effective in operations and remain competitive in today's business environment, companies have to expand their management and control functions to customers and suppliers. This extension through external integration is called supply chain management. In this context, the implementation of supply chain management into company's operations implies special activities. These activities involve all supply chain partners (suppliers, brokers and agents, and manufacturers) in order to make adjustment to the needs of the end customer in a prompt way. The integration of processes related to sourcing, manufacturing and distribution activities within the supply chain should help in achievement of this goal.

As opposed to a focus on the activities shaping supply chain management, the attention can be focused on management processes that are defined as a structured and measured set of activities and designed to produce specific output for the customer or market. In this case, SCM is the process of relationships management, coordination of information and materials within the company's operations to deliver the certain value through management of goods and information flows from sourcing to consumption. Besides, a supply chain process is the actual physical functions, institutions, and operations characterizing the way how a particular supply chain moves goods and services, across time and place, through the supply chain, having clearly identified inputs and outputs, and guidelines for actions.

In the literature review conducted by Khan and Burnes (2007), they claim that all tools and techniques for supply chain management are debated in nature because they are created and implemented by managers with individual attitude towards the risk (risk taking or risk rejection). Therefore, business leaders have to combine their preferences

in approaches with various impact of risk on different stakeholders and bring together objective and subjective measures (to obtain some freedom of maneuver). They have to balance shareholders' interests, at the same time minimizing possible risks. This situation can cause the conflict between interested parties thus managers try to keep several options rather than following the only chosen strategy. Plenty of information, newness of tasks (projects) and requirement to consider existing alternatives involve greater risks for the supply chain.

Various approaches to supply chain management opens its multidimensional nature where authors find some specifics and focus their studies on. However, supply chain management has one main aim (or goal) to find the solution for the supply chain in the issue of how to deal with flows and tires in the supply chain, prevent risk and faster recover from its consequences. The company itself should create the unique set of tools and techniques for management and control. Sometimes the combination of several methods is the best cure for the specific situation.

3.3. Supply chain risk management in a global environment

Because of certain complexity of the concept and existence of various approaches in the field of academic research, several definitions for supply chain risk management (SCRM) can be found in the literature. Karbalaee et al. (2013:331) view SCRM as a method for possible risks reduction in a supply chain. The authors divide the risk mitigation process into four sequential steps: detection, valuation, operations for solution finding for each situation in particular and control of risk.

Colicchia and Strozzi (2012:404) define SCRM as the process of potential risk sources' identification and implementation of suitable strategies using a coordinated approach among the partners in the supply chain in order to reduce vulnerability of the supply chain. Where the main goal of supply chain risk management is to protect the business operations from unexpected harmful events. The authors come up with the idea that SCRM should go beyond the company itself and include all partners connected in the network. They talk about the idea of cooperation and creation of strategic long-term relations.

Trkman and McCormack (2009:247) pay attention to the main critical step in managing possible disruptions of the supply chain that can cause significant impact on its stability. The authors claim to reduce risks and create a supply chain with strong ties company's managers should be able to identify suppliers' potential to disruptions before development of relations with them. Thus, they reject the discussed above idea about partners' relations and make focus on finding weak chains among tiers of the supply chain, and their replacement with more promising variants. Their definition of the concept is focused on growing importance of the field and the role of SCRM in developing the system of approaches to risk identification, assessment, analysis and treatment of the focal risk areas in the supply chain.

Later on, Manuj and Mentzer (2008:205 A) offer the definition where SCRM is based on the identification and evaluation of risks in the global supply chain, implementation of appropriate strategies bringing together the efforts of supply chain partners and coordination of their actions. In addition, they state that various risk events in global supply chains are linked to each other: one risk may lead to another or influence its outcomes. Everything in operations of SC partners is interdepended and an event in one company may cause the harm to others.

By combining the previous definitions, Tang (2006:686) defines SCRM as the management of supply chain risks through coordination among the supply chain partners to ensure profitability and continuity and addresses the SCRM issues along two dimensions: supply chain risk and mitigation approach. His definition has added the aspect of company's outcomes and financial results in the future.

Belloa and Bovell (2012:81) have reviewed academic papers and presented the definition combining elements from various sources: SCRM is the management of external and supply chain risks through a coordinated approach among partners to reduce vulnerability as a whole (inner and outside the supply chain elements). Additionally, they describe main parts of supply chain risk management: risk identification, which includes the acceptance of existing uncertainties, failure identification and recognition of its consequences; risk estimation, which includes estimation of risk probabilities, their description and quantification; risk evaluation,

which includes assessment of risk significance, the possibility of risk acceptance, and comparison the risks and positive outcomes. All these parts of SCRM are unified by three key activities: problem identification, assessment of its nature (source) and implementation of strategies for further problem resolution.

Wieland and Wallenburg (2012:890 – 891) define SCRM as the implementation of strategies to manage both everyday and exceptional risks along the supply chain based on continuous risk assessment reducing vulnerability and ensuring continuity. Thus, SCRM extends traditional risk management by integrating risks of partners. The authors include the time aspect and the possibility of events repetition and duration in their definition. Next, Jüttner (2005) suggests own definition as the identification and management of risks through coordination among partners within the supply chain to reduce vulnerability. Such definition correlates with ideas of Colicchia and Strozzi (2012).

Further, Son and Orchard (2013:686) view SCRM as a process where supply chain partners together apply risk management tools to manage and mitigate risks caused by logistics-related activities. They construct the theoretical SCRM framework and demonstrate the need to develop a set of tools and strategies to address various unpredictable issues in SCRM which make a supply chain inefficient. The authors' work supplement the previous theoretical results and add more understanding in the processes within the supply chain.

As mentioned earlier authors, Connelly et al. (2013) emphasize the importance of all partners in a supply chain. Additionally, they connect supply chain management with the social network theory. Supply chains are mechanisms of social connections between tiers included in them where the company may receive certain advantages from greater access to information sources. Strong ties are created with main partners opening new markets and opportunities for development, and weak ties bring the ability to adapt faster to changing environment (change of suppliers in the case of any uncertainty).

Craighead, Blackhurst, Rungtusanatham and Handfield (2007) move the research further and discuss the opportunities of proactive approach in SCRM in comparison

with reactive one. To achieve resilience of the supply chain, as the main goal of the risk management process, company's managers should proactively focus on capabilities for dealing with unpredicted events. This approach helps to understand risks, avoid them and be prepared to respond if such events occur as the worst scenario for company's operations. Therefore, the best advice is to promote practices for risk identification, mitigation and management in advance.

Finally, the aggregated definition of supply chain risk management should include the following dimensions: importance of partners / tiers in the supply chain that can help to each other in risk mitigation, coordination of actions and following to a developed plan, use of various tools and methods depending on the situation and repeatability of events, adjustment to the changing reality of doing business globally.

3.4. Global sourcing: regional varieties

Sourcing from various suppliers of any kind around the globe (Africa, Europe, America and Asia) involves a huge range of infrastructure and operations differences. If supply management personnel in the company know how to handle them, these variations will bring promising opportunities and fruitful results in the future (Maltz, Oke, Christiansen and Walumbwa 2010). Main advantages of sourcing globally are classified by Pfohl and Large (1993) such as lower prices, improved quality and technology, fulfillment of local content requirements, an extensive supplier potential and the possibility of balancing exchange risks.

Constantly manufacturers and retailers from developed countries are seeking for the way of cost reduction. This ended up with factories transfer from developed countries to developing ones supplemented with sourcing of materials, products, and services there. Developing countries also want to benefit from economic growth and switch in production geography; they roughly fight with each other to become suppliers to market leaders and wealthy economics.

Hence, purchasing from each region includes own risks, companies should find the way to adjust to them and compete with others (Pfohl and Large 1993). Risks in sourcing from various regions could be caused by different standards, the imperfect knowledge

of all conditions surrounding the market, problems with product quality and logistics as well buyer-caused obstacles (for example, the lack of qualified purchasing personnel). Dealing with the additional risk of currencies, time zones, distance, language and political instability, influences costs, so the companies have to adjust their strategies regularly (Sabbaghian 2009).

According to Moser and Blome (2008), despite high potential of India as a region for sourcing, it takes a lot of time to understand all complexity and vastness of the country. Two mentioned factors influence in large measure costs associated with logistics and the quality of products. A lack of understanding of regional specifics is not only relevant for companies doing business of Indian companies. If sourcing managers are experienced in dealing with various realities, it can help to reduce the possibility for increased potential costs and lead times as well as to improve the quality.

During the 2000's, the sourcing stories of success in Eastern Europe and Asia are well known, but now the situation has changed: major buyers are seeking alternative sources to reduce risks to supply disruptions and cost increases. It has happened because low purchasing prices were offset by high logistics costs and high transaction costs. The example to illustrate the situation is given by Maltz et al. (2010) where Chinese toy manufacturers have experienced strikes and quality problems while local protests forced the company's owners to relocate a factory in India. Such evolution of regional capabilities nowadays is the part of the global strategy equation.

The modern trend in global sourcing is that three areas received the highest companies' attention. Their operations have been moved there for certain reasons. The list is the following: Eastern and Central Europe that progressively try to become the part of the developed European region and, at the same, to keep control under the issues of intellectual property control; Southeast Asia, China and India particularly, that becomes more independent in the economic aspect and contains the potential for long-term development for manufactures and buyers in the region as well as for the growth of business networks; and Africa that demonstrates the gradual growth with low-cost goods for wide consumption and raw materials such as petroleum and minerals.

Central and Eastern Europe could present benefits of developed logistics infrastructure and closeness to the end customer in Western Europe. On the other hand, advantages of operations in these countries are political and economic stability (Pfohl and Large 1993). It is difficult to assess future trends in their development. The region is still suffering from bad traffic and communication infrastructure, a lack of means of transport, problems in production and with sub-suppliers, and the shortage of materials. Additionally, business with Central and Eastern Europe is associated with issues related to fluctuation in the exchange rate and difficulties in use of local currencies in transactions.

There is evidence demonstrated in the work of Maltz et al. (2010) that some manufactures have already shifted from China and India to the African region because of growing labor costs (workers' wages have been increased) and raising costs of manufacturing. It is stated by Hexter and Woetzer (2008) that Chinese suppliers' component failure rates are higher than global standards, distant and uncertain supply lines increase the total cost and reduce amount of turns, their deliveries are not reliable enough supplemented by absolute necessity to hold larger inventories, and their costs could be reduced implementing efficiency and waste reduction policies. Despite the fact, Subramanian et al. (2015) note that sourcing from China remained an attractive option for multinational companies and well-known brands (e.g. Wal-Mart); the country still remains the number one foreign direct investment destination.

Moreover, some European counties have already failed to present attractive conditions for manufactures and lost the game in the competition with several Asian countries. Skilled labor and closeness to the main world markets cannot be compensated by high expenses and existing tough competition. Therefore, this region will mainly focus on orders of customers with the need for quick respond and fast deliveries supplemented with increased amount of warehouses and transportation hubs for goods consolidation and further distribution, and assembling companies. While there is a trend that main manufacturing premises and sourcing for high volume batches will be transferred into the Southeast Asia. Unlikely, the African region (except the most developed South part) will start manufacturing of highly valued products requiring educated personnel or engineering.

The following shifting global patterns should be mentioned to understand the current situation (Maltz et al. 2010). First, the unit price in production is lower in Asia and the demographical situation (overpopulation) will not facilitate dramatic changes in the country in the future. Huge amount of Chinese and Indian population with the low educational level are interested in any jobs with the purpose to move from rural areas to cities. Kumar, Medina and Nelson (2009) state that sourcing from countries, as China is highly competitive due to the labor cost is lower compared to the US and other Western countries. Hence, the well-educated but limited pool of the population in Eastern Europe is looking for knowledge intensive and qualified jobs.

Next, the Asian region demonstrates the great potential for further growth. Sabbaghian (2009:42) claims that low-cost country sourcing, sourcing from countries such as China and India, has been one of the most popular strategies for decades. These countries will become even more competitive because of factories operating to US and EU standards and skilled workers. The companies from developed countries such as the USA and Scandinavia have started their expansion finding new partners and customers in the region and building own factories to supply customers outside the area. Often facilities for operation in the Asian market and export are divided with constantly growing demand from the locals. The work by Cho and Kang is resulted in evidence that India and China provide higher benefits for companies (for example, better value for money, enhancing competitive position) than Taiwan and Korea did; at the same time, these companies face more problems with customs procedures, transportation and inventory delays.

Additionally, final assembly for main components for the European market is likely to remain in Eastern Europe. Some manufacturers keep the production of the most advanced products in the Europe to guarantee the quality and protect intellectual property, while Eastern Europe stays the area for outsourced subassemblies. To deal with varieties of European languages, local and label requirements, manufactures have to keep the part of products inventory for the European market inside the area for the final customization to the customers' needs. Later on, countries of the African region face certain issues connected with poor infrastructure, the instability of the political situation and the excess of low qualified labor market over professionals. The area has

the huge potential for natural resources extraction and low cost labor force. This is the reason why it is becoming more popular among manufactures of consumer goods exported worldwide. Their current condition attracts companies from the developed part of the world as well as some huge Chinese and Indian manufacturers.

Finally, the conditions inside certain regions and countries may vary significantly. For example, the western part of China and cities at the coast attract more attention from the companies' side that assists in development of its infrastructure faster and further increase in operations. Eastern Europe is the part of another shift: companies move operations from north to south (Poland to Romania) and from west to east (Poland to Turkey, Russia). Such changes may be explained by differences in labor cost, the cost and availability of materials, some cultural and religion specifics, and political reasons (level of corruption and bureaucracy).

3.5. Classification and diversity of strategies for risk mitigation

Strategies and tools for prevention and mitigation of risks in the supply chain cannot be easily counted and described. Various factors and the current environment of the company's operation create conditions shaping the strategy and influencing the manager's decisions; either right or wrong ones for the focal company and its partners. There is the evidence from the business world that many companies have gone out of the global arena because they have failed with the choice of the right and effective risk management strategy (Khan and Burnes 2007).

However, there is no universal strategy or tool to organize a company and lead it forward overtaking possible competitors. Even in the literature review by Colicchia and Strozzi (2012:412), the authors underline that the existing results of various studies cannot provide a way to deal with risks and suggest a unified strategy. Each author bring new details in the field.

To confirm this statement, a list of six relevant and up-to-date supply chain strategy elements which influence the processes inside among supply chain partners are proposed by Jüttner (2005): the globalization of operations; reduction of inventory

holding; centralized distribution; reduction of the supplier base; outsourcing; and centralized production. The evaluation of the risk outcomes and reception of possible feedback for implemented supply chain strategies is an important issue in SCRM. Thus, Manuj and Mentzer (2008 B) suggest the classification of risk management strategies into seven categories: avoidance, postponement, speculation, hedging, control, sharing / transferring, and security.

Karbalaee et al. (2013) claim that all companies' managers can be divided into two group named risk takers and non-risk takers (see Table 3). Division into these groups is based on nature of business, manager's personality and experience and influence the choice of the risk management strategy. Main strategies of supply chains in managing risk include risk reduction, risk acceptability, risk transfer, personal risk analysis and decline of any risk. However, they highlight several useful methods for both named groups, such as accumulation and vertical integration, cooperation with mediators in inventory, use of product extra capacity, development of special requirements for suppliers' performance.

Table 3 Elements of attitudes toward risk

Attitude towards risks in supply chain
Transfer the risk to another actor in the supply chain (supplier, distributer, customer) so they bear the risk
Share or divide the risk with another actor in the supply chain (supplier, distributor)
Try yourself to reduce or eliminate the risk using internal solutions
Reduce or eliminate the risk with other partners in the supply chain (supplier, customer)
Finance the risk by budgeting and prepare for its consequences if it were to happen (for example, apply for insurance)
Do nothing and ignore the risk

Sodhi et al. (2012) recommend controlling operations of the partners because supply disruptions cannot only affect the company's stock price because also can cause a loss of reputation and harm the finance stability. Managers should pay more attention to the choice of suppliers in a turbulent and dynamic environment. Right suppliers' selection

and appropriate demand allocation with the help of developed contingency plans can significantly reduce the costs and risks of disruptions.

Kotula et al. (2015) develop this idea in their study and claim that strategic sourcing should become an integrated part of the company's strategy. They present the list of special criteria for strategic suppliers' selection and evaluation (see Table 4) highlighting three most important: financial criteria (price, total cost and payment terms), supplier's overall performance, and risk that the price remains the key criteria for final decision making.

Table 4 Important strategic supplier evaluation criteria

Rank	Evaluation criteria
1	Price, costs, payment terms
2	Supplier's performance
3	Risk
4	Specification, product complexity, quality
5	Delivery process with lead time and supply continuity
6	Strategic sourcing fit with internal strategy
7	Supplier relation and integration
8	Competitive advantage over competitors
9	Supplier production capability
10	Own capabilities and resources (the decision make or buy)
11	Customer / demand of own company
12	Supply market characteristics (e.g. bargaining power)
13	Processes and automation, transaction costs
14	Economic environment
15	Geography of the supplier

Ruiz-Torres and Mahmoodi (2006) present a decision model to optimize the demand allocation across suppliers by evaluating various costs connected with the existed network. Moreover, they add to the model a partial loss because of any supplier's possible failure and discuss the effect in situations where suppliers have equal or unequal probability of failure. The authors state that suppliers are able to use their flexibility in order to increase the total output and compensate the damage cause by other suppliers' disruption.

Belloa and Bovell (2012) argue that investment in inventory and multiple sourcing are the two most common mitigation strategies in the existing literature. Later, they present contingency strategies that include rerouting, for example, at alternate locations, and shifting demand to easily supplied products. Additionally, strategies for disruption management can be divided into 3 groups: proactive strategies reducing the probability of risk; advance warning strategies helping a company to prepare and minimize disruption effects; and coping strategies offering the ability to minimize the consequences.

Furthermore, in the article by Wieland and Wallenburg (2012), risk management strategies are divided into two groups: proactive (preventive) and reactive, however, both groups remain equally significant for company's implementation. A strategy to cope with changes reactively is agility which corresponds with being fast and able to modify the supply chain, while robustness is a proactive strategy that can be defined as the ability of a supply chain to overcome difficulties without radical adaptation of its initial configuration. Thus, a robust supply chain can handle unwanted events with significant changes; it increases resistance to volatility risks. In contrast, agility is effective in the case of high customer-side risks.

3.6. Strategies tested in the reality of international business

In the next part of the chapter, the author presents the huge diversification of strategies created by experts of the supply chain risk management field as well as tools and methods of uncertain events' avoidance and minimization of their consequences for the whole supply chain and the company in particular. All strategies have been studied from various angles and become useful for companies with global operations.

Adjustment as the optimal strategy for risks minimization is discussed in the work by Bai, Wang and Wang (2010). Various emergencies occurred on the market can cause the change of its size and affect production plans of the supplier. Partners should share up-to-date information and mutually coordinate their actions according to it. Such cooperation and flexibility of operations to the changing environment make easier forecasting and decrease the possibility of unforeseen events. In this case, when

suppliers and a buyer in cooperation try to increase own return, they additionally maximize return of the whole supply chain that is much higher than return without adjusted actions.

Strategies for the company's operations in the non-turbulent environment and the environment exposed to changes are compared by Trkman and McCormack (2009). The list for actions for the former includes placing orders in larger batches to decrease the cost of procurement, win on the economies of scales and creation of safety stock as well as single supplier sourcing with long and trustful relations. The latter involves the proactive approach and continuous adjustment of the supply chain where tiers (strategic partners) are interdepended and cannot control changes from outside. The authors claim that environmental uncertainty is the main threat for companies nowadays. The company in the supply chain should consider both the environment of its suppliers and own business strategy while estimating the likeliness of supplier failure for each situation separately.

Hallikas, Karvonen, Pulkkinen, Virolainen and Tuominen (2004:50) introduce in the study four major steps' strategy how a typical company can manage risks in collaboration with partners: first of all, to notice the existent risk, its threats and effect on the supply chain; the next step is to evaluate risk intensity, its financial influence and effects on the production, its probability and cost of losses; then, to control the potential risks through using short, medium and long term forecasts as well as through developing staff training programs, decentralization of the risk probability and financial response between partners; finally, to decide about risk-related strategies, using risk reducing, eliminating and individual analysis of risk effects.

Companies in a supply chain have a number of responses available to manage and mitigate risks. Insurance is risk mitigation by definition. However, the use of other methods are also possible including information sharing schemes, as an example (Olson and Wu 2011). In addition, responses can include development of closer relationships with partners and joint initiatives. There are trends from more independent responses, such as insurance and contractual standards, to more cooperative efforts.

Ritchie and Brindley (2007 B) summarize the previous findings in the list of risk management responses such as risk insurance, information sharing and relationship development, agreed performance standards, regular joint reviews, joint training and planning exercises, inter-partnership structures and relationship marketing initiatives. There is also the evidence of a risk management progressing from more independent responses (e.g. insurance) to more co-operative (e.g. relationship development).

Among works that study mitigation strategies, Son and Orchard (2013) demonstrate the effectiveness of combining inventory placement and back-up methods. This helps in order to do both to handle short periods of disruption and to overcome the consequences of long-term disruptions in the supply chain. They propose as well other strategies to overcome difficulties that increasing at a fast rate with the number of supply disruptions and the size of economic losses: advance warning, strategic inventory, supplier diversification and dual sourcing. Further, Tang (2006:482 – 483) discuss strategies to create stable supply chains from the very beginning of company's establishment.

Some ideas from the field research are suggested by PrasannaVenkatesan and Kumanan (2012): the combination of international and local suppliers; single, dual and multiple sourcing for similar product groups. They even propose a decision tree approach for the optimal size of supply base where the cooperation is based only on partners with limited failure scenarios. Special programs are built for strategic sourcing with the aim of simulation in suppliers' analysis, planning and optimization, and further evaluation in risk management within the supply chain. They can help in evaluation of the overall performance under uncertain events.

Pfohl and Large (1993:4 – 5) present five attributes of co-operative partnerships as a way to resolve possible risks between parties during the sourcing process: a supply pool consisting of a preferred few suppliers to have the alternative ways of sourcing in any situation; an alliance incorporating a credible commitment between the buying and selling firms when partnership relations are built in a long-term perspective; joint problem-solving activities acquired in production and logistics; an exchange of information between the firms (knowledge transfer); and joint adjustment to marketplace conditions. Mainly, these cooperation types could be a solution in relations

among suppliers from Central and Eastern Europe and their customers because of different level of operations' development.

Xia, Ramachandran and Gurnani (2011) focus their research on the strategy of dual sourcing. When the company has an alternative reliable supplier to replace another one in case of shortage of failure. Because nowadays lack of supplier reliability has become one of the top three supply chain risks. Problems with suppliers include a forced necessity for expensive investment in capacity, unplanned shortage in supply and uncertain demand. The company may face reduced control across the SC, longer lead-time and issues with boundaries and great distance. Use of two suppliers brings the opportunity to create shorter production time that leads to better management of risks.

Further development the dual sourcing concept has received in the study of Xia et al. (2011) where they discuss the idea of multi-sourcing. It helps to overcome information asymmetry about reliability of suppliers. Moreover, the company can choose partners using a monitoring policy to achieve the highest possible product quality and shortest lead-time of production, to find better solutions in logistics schemes and benefit from the shortest geographical distance between partners and the possibility of control under their performance. Thus, companies in the supply chain may better cooperate in order to decrease the likelihood of uncertainties, improve own internal processes and react in a faster manner when the disruption occurs.

Khan and Burnes (2007) present the idea of risk management in a supply chain as the group's work where a main component is the development of the strategy for risk evaluation and management within the entire supply chain with identification of an inappropriate behavior or possible failure of certain partners in the chain (internal interaction within the supply chain). Additionally, they share details and discuss conditions that are necessary for the successful strategy's implementation. They include suppliers' loyalty (cooperation and information sharing), characteristics of the situation in sourcing and the buyer's perception of existing problems.

The authors combine existing risk management strategies in the following list: closer working relationships with suppliers, purchasing partnerships and strategic alliances

(long-term relations and trust building), supplier quality and auditing programs, supplier improvement programs, multiple sources vs single sourcing, inventory management, communication and early involvement of suppliers in strategic decisions, buffers, risk sharing and knowledge transfer, focus on core competence vs product differentiation, risk taking and proactive supply management. Some these strategies can be combined in order to bring the synergy effect and can supplement each other; hence, others bring the opposite solution for the current situation in the supply chain and the company itself. Many of these strategies are situation-dependent and cannot be implemented every time, even if the risk source is the same.

Running business in the reality of the Indian complex environment is discussed by Moser and Blome (2008) who share major components for sourcing successfully within this region and creation of own talent pool from local staff. Four main ones could be summarized: 1. aligning the sourcing initiative with business strategy under support from company top management, 2. a clear identification of the Indian sourcing office role in comparison with other sourcing departments within the company, 3. the transparent system of motivation both for the headquarters and for the personnel in the local office, and 4. a long-term investment in attracting local talent. Often the knowledge at the headquarters about India is often minimal; however, sourcing from such huge country should be translated in sourcing from its particular part with gathering data about local requirements, laws, business “rules” and excess to existing networks.

Special requirements and hints for sourcing in China are given in the paper written by Hexter and Woetzer (2008), they advise companies to settle higher aspirations choosing suppliers. Getting familiar with the Chinese market and rules of the local game could help to achieve there global standards of performance and decrease prices for goods purchase. Because companies lack information, they use only one-third of the possible goods they believe they could purchase from China.

There are several steps identified by authors to overcome challenges: identifying good suppliers; cope with language and cultural barriers; boosting suppliers' quality; ensuring deliveries; managing supply chain inventory; communicating close with management

and specialists. Reduction of additional costs become possible if companies reach the certain level of market knowledge and source the goods and materials directly from manufactures without any intermediaries and agents (savings could achieve up to 35 percent). The opposite position is presented by Sabbaghian (2009), he declares that a local consultant could assist in development of useful contacts and relations, and advise in appropriate strategy creation. This specialist can provide assistance according to companies' needs.

Finally, Subramanian et al. (2015) establish that companies should collaborate with Chinese manufacturers at various levels and departments to overcome the uncertainty related to complex and high-tech technologies. Additionally, they should use cultural specifics such as networks of developed informal relationships to overcome differences and develop long-term relationships. It is preferable for companies to source directly from a low-cost supplier but also to have an additional channel, for example, to purchase through an international office. The authors suggest the integration of a supply chain based on trust among partners, sharing of information necessary for the smooth flow of operations, constant improvement of the quality by a means of supervision and control mechanisms.

As it has been mentioned earlier, amount of existing strategies for supply chain risk management is impossible to count. Various authors using similar methods can offer new ideas, study the issue from another angle, update and develop the existing ones strategies. Some of them pay more attention to the importance of relations with partners in the supply chain, the possibility of building trust versus the opportunity for the prompt change of the supplier in case of failure or dissatisfaction with their performance level, for example, the quality, price level or issues with logistics. Others pay attention to management of flows (goods, information, etc.), which is helpful for uncertainty reduction and increase the control under operations.

Moreover, some authors contrast two approaches to risk management: the reactive approach with the proactive one. The former is described as the outdated concept that has been used a couple decades ago or even earlier. It includes the methods and tools that can help to overcome existing and detected risks (e.g. safety stock) but cannot help

in prevention of the new risk occurrence. Hence, the latter is mentioned as the up-to-date approach with the idea to prevent the negative effects of uncertain events. The modern business environment requires the flexibility of the company operations' and ability to forecast the possible development of the situation in the future with the help of computer modeling and specialized software.

3.7. A conceptual framework of dealing with risk in a global supply chain

A theoretical framework (see Appendix 1) is built on the basis of the previous study from various researchers and practitioners in the field of risk management: Ghadge et al. (2013), Christopher et al. (2011), Mentzer et al. (2001), Manuj and Mentzer (2008 A and B), Ritchie and Brindley (2007 A), Tang (2006), Jüttner (2005), Zhang and Huang (2006) and others. It consists of the ten steps' (levels) hierarchy and presents a detail plan how the organization should realize in practice actions for risk mitigation and prevention.

The framework helps graphically understand the logical order of operations dealing with risks and their consequences in the company. The author takes into consideration two dimensions what determine the company's existence and its current condition: an external (business on international scale) and internal environment (interconnection of supply chain tiers and their correlation). Additionally, its design considers the development of the risk management field and is created with the focus on proactive approach to uncertainty prevention and avoidance of its negative effects, for an example, on the company image, profit and niche on the international market.

Furthermore, the model is applicable for both direct (supplier, core organization and customer) and extended supply chains (when the SC also includes supplier's supplier and customer's customer). However, the focus is on the core organization and its ability of building relations with first-tire suppliers as well as customers. The current framework takes into consideration the development of SCRM field tracked by Colicchia and Strozzi (2012) and combined with the operations in the changeable global environment (see Table 5).

Table 5 Research directions in SCRM (adapted from Colicchia and Strozzi 2012)

Main themes	From	To	Research directions
1. Complexity and uncertainty	Uncertainty as an opportunity	Uncertainty as a threat	Locating research into SCRM within the more structured study of the SC complexity
	Complexity of the SC structure	SC as a complex evolving system	Modelling SCs considering robustness and resilience
			Assessing and managing disruption risks
2. Practices and tools for SCRM	Operational risk management	Disruption risk management	Adopting a supply network perspective
3. Organization of SCRM process	Reactive approach	Proactive approach	Considering the SC as an open system interconnected with the environment
	Focus on SC	Focus on supply network	
4. Increased SC resilience and robustness	Theoretical point of view	Practical point of view	Evaluating the value of an increased SC resilience and robustness
	Focus on effectiveness	Focus on efficiency	

Next, all steps of the framework is described one by one. The author tries to highlight the main points of each step separately and, at the end of the part, make conclusions for the model as the whole in order to combine the ideas from the theory to the reality of the company where the main goal is achievement of efficiency of operations and profitability for parties involved.

The first step of the framework is risk identification. It is based on actions connected with finding any risks (both existing and possible) within the company's supply chain using various sources of information. Such information could be received from the company's environment as well as be shared by partners (building trustful relations with the closest and most reliable partners). Moreover, on this stage, the organization should determine the likelihood of unwelcome events, their undesirable effects on the current situation of company's operations and its future development.

Next, the second step includes further and deeper analysis of risks with their division on groups regarding factors and sources (risk classification). The organization should explore their nature. Initially, company's managers should find out if risks come from external or internal company's environment, their sources and the part of the supply chain that can be involved. Then, in accordance with Christopher et al. (2011), Manuj and Mentzer (2008 A), they identify risks that can be divided into five categories: supply, demand, process, control and environmental. All of these categories can be found simultaneously and influence on the company at certain degree.

Later, the third step of the model is the strategy of risk evaluation which can be divided into two subsections: likelihood of risk repetition (in the long term) which can be, correspondingly, high or low, and determination of risk impact on the company (outcomes of failure). This step answers the question is the existing risk influences company's operation in a harmful, neutral or positive way and to what degree. Managers decide how adverse can be risks' outcomes at first sight and after in-depth analysis, and if existing or probable risk occurrence is significant in general and can interrupt the company's functioning in normal mode. For risk assessment such methods as decision and perception-based analysis, case studies can be used.

At the fourth step, examined risks should be ranked according to their impact significance and harmfulness to normal company's operations. At this stage, the great role plays the managers' personality, ability to accept the situation, deal with obstacles and mitigate their effects. Such ranking will help to make priority in the list of problem-solving activities for each risk separately: the most harmful risks cannot be neglected and should receive greater attention; other risks can be accepted as not important ones with low impact on the company. To avoid all risky situations impossible because of changing environment of global economics and abundance of unpredictable events happing inside the company and in connection with various tiers of the supply chain. Therefore, after this stage, the company will obtain the detailed report on existing risks both within the core organization and in the extended supply chain.

The following (the fifth) step is the choice of one out of four risk management responses (Ritchie and Brindley 2007 A): risk taking if the situation cannot be changed

or adapted to achieve better outcomes or reduce consequences, or the results of risky events cannot harm the company's operations; avoidance if the risk event has been predicted and managers competence as well as the company's experience is enough to deal in a proper way in such situation (high level of proficiency, existence of tools and methods, sometimes availability of specific software); mitigation if the risk has been detected but it cannot be fully avoided on a number of various reasons and factors (the most common type of response when actions should be made in order to control the situation); and monitoring if risk events have not occurred yet but the surrounded environment requires constant control and update of existing strategies, tools and methods.

The appropriate response combines intra-organizational risk understanding and general approach to risk mitigation using a set of designed activities (certain risk management strategies discussed the literature review in their full diversity). For this reason, the next (the sixth) step of the framework is based on the combination of the company's overall strategy with everyday decisions and tactical actions of all parties involved. As the result of such balance, the choice of the certain response for the specific situation should be done on the strategic company level supplemented with special well-planned actions aimed at its successful implementation on the tactical level (further planning of actions in risk management).

The chosen specific strategy / tool can be used for one certain detected risk type or can help to deal with several risks with similar sources or same consequences. Additionally, strategies for various regions can radically different because of specifics discussed in the research part on regional variety in global sourcing.

Then, the certain strategy / tool is implemented (separately or in the combination with others) and finally the results are well known, all information should be gathered in order to obtain the full picture of strategy outcomes (the seventh step of the framework). Managers study received data and decide if the applied methods have brought any positive feedback and can be used in the future. Additionally, feedback can be received from partners' side bringing additional perspective to collected data (information

sharing) and the synergy effect to common business. Automation of this process and previous experience of managers simplify and fasten the task.

The eighth step is associated with the development of prevention measures to supply chain risks. At this stage, the company gains enough experience in risk management and is ready to influence the likelihood of various risks occurrence, managers can predict the obstacles that can appear throughout the whole supply chain and facilitate the process of decision making.

These actions is the part of proactive approach for risk prevention and reduction of failure likelihood in the supply chain. Such attitude to risk management and its outcomes is up-to-date and used by many corporations as the part of their everyday routines. To succeed in proactive supply chain risk management the greater attention should be paid to review of previous data, corporative learning and knowledge sharing, establishment of the system for the company's analysis and strategic planning.

It needs to be mentioned that there is the opportunity for mutual actions often exists, at least in the direct supply chain. This is the reason why the ninth step of the framework is dedicated to relations with partners in the supply chain, collective learning and other possible benefits for the main business outcome – the company profit. However, in some situations managers from the focal company cannot rely on other parties involved in the supply chain. The vivid example is when the supplier performance is not perfect and faces great chances for further failure causing negative effects for others. Hence, the opportunity of partnership should be taken into consideration as the chance for future advantages and, maybe, a part of the competitive advantage on the market.

Finally, coordination of mutual actions, information sharing between partners (if it is possible) and openness to dialogue lead together to building of long-term and trustful relationships (the tenth step). Consequently, suppliers, customers and state authorities can combine efforts and create the synergy effect of benefits for all tiers in the supply chain without possibility of any chain disruption or failure.

The given theoretical framework includes main steps for creating the proper system of risk management in the company. The stages can be repeated an infinite number of times bringing new data to the company and collecting more experience for future coordination of operations. However, the received results of monitoring and risk mitigation every time influence the decision making process and applied strategies / tools can vary greatly in accordance with the present situation and overall company's strategy.

3.8. Literature review summary

In accordance with the ideas presented in the literature review and in the theoretical framework, the further research is built in the following way. The author separate three main strategies to mitigate risks among the variety presented in the literature review (well-proven and tested in a real life business by more than one company). These methods and risk mitigating techniques are gathered from frequently occurring recommendations for action from the literature review. Additionally, they are approved by the findings of the previous research results.

The list of risk management strategies that are suitable for the company with the global supply chain according to the author's point of view and is chosen as following:

1. Dual sourcing is the strategy when two suppliers provide the similar products and the buyer has a chance to switch between them (Tang 2006; Xia et al. 2011; Son and Orchard 2013). Its advantages are price reduction and shorter lead-time due to constant competition between suppliers, quality improvement and flexible transportation schemes, the company always has a fallback in a case of force-major.

2. Buffering strategies when the possible sources of a risk are identified beforehand and necessary precautionary measures are taken in order to avoid or mitigate the consequences (Khan and Burnes 2007; PrasannaVenkatesan and Kumanan 2012; Kauppi, Longoni, Caniato and Kuula 2016). The following strategies are mainly used among companies with the developed risk management system: higher levels of

inventories (e.g. safety stock), excess capacity cushions, quoted lead-times and back-up suppliers.

3. Building closer relations with partners in the supply chain and share information (experience, technologies) with them is a method of risk prevention (Hallikas et al. 2004; Ritchie and Brindley 2007 B; Bai et al. 2010; Olson and Wu 2011) with high probability of positive outcomes. The more information is gathered, the fuller the picture of uncertainty facing and the easier solution finding (the effect of synergy and collective mind).

Later on, in the practical part, these strategies should be checked for their resilience in the real environment of the company with global supply chain. Additionally, the next step of the research is the comparison of the author's choice with the current situation in the described case study company. Finally, conclusions are made and recommendations are provided for further development of the company's risk management system.

4. RESEARCH METHODOLOGIES

4.1. Research design

Saunders et al. (2009:131) define research design as "*the general plan of how research question(s) will be answered*". The composition of the research design involves objectives formed in a clear way from the research question, specified sources from which data were gathered, and a list of difficulties to overcome on the way to the project's success such as data access, time, location and money issues. The main question addressed in this thesis is: How and why should supply chain risk management strategies be implemented in the company?

The practical perspective of the company's logistics manager is the lens through which the question is investigated. There is a little empirical evidence exists for verification of the strategy choice in the certain situation and business environment. Additionally, how the stage of internationalization, the size of the company, amount of suppliers and customers around the globe or other important factors influence the decision making process. Furthermore, there is a need for checking if the manager's choice was correct or there was a need to change the strategy eventually. This suggests a deductive element to the research design. The deductive aspect is also seen in the use of a conceptual framework. Therefore, an exploratory and explanatory research design using the qualitative interview and questionnaires is adopted to study the issue.

The deductive and inductive methods are the two approaches used in academic research. Hence, this study is a combination of deduction and induction. Eriksson and Kovalainen (2008:21) describe induction as reasoning that draws conclusions from an observation to findings and it is more general; while in the deduction method conclusions are built based from theory building and the review of existing literature sources. They claim that sometimes researchers obtain the combination of these two approaches named abduction.

Moving further, this research adopts a case study strategy. The case study approach is defined as a strategy for carrying out research that includes an empirical investigation of

a certain phenomenon in the context of the real life using multiple sources of evidence (Saunders et al. 2009:145 – 146). In the particular study, a company is analyzed in depth and from both perspectives: the opinion of the company management supplemented with the outlook of first-tier suppliers who can have a controversial or even opposite view. A qualitative research design for this study is chosen as not much is known about the phenomenon and there is a need for in-depth analysis.

Saunders et al. (2009) state that the case study strategy also has considerable ability to generate answers to the question 'why?' as well as the 'what?' and 'how?' questions and they used in the formulation of the research question of this study. A single case is selected because it provides an opportunity to observe a specific phenomenon from various angles.

4.2. Data collection

The data collection techniques employed in the case study may be various but face-to-face interviews and questionnaires conducted with top and linear managers are implemented in this research. In fact, qualitative interviews as a source for better understanding are suggested by many academics (Eriksson and Kovalainen 2008). So the methodology of the study is based on a case study strategy consisting of semi-structured interviews and questionnaires with open questions.

The amount of interviews and questionnaires depends on company's specifics; hence, the author has planned to conduct 7 face-to-face interviews and more than 10 questionnaires with managers of the suppliers from several regions, such as Turkey, China, Western and North Europe.

Interview guide, information statement for interviewees and questions in Russian and English are presented in Appendices (see Appendix 2 and Appendix 3). The language of the interviews is Russian as a native language for both parties. Additionally, some participants do not know English at the level of working proficiency and conducting interviews on this language could be restrained and cause discomfort among participants.

Semi-structured interviews are conducted in the premises of the company, specifically in its headquarters. The length of risk management issues' discussions with company managers varies from 30 minutes to 1 hour. Permission for recording has been given by all interviewees.

Table 6 Background information of interviews' participants

Interview number, date and duration	Position in the company	Level of education	Experience (total / in the company)	Background in the company
#1 09.04.2017 (46:47)	Head of Procurement Department (Male)	Secondary special	17 years in commerce/ 15 years and 11 – in the current position	Shop Assistant, Senior Shop Assistant, Sales Manager, Senior Sales Manager, Store Administrator, Distribution Manager
#2 10.04.2017 (33:40)	Logistics Manager (Female)	Higher	3 years + internship in the customs	None
#3 11.04.2017 (33:03)	Commercial Manager (Male)	Higher, unfinished PhD	23 years in commerce / 10 years	None
#4 11.04.2017 (34:08)	Head of Procurement Department (Deputy Commercial Manager in Procurement) (Male)	Higher, MBA	20 years in commerce/ 15 years	Sales Manager, Senior Sales Manager
#5 12.04.2017 (39:05)	Chief Accountant (Female)	Higher, Master's degree	23 years / 8 months	None
#6 14.04.2017 (27:48)	General Manager, Co-owner (Male)	2 Higher	24 years in business / 19 – in commerce / 17 – company co-owner	None
#7 14.04.2017 (56:48)	Finance Manager (Female)	Higher	23 years / 10 years	None

The following persons (four men and three women) have agreed on the meeting and interview with the author: the company's General Manager, Finance and Commercial Managers, Head of Procurement Department with his subordinate Logistics Manager, Chief Accountant and Head of Distribution Department. More detailed personal information of interviewees is presented in the table (see Table 6).

All participants have had a chance to become familiar with the main research topic and possible concepts discussed in the interview beforehand. They have received interview information statements (in Russian) a couple days before the meeting during the process of arrangement. Statements have been sent via corporate e-mail or directly delivered to the interviewee by the interviewer.

Questions for interviews are divided into three sections: introduction, discussion of supply chain risk, and the company's risk management system and the choice of the strategy. The aim is to build the discussion from the starting point of understanding concepts used in the study (via practical examples and interpretation in own words) to more complicate issues: implemented methods and strategies, the system created and functioning in the company as well as some ideas for development and finding existing weaknesses, drawbacks.

Information and participants' opinions gathered during the interviews are influenced by overall work experience of participants, their background in the case company and the current position as well as their attitude towards risk and the level of education. Additionally, all participants have tried to specify answers on the asked questions according to their area of responsibility in the studied company and provide practical examples based on prior acquired knowledge, not on possible guesswork.

While, questionnaires have been sent via corporate e-mail to company suppliers asking for assistance in the present studies. English as a main language for questions has been chosen, however, some participants have asked for using Russian as an alternative. Questions that have been prepared for study conducting have been included in the paper (see Appendix 4). Answers have been returned in the same way – via e-mail service. Eleven persons in positions related to sales and communication with customers from

suppliers' companies have taken part in the questionnaire, both male (8) and female (3) with working experience from 2 to 24 years. The geography of respondents is the following: Turkey – 4 respondents, China – 5 respondents, and Italy with Finland – one respondent from each country, correspondently. The complete information about participants is presented below (see Table 7).

Table 7 Background information of questionnaires' respondents

Respondent number	Country	Gender	Position in the company	Total experience / in the current role (in years)
1	Turkey	Male	Sales Manager	7 / 7
2	Italy	Male	Area Manager	9 / 7
3	Turkey	Male	Export Area Sales Manager	Not stated
4	China	Male	Sales Manager	10 / 3.5
5	China	Male	Sales Manager	8 / 3
6	China	Female	Foreign Trade Salesman	10 / 2
7	Turkey	Male	Regional Sales Manager	2 / 4 months
8	China	Male	Department Manager	17 / 17
9	China	Female	Co-owner	8 / 4
10	Finland	Male	Sales Engineer	12 / 1
11	Turkey	Female	Sales Manager	24 / 3

The aim of questionnaires is to supplement information gathered during interviews with the company managers with additional details of the situation in the supply chain. Moreover, they help to understand the risk management system of suppliers if they have developed strategies and tools for risk mitigation and prevention.

Both interviews and questionnaires have been used by the author in order to check if theories and ideas from the literature review work in practice, compare the built theoretical framework with findings and present further recommendations for action in development of the overall company risk management strategy.

4.3. Data analysis

The data collected are mainly qualitative by a means of semi-structured face-to-face interviews and questionnaires, although some secondary quantitative data are used: documentation, reports and the company's website.

The time horizon for the study can be longitudinal or cross-sectional according to Saunders et al. (2009). In a study conducted with the use of longitudinal time horizon the concept or phenomena are examined during the certain period of time. However, a study conducted with the use of cross-sectional time horizon, the same concept or phenomena are analyzed at a particular time. Due to certain restraints in time and resources, the author has chosen to conduct a cross-sectional study.

The first part of this thesis is built by deductive reasoning with further building of the theoretical framework. In the latter part, the logic switches to induction. Based on the findings of questionnaires with suppliers/partners, interviews with company managers from various departments and positions as well as collected data of the examined case, conclusions that are more general are drawn.

In addition, the theory building should be revisited after the interviews and questionnaires are analyzed to maintain the focus of the study and add significant details missed from the first sight. The theoretical framework should be also examined in order to find possible gaps.

Maylor and Blackmon (2005) claim that the main goal of data analysis is resulted in a systematic, clear and unambiguous interpretation of concepts in the research. After all interviews are conducted and answers for questionnaires are received from the respondents by e-mail, the material of the study should be presented in a textual form (recorded interviews are transcribed) in order to come up with a qualitative database collecting extensive outcomes.

Next step is to analyze the material for context suitability, find themes that are common and combine data in accordance with defined similarities. From common ones the

author chooses key themes that are related to the conducted study and stay in accordance with research question and objectives.

Final step of the classification leads to the comprehensive analysis of common themes and data presented in each group. Moreover, direct quotations from the face-to-face interviews added to the text in italics help to describe the findings without possible misrepresentation and highlight obtained evidence.

4.4. Reliability and validity

The research quality can be tested with the help of the concepts as validity and reliability (Newman and Benz 1998). These concepts determine the creditability of the conducted research and prove the value of received outcomes of the study.

Several methods are applied to improve the research quality. Firstly, the research is based on a theoretical conceptual framework with a clear structure. All findings of the research are based on the previous studies discussed in the literature review section. Additionally, data results correlate with each other. Later on, all interviews are recorded and transcript preserving main ideas of the respondents so as to no important information would be missed during the whole process of the study and interpretation is done correctly by the author. Finally, the author provides direct quotations from the interviews at all steps of analysis in such way that tracing of development in the outcomes is possible.

Use of semi-structured interviews as a main source of information for the study is connected with several issues about their data quality, such as various forms of bias, reliability, validity and generalizability. Marshall and Rossmann (1999) state that changes in the current situation do not allow qualitative research to be repeated at the same circumstances in which it has been occurred for the first time. Despite this fact, reliability can be achieved through avoiding biases in the process of research conduction. Two forms of bias can be separated: interviewer and interviewee bias.

All forms of the interviewer's behavior (gests, mimics, random comments or even tone of the voice) influence the results. Saunders et al. (2009) suggest to provide information in details (in the written or recorded form) how these interviews are conducted. The interviewer is not allowed to give any comments, express her opinion or try to explain and correct the incomplete answers of the interviewee during the whole conversation in order to prevent any influence on the results and information correction based on the actual conversation.

Additionally, all interviews start with the statement about confidentiality of the information received from the respondent that encourage interviewees to be more specific in their answers and provide practical examples from their experience if it is possible and helpful in this particular situation. In case it is necessary, the interviewer asks more questions to clarify any vague answers and receive to the extent possible full information.

Moreover, to increase credibility of the data every interview should begin with familiarization of respondents with the concepts used in the study and some time for them given to find traces in their personal experience. Furthermore, in order to clarify meanings of used concepts as well as conclusions the author adds probing questions and closed questions in the list. In addition, the interview cannot consist of topics considered sensitive or inappropriate by respondents and to reduce a possibility of any biases a use of specific terminology is avoided. These methods help to keep the collected data free from the interviewer's own experience and opinion, make sure that all questions are understood in the correct way.

Face-to-face interviews can be influenced of such kind of bias that the interviewer should keep in mind controlling tone and possible non-verbal behavior. To add more reliability to the outcomes received from the interviews and questionnaires, wording of the questions and connection of the responses to desired results and the research question of the study should be tested in a pilot interview. It can help to see if further changes in questions are needed and the context of interviews' questions is appropriate.

Additionally, all respondents are colleagues in one company and know personally the interviewer. It should help to ease the conversation and both sides can feel more freely during the interview. However, all questionnaires are carried out via e-mail where the author cannot influence the answers of the respondents. The only issue can decrease the value of data is incomplete or unanswered questions because further explanation is not possible due to the distance and a time gap between parties.

Another bias is an interviewee bias: it is connected with perception of the interviewer and her behavior as well as perception of the study goals (Saunders et al. 2009:326). Furthermore, there is also bias related to the sampling choice and the willingness of participants to interact due to the time consumption or relations between parties (Saunders et al. 2009:327). Hence, all interviewees are chosen to be relevant to the issues of the risk management in the company. They have agreed on his or her own to help the interviewer in study conduction and been familiar with the topic of conversation beforehand. The same situation is applicable to respondents of the questionnaires.

The interviews are conducted in Russian as a native language for both sides, the interviewer and the interviewees. It could become another issue applicable to the study validity. Therefore, it cannot influence data quality collected during the interviews. On the other side, questionnaires are performed in English as a common language for the business correspondents in the company. However, all respondents use this language in everyday work and possess the sufficient level of knowledge that is enough to understand correctly questions and give full and detailed answers for the discussed issues. As a conclusion, language issues do not influence answers of the respondents taking part in both types of data collection methods.

In conclusion, because of resource limits and a lack of time, the data for the current research cannot be collected until its saturation. Consequently, the author should admit that collected data and achieved results of the study might not present the full picture for the discussed concepts and the phenomenon might need further examination.

5. DISCUSSION AND FINDINGS

5.1. Case company background

The company for the case study has been chosen for several reasons. First, the company meets the criteria for the current study: it is a middle size company with international suppliers' network from various regions; it operates more than one decade of the Russian market. Additionally, it includes several departments with precisely separated functions, and the company makes the business in the turbulent and changing environment facing different groups of risks on the daily basis.

One more important thing is that the author is the part of this company team and plays a role of the Procurement manager in the Purchasing department. This position helps to understand the company strategy and operations as well as deeply analyze possibilities for disruptions and find gaps in the company's system of supply chain risk management. Close connection with local and international suppliers brings an opportunity to obtain information from their sides that can help to build the whole picture. Because the opinion from both sides always can shed some light on missing aspects of the studied issue.

Further, the author add some details to the company description for easier understanding of its position on the market and inner structure.

The case company in the study is one of the biggest foreign trucks, trailers and buses spare parts retailer and wholesaler in the Russian Federation generally and in the northwest region particularly. It is ranked in the top five biggest companies of this business sphere. The company was founded in 2000 by two entrepreneurs (co-owners) and started from the small spare parts store in Saint Petersburg.

Hence, the whole story begins with the idea of passengers' transportation using buses: originally, two co-owners had several buses for transportation and excursions in Saint Petersburg and its suburbs early in 1990's, and then they started to carry passengers to Finland for shop tours (later 1990's). At that time, they came to the idea that spare parts

for buses could also be sold to other bus owners and the business evolved to the current condition – wholesale and retail trade.

The company has been growing significantly during the whole period of its existence and nowadays it contains the group of several companies including the headquarters with the main warehouse complex, the wholesale department (separately the department for customers from the northwest region and from other parts of Russian Federation: the south with black soil region, the north with Karelia, Ural, Siberia and others), and eight retail stores in Saint Petersburg (various in the size and specifics) together with three regional divisions (Pskov, Vyborg and Velikiy Novgorod). The full organizational hierarchy of the company is demonstrated below (see Figure 3).

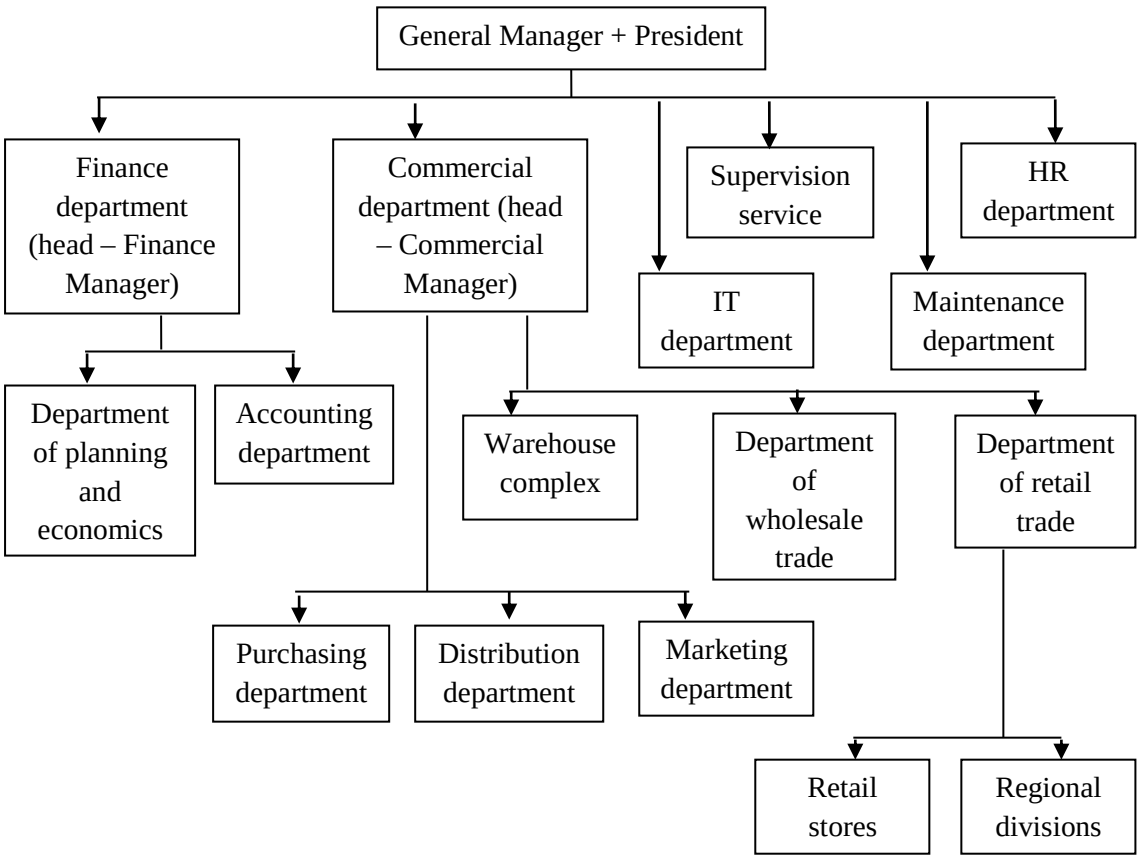

Figure 3 Organizational hierarchy

Talking about its partners and suppliers, the company has long-lasting and trustful relations with local companies that helps to get the access to the products from Russian producers and the assortment of positions that is not included in the list of the company's specialization (mainly goods for displays in retail stores). Moreover, the short lead-time and the possibility of purchasing and delivery for the define customer at the same day brings fruitful results in extra profit.

However, the main company focus and turnover is based on the relations with international companies - partners around the globe. These companies can be divided in several regions / zones in accordance with their geographical position: West Europe – e.g. the UK, Italy and Germany; North Europe and Baltic countries – Finland and Lithuania; East Europe - Poland and Slovenia; Middle East – Turkey; Asia – India, China and South Korea. All these suppliers specify on various product groups and the goods present different quality / price range – from low cost brands to premium ones. Hence, the focus of the case company is the middle and low-cost segments with the huge assortment of spare parts for European commercial transport.

Additionally, to compete with other numerous companies in this industry on the Russian market and create the group of loyal customers, the company has created several private brands in various assortment groups (e.g. air springs, brake pads and filters). The last but not least important business segment of the company is own online store where customers can make an order and obtain the necessary spare part with a low price and in the short term. The free delivery service of ordered goods with own truck fleet is also available bringing extra convenience to customers. Finally, the same vans distribute the goods between the warehouse and retail stores, regional divisions and partners' warehouses.

5.2. Interviews with company managers

5.2.1. Attitude towards risk

The starting point of each interview with linear and top managers of the company under study became their familiarity with discussed concepts, in particular with risk

management, its nature and main purpose. Participants tried to define it and describe in several phrases, find special words. Interestingly that everyone did it in the unique way.

To combine received answers the core of the concept can be characterized as following: "*risk is the part of the company's activity*", "*can be internal and external*", "*force-major as risk connected with nature and difficult to overcome*", "*risk from various perspective and angles – the customs, suppliers and customers*"; "*the system for risk mitigation and control*", "*risk in planning*" and "*finding new solutions to deal with situations*", "*determine strengths and weaknesses*", "*objectivity and subjectivity in decision making*"; "*uncertainty and obstacles for business*", "*risk of future losses*".

Summing up, risk management is the system that contains several stages: risk identification, acceptance of its existence and danger for the company, analysis of its severity and decision making process. If risk can include uncertainty for operations and cause possible future losses, it should be well studied and its consequences are minimized. The company management obtain certain experience (knowledge and learning process itself) that will become the part of ready solutions for future repetition of such situation or help to respond faster in case of uncertainties (the seventh step of the theoretical framework – received outcomes and feedback) .

The system overall is aimed to control business environment around and pay attention to weak places inside the company processes and operations. Additionally, influence of the third parties on the company's activity is much more difficult to predict, while internal risks (Cucchiella and Gastaldi 2006; Karbalaee et al. 2013) in the company with the long history and experience on the market are easier for control: all operations are coordinated and everyone knows his or her function, duties. In this situation, there is less space for critical changes and force-majors. Several respondents independently confirmed this statement.

Talking about severity and uncertainty of the international business environment, interviewees undoubtedly agreed with this statement (Manuj and Mentzer 2008 A). This finding is related to the first and second steps of the theoretical framework, namely risk identification and risk classification. Moreover, several reasons were specified adding

specificity: development of the global market and business itself, the presence of competition (mainly in its intense form "*because profit is the goal and the reason*"), internal instability of economics in the country (Russian specifics - currency fluctuations and inflation), interrelation of processes and globalization that cannot be avoided, difficulties in relations between countries and political instability. As examples, financial sactions with European countries leading to certain restrictions on international product distribution and ambiguous relationship with Turkey were mentioned.

Moreover, the Chief Accountant added the promising remark about overall global processes, such as countries' diversification and specialization on certain product groups, shift in production between developed in developing countries (from processing to the sphere of services). This change also makes harder the process of finding the niche for the company and subsequent success of business.

The General Manager came to the following formula: "*business itself connected with profit and competition: the higher profit on the certain market, the more fierce competition for the market share; here is the direct proportion*".

Finally, several respondents claimed that uncertainty and instability of business environment is not something new. Business has been always related to risk and possible losses, both on the local and international market. The main reason for changes is international relations of countries, their political interests and ability to find partners in the long term.

The attitude towards risk (Karbalaee et al. 2013) varies from the respondent to respondent. Mainly the reaction on risk remains negative, only a few said that risk is a positive thing for the company. However, majority found that uncertainty and necessity for additional planning in development of new processes and projects could help to achieve better results ("*new achievements*", "*improvement and movement forward*") even if possible risks did not appear. Such risk evaluation and analysis increase awareness of the company's management about hidden challenges both inside the company and on the market.

The General Manager described own attitude towards risk: "*The balance should be found, small risks can be accepted if they cannot cause huge losses, bigger risk situations should be avoided or the consequences should be minimized*".

Additionally, various attitude (negative, positive or neutral) among interviewees proves the existence of several groups and belonging to them that influence the managerial behavior in decision making process in the situation of uncertainty or lack of information. Negative attitude towards the risk (risk avoidance) associated with negative changes and losses – loss of profit, reputation. The age of the respondent and a high position in the company creates a tendency to risk avoidance and more conservative position in the life. Hence, positive attitude (risk acceptance) brings the ideas of gained experience and risk minimization in the future using new strategies and tools.

The Finance manager claimed the following position: "*Risk is the part of our life; it should be accepted as granted. Initially risk is associated with shock, especially for a top manager with many subordinates who is not well prepared for the situation and can lose control. From another angle, risk forces you to be concentrated and keep yourself in good shape without losing attention*".

This finding is correspondence with the process of risk evaluation and ranking (the third and fourth steps of the theoretical framework) leading to the following choice of the appropriate strategy for risk management in the company (the fifth step of the framework). The managers' attitude towards risk becomes the main trigger for the final decision and further implementation on the strategic and tactical levels (the sixth step).

5.2.2 Discussion of global supply chain risk

Speaking about risk sources (Christopher and Peck 2004), all risks were divided into two groups: internal and external, with greater attention to the latter (the discussion came back to risk classification – the second step in the framework). The Head of Distribution Department described the change of priorities in the company: "*On the stage of company establishment internal risks have more influence on processes,*

decisions and the whole system. Further, the company gains experience, passes the phase of learning, becomes familiar with management of important processes and personnel; the company grows and expands. Finally, when the internal system is organized, external risks come to the fore that are more difficult to control and predict because they are connected with the environment".

Examples of risk sources were presented in plenty: between buyers and sellers, connected with suppliers, customers, competitors, transportation companies (brokers and agents), and state authorities (especially with the customs as the main threat for the international company), inside the company with personnel and their professional competency and natural disasters (force-major).

Additionally, the General Manager made a notice: "*Usually risks are not unilateral, both parties (e.g. buyer and supplier) are involved and interrelated. For an example, one party did not prepare the goods and documents in a proper way and another party did not control the situation and did not predict the possibility of risk occurrence*". Thus, both parties should be take part in the risk management process. Probably, in some way of cooperation and information sharing to avoid such situation.

Contrast between a trading company and producer in accordance with demand and supply risks was highlighted by the Chief Accountant: "*It is easier for a trading company to switch from one supplier to another if you are not satisfied with his performance. A producer more depends on suppliers of raw materials, any failure in lead-time and quality brings uncertainty. Hence, it is easier for the producer to find a sales market and attract customers because of minimum margin and lower total costs. The trading company is an intermediate between producers and customers where lack of demand is a huge threat for the company's profit level and existence in the future*".

The Finance Manager supplemented previous findings and paid attention to the international activity of company's operations and its specifics: "*Any international company faces risks associated with international politics, relationships between countries, openness of borders, the customs' limitations and regulations, inner politics' situation*". The international environment with its changes and instability makes

companies to become flexible and be ready to better and faster adapt for unforeseen events than companies operating on the local market. However, it brings more opportunity for growth and development.

To understand what risk situations play more significant role for the respondents, the author came up with the question about practical examples. Mainly the given answers focused on the current business reality – changes in international politics and economics instability, and own experience from the case company's operations – excess safety stock for the next 10 years of sales, new suppliers and bad quality, problems with lead-time and logistics.

The vivid example of instability in regulations was given by the Commercial Manager: "*Some product groups in our company have long lead-time (e.g. suppliers from China) and while the goods were delivered by sea to Russia, the situation with the customs regulations had changed. In accordance with the new rule, all pallets and boxes of imported goods must have special marking with the EAC label of the Customs Union (Russia, Belarus and Kazakhstan). Our company together with the supplier did not have such information beforehand. As a result, the company suffered losses: a part of goods were confiscated, we had to pay the penalty and lost several orders from customers, our reputation of reliable partner were also blackened*". Even small changes in laws may lead to great consequences in the scale of a particular company. Where such risk situation cannot be predicted in advance and further methods of mitigation have been chosen.

The Chief Accountant came up with the example of positive consequences of uncertainty that took place on the previous work when the company found the way to adjust and even increase its profit during the crisis time in the year 2008: "*Because of decrease in profit during the crisis, the company that specialized on goods re-packing and re-export to developed countries, had to change own logistical system and adapt to the business reality. Top management decided not to deliver goods in Russia but send them straight to the customer (virtual re-export). We only prepared new documents and made all necessary arrangements. This helped to shorten delivery time, reduce tax load*

and additional costs, and optimize storage space. These steps led to reduced total cost and improved competitiveness of the company".

When discussion came to the current situation in the case study company, interviewees confirmed the evidence that the company has to operate in the changing global environment and faces various risks in everyday operations (Connelly et al. 2013). Different factors of the market cannot be followed in the proper amount, new competitors appear or well-known market players merge and grow.

Because of company's specifics, a half of all suppliers is of Turkish origin and the change of political situation significantly influenced its stability: the goods cannot go through the procedure of customs clearance, delivery terms are violated, the company losses profit, customers and the corporate image. Even if the goods cannot reach the place of destination, the company should pay to suppliers – in total, direct and indirect losses.

Another type of risk that the company faces constantly is risks connected with currency exchange rate and instability of the local currency (ruble) (Trkman and McCormack 2009). The goods are purchased in euros and dollars, the company should buy the currency to pay to suppliers but the exchange rate is instable, exchange differences are the reality. They can be both positive (some profit for the company) and negative, however, the latter is more frequent.

The Head of Procurement Department added: "*Every day we ship some goods, batches go through the customs clearance procedure, goods on pallets, in trucks and containers, arrive to our warehouse complex. There is no certainty in the system. We do not know what will change tomorrow and in what part of our activities*".

Finally, there is the constant uncertainty with customers who purchase the goods with payment delay. If the company does not receive payments on time (receivables), payment forecast becomes inaccurate and the streamlined schedule for payments to suppliers is disrupted. In this case, external risks cause risks for the company itself

(internal): risks of extra payments, such as penalties, fines or even review of current favorable payment conditions with suppliers.

The General Manager described this situation: "*The company has several key customers and a few customers with large turnover. If such customer has problems with money and credits, he will never tell you. As a result, one day he becomes a bankrupt, cannot pay to you. Usually we go to court but it takes much time and extra costs, and it is not the fact that you will receive money back in a full amount*".

Another situation where customers pay the main role in increased uncertainty for the company's operation is new regulations in the country – taxes and mandatory working schemes. The Finance Manager explains it with the example: "*The state authorities decided to introduce the new tax for transportation companies and individual entrepreneurs (trucks owners): they should pay extra money for use of roads which come to the funds of roads construction (a special fee for each km). Respectively, their profit remains at the previous level but expenses increase. Our company cannot raise prices (even if it is justified) because customers' solvency is reduced*".

Further, discussion came to the issue of cooperation (Tang 2006; Bai et al. 2010) with other tiers in a supply chain (the ninth step of the theoretical framework). Findings result in the following: the company tries to cooperate with suppliers – to know in advance dates of shipment, present up-to-date information for documents preparation and marking of goods, share plans for future orders and current market situation, in return, suppliers can inform about changes in the industry, give some information about new requests for cooperation from other companies; with customers – in less degree than suppliers but can share forecast for future orders (difficult to obtain – need for long lasting relationships), wait in the situation of force-major, the symmetry in documents' design (to avoid extra verification from the tax authorities). Even cooperation with competitors is possible in some situations - sharing the market information can be fruitful, main market plays know each other and can combine the efforts in the fight against new comers.

The Head of Distribution Department explains possible negative outcomes in such cooperation with other tiers: "*Sharing information with a supplier and giving him some market insides, we can end up with the situation when this supplier has grown significantly, found new partners on the market and decided to change existing preferential terms or even stop any relationships with the company. You can create risks with own hands*".

Additionally, other types of cooperation are possible in a supply chain: with brokers and agents – both parties share information about possible pitfalls for every shipment, help in preparation of documents and dealing in difficult situations with the customs; with banks and financial organizations – bank managers can inform about existing requirements for trading companies and importers, remind about correct order of operations and documents preparation. The presence of various cooperation types proves that the case company uses opportunities for risk sharing (the ninth step) that leads to trustful relationships among partners and actions for mutual risk prevention (the tenth step of the theoretical framework).

Company managers were asked to arrange in descending order risk types in accordance with their importance for the case company (Christopher and Peck 2004). The choice of the majority became as following: 1. demand risk, 2. environmental risk, 3. risk of losing control under the supply chain, 4. supply risk and 5. process risk (risk classification according to five groups from the second step of the framework). Reasons for such choice and explanation are outlined hereinafter.

Demand risk is on the first place because stable demand is the core business element, where the growing profit is the main goal. Without customers, the trading company will not exist. The company is constantly searching for new customers. At the same time previously loyal ones may find better conditions and switch the supplier. Moreover, there is another situation that may end up with the lack of funds because the product range includes seasonal goods, increase in prices and currency fluctuations dictate own rule: the company has to order in larger batches and it can lead to over stock in the warehouse.

Environmental risk is ranked on the second place. The business environment is uncertain, new market players can take a part of the profit. Because of industry specifics, these changes appear every year (changes in the automobile range and the service life of the fleet). The company should adjust and keep up with the progress. Additionally, during last 5 years dramatic changes in politics and sactions have led to limited access to some international markets for Russian companies (country's specifics). As it has been mentioned previously, instability in the currency exchange rate and in the country economics as the whole create more uncertainty for companies' activity.

Risk of losing control under the supply chain takes the third place in the rank of importance for the case company. The long supply chain is connected with more uncertainty: forecast for a long period is hindered, use of statistics only leads to uncorrected results - you cannot accurately determine the necessary purchase volume. Two situations are possible: lack of goods for sales and lack of funds for payments. If the situation of disruption connected with any tier of the supply chain is possible, the company should pay closer attention, revise and double-check all operations from order placement to delivery in a warehouse (check after a supplier, a broker and so on).

Supply risk with some differences in opinions of the respondents receives the fourth place. If the supplier has done some mistakes in order preparation (defect, inappropriate documents), it cannot be fixed after the event. However, the unreliable supplier can be replaced by another in the same country or even from another continent – it depends on the specific situation. Great competition among manufacturers make the process of the supplier's choice much easier.

The last but not least important is process risk. The reason is that the company has great experience on the market; inner processes are tuned and time-proved. It is flexible and uses the system of developed rules of actions for all main processes. Even if some process gets out of control, the problem will be resolved in a consultative manner among top management. The company implement the system of constant learning and improvement of operations. Moreover, personnel with lack of competence can be replaced or receive more attention from the management.

Paying attention to risks caused by relationships with suppliers of goods and services from various regions (Pfohl and Large 1993; Sabbaghian 2009; Maltz et al. 2010), opinions of the interviewees split up: some of them stated that Asian counties (mainly China) bring more uncertainty, while others chose Middle East with the focus on Turkey. It was claimed additionally that Asian and Turkish suppliers' performance may vary significantly: some of them are very observant, work with others may cause only "troubles and headaches".

Cooperation with Asian countries is connected with high level of uncertainty. The contact between parties is not developed at a high level. A huge role plays the difference in mentality: mismatch in holidays and attitude to business as well as an insufficient level of English. Quality of goods and supplier's performance vary a lot and cannot be predicted in advance. Hence, there is the increased likelihood of failure. Additionally, geographical distance adds more risk factors: lead-time is longer and possibility of bad performance in logistics schemes is higher; control under the situation is lower than with suppliers located closer.

However, many well-known European companies in the automobile industry purchase goods from China, Taiwan and South Korea, then deliver them into their premises and warehouses, re-pack, add some stickers and logos, and sell worldwide. Still these companies keep under control the quality and performance of suppliers to avoid any chance of reputation and customers' loss on the market.

Relationships with Middle East countries are not always stable. Changes in international politics only add more uncertainty. Despite some differences in culture and life attitude, personal meetings and close connections with suppliers help to establish trustful relationships and receive special preferences (annual bonus, discounts and payment delay). Some mismatch exists in this cooperation (as well as with China): long state and religion holidays affect production dates that lead to delays in delivery and lack of goods for sale, necessity to buy on the local market at higher prices (lost profit).

The Head of Distribution Department describes relationships of the case company with Turkish suppliers: "*Our company was a kind of pioneer in business with Turkish*

companies in Russia and in the northwest region in particular. They came on the Russian market in the 2000's, there were only local and European suppliers presented. Initially we faced many problems with goods quality, personal contacts and logistics. Nothing was well organized. However, now Turkish brands are well-known on the Russian market, customers choose them for low prices (compare to European ones) and good quality".

While, business with Europe (mainly, North or West) is recognized as more comfort and tuned. Relationships between countries have started during the Soviet era. Nowadays logistics schemes and quality are well known. Suppliers try to maintain relationships and control processes (order preparation, documents and delivery). Moreover, they are more flexible and open for a dialog – the company can negotiate better conditions. The General Manager commented that uncertainty in relation to European suppliers is of two or even three times lower.

5.2.3. The risk management system and the choice of the strategy

Further discussion came to the risk management system (Belloa and Bovell 2012; Wieland and Wallenburg 2012) and its specifics in the case study company. The respondents confirmed that there is no specific system or department dealing with risk identification and analysis. Hence, certain activity is organized in the company. Mainly at the level of individual services and departments.

The personnel addresses issues related to risk on everyday basis as their probability arises. They apply an individual approach to each situation connected with risk (every shipment or order placement). The activity is conducted based on the department's area of responsibility and managerial duties. Significant decisions usually made during meetings of top management and, when it is necessary, with involvement of the line personnel (brainstorming). Moreover, the company practices briefing meetings on weekly basis and annual meetings for development of the budget system and order planning for the next year.

Some functions of risk management service are taken by the Supervision service. Their duties include initial inspection of new suppliers and customers, check of their finance history, current performance and possible court claims. However, all activity is aimed at local suppliers and customers on the Russian market. After such inspection, new customers receives the rank that demonstrates maximum financial conditions for cooperation with them: payment delay terms and maximum amount of orders. The Supervision service does not communicate with international market players and is not able to prepare the report about their performance.

Another system that organized in the case company and aimed to deal with risks is the Workflow system. It is the electronic system that is used for setting tasks inside the company and monitoring their execution in accordance with the stipulated period. Furthermore, the company is constantly modifying software programs and tend to make everyday processes automatic.

However, the company has implemented a wide variety of methods and techniques for risk identification (Khan and Burnes 2007) and further analysis (steps from the first to fifth in the model). First, they include price monitoring of the market (competitors) and among suppliers within the same price category. Weekly and monthly reporting is used for the company's performance tracking, its main figures, indexes and trend of development.

In the process of own private brands development the company conducted marketing research, attract study groups and ran marketing campaigns to study public opinion among possible customers for these products. Close attention was paid to the choice of suppliers, their quality and lead-time to avoid breaks in availability. When brands were ready for launch, management carried out the double check of all parameters, calculated total cost and possible margin.

To mitigate risks related to suppliers, the company tries to cooperate with huge market players, with suppliers with long history and reputation of the reliable partner. Participation in the system of certification, especially under the quality management standards (ISO certification) adds the supplier extra points of trustworthiness. The same

methods are used in relation to agents and brokers: the company cooperates only with well-known and rather big companies that have strong connections with state authorities and know who to deal with risk situations.

Special methods of risk avoidance are used in the process of order placement: the case company developed the parameter that includes the minimum amount of goods in stock in the warehouse complex and mandatory availability for retail stores (minimum stock of goods). This parameter together with present stock and average monthly sales takes into consideration for order calculation (Khan and Burnes 2007). The method reduces the possibility when the company lacks some positions for sale. Additionally, such safety stock helps to increase the profit in case when the wholesale department receives unplanned orders from customers. In case the amount of goods still is not enough, the company applies purchasing on the local market to satisfy existing demand.

In order to avoid mistakes in selection purchasing of new positions for assortment and decrease risk of overstock, the special type of cooperation with other market players (trading companies and suppliers) is developed. The Purchasing and Distribution departments sign contracts with the requirement that companies supply the agreed amount of goods, they are distributed among retail stores and the payment should be done just after sales (the period of payment delay is not specified). In a half of the year, the received assortment is reviewed; unsold positions should be returned to the supplier, the rest – kept for further sales.

The finance department prepares the schedule of payments to prevent the situation connected with lack of money. The planning period is define within one quarter. It can guarantee smooth finance flow of business. Moreover, top management develops the annual budget for orders calculation (both for local and international suppliers). This method helps to balance the finance and goods flows. When sales are increasing, the order budget for next month will grow automatically because turnover of goods also becomes higher. Otherwise, the budget shrinks and the company will reduce own expenses.

Working methods for partners from various regions do not vary significantly. Only some nuances are taken into consideration to adapt to the specific situation. The company has developed guidelines of how to deal with international suppliers. Additionally, some additional requirement for a new supplier can be applied: certificates and samples can be asked from Indian, Chinese or Turkish suppliers to prove their quality. For European suppliers requirements are not so strict because state authorities in Europe require companies to meet the highest level of quality standards and prove it annually. However, these differences become blur comparing the business environment 10 years ago. Suppliers are eager to progress and bring the quality to their customers. It can be connected with economics development and the process of globalization.

The following issue to be discussed is the choice of new suppliers, what criteria are the most important and how it can be explained in the business reality (Kotula et al. 2015). The main criteria for the company are price together with quality and total cost that combines all expenses in the process, from order placing to delivery into the warehouse. High price and low quality reduce the company's competitiveness on the market: nobody wants such product; the company can lose not only profit but also the image and customers. Because of the industry specifics, customers are oriented at the optimal ratio price / quality. However, downtime of the fleet is the direct loss for a transportation company, so they are ready to pay a little more for prompt delivery.

Then payment terms and delivery process are taken into consideration (interconnected with geographical distance). Lead-time and production capability of the supplier become more important at the stage of growing orders: if the supplier can satisfy demand in the full amount, if the company will not face breaks in delivery and shortage of stock. When data is collected, economic and political factors should be checked: stability in the country, absence of any negative situations in relationships between countries (significant for the modern reality). Finally, overall supplier's performance can be checked only after the first order placement: if all documents are prepared on time, if delivery process is going smoothly and no force-major may appear.

Additional criteria were mentioned during interviews the following: image and popularity of the supplier on the market – customers are ready to pay more for well-

known brand; readiness of the supplier to take part into various marketing companies (at own expanse) and pay for additional promotion of products; the choice of suppliers from the region where the case company has current partners – the new supplier can gather information about credibility and suggest better financial conditions.

The Head of Procurement Department explains such company's priorities: "*Initially we pay attention to price and quality of the product. Later on when we understand what the price category is, we compare the product with others on the market at the same niche, check existing competitors. We discuss the payment terms with the suppliers, if they are favorable for us because if delivery time is long, we should receive longer payment delay. The same situation the expensive products: higher price, better payment conditions we need to obtain. The last significant criteria is the delivery process, if there is any problem with logistics, the customs and etc.*"

The General Manager added some comments: "*If we start cooperation with a new manufacturer, first we check the quality of the product and ask for a trial lot. Because we faced the situation when the supplier met at the fair was only the third party, not the producer or even sent the goods with quality that was lower than for samples. The size of the supplier is also significant. It can be explained by investments into production capacity (premises and equipment) because a small company cannot afford it*".

Finally, the Finance Manager summarized criteria that were mentioned earlier: "*Choosing a new supplier we take into account all factors, however, the final decision is made based on our confidence that this company will not fail, help us to stay competitive on the market and make the profit*".

Talking about risk situation that the company faced during its operations, the initial stage and company development were mentioned: purchasing of new products without quality check, double stock in the warehouse leading to violation of planned orders placement, the decrease in purchasing volume and loss of preferential conditions. Such situations could be explained by the lack of experience. Nowadays disruptions in the supply chain mainly connect with the international environment and external factors: changes in customs regulations, inappropriate performance of suppliers, written-off

receivables (related to customers), not in time deliveries. Failures may appear in every process in the situation when the control weakened. This finding can be explained by the learning process and processes' improvement based on received feedback (the seventh step of the model).

The Commercial Manager came up with the example combining both external and internal reasons for failure: "*Our company did not correctly assessed the impact of sactions but not from the European side – reverse sactions imposed by our government. About 50 – 70 per cent of our customers are transportation companies (carriers) that related to deliveries of goods from Europe to Russia. Some goods were banned to import, not all carriers were able to adjust to the situation and change specification and partners. As a result, direst losses for our company: we could not receive the margin as it was planned, expenses were not balanced with the profit, and the company faced the long loss-making period*".

In addition to risk management strategies (Jüttner 2005; Khan and Burnes 2007; Ritchie and Brindley 2007 B; Manuj and Mentzer 2008 B) mentioned previously, the case company implement some others as well (the sixth step in the framework – planning on the level of operation and implementation of appropriate to the situation strategies). To assure that transportation costs are not overestimated, the company hold tenders among agents and brokers for each shipment separately. The agent with the best offer becomes appointed for this delivery of goods and customs clearance.

Because of certain specifics of the automobile industry, product diversification is the key to success on the market (Son and Orchard 2013); it helps to achieve higher turnover and the increased profit. However, work under assortment in the company requires more attention from managers, search for new products and brands should be done on a regular basis. Another strategy for product diversification is related to development of own private brands. The idea is based on the brand exclusivity and monopoly on the market. In this situation, the company has an advantage to dictate prices and determine the possible level of the profit according to products' quality.

Forecasting and analysis of the possible market situation (Hallikas at al. 2004) has been implemented by company managers from the very beginning of its operations. Previously the company had the campaign for strategic planning in the long-term period (for next 5 years). Nowadays such method is not implemented in the full amount, only planning for one year in the frame of budgeting policy. Additionally, market monitoring should receive more attention (Xia et al. 2011): price monitoring is carried out weekly; however, monitoring of assortment remains insufficient. The only time-tested strategy for product groups' rotation is the ABC analysis when the company determines the most significant product groups bringing the biggest profit that should be always in stock.

Furthermore, the case company in order to avoid any possibility of failure controls suppliers' performance in the way of double checking of documents and goods marking before shipment, share updated information related to import operations. The strategy of dual sourcing and availability of substitutes for some product groups is an effective measure in the current political environment that can help to react faster on consequences of unforeseen events.

To conclude, the strategies mentioned in the last part of the third chapter as the most employed among companies with the high level of risk management development are also implemented by the case company. The finding proves their reliability and fruitful results of their practical application. The listed strategies can be summarized as following: dual sourcing and use of substitutes for main suppliers (usually partners on the local market to provide quick response in case of supplier's failure); buffering strategies, in particular use of safety stock and the parameter of minimum amount of goods availability, control under suppliers performance, information sharing and the choice of the most reliable partners; cooperation in the long term with strategic partners to avoid risks in quality, availability and obtain better market information.

Paying attention to strategies that can be implemented in the future, the majority of the respondents claim that any radical changes in the range of used strategies are impossible due to main reasons (with the environment and the situation inside the company). While strategies that the company manages on a daily basis should be developed and improved (it correlates with the eight step of the model – prevention of future risk emergence in

the future). There is a lack of monitoring on the level of macroeconomics, tracking of technological changes in the industry in order not to miss new products and opportunities for business growth. More planning and forecasting are necessary in the work with customers. For the company with the network of retail stores assortment development is the must-have process, right now the case company tries to come up with the assortment matrix for each product group presented in its stores.

In contrast with strategies used for existing risks, additional methods should be implemented in the company for risk forecasting and prevention (the proactive approach to risk management). The case company does not separate these two systems: some strategies are overlapped and can be used for both processes. No special department does not perform such functions and no software is specially used for these operations. A proactive approach for SCRM is not realized in full volume. The interviewees confirmed this statement: they understood that there would be some area for improvement in the future.

Finally, discussion with managers approached for possible suggestions for risk management system's improvement in the case company. Promising ideas for vertical coordination and creation of the specific system for SCRM for adjustment to the changing global environment were presented by the Head of Distribution Department: "*The company should develop further and come up with the centralized system of risk evaluation and implement it in the current business processes. All departments should be involved in the issues related to their functions. Top management should configure internal coordination and the criteria for outcomes assessment. Such system will add more mobility to the company operations. Moreover, creative potential of the personnel will be applied to a specific situation*".

Other respondents paid attention to improvement of existing processes and services. Specifically, the Supervision service dealing with local suppliers and customers can be extended in the hierarchy in order to review international partners as well or receive extra excess to all processes inside the company to make them more transparent and mitigate possible risks. Additionally, current work regulations become out of date, require changes and adaptation to the reality. They include regulations inside the

company and ones for cooperation with suppliers and customers that should include more specifics and recommendations for action.

To continue, more attention should be paid to the assortment: the system of rotation and division on product groups in accordance with their profitability; constant price monitoring of the market (preferably daily); search for new suppliers for current and new product groups (amount of suppliers has decreased in three times for ten years); search for new markets (expansion of the company). Price formation should become clearer, easier to control and include all elements of the total cost. From the financial side, control under the exchange difference is the priority. The new strategy for this aim is planned to implement in the future – the hedging strategy (Manuj and Mentzer 2008 B). The use of this strategy eliminates the possibility of suffering losses on deals with currency purchasing.

Coming back to the theoretical framework, questions for the interviews have been created by the author with the aim to check on practice the developed model, to prove the right order of all steps and confirm the correspondence of the evidence derived from the literature review with activities in practice.

Firstly, being aware of various risks associated with the changeable environment and operations within the company, managers of departments and services identify the existing risks related to the area of responsibility. If obtained information is enough and such risks are detected, the likelihood of negative outcomes of the event (Ritchie and Brindley 2007 B) is estimated. Risk events that can cause severe demand to the company operations, image, and profitability or have the effects that could be assessed easily receive further examination.

The second step of the model is associated with risk classification (Karbalaee et al. 2013) to understand the source of risk, reasons for occurrence and if it comes from the external environment that risks are more difficult to overcome and predict, and deep analysis is required or the risk is internal in nature and can be handled with some changes in operations and regulations in the company. Risk management for the former type of risk has a need for more experience, methods and tools for examination.

Additionally, risks are divided in five groups in accordance with their type and for easier choice of the mitigation strategy.

The next step is connected the final evaluation of risk parameters: the likelihood of its future repetition and its possible impact for the company (Khan and Burnes 2007). Sometimes the same risks can be evaluated differently because of the certain situation and their outcomes can also vary. At this step, the experience of one manager or department can be not enough, thus, the huge role plays the coordination between top management and line personnel (meetings, brainstorms).

Risk evaluation and examination ends at the third step of the model – risk ranking. The most severe risks should be managed in the first place and receive additional attention and control under situation development. The following step is interrelated with risk ranking and mainly depend on the risk attitude of the company's management, especially its top management who make the final decision and give instructions to action to the subordinates.

When the plan for risk management is ready and the appropriate strategy or the combinations of several strategies are chosen, it is the time for following implementation (Jüttner 2005) in the company operations (the step of the model – tactical planning and implementation). The company has a range of strategies that are used on a daily basis because some risks associated with the company's specifics and can suddenly occur (e.g. control of receivables). Other strategies are risk and situation-specific (e.g. in the situation of supplier's failure).

After strategy implementation, information is collected and the certain feedback is received by the managerial personnel, the conclusions should be built (the step – strategy outcomes and feedback). If the outcomes of the strategy are not satisfying and it does not help to overcome the uncertainty, the previous step should be repeated. Moreover, there is a possibility for the situation when the strategy has not become fully useful, risk has occurred and the company faces negative consequences or even losses.

However, such situations can help in creation of better methods for risk mitigation and prevention. In addition, it leads to more proactive approach (Schlegel and Trent 2012) in risk management within the supply chain (the eight step of the model – prevention of future risk emergence). These practices include various monitoring actives, forecasting in a medium and long terms, budgeting, development for new and update of existing processes' regulations.

The final steps of the model (risk sharing and mutual prevention) related to partners in the supply chain and the role in uncertainty avoidance and risk prevention (Tang 2006; Khan and Burnes 2007; Trkman et al. 2015). Various possibilities for cooperation can be found when trustful relationships are built between parties. Among others, the following should be mentioned: cooperation with strategic suppliers and key customers, with insurance and bank organizations, with brokers and agents. However, it is not always possible to share risk with other tiers in the supply chain, in many cases the company has to overcome the risk outcomes and develop its operations further.

In conclusion, despite the fact that the company does not implement the special risk management system or is not installed the specialized software, it is aware of possible risk connected with the specifics of operation. In addition, it has developed the range of strategies and methods to control every type of risk (demand, supply, environmental, process and control) trying to avoid them or mitigate consequences. The structure of existing in the company risk management practices is correlated with the theoretical framework presented in the third chapter of the study. Moreover, all steps (from the first to tenth) are found in the case company operations.

5.3. Replies for questionnaires with international suppliers

In order to avoid the situation when the phenomenon is studied from one sides and the full picture cannot be achieved, a series of questionnaires has been conducted. All respondents answered twelve questions aimed to know their attitude toward risks in the international environment and to Russian companies in particular, to find out if their companies have implemented the specific system for control under uncertainty and to identify what methods and strategies are used / should be used in the future.

The majority of respondents agreed with existence of the uncertainty in their operations. The main reasons have been named the following: instability in international economics and fluctuation in currency exchange rates, tough competition on the market, the current political situation (Brexit, the situation with Ukraine, the war in Syria, local conflicts), changes in the credit politics of banks and the high possibility of unexpected events.

However, at the same time, many countries' markets are open and the global trade is the reality. This can explain the rather neutral attitude towards risk among respondents: "*risk cannot be avoided*", "*risk brings the opportunity for the huge profit*", "*you cannot win without risk*", "*risk is a modern reality*", "*risk is a big chance*", "*the core of business is associated with risk*", "*you need to have a balance approach towards it*".

On a daily basis companies face a plenty of risks, the most important ones that are not planned and predicted in advance, and connected directly with losses: the issues with the customs (settlement of claims, correct documentation); with customers and payments (payment refusal and delays); with not in time delivery and supply disruption of raw materials, ready goods (shortage in availability); with suppliers (quality problems leading to customers dissatisfaction, the sharp and unplanned price increase, no substitutes for main suppliers in case of failure); with state authorities (new regulations and additional inspections, certification of goods); with changes in the environment (economics and politics that cause overall sales decrease, instability and force-major).

Talking about the risk management system itself (Son and Orchard 2013), only several respondents confirmed the existence of such system in their company (one Finnish and three Chinese companies): the monitoring system for the whole supply chain, the system for improved production plans and cost reduction, the scientific system for processes control for the factory and the Quality Assurance System. About the latter, the Sales Engineer involved in its development and implementation in the company gave some details: "*We are currently developing the system, which will take account of all the possible risks and guides how to avoid taking too big risks. It guides us through different steps and we can minimize risks where we can influence on the situation*".

Some managers claimed that they are planning implementation of the risk detection system in the future (Karbalaee et al. 2013). However, as in the case study company, they developed special methods and strategies that help to prevent risks or mitigate outcomes. Several should be mentioned: constant learning process, use of rich experience and trainings for the personnel, internal regulations and work with official contracts, accurate selection of suppliers and check of customers' credibility, creation of the special service for control under operations, analysis of goods and shipment on quality, packing, production time and documents accuracy; involvement of insurance practices, market monitoring to be keen on daily changes.

The process of cooperation with other tiers of a supply chain (Tang 2006) is significantly developed in the majority of the companies. Mainly cooperation is based on interaction with suppliers of raw materials and transportation companies to assure production dates will not be violated, delivery will be on time and the quality will satisfy the requirement; with other producers in the way of the concern or partners relationships to provide a wide range of positions; with customers to find out if they are satisfied with conditions, quality and a product range; with authorities to check if the company meets all requirements and any problems will not occur; and with insurance companies to reduce supply chain risk with the help of credit insurance policies applied for their customers.

With regard to regional varieties (Pfohl and Large 1993; Maltz et al. 2010) and change in the level of uncertainty, West Europe is claimed as the most stable region for doing business (the same results are demonstrated in the interviews); the European Union is one market with no boarders for the goods flow and has quite similar regulations. Risks in Europe are lying on higher quality and service levels and if the company can reach expectations. Hence, Middle East, South America, Central Asia and Africa are stated as very uncertain areas for the international company's activity. It is mainly the result of changing countries' policy, the political situation and cultural differences. For these regions, companies apply special requirements: prepayment after the order confirmation, payments in cash or in advance before shipment.

While business relationships with Russian companies (both partners and customers) do not bring huge problems. Base on respondents' experience, Russian companies are reliable partners with good reputation, "*our relationships lasts for a long time*" and "*they are quite precise with payments*". One respondent from the Finnish company commented: "*You will learn the cultural differences and know how to avoid problems*".

However, because of political changes and currency fluctuation, some banks and insurance companies are not ready to provide them with credits, consequently, suppliers and manufacturers have to ask them for prepayment. To overcome financial uncertainty, evaluation of the company credit status before the deal is the must. Moreover, risks faced doing business with Russia are connected with the strict customs regulations and additional requirements for documents and goods marking.

Rarely but companies faced situations of failure that caused direct losses. The customer did not pay for the goods and the company did not cooperate with the insurance company, so it had to take all risks of not receiving the payment. Alternatively, an example when the company did not have the quality department, it ended up with increased warranty claims (loss of profit, customers and reputation).

To avoid mentioned above situations, companies made some improvements for risk forecasting (Hallikas et al. 2004; Bai 2010): training for the personnel about risk management strategies, cooperation with insurance companies, establishment of certain regulations and customers' credit management, top management engagement, creation of quality standards for operations inside the company, quality assurance checking for every position produced.

According to respondents' point of the view, even more should be done in risk management in the future. The manager from the Italian company shared their plans: "*We are planning to check information regarding new customers with other suppliers who are working with them directly*". Another comment came from the Turkish manager: "*Kind of financial risk management program can be implemented to better follow up our financial risk on customers. Also, to eliminate delivery problems, an effective ordering and shipment system can be established*". The Chinese Department

Manager concluded: "*To avoid currency risks and catch more updated news about all changes, our company can open more local offices / branches in the future*".

Summarizing the ideas collected with the help of questionnaires, the majority of surveyed companies are conscious of various types of risk in the global business environment. However, just few of them developed the specific system for uncertainty avoidance and forecasting of adverse events. Close attention is paid to relationships with customers and suppliers, the activity for risk identification, analysis and mitigation remains at unsatisfied level.

The received findings are corresponded with date collection in the interviews with the case company managers. The companies pay attention to the processed related to risk identification and evaluation with further setting of priorities and choosing for the strategy to address risks faced by the company. Outcomes of used methods and gained experience help to develop risk management practices further and prevent the repetition for such situations. Finally, some companies use the opportunity for cooperation with other tiers in the supply chain to share possible risks or even forecast their occurrence in the future.

6. CONCLUSIONS

This chapter presents the summary of key findings in supply chain risk management based on overview of theoretical (literature review) and practical (interviews and questionnaire) parts of the study. The research question and objectives are reviewed and evaluated according to the findings. Moreover, the author provides the theoretical contribution of the current study comparing to the previous research in the field and managerial implications for discussed strategies and practical ideas. Finally, in the last part of the chapter study limitations are defined.

6.1. Summary

The aim of the study was to understand why risk management is the significant part of company operations and what strategies should be implemented to avoid disruptions within a supply chain. The focus was made on methods and tools that can be helpful for operations of the company in the international environment on a daily basis. Together with strategies that can be used for forecasting and prevention of possible losses in the future throughout the whole supply chain – from the supplier of raw materials and components to the end customer.

The result was reached by carrying the review on the literature existing in the field with respect to the phenomena of risk and its categorization, risk management, a supply chain and its management in the company, and risk management strategies implemented for the business activities on the world scale and further supplemented by the theoretical framework in ten steps describing how the system of SCRM should function, and gathered data via the empirical research and examples collected from the real companies' experience.

The concept of risk in the literature is mainly related to unwanted and unpredicted events that can cause negative consequences for the company. However, discussion with managers from the case company and suppliers has demonstrated the possibility of opposite attitude towards risk when it is seen as the business reality and opportunity for growth and development. They still are aware of adverse consequences of uncertainty

for company operations, at the same time the company can become more flexible, take part into the constant learning process and adapt to the changing modern environment. Additionally, the developed risk management system in the supply chain reduces the opportunity for failure, thus, it brings the competitive advantage and higher profit as the main goal of companies activities.

Risks related to their nature and sources in accordance with findings of Cucchiella and Gastaldi (2006) are divided into two groups: internal and external. Managers in the case company stated that internal risks more often occur at the initial stage of company establishment when processes are not well developed and managerial experience is not enough for the smooth operations' flow. The changeable business environment, new contacts with suppliers and transportation companies, tough competition for the market share and strict control from the governmental side increase the uncertainty.

However, when the company obtains more experience and adjust to the environment, find loyal customers and adapt the assortment, when the suppliers' pool is created and mutual trustful relationships are built, internal risks decrease their significance. The first place in this situation is taken by external risks. Nowadays the unstable economic situation, both in the country and worldwide, changes in international relationships between countries, sactions and other regulations become the main risks source for manufactures and trading companies.

The division of all risks into five groups presented earlier by Christopher and Peck (2004) has found confirmation from the managerial side. Demand, supply, control and environmental risk relate to sources external in nature, on the other side, operational risk is connected with the internal company processes.

Additionally, company managers have created the ranking for the listed risk types. Where demand risk is the most significant risk type that influences the ability of the company to bring the profit. Search of new customers and market monitoring are in the priorities of any trading company. The second place goes to risk related to the business environment. Political changes, international relationships and instability in economics increase the possibility of losses and failure in performance. Moreover, the huge

importance for companies working with Russian partners or operating on the Russian market has the instability of the currency and fluctuation on the market connected with it.

Then, risk of losing control ranked on the third place according to severity and importance. It can be explained by geographical distance among partners, cultural differences and the insufficient amount of static data (future sales is difficult to forecast). Any tier in a supply chain may fail and destroy the smooth flow of operations that leads to negative consequences and possibility of extra expenses.

Supply risk does not have the same significant influence on operations as demand risk, however, failure in quality, delivery or availability leads to the direct losses in money, image or even to the loss of customers' loyalty. Hence, the supplier can be substituted to assure prompt delivery and appropriate quality or use of dual sourcing can be implemented for strategic product groups. Finally, for the company with great market experience and developed methods for risk prevention the last place is received by operational risk. Flexibility of operations and learning process facilitate the ability of the company to come up with new strategies of risk avoidance.

Managing the complex supply chain is a really challenging task. According to Khan and Burnes (2007), the processes of risk identification, evaluation and control are aimed to reduce the uncertainty, fully compete with other market players and reduce total costs. The main reason for risk management is the ability to overcome difficulties on the market and obtain the better profit. It happens because of the direct proportionality: the higher possible return on the market, the more fierce is the competition for the market share and more changing the environment; new players want to occupy the company's niche and develop own operations. If the risk management system in the company is well-established, it can assess and address risks without possibility for operations disruption. Nowadays in order not to lose the race of market competitiveness, the proactive approach should be implemented.

The methods for risk prevention and mitigation should be integrated in the company structure (as it is shown in the theoretical framework). Such system helps to evaluate

possible risks in the context of everyday operations. Three motives are identified for risk management (Manuj and Mentzer 2008 B): to obtain certain protection for the business, to assure the smooth flow in a supply chain, to increase the profit because the company that can adapt to the changing environment brings more return to the shareholders.

Furthermore, the case company is constantly looking for strategies and tools to adjust operations to the new realities of the international business. In the literature review, many authors provided various classifications for SCRM strategies. Additionally, after comparison of these strategies with ones used by companies from the empirical research, their similarity was proved.

Three strategies that should be implemented for control under uncertainty in the company are the following: dual sourcing, buffering strategy and strategic partnership. They can help to create the supply chain risk management system that meet the minimum necessary requirements of the company. Furthermore, a fairly complete list of possible responses for each risk type from the case company is presented in the table below (see Table 8).

Table 8 Risk types and strategies for prevention and mitigation

Risk type	Possible strategy
Demand risk	- Price monitoring of the market - Assortment rotation and strategic division on groups - ABC analysis to make priorities in product groups availability - Product diversification - Private brands' development - Use of safety stock - Communication development with customers - Activity on loyalty facilitation among customers (bonus programs and promotion campaigns with discount, use of customer cards)
Supply risk	- Use of special criteria for the new supplier's choice - Certification of products, preferably according to international standards

	- Control of suppliers' quality management (quality check and trial batches of goods) - Control under preparation of documents and goods marking - Cooperation with well-known companies, mainly producers - Dual sourcing - Consolidation of purchases from local and international suppliers - Strategic partnership with main suppliers
Risk of losing control	- Creation of Supervision service - Inspection of new customers' credibility (the change of payment conditions and turnover limits) - Automatic Workflow system (control under operations' execution) - Cooperation with huge market players with a long history of operations - Tenders among reliable brokers and agents to receive better conditions - Creation of the payment schedule - Strategic planning in the middle and long term - Control of overdue receivables
Operational risk	- Top management meetings with the involvement of line personnel - Briefing meeting on a daily basis in departments - Creation of the budgeting system for orders - The system of weekly and monthly reports - Vertical coordination of operation in the company - Implementation of the minimum amount of goods in stock and mandatory availability parameters - Contacts for new assortment with the condition of the payment after sales (commission contracts) - Staff trainings on risk management - Use of up-to-date internal regulations and rules - Transparency in price formation (the concept of total cost) - Automation of daily operations to avoid mechanical errors
Environmental risk	- Monitoring of new competitors - Forecasting of market changes - Tracking of technological changes - Use of payment delay and possible discounts to remain competitive - Availability of substitutes for strategic products' groups - Information sharing with partners (suppliers, brokers and agents,

	banks and some customers) - Cooperation with suppliers from regions without serious instability in politics - Joint marketing campaigns with suppliers - Hedging for future payments - Control of exchange differences - Use of virtual re-export

The following findings are related to cooperation and mutual risk mitigation. In order to achieve better results the company can find partners within the supply chain (suppliers, brokers and agents, banking organizations and some customers). Additional market information, possible sharing of experience and extended control under operations are the main benefits of such relationships.

With regard to cooperation with companies from various regions. The business with European is found as more stable and long lasting. The companies are well known for high quality, just-in-time deliveries, readiness to compromise and easy adaptation to certain conditions. However, Asian countries and Middle East are recognized as the regions with higher level of uncertainty in operations. The partners from such countries as Turkey and China have more chances for failure in performance. Additionally, differences in culture, regional and attitude to the business itself increase this probability. To avoid risks and increase the control under suppliers' operations the company uses special requirements and double check everything (documents, package of goods, compliance to governmental regulations and certification).

The necessity for some improvement in the system of supply chain risk management for the future are also found. Vertical integration of risk mitigation practices within the company, further development of strategies in use by various departments (Finance, Sales, Purchasing and Distribution as well as Supervision service), and revision of existing regulations, staff responsibilities and powers to make decisions together with company rules should be implemented. There is a need for better forecasting on the strategic and tactical levels, constant market monitoring and more attention to assortment selection.

Paying attention to development of risk management in the supplier companies, only several companies have implemented any risk methods for mitigation and prevention. The reasons for this fact can be found in the industry specifics, a small volume of transactions or minor awareness of negative consequences of unforeseen events.

The good example of well-developed system with risk avoidance related to quality issues has been shared by the Finnish manager. As a producer, the company created the system of control under each operation for every position from their product range. Moreover, the benefits for the system have been estimated where reduction of the possibility for failure added more reliability to the brand, increase in profit and customers loyalty.

Additionally, only few respondents could come up with example from their experience of risk situations or failure in performance. Specifically, for partners from Russia, the majority agreed that cooperation with this country does not bring more risk to their operations and find such relationships mutually beneficial.

However, some strategies used for risk forecasting have been mentioned: training for the personnel, cooperation with insurance companies, establishment of regulations and customers' credit management, top management engagement, creation of quality standards for operations, quality assurance checking.

It is found that companies from the empirical research do not frequently face the situations leading to huge losses for company's operations. Because the main focus is on trustful relationships with partners and customers in the long term. Additionally, only few respondents could come up with example from their experience of risk situations or failure in performance. Specifically, for partners from Russia, the majority agreed that cooperation with this country does not bring more risk to their operations and find such relationships mutually beneficial.

In conclusion, findings of the study are corresponded with the theoretical framework for risk mitigation and prevention. However, just few companies from the empirical research have implemented the full-size risk management system for a supply chain.

Mainly companies have developed certain procedures and strategies to increase the control under operations and decrease the probability of any losses. Functions of the risk management department are divided between departments and services within the company in accordance with their area of responsibility. Attitude towards risk and the level of experience influence the strategy choice and tactical implementation.

Moreover, risk forecasting and evaluation of the possible future uncertainty, as a proactive approach, requires following improvement and development. Finally, not all companies are ready to share risks with partners in the supply chain and work under increased control under operations from various angles.

6.2. Theoretical and managerial implications

Despite the existence of some limitations, the present study contributes to the current body of the literature in the field of risk management in a supply chain and implementation of relevant strategies for risk mitigation and prevention in the changing global environment.

The main contribution of the study is the development of the theoretical framework, which describes the process of risk management in ten steps, from risk identification to the possibility for cooperation regarding its mutual prevention and mitigation. The framework takes into consideration the existence of various risk sources, their division into five groups in accordance to their nature, the possibility of differences in risk attitude among decision makers. Additionally, risk evaluation in the model is based on the likelihood of uncertainty repetition and severity of consequences for the company: greater attention should be paid to risks with higher probability of losses and repetition in the future.

Based on the empirical research combining the use of face-to-face interviews and questionnaires, findings in the relationships between internal and external risk sources are presented. The significant influence on risk management development in the company has company’s experience, managerial attitude towards risk, developed regulations for daily activities and use of monitoring procedures for further

improvement in system operations together with the influence of the business environment. Moreover, the author has found the difference in importance and severity of various risk types for manufacturing and trading companies.

The first place in risk prevention practices in the trading company should take methods directed to minimization of the uncertainty with demand. Because the aim of the business is to bring the profit to shareholders with the possible decrease in expenses. However, the manufacturing companies should pay more attention to the choice of suppliers because they directly affect further performance of the company in the way of the quality level, just-it-time delivery and customers satisfaction results in the company image and received outcomes.

The finding can have additional implications for companies with global operations and the extended supply chain. The study sheds the light on the methods and tools within the companies and its partners' relationships that are implemented in the reality of the changing modern environment with the focus on political instability, changeable international relationships between countries, currency fluctuation and constant emergence of new competitors trying to take your market niche.

The author has found that just few companies from the empirical research have developed the full-size risk management system; however, every company can use some methods and strategies to adapt to the environment and reduce the uncertainty in operations. Thus, this finding can contribute to development of risk mitigation practices regardless of company's specifics, size and market niche, intensity of the international business activities or management attitude towards risk.

Furthermore, the author has developed the list of risk management strategies that can be implemented in order to address such risk types as supply, demand, operational, control and environmental. Adjustment of these strategies to the business reality and industry specifics can bring fruitful results in improvement of internal operations and increase the level of managerial control, reduction in the possibility of failure in performance, better planning and forecasting of future market development.

6.3. Limitations of the study

The study is conducted in correspondence with writing guidelines in the Faculty of Business Studies in the University of Vaasa and other existing instructions that can guarantee grounded research and the quality of achieved findings. However, it implies the existence of some limitations.

Firstly, the study is limited to a single company case. Moreover, it is the middle-size and one of the biggest trading company in the region, the Russian distributor of spare parts for the European trucks and trailers, with international suppliers but all customers are from the local market. The company's operations are focused in the northwest region with the developed wholesale department, the chain of retail stores and there regional divisions. Other results could be achieved if another company has been chosen for examination (industry, country and company specifics, pool of suppliers and customers, the company size and personnel).

Secondly, due to limits in time and resources, the sample size is a rather limited including seven interviewees of Russian origin from the case study company and eleven respondents of Chinese, Turkish, Italian and Finnish origin for questionnaires with managers from supplier companies. Therefore, the empirical results can be used for further generalization of findings. Involvement of more respondents for the study would be fruitful; however, the author could reach only these persons due to intensive workload of managers and their wiliness to share experience on risk management.

Thirdly, involvement of respondents from the supplier side from other countries and regions that cooperate with the case company and involved in its supply chain would bring more details and specifics to the whole picture of used methods and practices for risk mitigation, risk attitude and its influence on managerial decisions and application of a proactive approach in prevention of uncertainty in daily operations.

Furthermore, limitations exist in relation to participants' wiliness to share experience and provide some examples from company's operations, especially answering the questionnaires received by e-mail. Information about possible failures and other

customers, their attitude to partners from the Russian market and evaluation of certain activities has become hindered. For this reason the author have made some conclusions based on body language during interviews, unwillingness to continue in further explanations and personal perception of the discussed situation.

Finally, the theoretical framework has been built on the overview of literature sources and received further verification by means of findings collected from the empirical research. It includes the model of the risk management system for the company with the global supply chain. However, it does not include explanation of how the process of its implementation in the company should be organized. Additionally, examination of more sources related to risk management in a supply chain and repetition of the case study with other companies could bring new insights to the research field of the study.

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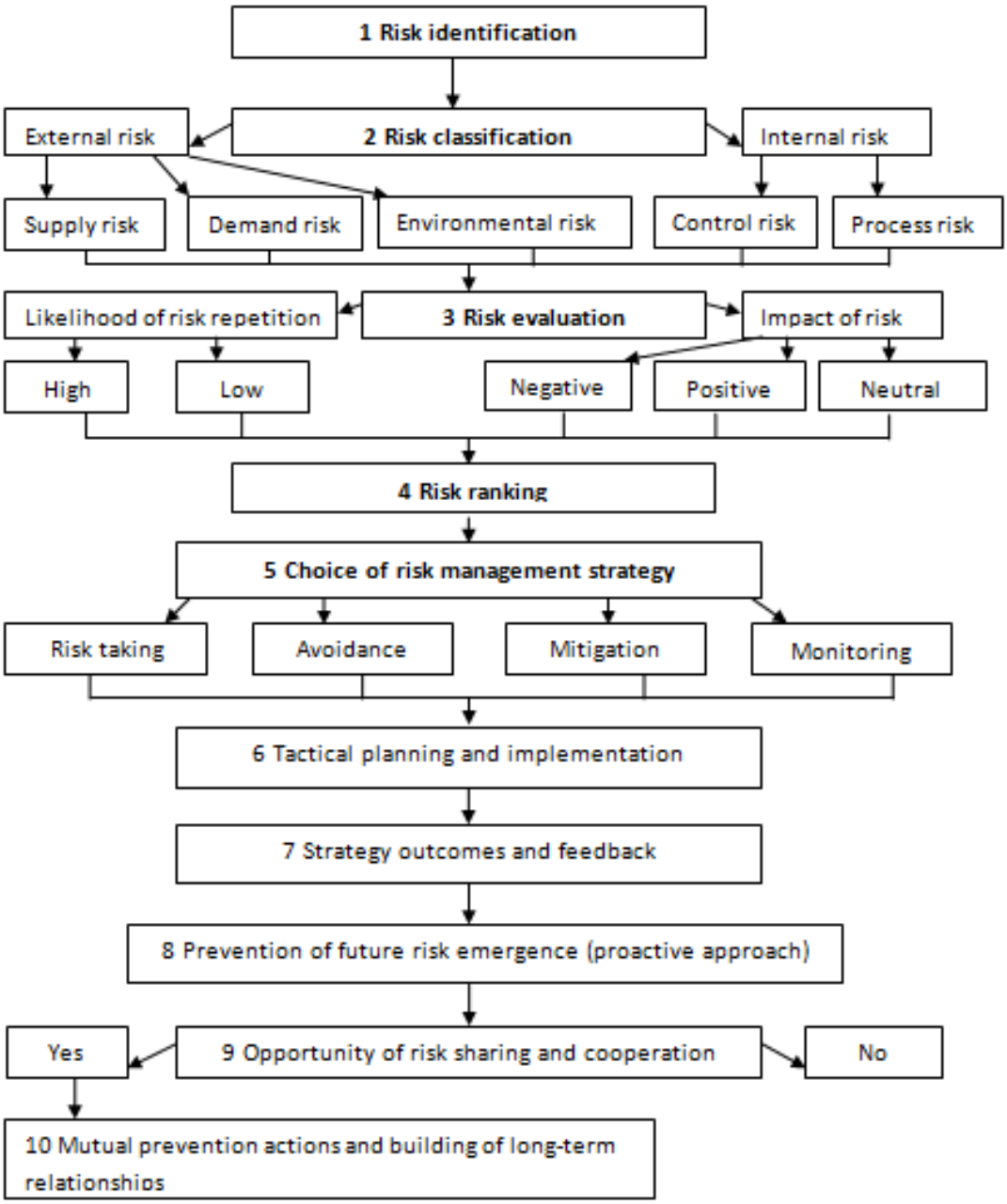
APPENDICES

Appendix 1. The theoretical framework



Appendix 2. Semi-structured interview guide and questions

Interview Guide

Starting with each question from the prepared list, the interviewer should use several directed probing questions, for example, what it causes, where it leads, what it effects, how you can explain and why until the interviewee cannot find any more answers. The aim is to obtain the maximum possible information regarding the issue under the study. The conducted interviews are recorded if the interviewee gives the permission.

Interview number _____

Date and duration _____

Permission for recording: Yes / No

Gender:

Level of education:

Years of experience (totally):

Job position/title:

Years in the company / in the current role:

Background in the company (if applicable):

Interview information statement (translated in English)

Dear Interviewee,

Thank you for agreeing to the interview meeting for my Master's thesis research. The topic of the thesis is in creation of the risk management system in the company with the global supply chain, particularly the situation with risk mitigation (its weaknesses and

strengths as well as the area for improvement) and determination of used tools in the company you are working for.

I am interested in hearing about your opinions, suggestions, and experiences with contributing to risk management strategy at the case company. The obtained information will be used for identification of recommendations for future improvement. By supply chain risk management, you should think about following terms : “risk”, “uncertainty”, “global environment”, “supply chain”, “management system”, “strengths and weaknesses”, “methods and tools”, “solving of problems”, “answering questions” or “providing information”, “sharing a piece of advice”.

The interview consists of three parts: introduction and background information, discussion of studied concepts and definition of the situation in the case company (the current situation and development in future). I would like to hear about your personal experiences through providing practical examples as well if it is possible. I kindly ask you to be honest while answering the questions. As an interviewee, you should remember that participation is voluntary. Please notice that all information about your identity will be kept confidential, I additionally confirm that respondents will stay anonymous and nothing would be used without asking your permission. You can decide to not answer any question. Moreover, you can stop the interview if you wish. The data collected will only be used for the purpose of this Master’s thesis research. Approximately the interview will last 40 minutes to 1 hour.

Best regards,

Anastasia Kravchenko

Interview questions (translated in English)

Part 1. Introduction

1. Is the term risk management familiar for you? (Yes / No) Could you explain it in several words?

2. Do you agree that nowadays international companies are operating in a changing and uncertain environment? (Yes / No) Why?
3. What is your attitude towards risk? In your opinion, does this term have negative, neutral or positive connotation?

Part 2. Discussion of supply chain risk

4. What sources of risk in a supply chain could you name? Do they mainly connected with suppliers, customers (so-called external risks) or may have inner nature (inside the company)?
5. Would you mention several situations connected with risks that have occurred with companies on the Russian market or worldwide?
6. Does your company face many risks in everyday operations? What kind?
7. Do you cooperate with any tiers in the supply chain in order to prevent or mitigate risk? In what way?
8. Could you rank the following risk types in accordance with their importance from 1 to 5 where 1 is the most important and harmful, and 5 – the least:
   - Supply risk
   - Demand risk
   - Process risk
   - Risk of losing control under the supply chain
   - Environmental risk
9. Do you face various risks dealing with suppliers from Europe, Asia or Middle East? Which region has more uncertainties?

Part 3. The company's risk management system and the choice of the strategy

10. How does the company manage supply chain risk? Do you have the special system?
11. What processes and techniques do you use to identify and analyze risk in the supply chain?
12. Do you use different strategies and techniques with tiers of the supply chain from various regions (for example, developed vs developing countries)?

13. How do you evaluate new suppliers of goods and services? What criteria do you use? Please state in accordance of their importance (in descending order):
    - Price
    - Payment terms
    - Overall supplier's performance
    - Quality
    - Lead-time
    - Delivery process and logistics
    - Production capability
    - Total cost
    - Geographical distance
    - Economic situation
    - Political environment
    - If other, please specify
14. Do you know situations when the risk management system failed? Why and what were the consequences?
15. Could you choose from the following list of risk management strategies ones that have been ever used by your company:
    - Use of safety stock
    - Orders annual and tactical planning
    - Long-lasting strategic partnership with suppliers
    - Dual or multiple sourcing (use of several suppliers of similar product groups)
    - Quality control and auditing of supplier's performance
    - Constant market monitoring
    - Forecasting and analysis of the possible market situation
    - Information sharing with suppliers / customers
    - Combination of local and international suppliers (optimization)
    - Choice of international suppliers from various regions / countries (diversification)
    - Choice of certified suppliers (ISO and other standards)
    - Insurance of orders and their shipment

- Use of several brokers / transportation companies
- Product differentiation
- Other strategies (please specify if not mentioned)

In addition, what strategies can be implemented in the future? Please explain your choice.

16. Have you implemented the system for risk forecasting and prevention? What kind?
17. Do you think that the current system for risk management should be changed or improved? In what way?

Conclude the interview by asking if the interviewee is interested in making any additional comments and if there is any information missing.

Thank you very much for your time. Your participation is significant for results of the current study!

Appendix 3. Interview information statement and questions (in Russian)

Interview information statement

Уважаемый участник интервью,

Спасибо, что согласились принять участие в исследовании для моей магистерской работы. Тема моего диплома основана на создании системы управления риском в компании с международной цепочкой поставки, в частности на уменьшение вероятности проявления рисковых ситуаций в той компании, на которую вы работаете (ее слабые и сильные стороны, а также пути для улучшения) и определение используемых методов.

Я заинтересована в том, чтобы узнать ваше мнение, услышать возможные предложения и эпизоды из вашего опыта работы, связанные со стратегией управления рисками в исследуемой компании. Собранная информация будет использована в целях определения рекомендаций для дальнейшего совершенствования системы. При обсуждении риск-менеджмента в цепочке поставок вы должны представлять себе следующие понятия: «риск», «неопределенность», «международная бизнес среда», «цепочка поставок», «система управления», «сильные и слабые стороны», «методы и инструменты», «решение проблем», «ответы на вопросы» или «предоставление информации», «поделиться опытом».

Интервью состоит из 3 частей: введение и справочная информация, обсуждение исследуемых понятий и определение ситуации в компании (текущее состояние и развитие в будущем). Я бы хотела услышать побольше из вашего опыта в данном вопросе, а также получить, если это возможно, примеры из практики. Я прошу вас отвечать максимально честно на вопросы. Как участник интервью, вы не должны забывать, что ваше участие является добровольным. Вся личная информация останется конфиденциальной, дополнительно я подтверждаю факт того, что все имена респондентов будут скрыты, и никакая информация не будет использована без вашего предварительного согласия. У вас есть право не отвечать на какой-то

из вопросов. Более того, вы по желанию можете остановить ход интервью. Собранные данные будут использованы только в целях написания данной магистерской работы. Интервью займет по времени примерно от 40 минут до часа.

С уважением,

Анастасия Кравченко

Interview questions

Часть 1. Введение

1. Знакомы ли вы с понятием «управление рисками»? (Да / Нет) Могли бы его описать в нескольких словах?
2. Согласны ли вы, что в наши дни международные компании ведут свою деятельность в изменчивой и подверженной рискам бизнес среде? (Да / Нет) Почему?
3. Какое у вас отношение к рискам? По вашему мнению, понятие риска носит негативную, нейтральную или положительную окраску?

Часть 2. Обсуждение рисков в цепочке поставки

4. Какие источники риска в цепочке поставки вы бы могли назвать? Как вы думаете они больше связаны с поставщиками, клиентами (так называемые внешние риски) или могут внутренними по своей природе (внутри компании)?
5. Могли бы вы вспомнить несколько ситуации, связанных с рисками которые случились с компаниями на российском или международном рынке?
6. Ваша компания сталкивается с рисками на ежедневной основе? Каким образом?

7. Используете ли вы возможность сотрудничества с участниками цепочки поставки для предотвращения возникновения или уменьшения риска? Каким образом?
8. Могли бы вы оценить следующие типы риска в соответствии с их важностью от 1 до 5, где 1 – самый важный и опасный тип риска, а 5 – наименее опасный:
   - Риск связанный с поставщиками
   - Риск связанный со спросом
   - Риск связанный с процессами в компании
   - Риск потери контроля по управлению цепочкой поставки
   - Риск связанный с окружающей бизнес средой
9. Отличаются ли риски, с которыми вам приходилось столкнутся в бизнесе с поставщиками из Европы, Азии или Ближнего Востока? Работа с каким из регионов связана с большим количеством неопределенности?

Часть 3. Система управления рисками в компании и выбор стратегии

10. Как устроено управление рисками в вашей компании? Существует ли специальная система?
11. Какие процессы и методы используются для определения и анализа выявленных рисков в цепочке поставки?
12. Используются ли различные стратегии и методы для участников цепочки поставки из разных регионов мира (например, из развитых стран по отношению к развивающимся)?
13. Как происходит оценка новых поставщиков товаров и услуг? Какие из перечисленных критериев вы используете? Укажите в порядке значимости (по убыванию):
    - Цена
    - Условия платежа
    - Общая эффективность поставщика
    - Качество
    - Время выполнения заказа
    - Процесс доставки и логистика

- Производственные мощности
- Общая себестоимость
- Географическая удаленность
- Экономическая ситуация
- Политическая среда
- Если что-то другое, пожалуйста укажите

14. Знакомы ли вам ситуации, когда система управления риском дала сбой? Почему и какие были последствия?
15. Могли бы вы выбрать из следующего списка стратегий по риск-менеджменту те, которые когда-либо использовались компанией:
    - Использование страхового запаса
    - Ежегодное и тактическое (текущее) планирование заказов
    - Долгосрочное стратегическое партнерство с поставщиками
    - Закупка у двух или нескольких поставщиков одинаковых товарных групп
    - Контроль качества и выполнения операций поставщиком
    - Непрерывный мониторинг рынка
    - Прогнозирование и анализ возможного развития рыночной ситуации
    - Обмен информацией с поставщиками / клиентами
    - Совмещение закупок у местных и международных поставщиков (оптимизация)
    - Подбор международных поставщиков из разных регионов / стран (диверсификация)
    - Выбор сертифицированных поставщиков (стандарт ISO и другие)
    - Страхование заказов и их доставки
    - Использование услуг нескольких брокеров / транспортных компаний
    - Диверсификация ассортимента
    - Другие стратегии (пожалуйста укажите если не включены в список)

    В дополнение, какие из упомянутых выше стратегий могут быть использованы компанией в будущем? Поясните свой выбор.
16. Существует ли в компании система прогнозирования и предупреждения рисков до их наступления? Какого рода?

17. Как вы думаете, что в текущей системе управления риском должно быть изменено или улучшено? Каким образом?

Огромное спасибо за уделенное мне время. Ваше участие очень важно для результатов данного исследования!

Appendix 4.The questionnaire for suppliers

1. Do you agree that nowadays international companies are operating in a changing and uncertain environment? (Yes / No) Why?
2. What is your attitude towards risk? In your opinion, does this term have negative, neutral or positive connotation?
3. What types of risk in a supply chain does your company face in daily operations? Please rank them in accordance with their importance and severity, and if possible give some examples.
4. How does your company manage supply chain risk? Do you have the special system?
5. Do you cooperate with any partners (e.g. other manufacturers, suppliers, customers or authorities) in the supply chain in order to prevent or mitigate risk? In what way?
6. Do risks vary while dealing with customers from various regions of the globe: West and East Europe, America, Asia or Middle East? Which region has more uncertainties?
7. Do you think that doing business with Russian companies connected with high probability of risk occurrence? Please explain your opinion.
8. What risks could you mention that your company have faced working on the Russian market?
9. What strategies / methods do you use in order to risk mitigation and what should be done in the future for its prevention?
10. Do you know situations when the risk management system in your company has failed? Why and what were the consequences? What conclusions were made?
11. Have you implemented the system for risk forecasting in the middle and long term? What kind?
12. In your opinion, what methods / strategies should be added to the risk management system of your company?

Thank you very much for your time. Your participation is significant for results of the current study!