

# Addressing CSR issues in supplier-buyer relationships: Agency theory perspective

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## **ABSTRACT**

Growing concern with environmental impact of the goods and services worldwide put organizations under the pressure to behave responsibly and take actions to minimize environmental footprint of their operations. Given the fact that organizations outsource their activities to third parties and the end product embodies the result of joint efforts of the whole supply chain, it is of great importance to ensure conformance to environmental requirements at each level of the supply chain. Specifically, this study is exploring methods and mechanisms used by buyers to ensure sufficient environmental performance of their suppliers.

Relationship between buyer and supplier embodies principal agent relationships, where buyer is a principal and supplier is an agent, therefore, the agency theory was chosen as a central theoretical framework for this research. The goal of this study is to find efficient and effective supplier management mechanisms to address principal-agent problems arising within the context of corporate environmental responsibility. Specifically, this study aims to understand which type of contract behavior-based or outcome-based is more efficient at managing environmental aspects of buyer-supplier relationships.

Through literature review and case studies, this thesis identifies mechanisms utilized to address agency theory problems and elaborates on their efficiency. In addition, key findings of this study provide important insights on the patterns of such mechanisms use with respect to company and industry characteristics.

### **Keywords**

Corporate environmental responsibility, principal-agent problem, supplier-buyer relationships, environmental performance, motivational mechanisms.

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# 1. Introduction

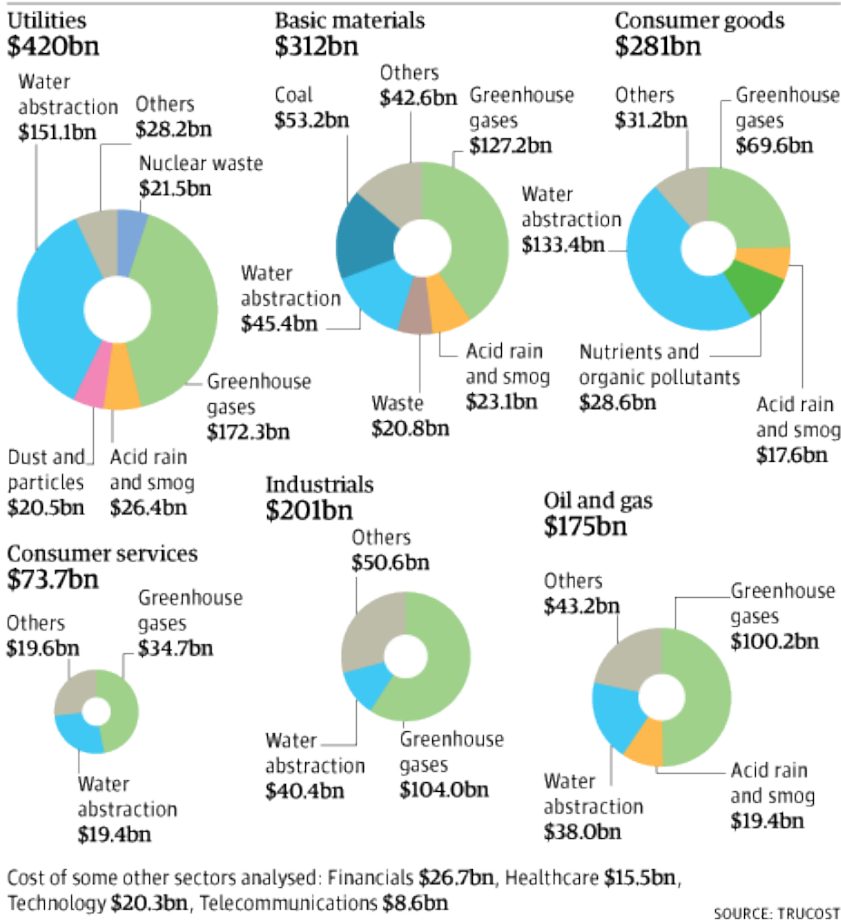
## 1.1. Background and motivation

Information openness and availability enables access to information sources and facilitates the growth of information awareness among customers, which affects their purchasing decision making. Greater number of customers when making their purchasing decisions wants the product to be environmentally friendly and easily recyclable. Choosing between two similar products those with “green” image are increasingly preferred (Environmental Leader (2009).Online. Available at: <http://www.environmentalleader.com>, [22.07.2013]). This creates a certain pressure on manufacturers pushing them towards developing environmentally safe products and environmentally sustainable ways of production. Examples of such products are ranging from eco-friendly LED light bulb and electro-cars, to environmental friendly travelling. For instance, Finnair positions its flights as more environmentally friendly, because company puts numerous efforts in carbon dioxide emission reduction and lowering the fuel consumption during the flights (Finnair Group (2013). Online. Available at: [www.finnairgroup.com](http://www.finnairgroup.com), [28.06.2013]).

News spreads with fantastic speed and every now and then one can read or listen or watch about hazardous incidents featuring names of multinational corporations. Some of them are on the global scale, such as the oil spill resulted in environmental catastrophe for the whole area (e.g. BP) or collapse of the garment factory in Bangladesh which took away over 100 lives in 2013, others of small scale may be related to contaminants or dangerous substances found in food or other consumer goods.

Moreover, legislation pressure is pushing companies towards increasing transparency of their operations and public information disclosure. Currently corporate annual reports include not only economic and financial information, but also matters related to social and environmental performance of the company. Many of multinational corporations include corporate social and environmental responsibility in their strategy, especially this is important for industries in which manufacturing creates significant amount of waste, carbon dioxide emission and other kinds of pollution. Graph 1 shows the costs of damage to the environment by business sector. Companies working in utilities cause the most expensive damage to the environment equal to \$420bn, basic materials and consumer goods occupy second and third places causing damage for \$312bn and \$281bn respectively.

**The cost of damage to the environment by business sectors**



**Figure 1. The cost of damage to the environment by business sector**

Source: The Guardian (2010).Online. Available at: <http://www.guardian.co.uk>, [01.07.2013]

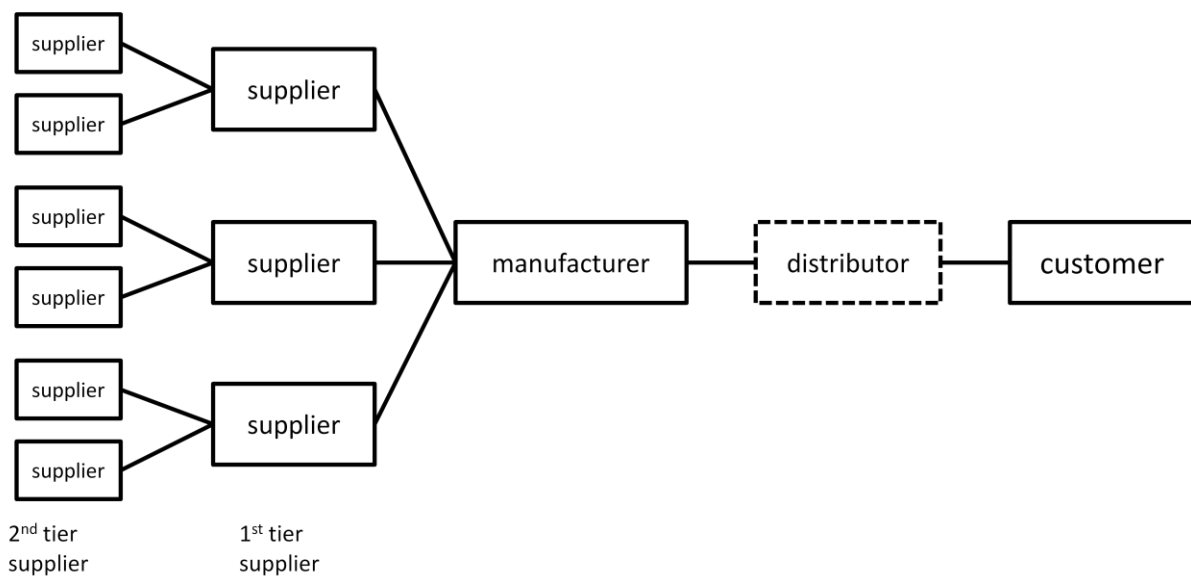
With the growing trend of outsourcing non-core activities to the suppliers, companies have to rely more on their suppliers and the whole supply chain. Far distance, cultural differences and other external factors make it difficult to control the product related processes going on at the supplier’s side, which creates a certain risk for the company-buyer relationship. Moreover, such factors as global competition, short product lifecycle and fast changing business environment are creating additional pressure on companies to ensure the necessary level of supply chain performance.

Transformation from companies manufacturing goods within wholly owned facilities to companies engaging in supply chains and supplier-based manufacturing across national borders is nature of many business relations (Andersen, 2009). Supply chain, regardless of size and specialization, comprises companies performing particular function, such as supply, manufacturing, distribution, retail, and end consumers. This study is focusing on the side of



the supply chain representing supplier-manufacturer or supplier-buyer relationships. Implications of the study can be applied to relationships between other elements of the supply chain as well.

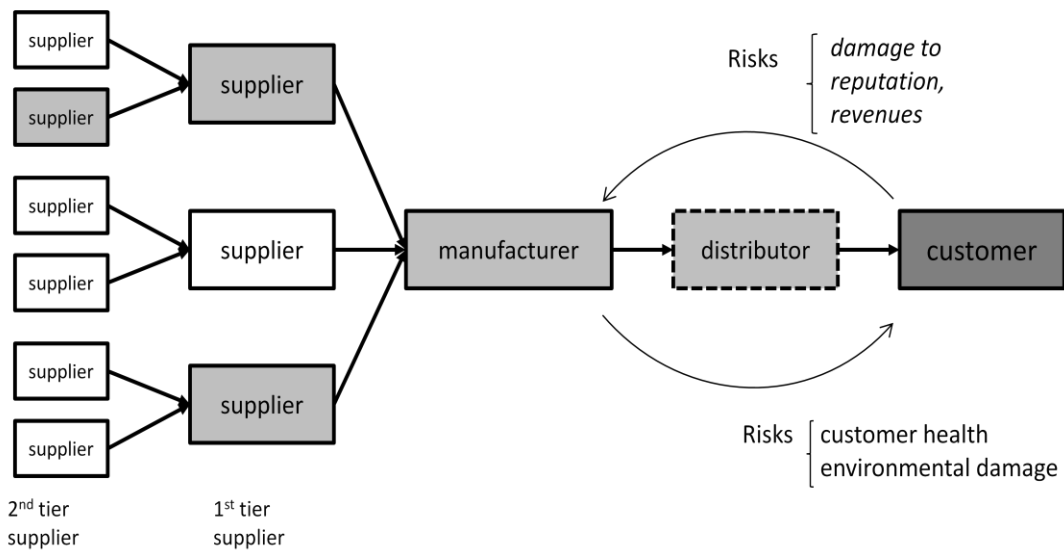
In complex supply chain there could be several tiers of suppliers leading to the final product manufacturer/service producer (Figure 2), which means that components of the ultimate product have gone through the several layers and it can be difficult to control that production process at each stage was carried out in socially and environmentally responsible way.



**Figure 2. Supply Chain**

In case when one of the suppliers violated environmental requirements, it might affect the whole supply chain and eventually lead to the situation when the final product offered on the market contains hazardous substances or in any way could be dangerous to consumers and the environment (Figure 3). In this case, it is the company which brand is on the product (often manufacturer) will be first accused of offering harmful products and non-compliance environmental and health standards. This can occur regardless the fact that the manufacturer utilizes advanced Environmental Management System and has environmental and quality certificates proving that all the processes carried out comply with environmental standards. Although the problem has come from one of the components produced by suppliers, it is the end manufacturer who will suffer from reputational and economical loss. Therefore, it's critical for a buying company to ensure that they have comprehensive and complete information about how the products they purchase from the suppliers were produced, under

which conditions, whether all social and environmental responsibility requirements were complied with.



**Figure 3. Situation when one of the suppliers violated environmental requirements**

For instance, dioxin-contaminated organic eggs were discovered at a farm in Germany in 2010, the cause was identified to be dioxin-contaminated feedstuff produced by a Dutch company, which in its turn used dioxin-contaminated maize meal from the Ukraine. Although the initial cause originated from Ukraine affected companies in Germany and the Netherlands were closed. Moreover, the image of organic eggs was undermined which resulted in significant market decline (Wiese and Toporowski, 2013). Consequently, success and safety of buying company operations depend on the reliable performance of the whole supply chain. Therefore, it's of great importance for a buyer to ensure that its products live up to the requirements and expectations of their consumers concerning the environmental and social impact. And the way to provide this assurance is to create a reliable supply chain where each party puts sufficient efforts to comply with environmental and social requirements exposed by the buyer, legislation and society represented by NGOs.

In this study buyer and supplier are represented by different companies who have own goals and interests that might not be matching, this applies to environmental goals as well. Talking about supplier-buyer relationships in supply chains, it is important to take into account risks associated with this type of relationships. Companies entering into relationships expose themselves to a certain degree of risk coming from the lack of information about the other side and uncertainty about behavior of the counterparty. There could be a great number of

uncertainties coming from different parts of the supply chain that make the whole supply chain inherently vulnerable. Svennson (2000) defines supply chain vulnerability as “the existence of random disturbances that lead to deviations in the supply chain of components and materials from normal, expected or planned schedules of activities all of which cause negative effects or consequences for the involved manufacturer and its sub-constructors”. Moreover these negative consequences can impact each individual member of supply chain directly and indirectly. Poisoning by organic eggs described above is a good example of deviations in a supply chain of feedstuff for chicken caused negative effect for the consumers buying the end product - organic eggs (Wiese, 2013).

When buyer makes a decision regarding the supplier to buy from, it simultaneously accepts the waste stream generated by that supplier. In other words the company acquires not only a desired item but also “the waste created during the production of the good or service purchased and the waste associated with the disposal of the product at the end of its useful life.” (Handfield, 2005). As materials purchased from suppliers are used in manufacturing of the final product, buyers should ensure that supplied materials conform to required quality and environmental standards.

Nevertheless, key decisions of supplier with respect to the supply operations can lie beyond the required standards and give supplier an opportunity to act according to own interests. The results of such decisions may have positive and negative consequence for a manufacturer (a buyer) and the whole supply chain, depending on how interests of supplier and a buyer are aligned together and how supplier is motivated to take buyer’s interests into consideration in decision-making process. Therefore mechanisms capable of levelling off interests of the parties and mitigating associated risks represent an interesting and important topic to research. This study is trying to identify whether supplier-buyer relationships can help to align interest and goals of supplier and buyer and encourage supplier to act with respect to buyer’s interests.

## 1.2. Research question and objectives

An increasing number of companies perceive corporate social and environmental responsibility as an integral part of their business. It's been clear that great number of companies have recognized the risks related to underperformance of their supplier in environmental and social issues. Therefore, such companies are likely to create high pressure on their suppliers to show certain level of performance in environmental and social issues.

Relationships between buyer and supplier embody principal agent relationships, where buyer is a principal and supplier is an agent. This study is utilizing agency theory to address agency theory problems arising between buyer and supplier when buyer wants to reduce the risks related to violations of CSER requirements by supplier. Agency theory helps to understand relationships between buyer and supplier; in addition, it determines problems underlying principal-agent relationships (information asymmetry and conflicting goals) and suggests mechanisms to address these problems. Such mechanisms are represented by the type of management contract, one of them is based on principal facilitating and encouraging agent to perform desired behavior and another is based on compensation awarded by the principal to the agent for achieving desired performance outcome (Eisenhardt, 1989).

The holistic goal of this study is to find efficient and effective supplier management mechanisms to address principal-agent problems arising within the context of corporate environmental responsibility. Specifically, this study aims to understand which type of contract behavior-based or outcome-based is more efficient at managing environmental aspects of buyer-supplier relationships.

The main research question of this study is *how do companies address principal-agent problems related to corporate social and environmental responsibility?*

In order to answer the main research question several sub-questions were developed:

- *What mechanisms are utilized to align interests of both parties in supplier-buyer relationships and to minimize risks related to corporate environmental responsibility and whether they have behavior or outcome based nature?*
- *How does environmental strategy of buying company affect the nature of mechanisms utilized to address agency problems?*
- *Do companies from different sectors use different methods?*

This study will analyze mechanisms utilized by buyers to align their interests with those of suppliers, to level off the information asymmetry and to mitigate environmental and social responsibility risks related to suppliers' performance.

## **2. CSER: motivation and strategic perspectives**

In response to increasing attention to corporate social and environmental responsibility phenomenon, numerous studies have been conducted by scholars worldwide resulting in solid body of literature discussing CSER topics from various perspectives. This chapter will pinpoint various theoretical approaches and views determining company's own motivation to adopt corporate environmental and social responsibility. In addition, it will discuss different levels of CSER integration into company operations and corresponding environmental strategies. Finally, the summary part will provide insights for further empirical analysis.

### **2.1. Corporate social and environmental responsibility**

Companies increasingly outsource their operations to other companies all around the world seeking cost reduction and cost efficiency. This phenomenon leads to increasing significance of the supply chain as companies are becoming more dependent on their suppliers and have to rely on their trustworthiness. Therefore, establishing long-term and reliable relationships with suppliers has become a critical factor in creating competitive advantage.

Furthermore, outsourcing has brought up new wave of concerns related to social and environmental impacts of production and consumption, which triggered interest to issues related to corporate social responsibility and environmental management (Skjoett-Larsson and Andersen, 2010). These issues have been gaining close attention of media, NGOs, society, government, consumers and other stakeholder groups, and such concepts as sustainable performance, environmental management, green supply chain and corporate social responsibility in supply chain are receiving increasing interest from the corporate world.

CSR (Corporate Social Responsibility) refers to company commitment to behave ethically and contribute to economic development, whilst ensuring environment protection from own operations (Shabana and Carrol, 2010; Van Marrewijk, 2003). There are several pillars underlying CSR concept: economic (value creation through produced goods), environmental (minimizing environmental impact of operations) and social (improving work conditions and the quality of life of community). This study focuses mainly on the environmental dimension of CSR; however some social issues are also taken into account. Therefore, in order to highlight the environmental focus abbreviation CSER meaning *Corporate Social and Environmental Responsibility* is utilized.

Corporate Social and Environmental Responsibility issues have been drawing increasing attention of researchers as well resulting in great proliferation of theories, terminologies and approaches. CSR started to appear in academic literature in the end of 80s beginning of 90s and have been rapidly drawing more and more attention of scholars (Rasanen et al., 1994, Gladwin, 1993, Green et al., 1995). Presently, there is a large body of literature discussing CSER and sustainability from different perspectives. Garriga E. and Mele D. (2004) in their review of CSR theories have found four main aspects many of current CSR theories are focused on: “meeting objectives that produce long-term profits, using business power in a responsible way, integrating social demands and contributing to a good society by doing what is ethically correct” (Garriga and Mele, 2004).

Large number of studies has been done to identify companies’ motivational factors leading to adoption of CSER values and implementation of the relevant strategies aimed at greening company’s performance. Kuruz et al. (2008), Lynes and Andrachuk (2008) suggest the following motives: financial benefits, including cost and risk reduction; competitive advantage; reputation enhancement; and legislation requirements. Carroll and Shabana (2010), writing a business case for corporate social responsibility, complemented this list with strengthening legitimacy and reputation and creating win-win situations through synergistic value creation. A number of theories used to analyze the factors underlying companies CSR decision-making, two theoretical approaches seem to be central in the CSER literature: stakeholder theory and resource-based view.

## **2.2. Stakeholder theory**

Stakeholder theory suggests that companies adopt various environmental practices in response to stakeholder pressure (Buysse and Verbeke, 2003; Kassinis and Vafeas, 2006; Babiak and Trendafilova, 2011). According to Freeman (1984), stakeholder is “any group or individual who can affect or is affected by the achievement of an organization’s objectives”. There are internal (employees, management) and external (customers, government, shareholders and society represented by NGOs) stakeholders (Sarkis et al., 2010). Different stakeholder groups can affect company’s decision to implement environmental practices differently. Corporate customers may require various environmental certificates to prove certain level of environmental performance (Sarkis, 2010); also they often include criteria based on social and environmental responsibility issues in their supplier evaluation and selection process (Humphreys et al., 2003; Handfield et al., 2002). Consumers in their turn

may expect products to be recyclable and environmental friendly; that can be manifested by various eco-labels (Marette et al., 2012).

Strengthened environmental regulations and laws imposed by government create particular pressure on the organizations to implement green practices, for instance, new laws may require all companies to have environmental management system in place certified according ISO 14001 standard (Zhu and Sarkis, 2003). NGOs and local communities can impose pressure through their environmental activism, for instance, in a survey of 700 firms conducted by Henriques and Sadorsky (1996) companies indicated that their decisions to adopt environmental management practices was influenced by desire to build or maintain good relationships with the local community. Competitors and other industry players can cause significant pressure on a firm, according to institutional theory, organizations are likely to imitate behavior of other companies if they perceive this behavior as beneficial to them (Delmas and Toffel, 2004). Thus, having more companies in industry adopted social and environmental practices creates a certain industry standard and impose higher pressure on those who do not comply with it. In addition, such companies not only lost the first mover advantage, but bear the risk to lose potential customers as well.

Building upon stakeholder theory Jawahar and Mclaughlin (2001) found that organizational needs vary with life cycle stages and particular stakeholder groups with potential to meet those needs are perceived as critical and their issues will be addressed primarily. Additionally, they have discovered that organizations are likely to use different strategies to deal with stakeholders over time (Jawahar and Mclaughlin, 2001). For instance, a start-up company may see addressing the needs of customers as their first priority, whereas corporate social and environmental responsibility may be not taken into account at all. However, when the company is becoming more mature and have reached steady revenues and recognition, it may be more responsive to the needs of its employees and society and more responsible about its environmental impact. This could be confirmed by empirical observation: the larger a company the more advanced the CSR part on its corporate website, whereas SMEs may not have such information at all.

Conversely, other stakeholder management approaches recommend companies to broaden their objectives to address the interests of a wide variety of stakeholders (McGee, 1998), such objectives may include maximization of shareholder value, increased customer satisfaction, being a good corporate citizen and improving social and environmental responsibility



performance.

Poor social and environmental performance of the firm may negatively affect stakeholder relationships. If the company is found liable for environmental damage or harsh violations in working conditions, company's shareholders and investors may suffer monetary losses, due to decrease in stock prices or in company sales. In addition, financial institutions can perceive such company as more risky one that may result in lower financial rating and higher premium on loans. Furthermore, consumers are becoming more environmentally consciousness and may disregard the products offered by the company known for being environmentally irresponsible (Hamilton, 2010). Such companies may found boycotts and demonstrations arranged organized by communities or NGOs with intention to raise attention to the damage caused by this company and bring it to justice. Such activities may damage company's reputation significantly and result in extra expenses.

Overall, the threats posed by various stakeholder groups create a strong pressure on the firm and act as a motivational driver to implement efficient corporate social and environmental responsibility practices. In some cases companies collaborate with the stakeholder groups such as NGOs to create special projects aimed at solving social and environmental issue. Such projects are often carried out in developing countries, thus Unilever joined efforts with Indian NGO to create a rural network named Shakti that employs 31.000 women and sells customized products to 100,000 rural villages (Dahan et al., 2010).

Since minimizing risks associated with stakeholders' response to poor CSR performance requires adopting efficient environmental management systems, it is crucial to analyze whether the company is capable of doing that.

### **2.3. CSER and economic performance**

All activities undertaken by company are correlated to its economical performance. Implementing environmental management system aimed at improvement of company environmental performance can require significant financial investments; thereby an inherent trade-off exists between environmental responsibility and economic performance of a company (Porter and van der Linde, 1995).

Porter and van der Linde (1995) argue that improved environmental performance can be a source of competitive advantage, because strict and properly designed environmental regulations and standards can trigger innovations leading to cost-efficiency and increase in

product value. Thus, there is a positive correlation between environment performance improvement and increase in economic profitability. Two major reasons support this argument. First states that companies incurring higher costs of polluting activities pursue an incentive to develop new technologies that can ultimately reduce the cost of compliance with environmental standards. Second contends that companies can gain first mover advantage by selling their innovative solutions to other organizations (Esty and Porter, 1998; Wagner et al, 2002).

Studying how CSER affects stock prices during the crises, Schnietz and Epstein (2005) found that returns of companies with good CSER reputation did not changed significantly during the crisis as opposed to the firms without CSER reputations. Allouche and Laroche (2005) investigating relationship between company social and financial found positive correlation. Feiock and Stream (2002) and Wahba (2008) belong to the number of supporters of Porter's hypothesis as well; they provide empirical evidence of investment in CSER activities lead to improved economic performance, risk and cost reduction and increase brand recognition (Cruz, 2009). In his study of New Zealand industry Orlitzky have found positive correlation between company social and financial performance (Orlitzky, 2005; Orlitzky et al., 2003), thereby adding one more voice supporting Portet's hypothesis. Other researchers report no significant relationships (McWilliams and Siegel, 2000) or strong negative relationships between environmental performance improvement and economical development (Brännlund et al, 1995; Wagner et al, 2002). There has been a vibrant discussion in the CSER literature regarding positive or negative correlation between environmental and economic performance and yet no consensus has been reached. Some researchers see the main reason in inconsistency in defining CSR (Nawrocka, Parker, 2009; Beurden and Goessling, 2008). Since there is no universal definition exist each company has own perception of corporate social and environmental responsibility that creates significant variation in results obtained.

#### **2.4. Resource-Based view**

Exploring further the motivational drivers of CSER integration, the resource-based theory or resource-based view (RBV) can give a valuable perspective on this topic. Resource-based theory examines the relationship between firm's internal characteristics and its performance. According to RBV companies can gain capabilities resulting in sustainable competitive advantages if they are supported by organization-level competences that represent resources which are valuable, rare, inimitable and non-substitutable (Barney, 1991). These resources are

classified by tangible and intangible, with tangible resources including financial assets and physical assets (facilities, people) and intangible including intellectual property assets, organizational culture, human resource management, corporate reputation, skills and knowledge (Galbreath, 2005).

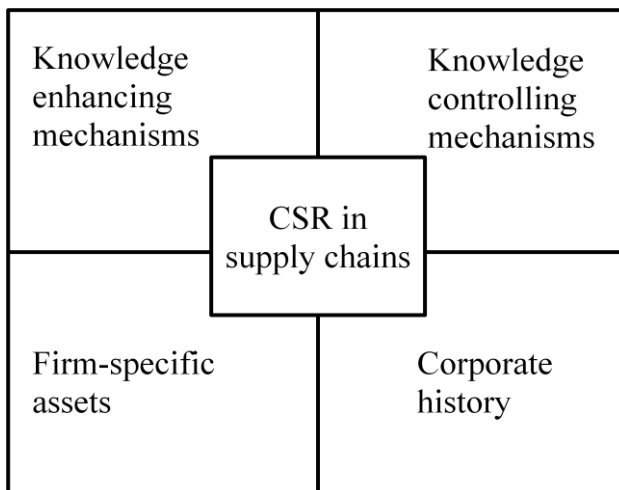
Linking RBV to organization environmental performance, Hart (1995) contended that in order to enhance environmental capabilities, company can make a combination of investments in technologies, processes, systems, trainings. Building on Hart's work Buysee and Verbeke (2003) determined five "resource domains" where companies can pursue actions aimed at greening their performance:

- investments in conventional green competencies, such as green product development (Chen, 2001), green manufacturing technologies (Power and Simpson, 2005);
- investments in employee skills; Govindarajulu and Daily (2004) argues that employees environmental training can facilitate achieving some organization CSER goals such as improvements in worker health and safety, reduced environmental impact, increased competitiveness and company overall environmental and social performance;
- investments in organization embodies involvement of functional areas in environmental management, for instance, green marketing (Cronin et al., 2011), green accounting and finance, e.g. paperless invoices (Thornton, 1993; Cho and Patten, 2013), green purchasing (Min and Galle, 1997), green ICT (Reimsbach-Kounatze, 2009);
- investments in routine-based management systems and procedures such as life cycle analysis (Joshi, 1999), social and environmental reporting (Branco and Rodrigues, 2007), environmental plan development and incorporation of environmental performance measures to the employees performance management (Buysse and Verbeke, 2003);
- Integration of environmental issues in strategic planning (Albino et al., 2009), that may result in improved environmental and financial performance of the organization and may yield competitive advantages (Judge and Douglas, 2002).

Investing in the above mentioned resource domains may improve relationships with different stakeholder groups, enhance reputation of the company among external stakeholders and employees, and improve overall environmental and financial performance of the organization.

## 2.5. CSR in supply chain

Since responsible behavior of organizations in the supply chain is dependent on the actions of other parties such as suppliers and customers, only through co-operation of different parties involved it is possible to achieve efficient CSER integration (Bakker and Nijhof, 2002). Therefore, if company wants to practice CSER in the supply chain, it's required that CSER is embedded within the entire organization (Andersen and Skjoett-Larsen, 2009). CSER shouldn't be only staff activity at the headquarters; it has to be to all organizational levels and functional areas including subsidiaries abroad and suppliers. Andersen and Skjoett-Larsen (2009) argue that organizational embeddedness can be manifested through four mechanisms (Figure X): knowledge enhancing mechanisms, knowledge controlling mechanisms, firm-specific assets and corporate history.



**Figure 4. Contingency factors influencing CSER in supply chain**

Source: Andersen and Skjoett-Larsen, 2009.

**Knowledge enhancing mechanisms** aim to enhance and maintain the knowledge of parties working with CSER in supply chain and consequently increase their abilities and skills. Literature distinguishes internal and external knowledge enhancing mechanisms. Internal knowledge enhancement can be achieved through employees training focused on CSER topics as well as sharing knowledge and best CSER practices throughout the organization. Some companies integrate CSER issues in their corporate values and strategy, thereby manifesting the importance of such issues for company's business. External knowledge enhancement refers to establishing and maintaining consistent dialog with suppliers including aimed at creating the CSER reference body between organization and its suppliers. Supplier training programs focused on CSEER topics can serve as an example of external knowledge enhancing mechanism.

***Knowledge controlling mechanisms*** implies including CSER-focused KPIs into performance management system. For instance Incorporation of Code of Conduct in performance management system can encourage employees to work on CSER issues with suppliers more effectively. Another approach is appointment of “change agents”, employees responsible for monitoring and encouraging employees’ commitment to CSER issues working closely with suppliers.

According to Andersen and Skjoett-Larsen (2009) ***firm-specific assets*** include the size of the company, the design of its global supply chain, financial resources and reputation. Large size and large amount of resources make company attractive for suppliers to work with, thus they will be more willing to take necessary actions to conform to CSER requirements. Moreover, large multinational companies often have supplier development programs that include CSER issues management. In order to safeguard its reputation and avoid CSER related costs companies impose more stringent CSER requirements on their suppliers; thereby setting supplier high social and environmental performance as a competitive advantage.

***Corporate history*** refers to traditional way of working with CSER issues; organizations known for being engaged in social and environmental activities as well as for stringent supplier selection process are more likely to be approached by suppliers responsible for their social and environmental impact.

## 2.6. Summary of the chapter

The purpose of business is to create value for its stakeholders and since CSER issues are of great importance for the stakeholders company must rethink its corporate strategy taking into account CSR values. In order to form the new strategy company should analyze its business environment and recognize that environmental legislation and stakeholder demands will exert an increasing pressure on business operation towards demonstrating environmental and social responsibility (Clegg and Robinson, 1998). Freeman et al. (2000) suggest finding basic CSR values crucial for the stakeholders and designing environmental and social strategies in consistency with those values.

Building on the resource-based view conceptual framework developed by Hart (1995) Buysse and Verbeke introduced the following classification of environmental management strategies: reactive, pollution prevention, environmental leadership. According to Buysse and Verbeke companies following *reactive* strategy do not view environmental issues as a priority, they invest in environmental management in response to governmental regulation considered as required minimum. Thereby, such companies are less likely to have high CSR demands from their suppliers either.

Firms following *pollution prevention* strategy view environmental and social issues as more important and go beyond the minimal requirements imposed by the legislation. Such companies are ready to invest in the ‘resource domains’ in order to develop their capabilities and create a buffer of environmental knowledge and practices that they can share with the suppliers. Therefore, companies pursuing pollution prevention strategies are more likely to have higher expectation from their supplier to perform at the conforming level.

*Environmental leaders* are driven by “strongly held corporate values that include a concern for protection of the environment and a concern for the business case” (Kashmanian and Keenan, 2010). Such companies view creation of green competences as a source of competitive advantage. Therefore are likely to have stringent requirements to environmental and social performance of their suppliers. Environmental leaders may expect their supplier to be certified according to ISO environmental standards, to have effective environmental management system in place and to promote corporate social and environmental responsibility issues among their suppliers.

The focus of this study is on managing supplier behavior in the context of environmental and

social issues. Literature review pinpoints a link between CSR strategy of the company and the way it manages relationships with the suppliers. Therefore, in order to identify the mechanisms companies utilize to motivate their suppliers to comply with CSR values, it's is important to understand what role CSR plays in company's own strategy. Drawing on the key points of the stakeholder and resource-based theories and contingency factors influencing CSR, several factors determining the level of company advancement in CSR issue integration can be identified: firm-specific characteristics (company size, international presence, number of suppliers), stakeholder pressure (stakeholder groups imposing highest pressure), CSR as an integral part of organization (presence in values, strategy, goals; internal and external activity; measures taken to minimize environmental impact of the operations; EMS used), supplier management and CSR (supplier characteristics; supplier evaluation and monitoring; supplier relationship policy), communication (internal and external environmental reporting). These factors were used to outline the interview structure utilized to gather data for the empirical part of this study. Such analysis can provide important insights regarding the supplier motivation mechanisms.

### 3. Agency theory perspective

This chapter presents the literature review concerning agency theory and elaborates on the applicability of this theory to exploring buyer-supplier relationships in the context of environmental and social responsibility. Based on the literature review theoretical framework underlying the following analysis will be developed.

#### 3.1. Agency theory

Agency theory has been broadly used by researchers to study different phenomena in accounting, marketing, organizational behavior (Tosi et al., 1997), management (Stroh et al., 1996) and other areas. Agency theory examines agency relationships in which one party (the principal) delegates work to another party (the agent) who performs work on behalf of the principal (Jensen and Meckling, 1976). This type of relationships occurs between a supplier and a customer in supply chain, where a customer firm is a principal who outsource part of its production to a supplier firm who represents an agent. The customer firm is ultimately responsible for the final product offered to its customers, therefore, despite the size of supplier's input, the supplier firm works on behalf of the customer firm, which means it acts as an agent (Whipple and Roh, 2010).

The focus of the Agency theory is on finding solution to the problems occurring within agency relationships. Kathleem Eisenhardt in his assessment and review of the agency theory has emphasized two problems agency problem and risk sharing problem. The first one is the *agency problem* that arises “when the desires or goals of the principal and agent conflict and it is difficult or expensive for the principal to verify what the agent is actually doing”. The second problem related to agency relationship is “the problem of *risk sharing* that arises when the principal and agent have different attitudes toward risk”. This problem assumes that when dealing with uncertainties one of the parties could be more risk averse than the other, therefore they may prefer different actions due to different risk preferences. (Eisenhardt, 1989).

The agent may not share principal goals and interests, moreover the agent (supplier) normally possess more details and information about the delegated task, which means that the agent may have both motive and opportunity to act in a way to maximize its own benefit regardless the consequences for the principal (Lassar and Kerr, 1996). In other words, there are two reasons underlying the problems of the agency theory: *goal/interest misalignment* creating the motive and *information asymmetry* creating the opportunity.



In the context of CSER in supplier-buyer relationships, it could be seen that customer cannot verify with 100% assurance that supplier has been performing delegated work appropriately with no violations, e.g. no child labor utilized at the factory, no extra pollution, no harsh chemicals used in manufacturing. This can cause a serious threat to principal's business and reputation, as in case of any violations of quality and/or environmental standards in supplied product or service, customer firm will carry the costs associated with the consequences.

At the same time agency relationships can serve as an excuse for principals to exempt themselves from any responsibility. For instance, in their study of failures in food supply chain, Wiese and Toporowski give a good example of such case: a German chicken producer was accused in animal mistreatment which included rough handling of chickens, bad conditions inside the cages and late reaction to diseases. The company confessed the accusation and announced stricter regulations to be implemented. However, after a year, company faced new wave of similar accusation, this time chicken producer blamed its sub-contractor for failures in operating the farm. (Wiese and Toporowski, 2013)

In any case different goals and information asymmetry can create a contractual problem due to potential opportunism. Typically, in supplier-buyer relationships, the principal represented by customer-company bears risks, which agency theory labels as *moral hazard*, lack of efforts from the supplier side, and *adverse selection*, misrepresentation of ability by the agent or inaccurate assessment of supplier abilities (Eisenhardt, 1989; Zsidisin and Elram, 2003).

In order to find most efficient mechanisms of governing contractual relationships that could solve above mentioned problems, agency theory suggests two main approaches: outcome-based and behavior-based. *Behavior-oriented* approach suggests the principal, in order to safeguard its interests, to reduce the information asymmetry by investing in monitoring systems (e.g. reporting procedures, auditing, information systems) thereby limiting agent's opportunity to act in a self-beneficial way. Monitoring systems reveal the agent's behavior to the principal and reduce information asymmetry; this allows verifying what the agent is actually doing. *Outcome-oriented* approach suggests principal to find incentives to motivate agent to align the interests of both parties (e.g. commissions, stock options). (Eisenhardt, 1989; Fama, 1980; Lassar and Kerr, 1996). "Outcome-based contract motivates behavior by co-alignment of agent goals with the goals of the principal at the price of transferring risks to the agent" (Eisenhardt, 1989). The outcomes are dependent on two factors: behaviors of parties and variations in environment causing risks. These variations could come from

change in legislation, competitors' actions, economic climate change, technological change, etc. outcome uncertainty introduces risks that must be borne to someone. When outcome uncertainty is low, the costs of transferring associated risks are low, which makes outcome-based contract more attractive.

The notion of risk transferring and behavior observability underlie behavior-oriented and outcome-oriented types of supplier-buyer relationships contracts, thus when cost of transferring risk to the agent is less than cost of monitoring outcome-oriented contract is more attractive and otherwise when the cost of monitoring system is less than cost of transferring risks, behavior-oriented contract is more preferable (Eisenhardt, 1989).

All mentioned above represent a simple agency theory model in the heart of which lies a trade-off between the cost of measuring behavior and the cost of measuring outcomes and transferring risks to the agent. The model has a number of extensions consisting of the following parameters (adapted from Eisenhardt, 1989): risk aversion, strength of goal conflict, task programmability, outcome measurability and length of relationship.

*Risk aversion.* As mentioned earlier in this section principals and agents can have different attitudes towards risks. When the agent becomes less risk averse, cost of transferring risks to the agent are decreasing and outcome-based contract is becoming a more attractive option. Conversely, when the agent becomes more risk averse, the costs associated with risk transferring are increasing and behavior-based contract is becoming a better option.

*Strength of goal conflict.* This extension is based on the assumption that goal conflict between principal and agent can be minimal or may not exist at all (Demski and Baiman, 1980). In this case, goals of both parties are aligned and the agent will behave the way principal would like it to be with no monitoring. With decreasing of goal conflict using the outcome-based is becoming less justified, as there are no interests to be aligned. At the same time, costs of monitoring goes down and becomes lower than costs associated with relevant risks, which makes behavior-based contract more attractive.

*Programmability.* Eisenhardt (1989) in its review of agency theory defines programmability as "the degree to which appropriate behavior by the agent can be specified in advance". In his studies of outcome and behavior-based approaches to control he found that task programmability is strongly related to compensation package, which implies that the less programmed the task is, the more attractive outcome-based contracts are (Eisenhardt, 1985,

1989). Later on this finding was confirmed by Stroh et al (1996) who found that in cases when the tasks of middle-level managers were less programmable, there was a greater reliance on outcome-based compensation strategies.

In environmental context task programmability could be explained using the case of environmental criteria integration in employee performance evaluation. According to Eisenhardt (1985), Rajagopalan (1996) and Sharma (2000) search for environmental management solutions is associated with threats such as low task programmability and high outcome uncertainty. This is related to the fact that innovative environmental solutions although yield positive economic result in a long-term perspective, can be unprofitable in the short-term perspective, which will undermine overall performance of the manager responsible for taking such decisions (Sharma, 2000).

*Outcome measurability.* According to the core model of agency theory outcomes are assumed to be easily measured, however in practice this may not always be true. Some tasks require joint team efforts, different resources, long time to complete and result in outcomes which are different to measure, such as services, pieces of art and etc. In this case outcome-based contract seems to be less attractive rather than behavior-based.

It is rather difficult to measure sustainable performance of a company, partly due to the lack of clear and universal standards (Hubbard, 2006), for instance, there exist more than 60 different codes of practice (Robins, 2005) and 32 different sets of standards (Leipziger, 2003) that organizations could use. Measuring environmental performance of suppliers would require precise and verified information about supplier environmental impact. This relates to the concept of environmental auditing, which main goal is to verify the validity of environmental data reported by organizations. Auditing of environmental information is a relatively new phenomenon, which despite of being widespread lacks of formal research and broadly accepted definitions (Morimoto et al, 2005).

*Length of relationships.* When principal and agent are engaged in long-term relationship, it is likely that the principal will have more authentic image of the agent and thus will be able to understand and foresee its behavior. Moreover J. A. Hill and his colleagues in their study has found that length of relationship is a significant predictor of benevolence in supplier-buyer relationship (Hill et al, 2009), which means that the agent (supplier) is more likely to avoid opportunistic behavior and act taking into consideration interests of the principal. This makes behavior-based contracts more attractive. In the reverse situation, when the principal and the

agent have short-term relationships, outcome-based contract can be a better option due to the greater information asymmetry.

Table 1 gives the summary of extensions to the basic agency theory model and displays main characteristics of the two approaches to relationships governing contract.

**Table 1. Characteristics of behaviour-based and outcome-based contracts**

<b>Behavior-based contract is more attractive when</b>	<b>Outcome-based is more attractive when</b>
agent is more risk averse	agent is less risk averse
minimal goal conflict exists	strong goal conflict exists
tasks are difficult to program	tasks are easy to program
outcomes are difficult to measure	outcomes are easily measured
principal and agent are engaged in long-term relationship	principal and agent are engaged in short-term relationship

Source: Adapted from Eisenhardt (1989)

### **3.2. Agency theory in CSR**

Agency theory has been applied to different topics in supply chain such as supplier-distributor relationships (Lassar and Kerr, 1996), quality issues in buyer-supplier relationships (Whipple and Roh, 2010), supply chain risks (Zsidisin, 2003), there is a limited number of studies done in topics related to Corporate Social and Environmental Responsibility within the supply chain. Existing research has been conducted in past several years, this could be explain by overall novelty of sustainability topics in supply chain and increasing interest from stakeholders to the problem of social and environmental sustainability.

In the study of food supply chain Wiese and Toropowski (2013) have applied agency theory to understand failures in CSR implementation and highlight possible solutions. The study is considering three cases of failures to implement corporate social and environmental responsibility in the following topics: health and safety, animal welfare and threats to animals and the environment through procurement. The study revealed that due to complexity of some supply chains, principals are able to monitor only their first-tier suppliers. In such situation principals heavily rely on their agents initiative to control their suppliers and are often ready to assist them in implementing monitoring systems and by providing incentive systems. The researchers assume that there are certain problems underlying each failure: hidden characteristics (information about the supplier unknown to the customer company during supplier selection), hidden intentions (conflicting goals of both parties) and hidden action (sources of potential opportunistic behavior). In order to mitigate each problem the authors analyze the instruments of agency theory and their applicability. The key findings illustrate that pre-contractual methods (e.g. using different screening activities to obtain important information about supplier characteristics) could help to avoid adverse selection, goal alignment mechanisms such as incentives systems and bonuses might be a good tool to reveal and mitigate the hidden intentions, behavior-based and outcome-based contracts could help to mitigate the problem of hidden actions. Therefore, this study shows that agency theory is proved to be suitable to provide implications for companies regarding sustainability issues management in supply chain.

As it was mentioned in the first chapter of this study, socially and environmentally responsible companies can achieve certain benefits, such as cost reduction, enhancements of corporate image and reputation, increased customer loyalty and increased revenues

(Blowfield and Murray, 2008). Such benefits can affect the whole supply chain, at the same time, failure by one part of the chain (a supplier) to perform sustainable operations and conform to environmental and social standards can negatively affect the whole supply chain not only by eliminating the positive effect but reversing the same benefits in a negative way (e.g. increased cost related to liquidation of environmental and social issues, damaged image, sales drop, etc). Thus, in order to avoid possible threats environmentally responsible companies should persuade or even force their supply chain partners to implement corporate social and environmental responsibility mechanisms.

In this study customer company is regarded as socially and environmentally responsible whereas suppliers are seen as potential source of opportunism. Using the terminology of the agency theory in supplier-buyer relationships, the customer company represents a principal and the supplier represents an agent. "Supply chain partners are driven by self-interest, are prone to bounded rationality, have partially conflicting goals, and information is asymmetric," asserts Ciliberti et al. (2011). Based on these assumptions it is likely that risks of moral hazard and adverse selection can arise. According to the agency theory the principal is searching for mechanisms to mitigate these risks, existing mechanisms will be discussed further in more details.

### **3.3. Moral hazard and adverse selection in CSR**

#### *Adverse Selection*

Adverse selection arises because the principal cannot completely verify skills and abilities of the agent during the hiring process or while the agent is working (Eisenhardt, 1989). Adverse selection in the CSER context could mean a failure to evaluate supplier environmental and social performance. This risk can be minimized by integrating strict environmental and social criteria in supplier evaluation and selection process. These pre-contractual means can help to eliminate supplier with greater probability of opportunistic behavior.

Conventional supplier evaluation criteria include neither environment nor social factors, for instance, the model of supplier selection developed by Sarkis and Talluri (2002) comprises strategic performance metrics (costs, quality, time and flexibility) and organizational factors (culture, technology and relationships). Chan (2003) distinguishes Quantitative and Qualitative criteria, with the former including cost and resource utilization and the latter including quality (incl. time), flexibility, visibility, trust and innovativeness. Trying to

summarize all existing approaches to supplier evaluation Sarkis and Bai (2010) suggest the classification displayed in the Table 2:

**Table 2. Business and economic supplier selection attributes**

Source: adapted from Sarkis and Bai (2010)

<b>Strategic performance measures</b>	<b>Organizational factors</b>
<i>Cost</i>	<i>Culture</i>
Low initial price	Feeling of trust
Compliance with cost analysis system	Management attitude/outlook for the future
Cost reduction activities	Strategic fit
Compliance with sectoral price behavior	Top management compatibility
<i>Quality</i>	Compatibility among levels and functions
Conformance quality	Suppliers organizational structure and personnel
Consistent delivery	<i>Technology</i>
Quality philosophy	Technological compatibility
Prompt response	Assessment of future manufacturing capabilities
<i>Time</i>	Suppliers speed in development
Delivery speed	Suppliers design capability
Product development time	Technical capability
Partnership formation time	Current manufacturing facilities/capabilities
<i>Flexibility (FY)</i>	<i>Relationship</i>
Product volume changes	Long-term relationship
Short set-up time	Relationship closeness
Conflict resolution	Communication openness
Service capability	Reputation for integrity
<i>Innovativeness (IS)</i>	
New launch of products	
New use of technologies	

Sustainability topics have been raising significant attention from stakeholders for the last 10-15 years, which resulted in the situation when increasing number of companies are including environmental and social responsibility topics into supplier evaluation criteria. Drawing on the works of Gauthier (2005), Klassen and Whybark (1999) and Dou and Sarkis (2010) Sarkis and Bai have suggested a set of environmental metrics to be included into supplier selection evaluation and selection process (Table 3).

**Table 3. Environmental metrics in supplier selection decision**

Categories	Factors	Sub-factors
Environmental practice	Pollution control	Remediation End-of-pipe controls
	Pollution prevention	Product adaptation Process adaptation
	Environmental Management System	Establishment of environmental commitment and policy Identification of environmental aspects Planning of environmental objectives Assignment of environmental responsibility Checking and evaluation of environmental activities
Environmental performance	Resource consumption	Consumption of energy Consumption of raw material Consumption of water
	Pollution production	Production of polluting agents Production of toxic products Production of waste

Source: Sarkis and Bay (2010)

There are various ways suppliers can show their commitment to Corporate Social and Environmental Responsibility matters, such as Code of Conducts (Ethical Trading Initiative, Chamber of Commerce Guidelines on Supply Chain Responsibility, Responsible care by International Council of Chemical Associations) and management systems (ISO 14001 for environment, SA 8000 for working conditions and human rights, OHSAS 18001 for health and safety). (Ciliberti et al., 2010)

In addition, each company has own set of decision criteria and their content and strictness often strongly depends on how sensitive the industry and type of company's business to environmental impact and social issues. For instance, textile and clothing industry is affected very much by CSER issues such child labor, overtime work, harassment, environment degradation caused by dyeing methods and methods of organic cotton planting (Wiese and Toropowski, 2013; Dickson and Eckman, 2006). In such case, customers searching for suppliers in textile industry is likely to require certain certificates and standards to prove suppliers *environmental performance*: Cotton Union/Skal certification (proves that textile products contain real organic cotton grown in sustainable way) or Oeko-tex 100/1000 standard (verifies the absence of harmful substances in the textile products); and social performance: Business Social Compliance Initiatives, Fair Wear Foundation verification etc.



(van Yperen, 2006; Oko-tex Association (2013).Online. Available at: <https://www.oeko-tex.com/>, [24.06.2013]). Effective supplier evaluation and selection process based on strict industry specific criteria can help the buying company to eliminate suppliers with higher potential to opportunistic behavior.

### *Moral hazard*

Moral hazard refers to a situation when the agent did not perform agreed-upon efforts (Eisenhardt, 1989); the underlying assumptions are existing goal misalignment and information asymmetry. It is important to understand what reasons could cause goal conflict and information asymmetry between supplier and customer companies in the context of corporate social and environmental responsibility.

Each supply chain party is a stand-alone organization with its own values, goals, interests, policies and practices, at the same time parties can enjoy the benefits of the supply chain only if they work together. That implies that companies have to find mutual interest and create common goals to reach a trade-off under which every party will achieve certain benefits. In the CSER this could mean, for instance, achieving mutual targets in environmental and social performance (e.g. annual emission reduction, employee working condition improvement at the factories), joint programs and projects. The goal conflict can arise from misalignment of CSR interests and strategies of the customer and its supplier. For instance, the customer can be active in integrating CSER aspects in its values, strategy, business processes, by that facilitating the overall image of a “green” market player and responsible corporate citizen. For such company it would be critical to have reliable and socially and environmentally responsible suppliers capable of keeping their performance at the same sustainability level. Typically, greening initiatives require significant investments in obtaining necessary certificates, redesigning operation processes towards more sustainable way, and each organization has to make a trade-off between economical performance and sustainable development (Porter and van der Linde, 1995).

There is a possibility that customer (principal) and supplier (agent) will make contrary decision which might result in one party focusing on economical performance and the other putting more efforts in environmental and social performance enhancement. This misalignment of goals and interests may lead to underperformance of supplier in environmental or/and social issues, e.g. Supplier Code violations, decrease in quality, excessive pollution, worsening of employees working conditions.

An extreme example of the consequence of goal misalignment could be, for instance, a collapse of a garment factory in Bangladesh earlier this year. This tragedy has taken more than a thousand of lives, because the factory building was far too obsolete and did not meet safety requirements. The factory was one of the suppliers of well-known garment brand H&M, which according to publicly available information is put a lot of efforts in improving working conditions on its factories and overall socially responsible performance (UK BBC news; H&M Sustainability Report).

The case mentioned above could serve as an example of information asymmetry between the customer company and the supplier. Factory employees have claimed that when the foreign buyer came, the workers were treated very well; otherwise they were often subjected to moral and physical punishment and harsh working conditions (NBC News). Moreover factory working conditions were very poor: unbearable heat, offensive rules, long working hours, adding to that non-conformance to fire safety requirements (PBC.org; BBC News). It is assumed that the principal (H&M) did not possess the full information about the situation at the agent's factory; otherwise prevention measures could have been taken.

Risks associated with goal misalignment and information asymmetry in sustainability issues could have economic, environment and social nature. For instance, example of economic costs could be costs carried by principal to liquidate the consequences of Code of Conduct violation from the agent side such as blocking the oil spill, withdrawal and liquidation of products containing dangerous substances, decreasing sales as a consequence of damaged reputation. Environmental risks embrace issues related to damaging the environment such as excessive pollution and emissions, water, soil and air pollution, incorrect utilization of dangerous substances, etc. Risks of agents mistreating their employees (harassment, punishment), child labor, underpaid long work hours refer to the social responsibility threats. Social and environmental risks if realized often may lead to significant damage to corporate image, which is very hard and expensive to recover.

### **3.4. Behavior-based and outcome-based contracts in CSER management**

In order to mitigate information asymmetry and goal misalignment including risks associated with them customer company should find an appropriate way to reduce these two parameters. As it was discussed earlier in this chapter, agency theory suggests outcome-based and behavior-based contracts as mechanisms aimed to minimize the probability of opportunistic behavior from supplier's side. Furthermore, it is crucial to remember that in this study principal is represented by the organization; this means that it is pursuing a certain strategy in doing business and this strategy affects the way organization manages relationships with its suppliers. Therefore, the type of strategy should be taken into account while investigating the outcome and behavior-oriented approaches in green supplier management.

*Behavior-based* contract fits companies pursuing differentiation strategy. Main goal of this strategy is “to create a distinct value or image for a product or service” (Lassar and Kerr, 1996). Differentiation strategy is characterized by creating perceived value through advertising, prestige pricing and market segmentation (Hambrick, 1983), and value transfer. Some companies have recognized potential gains of using environmental friendly marketing strategies, “green” image allows setting higher margins for their products, because customers are ready to pay premium for high quality, safe and environmentally friendly product (Cronin et al., 2011). For such companies maintaining their green image is a critical issue, therefore they should create such mechanisms that can help to ensure conformity of their suppliers to the green corporate standards and requirements. This problem could be addressed by investing in monitoring systems to improve information sharing, monitoring supplier progress and actions and by building closer relationships with suppliers to enhance mutual trust and reliability (Zsidisin and Elram, 2003). These approaches facilitate sharing risks between customer and supplier reducing the probability of moral hazard and adverse selection.

Zsidisin and Elram (2003) suggest four management techniques that serve to align goals of the both parties and that focus on supplier behavior: supplier certification, implementation of quality management programs, target costing and supplier development.

*Supplier certification* is given as an award to those suppliers that consistently meet predetermined objectives in quality, cost, delivery and environmental and social performance (Larson and Kulchitsky, 1998). Customer-company can be capable of certifying its suppliers or certification could be done by external certification bodies. Important advantage of

certification is that may reduce the need for customer-company to conduct often costly and time-consuming inspections, moreover it is a good tool to obtain reliable information about supplier's performance and to ensure supplier's capability to conform to customer's requirements in quality, sustainability and other aspects. Since certification criteria are standardized, supplier is expected to perform consistent standardized behavior as well; this makes supplier and customer goals closer aligned. (Zsidisin and Elram, 2003)

The *implementation of quality management programs* in the supplier facilities helps supplier to conform to customer requirements and live up to customer expectations. Quality management programs embrace broader range of aspects than certificates. For instance, commonly used Total Quality Management program addresses environmental and social issues.

*Target costing* attempts to align customer goals with those of suppliers by sharing information about customer financial targets. Targets could have different character - quality oriented, environment oriented, social and employment oriented. Some customers collaborate with their suppliers to develop mutual targets of emission reduction, pollution prevention, safety enhancement etc., this is typical for companies having long-term and trustful relationships.

*Supplier development* refers to the efforts customer-company invests in improving supplier performance and capabilities, so that supplier can meet customer-company's long-term and short-term goals (Zsidisin and Elram, 2003; Krause and Ellram, 1997). Supplier development is accompanied with knowledge transfer activities that are time and resource intensive for the purchasing firm, and firms undertake them with the objective of increasing supplier capabilities (Mobi and Mabert, 2007). The purpose of supplier development includes cost reduction, development of new capabilities, sustainable process redesign, improvement of quality and communication. This could be achieved by staff training and educating, implementing better environmental practices including environmental management system, implementing feedback mechanism. The process of environmental adaptation was found to be more successful in those cases where customers were actively involved in supplier development process (Simpson and Power, 2005).

One more important mechanism not mentioned in the four approaches described above is supplier Code of Conduct which comprises minimal requirements to supplier performance

including environmental and social aspects. Suppliers are expected to sign the code and fulfill necessary requirements, customer-companies in their turn conduct supplier auditing to ensure that suppliers are actually following the rules.

*Outcome-based* contract fits companies following cost leadership strategy. Main goal “is to achieve industry’s lowest cost structure through highly efficient operations, rigorous cost controls and economies of scale based on high unit sales volumes” (Porter and van der Linde, 1995). Outcome-based contract by its nature implies minimal monitoring and compensation based solely on the volumes sold. Principal is not expected to provide any special support and no value transfer occurs between parties, both parties maintain flexibility and avoid commitments (Anderson and Gatingnon, 1986). Arm’s length relationships exist between principal and agent, thus supplier has no obligation beyond the sale of the product to the customer. From the agency perspective the customer will bear the inherent risk of this arrangement for two main reasons: he believes that product sales will justify the terms of the contract and switching costs are low. (Lassar and Kerr, 1996).

In the CSER context this outcome-based contact might mean less attention of the customer to what the environmental and social impact of the supplier actually is. Considering monitoring investments to be low, buying company doesn’t have consistent and efficient mechanism of verifying the environmental performance of suppliers. This increases information uncertainty and can lead to negative unexpected consequences, for instance, customer might find that these employees at the supplier factory are subjected to physical punishments and harassment or underage labor is used.

At the same time, outcome-based contract uses different interest aligning mechanisms, such as incentives and bonuses, to ensure that the other party behaves in expected way. For instance, customer can offer a monetary reward if supplier has obtained certain CSR certificates or been consistently conforming to CSR targets stipulated by customer company. The latter, however, implies having a verifying mechanism in place and/or certain degree of trust between the parties, which is more typical for long-term relationships characterized by relatively high switching costs.

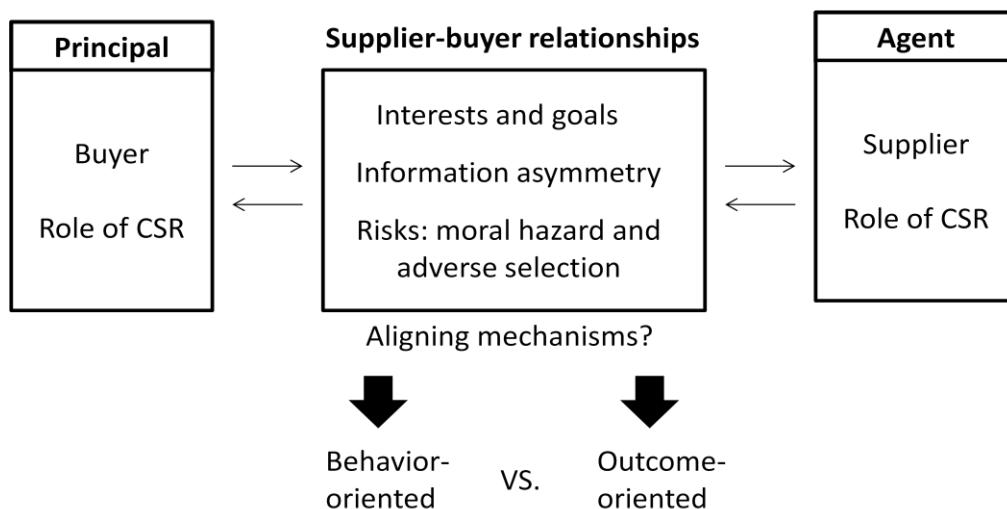
Customer company bears risks associated with CSER, which may be extremely undesirable considering the scope of negative consequences in case of any opportunistic behavior from supplier side. These risks could be partially mitigated by minimizing the adverse behavior

and implementing pre-contractual mechanisms, such as stringent and complex process of supplier evaluation and selection. This might help to eliminate potentially risky suppliers, but at the same time such process can require substantial investments of time and resources from the customer. Overall, outcome-based contract doesn't seem to be an attractive mechanism to ensure the safety and sustainable performance of the suppliers.

### 3.5. Summary of the chapter and theoretical framework

The analysis of literature review on agency theory and on the role of environmental and social responsibility in supplier-customer relationships confirms that agency theory is applicable to the problems of supplier-customer relationships arising in the context of environmental and social responsibility. This study aims to implicitly address the problem of risk in supplier-buyer relationships. Such risks are regarded in the literature as moral hazard and adverse selection and they arise due to different attitudes toward environmental and social responsibility topics from supplier and buyer sides. This happens when CSER issues are crucial for buyer's business and strategic development, whereas supplier priorities are different from those of the buyer and corporate responsibility topics are regarded as less important. Therefore, it is critical to understand how each side regards CSER issues and what role they play for company wellbeing. This could be done by identifying environmental strategy within the classification suggested by Buysse and Verbeke: reactive, pollution preventive and environmental leadership. Theoretical framework developed for the further analysis is illustrated on the Figure 5.

**Figure 5. Theoretical framework**



This study will analyze aligning mechanisms used by buyers to align their interests with those

of suppliers, to level off the information asymmetry and to mitigate environmental and social responsibility risks related to suppliers' performance. In order to address the research objectives, first, it's critical to understand what the state of CSER in the company is: whether and how CSER topics are integrated in corporate values, strategy, goals and targets, operations and supplier relationships management. Literature suggests that main pressure to implement CSR practices comes from stakeholders, thus company's approach to stakeholder relationships management will be analyzed as well in order to understand whether and how stakeholder pressure may affect the way companies are dealing with their suppliers. Further, the study will analyze methods utilized by companies in order to reduce information asymmetry, align interest with those of supplier and mitigate associated risks. The goal is to identify which contractual approaches behavior-based or outcome-based fits supplier relationships management in CSR context the most.

## **4. Research methodology**

This chapter presents research methodology of the study. Also, it will discuss research approaches used to gather and analyze the empirical data. Based on the literature review, the outline of the interview questions will be developed.

### **4.1. Research approaches**

This master's thesis represents a qualitative research that focuses on understanding the studied phenomena within the context of participant's perspective (Sharan, 2002). Case study is chosen as a main research method of this study. This method can be defined as an in-depth study of the object of phenomena within its real-life context. According to Yin (2003) case study research method is suitable when:

- a) study aims to answer “how” and why “questions”,
- b) researcher cannot control or manipulate the behavior of observed people of events,
- c) researcher considers contextual conditions to be relevant to the phenomenon under study,
- d) and the boundaries between phenomenon and the context are not clear enough.

There is a lack of literature covering the problem of supplier-buyer relationships within CSER context. With multiple studies of supply chain management available rather few of them focuses on the role of corporate social and environmental responsibility issues in supplier-buyer relationships. This thesis aims at understanding “why” it is important for companies to be green and “how” they ensure the safety and reliability of their supplier relationships from the CSER perspective. Therefore, case-study research method is appropriate to be used.

Since one of the main objectives of this study is to examine methods utilized by buying companies to motivate their suppliers towards improving environmental and social performance, comparative analysis of several cases will facilitate obtaining more comprehensive results. Therefore, this research was designed as multiple case-study as it allows comparison of the findings across different cases as it allows exploring differences within and between cases (Yin, 2003). Such approach can help to identify similarities and differences between the methods utilized by multiple players and discover relationships patterns specific for particular situations.



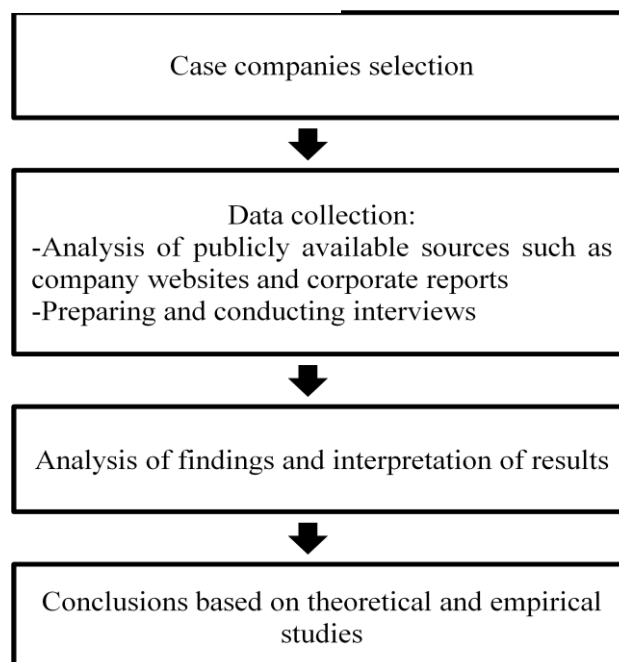
Regardless of obvious advantages of case-study, this method can lead to massive volumes of data and documentation. They can not only slow down the process of analysis, but lead to the situation where the researcher trying to utilize all the data will not be able to distinguish important patterns and dependencies and build a very complex theory. This risk is partially mitigated by the narrow focus of the interview questions structured according to the framework developed in the theoretical part.

Another weakness of case-study refers to the quality and coverage of collected data; this is related to company's unwillingness to reveal all the relevant information. This issue could be only partially overcome by offering anonymity to the case companies, however, in this research none of the companies insisted on that. Within the context of this master's thesis the advantages of the case study method overcome its disadvantages. In order to meet the objectives set in this study, real-life situations must be analyzed and multiple sources of information must be used.

## 4.2. Research design

Since the focus of this study is to examine how agency theory can address the issues of motivating suppliers to perform environmentally and socially sustainable behavior, the analysis of the selected companies was aimed at studying how they manage CSER relationships with their suppliers. Figure 6 illustrates the research procedure carried out in this study:

**Figure 6. Research procedure**



Data collection was done in the form of semi-structured interviews and using annual sustainability report and relevant information published on the corporate websites. The case companies were selected according to the following criteria:

- Sensitivity of industry to environmental issues. These industries create significant environmental impact and companies operating there are often subjected to the strong pressure from society and legislation.
- Finnish-based with operations in foreign countries. Companies having international operations encounter a greater number of requirements from local communities and legislation, additionally they have a great opportunity to learn from their international partners and vendors; the researcher is based in Finland and Finnish companies are in close proximity.
- Availability. This factor significantly limited the number of companies willing to participate in the research.

Form selected 10 companies only three participated in the study: Lindström, UPM and Finnair. Initially, it was planned to interview supplier-customer dyads, in order to gain two-sided perspective; however, it occurred to be difficult to reach customers of the interviewed companies, no contact was eventually established. Thus, participating case companies were analyzed as a buyer to their suppliers and as a supplier to its customers. Therefore, in the conducted analysis each company represents buyer and supplier side simultaneously. This move is justified by the fact that in a supply chain one company can play a double role by being a buyer purchasing goods and services from the suppliers and then after processing them sell to other buying companies.

Four interviews were conducted with company representatives in June 2013. The interviewees are the employees occupying high managerial positions. The interviews have lasted approximately one hour each, all interviewees work in leading positions. Interviews were conducted in English and recorded by the permission of the interviewees. The records were transcribed for analysis purposes. The outline of the interviews and the list of interviewed people could be found in Appendix 1.

### 4.3 Data analyzing method

First, existing literature in the field of supply chain management, CSR and principal agent problem application in supplier-buyer relationship was reviewed and as the result theoretical framework was developed. Theoretical framework embraces several levels: strategic role of CSR in firms operations and its activity in this field, agency problems underlying supplier-buyer relationships and possible solutions based on outcome and behavior-oriented approaches. These levels serve as guidelines for the data analysis presented in the empirical part in the following way:

#### *CSER*

- understand how active both sides are in pursuing sustainability aspects in their business
- understand the attitude of buyer and supplier to CSER and how important it is in their business

#### *Agency relationship problems*

- describe and understand buyer-supplier relationships in the case companies
- examine the situation of information asymmetry between supplier and a buyer,
- examine the goals and motives of each side
- understand what CSER related risks are the most critical and how they are mitigated

#### *Solution approaches*

- by applying outcome and behavior-based approaches, identify the motivation methods used by buyer for motivating their suppliers and safeguarding customer's CSER interests

Each of the case companies are analyzed according to these guidelines. First, the motivation of buyer to be green is investigated, second, existing agency problems are described. Finally, existing mechanisms of supplier motivation towards socially and environmentally sustainable development are analyzed within the context of outcome and behavior-based approaches. The key findings are expected to answer the main research question: *how do companies address principal-agent problems related to corporate social and environmental responsibility?*

## **5. Empirical part**

This part represents empirical analysis of the issues discussed in the theoretical part. Three case companies will be analyzing with the help of theoretical framework developed in the previous chapter. First, each part of the chapter will describe how company manages CSER issues in its operations and stakeholder relationships.

Second, analysis of the case will be performed in order to determine the role of CSER and company environmental strategy. According to the literature review company environmental performance can be evaluated through five resource domains. Essentially these domains represent investment areas developing which company can achieve greater environmental performance. Such domains comprise (1) investments in conventional green competencies (e.g. green product development, green manufacturing technologies), (2) investments in employee skills (training), (3) investments in organization (green marketing, green accounting and finance, green purchasing), (4) investments in routine-based management systems and procedures such as life cycle analysis and environmental reporting, (5) integration of environmental issues in strategic planning. Active investing in these domains indicates how important CSER is for the organization.

Third, it will be analyzed which motivational mechanisms are utilized to address principal-agent problems and whether they have behavior or outcome-based nature. Next, based on key findings the efficiency of used methods will be evaluated. Finally, key findings will be compared among the companies in order to find common patterns and differences in the ways companies address agency problems. And final conclusions will be drawn from this comparison.

## **5.1. Case Lindström**

### **5.1.1. Case description**

#### ***Company profile***

Lindström Group is a family owned Finnish multinational company providing B-to-B textile services in the following areas: Workwear Services, Restaurant Textile Services, Shop Towel Services, Mat services, PPE Services and Hygiene Services. Within each area Lindström takes care about the whole life-cycle of the textile starting from textile collection design and acquisition, necessary customization, to washing, repair, storing, delivering clean and new textiles, and textile recycling. Lindström operates in 21 countries and employs 2750 people. The turnover of the company has reached €288 million in 2012.

#### ***Responsibility at Lindström***

According to the Lindström Environmental Sustainability report 2012 company's core values comprise profitable growth, long-term customer relationships, responsibility, enthusiasm and joy of learning. Responsibility by Lindström means taking into account social, environmental and financial impacts of its operations. Both interviewees emphasized critical importance of the three responsibility aspects, the VP of Quality, for instance declared that: "*Responsibility is one of our core values, we are responsible for what we are doing, to be sure there will be future for our customers and our business*". Also, he explained that Lindström is a family owned company and "*owners want to develop company so that the following generation would have a company to run.*" This aspect of heritage reflects the long-term orientation and highlights the importance of finding sustainable development model.

#### ***Environmental Responsibility***

Long-term orientation in CSER context can be observed from Lindström medium and long-term planning as well as supported by environmental goals set in the annual sustainability report: monitoring and reporting system for supply chain responsibility by 2016; reducing energy consumption 1,05kWh/kg washed, water consumption 7,1 l/kg washed; and increasing textile waste recycling rate up to 90% from current 73% (Annual Sustainability Report). Moreover, according to the same report Lindström has signed the ICC Business Charter for Sustainable Development, thereby committing itself to taking into account its environmental impacts in planning and decision-making and to comply with relevant laws and regulations.

### *Environmental Management System*

Deep integration of CSER issues into Lindström organization and management is supported by the fact that ISO 14001 is used as Environmental Management system to facilitate CSER goals fulfillment. Furthermore, purchasing and supplier agreements are regulated by Code of Conduct which is based on SA 8000 standard. And finally, Lindström products have eco-labels relevant to the regional requirements such as CE markings in Europe and GOST-R certificate in Russia.

### *Environmental impact of the operations*

Main environmental impacts of Lindström operations come from water and energy consumption at laundries and waste generated by textiles and their processing. In order to fulfill environmental goals set in Lindström corporate strategy, company should take measures to minimize environmental impact of its operations. Sustainability report proves that such measures have been taken by Lindström and resulted in certain level of improvement compared to the last year. These methods can be found in the Appendix 2.

### *Stakeholders*

According to the interviews long-term orientation underlies Lindström corporate values and strategy, including the stakeholder relationships. Company representatives mentioned that despite all stakeholder groups being equally important, customers are the one that cause the largest pressure on the organization in terms of environmental and social responsibility. Such finding corresponds to the views of some scholars, such as Sarkis (2010), Humphreys et al., (2003), Handfield et al. (2002), who claimed that customers can affect significantly CSER policies in the firm.

Lindström is trying to address pressure coming from customers through monitoring service experience, to be able to react to arising issues in time. As an example of such mechanism both interview and report mention customer satisfaction survey conducted by Lindström twice a year. This survey measures satisfaction with customer service and customer relationship management, service and product quality, delivery accuracy of each service, the conduct of service representatives and invoicing. The results of such survey illustrate the level of customer satisfaction that, according to the Annual Sustainability Report 2013 have achieved high level with the grade above 4 on a 1-5 scale.

Employees seem to be another stakeholder group playing important role in Lindström environmental and social activity. Company representatives stated that Lindström provides employee training on environmental and social issues. For instance, “At Your Service” board game was mentioned as a part of employee training program, this game allows employees practicing how to deal in different non-standard situations, according to the interviewee reflection this game proved to be very successful in personnel training.

Lindström seems to be a responsible employer; this argument is supported by the annual employee satisfaction survey and could be observed in interviewee’s reflection on corporate employment policy: *“if a person started working at Lindström and performs its work well, the only way the company will say good bye is at the retirement.”* Furthermore, “Enthusiasm and a joy of learning” are included into corporate values, thereby signifying that Lindström appreciates its personnel and encourages openness and learning among the employees. Being a responsible employer itself company is more likely to require same level of performance from its suppliers. In case of Lindström this assumption is supported by the Code of Conduct that stipulates basic requirements regarding the employee treatment.

### ***Suppliers***

*Lindström works with the following suppliers:* textile suppliers, machinery suppliers, laundry suppliers, suppliers for washing processes. Out of them textile and fabrics suppliers represent the most crucial suppliers with biggest value. The fabrics manufacturers are located in China.

### ***Relationships with suppliers***

Lindström adheres to the long-term orientation in relationships with its suppliers, because suppliers learn about the requirements of the company, its business ethics and can adjust their products and processes to create mutual benefits (e.g. customization, fast delivery, conformance to required standards, improved trust and reliability, more aligned interests, lower risks). Company representative supported this argument in the following way: *“we believe that having long-term relationships you get better service, better quality and the continuity helps you in cooperation, you can learn to trust each other, you can be more open. And thus we are also able to serve our customer better”*.

However, the interviewee emphasized the importance of financial perspective in responsibility as well: *“you need to be aware that you are not too easily giving for the suppliers, so that if you are with us, you are forever with us and you can do whatever you*

*want with your prices.*” Reasonable price setting is an important issue in supplier-customer relationships, it helps to keep the competition on the supply market that creates a push for suppliers to seek for new ways of increasing their productivity ensuring the overall development. Development in its turn leads to searching for more sustainable ways of doing business, which opens new opportunities for growth.

### *Selection and evaluation*

Lindström sees supplier evaluation process as the pre-contract mechanisms of ensuring the conformity of suppliers to the corporate standards and requirements. This can help to reduce the probability of encountering violations from suppliers and associated risks. Five holistic supplier evaluation criteria were mentioned in the interview: price and quality, service, environmental and ethical values. All five criteria were claimed to be of equal importance for the company, signifying that the company expects its supplier to illustrate a certain level of environmental performance. Supplier Code of Conduct (SA 8000) supports this argument, since it incorporates environmental and ethical aspects such as ‘no pollution that is against the legislation of the set country’. Another evidence in favor of the argument discussed above is that Lindström requires their suppliers to provide certificates relevant to the type of production in order to prove that a supplier has taken necessary pollution prevention measures and is following the ethical values.

### *Auditing and Monitoring*

Lindström requires its suppliers to sign the Code of Conduct and expects them to follow the requirements; however, no monitoring mechanism to prove that suppliers actually do follow the requirements was mentioned. Company doesn’t consider such mechanism to be necessary on the regular basis. The reasoning behind such decision can be relatively low level of pollution caused by company operations (as in case with garment production) and another can be reliance on the supplier level of quality, which is supported by the words of the company representative: *“our fabric manufacturers are well-known companies who follow the rules regarding pollution and they can prove to us how they handle polluting”*.

According to ISO standards, company should conduct supplier auditing to ensure their conformity to imposed requirements. Lindström audits the suppliers every three years and only key suppliers are audited. Audit is conducted by Lindström internal resources: employees from the quality and corporate purchasing competence centers; no external auditors are used.



Such cooperation of Lindström staff members with its suppliers helps to convey company's goals and vision for future decisions thereby improving mutual understanding and strengthening relationships between parties.

According to the interview, Lindström has never encountered any violations from the suppliers. However, in case of any violations happening Lindström has thought about the reaction strategy, company representative reflected on it in the following way: *“With critical nonconformities we give time to take corrective action, but they need to be fast, we need to have evidence that they are taking corrective actions.”* If critical nonconformities have not been fixed in the given period of time and company hasn't showed significant efforts to solve the issue, Lindström claimed that it will terminate the contract with such supplier: *“If the nonconformity is not fixed, Lindström will find another supplier.”* This supports the argument that sustainability issues such as environment and ethics are genuinely crucial for Lindström.

### **5.1.2. Key findings**

It has been found that CSER aspects are integrated into Lindström corporate values and strategy, adding to that Long and medium term planning goals include CSER topics as well. Furthermore, Lindström has recognized the environmental impacts of its operation and are taking necessary measures towards minimizing such impacts. Certified environmental management system and utilization of eco-labels, Supplier Code on conduct determining baseline for environmental and social requirements, integration of CSER aspects in supplier selection criteria and training programs for employees on key CSER issues indicate high level of CSER integration on organizational level (culture, management, training) as well as on process level (selection criteria, pollution prevention measures taken to minimize environmental impact). Consequently, it can be concluded that CSER plays an important role for Lindström business and corporate image. Such conclusion can be supported by the following words of the company representative: *“...only a sustainable and responsible business is a long-term business.”*

According to the environmental strategy classification developed by Buysee and Verbeke (2003), Lindström seems to be pursuing pollution prevention strategy rather than environmental leadership. Pollution prevention strategy is characterized by CSER issues taken into account seriously in a company and company efforts to go beyond the minimal

legislation requirements, both of which are clearly presented in Lindström case. Although Lindström environmental activity exceeds the minimal legislation standards, no clear intention to develop environmental capabilities has been observed. As follows from the gathered data Lindström sees corporate sustainability as a competitive advantage, economic and social aspects of which has been especially emphasized. Environmental responsibility is viewed as important, but doesn't seem to be differentiating factor.

Lindström is not involved in supplier development and does not have any environment oriented projects with the suppliers. In order to convey responsibility values to the suppliers Lindström provides internal environmental training for the employees and also for those suppliers who regularly visit Lindström Service Centers such as delivery companies, people and companies inside the premises. However, there is no training for crucial textile suppliers, one of the reasons for it is that Lindström might not be competent enough to teach their suppliers who are professionals in their industry, company representative supports this argument by saying: *“There are also types of risk that we are not focusing on the right topics in their business point of view when giving the environmental training. Suppliers know the processes better than us and maybe we don't have the competence to teach them.”*

Information asymmetry problem arises when the principal (buyer) is unable to verify what the agent (supplier) is actually doing. At Lindström such problem is addressed by investing in supplier selection process and conducting supplier audit. Given the low frequency of the supplier audit (once in 3 years), this mechanism doesn't seem to be critical. Drawing on the interview data, supplier selection process seems to be the mechanism company relies on the most. Adding to the supplier selection, Lindström expects suppliers to fulfill the requirements of Supplier Code of Conduct considering this tool as a baseline for supplier performance. Taking into account zero level of violations encountered, utilized methods seem to be sufficient to mitigate the problem of information asymmetry and ensure the safety of Lindström operations and reputation of a good corporate citizen.

Investing in monitoring mechanisms, long-term orientation in relationships, efforts to convey company values and objectives are characteristics of behavior-based contract. That means that company relies on motivating suppliers to be green by encouraging desired behavior. Yet, economic side of corporate responsibility seems to be even more critical for the company. Reflecting on the question ‘how do you motivate your suppliers to be green?’, the interviewee emphasized market approach, meaning that in order to stay competitive, retain

existing customers and gain new, companies should follow sustainable way of doing business and integrate environmental and social responsibility issues into their strategies: *“At the end of the day it’s about business, if there are two identical suppliers and one of them takes care about the sustainability issues better than the other, it’s crystal clear that this one is preferable.”* Such opinion brings up the issue of a trade-off between economic and environmental performance. Case Lindström indicates that in the industries with relatively low environmental impact economic and social responsibility issues are of greater importance, whilst issues related to environmental responsibility takes a secondary role.

One interesting finding was discovered in relation to the way environmental information is communicated. As a supplier to its customers, Lindström is entitled to report about its performance including environmental and ethical aspects. Customers send numerous questionnaires for Lindström to fill. Although, information about company environmental and ethical performance is published in annual sustainability report, it was claimed to be insufficient for customers, since it does not contain all required information and representation format does not allow easy search. Therefore, Lindström needs an efficient communication tool that would allow saving time and efforts of the personal responding to the customer inquiries and enable information search for customers.

## **5.2. Case UPM**

### **5.2.1. Case description**

#### *Company profile*

UPM is a Finnish manufacturer of fiber and biomass based products. UPM comprises of six business areas: Energy, Pulp, Forest and timber, Paper, Label and Plywood. With presence in 67 countries, plants in 17 countries and global sales network UPM has truly international business. According to the Annual report there are approximately 22000 employees working for the company and the turnover in a year 2012 totalled €10,4 billion.

#### *Responsibility at UPM*

##### *Values, Strategy, goals, activities*

According to the interview UPM doesn't have a separate CSER agenda, but CSER aspects can be observed in values, goals and strategy of the company. Forest industry is very sensitive to environmental issues due to the large amount of nature resources utilized in the production. Thus, special attention to environmental issues is required. For instance UPM sees environmental and social responsibility values as an integral part of their business, company's strategy is to be a forerunner of the forest and bio industry, this intention is embodied even in the name of the strategy - Biofore. This name appears on every UPM related attributes, web pages and even accessorizes, that indicates company's intention to manifest the environmental aspect of its business.

Wood is a renewable resource, thus having effective and efficient methods of recycling and restoration can open new opportunities for the company. UPM has been expanding its businesses from paper and pulp to biomass energy and labels by seeking new ways to utilize every product produced during the manufacturing process. For instance, profi - a side product in the recycling part of the label manufacturing - is used as a construction material for building terraces.

CSER aspects are present in UPM business drivers (Appendix 3): low-emission and renewable energy, recycling and climate change, sustainability and renewability. Driven by CSER matters UPM embodies environmental plans in strategic objectives for each business area. These objectives as it can be seen in the Appendix 4 strongly reflect focus on mitigating environmental impact, sustainable growth in the growing businesses (e.g. expand in low-

emission power generation, forest plantation development, growth through product renewal and in emerging markets) and sustainable development for mature businesses (e.g. Finnish forestry development, Savonlinna plywood mill modernisation completed).

Furthermore, UPM develops annual responsibility targets in collaboration with business areas. Each target represents a baseline for economic, social and environmental responsibility key areas and sets the direction for further performance improvement (Appendix 5). Such targets serve as a good tool for tracking the progress in company performance in three main directions: economic, social and environmental. The fact that UPM publishes such targets online indicates company’s readiness to share the information with their stakeholders and ensures the transparency - “Trust and be trusted” states one of the UPM core values. Such approach has been recognized globally resulting in numerous awards given to UPM’s Biofore strategy, see Table 4.

**Table 4. Awards and recognitions**

<b>Award</b>	<b>Party</b>	<b>Ground</b>
The only forestry and paper company listed	Dow Jones Sustainability Indexes (DJSI)	<ul style="list-style-type: none"> <li>• high environmental performance,</li> <li>• strong focus on the development of Occupational Health and Safety</li> <li>• increased transparency of corporate responsibility reporting.</li> </ul>
Supersector Leader in the Basic Resources sector for 2012–2013		
Highest score in the Nordic Carbon Disclosure Leadership Index	Carbon Disclosure Project	<ul style="list-style-type: none"> <li>• Successful energy efficiency campaigns,</li> <li>• investments in renewable energy and innovations in the development of a low carbon economy</li> </ul>
Most Innovative Company	Ethical Corporation Awards 2012	ecodesign concept and overall sustainability thinking

*Source: UPM corporate website*

Forestry industry operations may cause serious damage to nature and ecology, UPM sees such risks as hazardous and lists them among priorities.

*Environmental impact of operations*

Utilizing forest ecosystem influences biodiversity and landscape; wood processing and production processes release emissions into water and air, adding to that they generate a lot of waste, often noise and odours. In such sensitive to environmental issues industry, efficient and effecting environmental management practices and superior environmental performance

can be a source of competitive advantage. It's especially critical for UPM that is responsible for the entire supply chain from raw material procurement to end use. It requires from the company to ensure the efficiency of environmental management mechanisms at each stage of the process and at each level of the supply chain. UPM has recognized environmental impacts caused by its operation and is taking necessary measures to minimize such impacts, such measures are presented in Appendix 6. From the listed measures in could be seen that company puts solid efforts to comply with required limits and standards by utilizing various recycling and operation optimization technologies.

### *EMS and certifications*

UPM seems to have implemented all the necessary measures to integrate CSER on the organizational level, thereby ensuring recognition of its corporate environmental responsibility by external parties. For instance, all UPS paper mills in Europe are certified according to EMAS system, most of production plans work according to ISO 14001 environmental standards and occupational health and social accountability standards OHSAS 8001. Due to the diversity and large scope of UPM businesses each business possesses relevant certificates. On the top of that, UPM has implemented own Chain of Custody systems in accordance with two main international forest certification standards FSC and PEFC. FSC (Forest Stewardship Council) certification and PEFC (Programme for the Endorsement of Forest Certification) are certification systems highly valued in the forest industry. FSC aims to ensure that wood products come from well managed forests that provide environmental, social and economic benefits (FSC Forest Stewardship Council, 2013) and PEFC works to promote good practice in the forest throughout the supply chain and to ensure that timber and non-timber forest products are produced with respect for the highest ecological, social and ethical standards (PEFC, 2013).

### *Stakeholder relationships*

UPM claims that all stakeholder groups including investors, customers, employees, media, government and communities are interested in company sustainability credentials. Such strong interest can be explained by the industry specificity - wood is a natural resource and deforestation is considered as one of the causes of global warming and climate change (Food and Culture organization of United Nations, 2006). In order to maintain relationships with social communities, UPM is pursuing such initiatives as Plant a Tree Day where company plants trees together with school children, young adults and other stakeholders. UPM

recognizes the importance of educating stakeholders about important issues in forestry, and in order to increase stakeholder awareness about its operations company has launched Plantation Life project. Plantation Life is a web portal where all interested stakeholders can learn what sustainable plantation and forestry is all about. The biggest pressure, however, was claimed to be coming from the customer side. Customers want to be sure that purchased products conform to all relevant eco standards. Therefore they require environmental information about the products and corporate performance on the regular basis. For instance, Elle magazine in China buys only FSC certified paper, thus making FSC certification an important competitive advantage.

Employee satisfaction surveys and collaboration with design students to develop new sustainable products, activity in social issues such as promoting education in China, active participation in various initiatives such as The Forest Dialogue in order to collaborate on the most pressing local and global issues indicate UPM intention and efforts to maintain constant dialog with its stakeholders and overall active corporate social and environment and responsibility position.

## ***Suppliers***

### *Description*

UPM supplier network numbers in about 30000 suppliers with only about a hundred of them constituting the majority of corporate spending. UPM promotes utilizing local suppliers, yet, given the diversification of countries; key suppliers are located mainly in Europe. That can be explained by higher reliability and quality are expected from the suppliers based in European region partly due to the unified stricter social and environmental legislation adopted in EU.

### *Relationships with suppliers*

Supplier environmental impact is mentioned among the main environmental impacts of the company, thereby UPM should have certain mechanisms to monitor and control how supplier operations influence the supply chain. Information obtained during the interview indicates that UPS maintains close and long-term relationships with its key suppliers. For that purpose there is a separate supplier relationship program in place, and this program is managed by the sourcing department. Such programs' main focus is on financial aspects, but environmental and social topics are also included as confirmed by the company representative: "*For instance, some of pulp suppliers are our key supplier, as pulp is the most critical raw*

*material when making paper, and we have rather long-term supplier-relationship programs in place, including social and environmental responsibility aspects.”*

The interviewee mentioned that UPM does collaborative projects with their key suppliers; such projects are focused on developing and achieving cost saving goals, addressing sustainability related issues, working on energy efficiency, optimizing transportations and so forth. From the review of the UPM approach to supplier relationships, it follows that the company is putting a lot of efforts in establishing and maintaining reliable and trustworthy relationships with suppliers. Such efforts are necessary to ensure the quality and safety of the entire supply chain.

#### *Environmental requirements and supplier monitoring and qualification mechanisms*

Major environmental requirements imposed to suppliers are listed in the Supplier Code. Supplier Code serves as a baseline for requirements concerning environmental, social and economic responsibility. All suppliers are expected to sign the code fulfill the requirements. In addition, “UPM requires all its suppliers to be fully compliant with the requirements of the European Community REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) and CLP (Classification, Labelling and Packaging) regulations” (UPM corporate website (2013). Online. Available at: <http://www.upm.com>, [28.06.2013]). Moreover, each business at UPM has developed own specific environmental requirements that suppliers are expected to fulfill. Strict pre-evaluation of all the materials is conducted before the purchasing decision is made, suppliers are expected to provide a set of documents to ensure that offered materials do not contain any restricted substances.

Several monitoring and qualification mechanisms can be distinguished in UPM supply chain: supplier assessment, supplier auditing, eco-labeling and Chain of Custody.

*Supplier assessment* is conducted several times per year with frequency depending on the type of commodity supplied and the need. Assessment criteria are dependent on the type of commodity as well due to the diversity of requirements and standards imposed to different commodities. For instance, assessment criteria for wood suppliers will be different from those used to assess suppliers of chemicals, due to different characteristics of material.

General criteria are associated with emissions and energy consumption figures, social metrics, relevant certifications, occupational health and safety, accidents frequency and



efficiency of environmental management system. Moreover, each business has developed own KPIs in accordance with commodity type.

In addition to annual assessment, UPM conducts *supplier auditing* that is carried out in cooperation with certification bodies (FSC and PEFC). Auditing checks how whether suppliers conform to environmental requirements. Frequency of the audit was claimed to be dependent on the risk assessment, but in general audit is conducted once a year with all the crucial suppliers. Combination of regular supplier assessment and auditing indicates the critical role of monitoring supplier environmental performance, company invests a lot of resources in order to safeguard their business and ensure that environmental impact produced directly or indirectly by its operations is under strict control. The practical reasoning behind can be high sensitivity of forestry industry to the environmental damage caused by operations processes. Forestry-related issues are the most visible and any violations draw a lot of public attention, which may cause negative effect on the corporate reputation. UPM sees auditing as an effective and efficient tool of tracking supplier development over time in environmental economic and social aspects, which is supported by the following words of the interviewee: *“For our sourcing people it’s quite a good tool to follow up and measure the development a supplier and it’s also used in evaluation of new supplier.”*

The chain of custody is a tool that enables monitoring of the volume of certified wood supplied to the mills, thereby ensuring that non-certified wood originates from non-controversial sources. Chain of custody constitutes for a part of auditing process as it helps to increase the visibility of supplied chain, company representative supported this argument with the following words: *“in wood sourcing side, it’s really easier to say, they say that they have 100% visibility in the chain of custody they know everything about where the wood is coming.”*

Another monitoring mechanism is eco-labeling, UPM certifies some of its products such as paper according to *EU eco-labels*. EU Ecolabel (European certification body managing labels) sets the following requirements: use of natural resources, chemicals, energy consumption, emissions to air and water, waste management, fibers. Suppliers are expected to label their products as well, so that UPM will be able to prove to its customers that all UPM paper is eco-labeled. Thereby, EU represents one more layer of protection ensuring the conformity of the products to environmental requirements.

Being asked about cases of violations from the supplier side the interviewee recalled only one case of serious violation. The supplier from developing country did not conform to requirements regarding environmental management stated in the code of conduct. UPS conducted assessment and assisted in correction plan development, however in the given time correction plan was not implemented at the sufficient level, which resulted in contract termination. Regardless that case the overall reflection of the interviewee about the performance of the monitoring and controlling tools was positive: *“Qualification is working well, rather extensive requirements we have in place, certification and the auditing of the whole chain of custody working pretty well, it’s a very good risk management tool.”*

### *Communication*

UPM communicate its environmental values and relevant information to stakeholders through Annual Report that follows GRI framework which and includes comprehensive sustainability part and through the corporate website. Corporate website serves as a great source to find comprehensive information about company sustainable strategy, goals, values, certificates, environmental and social requirements to suppliers, environmental and social activities and other relevant information.

UPM representative mentioned certificates as a good communication tool, as they convey the level of CSR issues development and importance for the company. In order to ease certificate search UPM has launched the Certificate Finder on the corporate website. This option has been actively used by customers to find what certificates are obtained by which products.

UPM customers request certain information regarding social and environmental performance such as chemicals used, product safety, supply chain management. Typically inquiries come in the form of questionnaires: *“It’s very common to get this 10 page questionnaires asking from the environmental policy to all the details of the environmental footprint, for example carbon emission”*. The interviewee highlighted that regardless UPM’s efforts to make public as much information as possible to enable stakeholder access, customers still prefer to delegate the task of finding information to the company. Such tasks are very time consuming and represent a real problem for the personnel.

Suppliers are required to report information about their environmental performance; it is done through regular supplier assessment. Remarkably, UPM has made part of this procedure

available online, so that suppliers could fill necessary questionnaires themselves. Also, it is worth of mentioning that UPM accepts only electronic invoices from its suppliers, partners and customers, thereby reducing waste generated by paper invoices. Thus all internal communication is done in electronic format, no papers are allowed.

### 5.2.2. Key findings

Drawing on the data obtained from the UPM case, the integration of CSER in company operations and routines can be characterized in the following way:

- *investments in conventional green competencies.* It was found that UPM invests in implementation of green technologies in manufacturing processes and incorporates eco-design in product development process;
- *investments in employee skills,* it was found that UPM provides extensive training on environmental topics for the employees;
- *investments in organization.* UPM claimed to purchase only products certified according to relevant standards, such as in case of wood, company knows where the wood has come from; green marketing takes place as well, since UPM emphasize the green aspects in their production in its marketing campaigns;
- *investments in routine-based management systems and procedures.* Environmental management systems are implemented and certified according to required environmental standards; relevant certificates are obtained and chain of custody is created to ensure sustainable procurement, supplier environmental assessment and auditing, as well as environmental reporting practices are routinized; environmental reporting to customers is inefficient and time-demanding.
- *integration of environmental issues in strategic planning.* CSER aspects were found in corporate strategy, goals and objectives, corporate risks and, which indicated deep integration of environmental issues in company strategic planning.

UPM seems to invest heavily in all the resource domains which indicates deep integration of CSER in company operations and procedures and illustrates high importance of CSER for company business as such. This argument is supported with sustainability awards and recognitions obtained by UPM for its Biofore strategy, green initiatives and environmentally sustainable performance. Furthermore, UPM environmental strategy corresponds to environmental leadership, the reasoning behind this conclusion comes from clear intention of

UPM to gain competitive advantage using CSER and sustainable development as differentiation factors. As it was mentioned before, UPM invests a lot in certifying its products, these certificates facilitate creating 'green' image around the products. Thereby products can be marketed as environmentally sustainable.

Since UPM is pursuing active strategy of environmental leadership, it is critical for the company to ensure required level of environmental performance from its suppliers. Principal-agent problem in UPM case is on the large scale due to the great number of UPM suppliers and international scope of operations. As follows from the case description, UPM has recognized the problems of goal misalignment and information asymmetry as well as risks related to the, thus it has been implementing certain mechanisms to address such problems.

In order to convey own CSER values, UPM arranges training sessions and workshops with its suppliers, where companies collaborate on developing common environmental targets and plans. Joint programs with the suppliers and supplier development programs facilitate exchange of ideas, views, cultures and practices in managing environmental responsibility issues. In addition, it allows aligning interests and goals between UPM and the suppliers, that leads to reduced risk of moral hazard from the suppliers. Moreover, UPM has efficient supplier assessment and audit mechanisms, as well as chain of custody in place to monitor environmental performance of their suppliers, these mechanisms encourage suppliers to behave in environmentally sustainable way, since they are expected to report on their performance on the regular basis. Agency theory considers such mechanisms as behavior-oriented.

At the same time, UPM understands that developing environmental capabilities and implementing efficient environmental management practices can require significant economic investments from suppliers. Obtaining the trade-off between economic and environmental performance in favor of economic side may increase probability of supplier environmental underperformance and result in certain risks born by UPM. In order to mitigate such risks UPM is utilizing certain rewarding methods. For instance, the interviewee mentioned some cases in Finland where extra money has been paid to the suppliers in case if they provide certified wood. This way of support can be explained by the high costs related to certification, smaller companies can solve the trade-off between environmental and financial performance not in the favor of the first one. Another method of motivation mentioned by the company representative refers to awarding best suppliers with longer contract: *"We award*

*our suppliers with longer term contracts if we see that all the sustainability performance management is at the advanced level.*”Such methods of motivation due to their compensation nature correspond to outcome-based contract.

Drawing on the key findings from the UPM case, it can be concluded that company is combining both behavior-based and outcome based types of contract. The reasons justifying such combination can be hinted the sensitivity of industry to environmental issues and environmental leadership strategy pursued by the company. Since company views CSER as integral part of its differentiation it invests a lot of efforts to maintain required environmental performance at levels of supply chain, including the suppliers. Taking into account different level of supplier capabilities and economic situations behavioral or compensation method only may not be sufficient and effective enough.

### **5.3. Case Finnair**

#### **5.3.1. Case description**

##### ***Company profile***

Finnair is the largest airline in Finland. Finnair specialises in flights between Asia and Europe, and its vision is to be the number one airline in the Nordic countries and the most desired option in Asian traffic. Finnair Group comprises several business areas: Airline Business, Aviation Services and Travel Services. The number of personnel is approximately 7,000. According to Wikipedia Finnair is one of the five oldest airlines in the world with uninterrupted existence and with no accidents since 1963 (Wikipedia, 2013). Finnish government holds 55,8% of shares. The cornerstone of Finnair competitive strategy is high quality of services. The aspiration towards high quality has been manifested in Finnair status of one of the most punctual airlines in the industry.

##### ***CSER at Finnair***

##### ***Values, strategy, goals***

According to Finnair competitive strategy it offers *“the fastest, most eco-efficient and most convenient connections to Asia's large hubs from those European cities which do not offer direct flights”* (website). “Eco-efficient” indicates that company considers environmental

aspects to be important for the strategy success, which is reflected in Finland sustainability targets as well. They comprise emission reduction, energy consumption reduction, dialogue with customers and interest groups, waste reduction, improvement of corporate responsibility internal and external reporting (See the full list in Appendix 7).

#### *Environmental impact of operations*

Main environmental impact of the airlines is air pollution caused by carbon dioxide emissions produced during the flight. Finnair views emission reduction as a critical objective and has been taking various measures to minimize the environmental impact of its flights. According to the website company has managed to reduce emissions by 21% per seat in the time span of 10 years (1999-2009), current goal is to achieve reduction by 41% per seat. Main methods of emission reduction are based on reduction of fuel consumption that can be achieved by investing in new technology and capabilities development. For instance, Finnair has implemented so called green landing which results in less engine power consumption when landing the plane; additional equipment and modifications such as winglets and sharklets (special ailerons at the tips of their wings) improve aerodynamic properties of the wings facilitating less fuel consumption; fleet modernization is another method of environmental impact reduction, since each new generation of aircraft consumes up to 25% less fuel and produces 25% less carbon dioxide (website). Evidently, Finnair invests substantial resources in developing own environmental capabilities.

#### *EMS and certificates*

Finnair is a part of IATA's Environmental Assessment Program that represents a new environmental management system developed specifically for airline industry. Environmental standards utilized by IEanA are based on ISO 14001 principles.

#### *Stakeholder relationships and stakeholder pressure*

According to the information gathered during the interview main trigger for Finnair CSR is stakeholder pressure. Company representative emphasized that a lot of pressure for the environmental side is coming from the media and NGOs: "*Environmental footprint of predations is discussed broadly, so we need to have a license to operate, license to grow, to exist.*" Typically these two groups play crucial role in forming public opinion about the organization and airline industry has always been attracting close attention of the public.

Legislation is another source of pressure, since it imposes different taxation related to environment and produced emissions. The interviewee claimed that due to the tightening of noise regulations airport Vantaa will be closed at night in the coming years. Another critical stakeholder group influencing Finnair's corporate responsibility strategy is customers, according to company representative 95% of Finnair customers do ask information about environmental and social responsibility issues.

From the information given at the website and gathered during the interview it can be drawn that Finnair puts a lot of efforts in maintaining dialog with stakeholder groups representing, media, communities and customers. For instance, company launched regularly free-form discussions with employees to facilitate informal exchange of views and opinions. Finnair has been heavily utilizing social media in customer service, now it is possible to get customer service using twitter or Facebook accounts. Such move has been proved to be very beneficial and resulted in increasing customer satisfaction.

### *Communication*

Finnair uses sustainability report as the main tool to convey CSR related information. The report is organized using GRI framework. Corporate website itself is one more tool to communicate responsibility related information to stakeholders, for instance, there is Emission Calculator function available on the website. Thereby, every interested customer can check how the amount of emission produced during the flight. Such tool must be especially useful for the corporate customers that have to report about their own environmental impact.

Regardless of sustainability report and emission calculator available, Finnair claims that customers send numerous questionnaires asking about environmental data (Interview). Such questionnaires have different form and structure and all require different information, company representative reflected on this issue in the following way: *“They usually send excel sheets. Sustainability report is not enough. Then they want detailed information on how the flight has been operate and how much was the emission and how many gallons of fuel was consumed.* Evidently, responding to customer inquiries is very time-demanding task and there is a clear need to address this issue. Emission calculator being available on the website to calculate environmental impact of the flight has not been widely used by customers because as mentioned by the interviewee *“every company reports in a little bit different way. And*

*that's getting more and more so".* Consequently, there is an obvious need to develop a mechanism addressing this issue.

### ***Supplier Management and CSER***

#### *Suppliers*

Finnair suppliers comprise of fuel suppliers (largest spend wise), catering suppliers (food served on the flight), office items, uniforms and service elements. Interesting fact is that the airplanes are not owned, there are leased, therefore airplane manufacturing process is out of airlines concern.

#### *Responsibility in supplier management*

Supplier Code of Conduct is the only source determining Finnair requirements including the CSR aspects. In order to understand how responsibility issues related to supplier performance are managed in Finnair it is critical to understand how airline industry operates first, because it determines Finnair relationships with suppliers.

Airline industry is highly regulated by governmental legislation, regulations from aircraft manufacturers and owners and regulations from the airport. As the result, airline companies have little freedom of action including supplier selection. *"Regarding everything we would like to have the regulation comes from the aircraft manufacturers and owners and that is really tight regulation and also the services providing at the airport"*- expressed company representative supporting the argument. Such strict industry regulations create a sort of system that determines the way processes are carried out. For instance in order to become a supplier for airline industry the company has to fulfill certain requirements that already include environmental and social aspects. Thereby, when an airline company is deciding to acquire certain products it has a restricted number of suppliers that are already qualified to supply for airline industry. Such system takes care about many issues and drastically reduces the need for the airlines to conduct supplier evaluation and monitoring. Often there can be only few or even one supplier available, in this case comprehensive evaluation and selection processes are not needed. Therefore, Finnair does not conduct supplier assessment and supplier auditing, this processes are carried out by the airports and there environmental and social issues are taken into account.



### 5.3.2. Key findings

Applying five resource domains to the data obtained from the Finnair case, the integration of CSER in company operations and routines can be characterized in the following way:

- *investments in conventional green competencies.* Finnair heavily invests in technology and engineering modifications to reduce emissions produced during the Finnair flights
- *investments in employee skills,* according to the information given on the corporate website, environmental training is available for company employees.
- *investments in organization.* green marketing is one of the areas exploited by Finnair, since Finnair positions itself as eco-friendly airlines and emphasizes eco-efficiency of its flights compared to others; green purchasing takes place in a manner that suppliers are already pre-selected and expected to conform to environmental standards.
- *investments in routine-based management systems and procedures.* Environmental management systems are implemented and certified according to required environmental standards; sustainability report is published annually; environmental reporting to customers is inefficient and time-demanding.
- *integration of environmental issues in strategic planning.* CSER aspects were found in corporate strategy, environmental targets are developed and necessary actions to achieve them have been undertaken.

From the analysis and case description Finnair invests heavily in conventional green competences, such as technology and engineering modifications leading to emission reduction. However, environmental responsibility aspects seem to be only at the beginning of development on the organizational level. Environmental management system has been implemented and Code of Conduct designed. Finnair integrated CSER topics in its strategy and targets and provides training on environmental issues for the employees. Consequently, it can be concluded that Finnair is pursuing rather active environmental strategy.

Yet, Finnair representative stated that company is increasingly outsourcing non core activities; however, there is virtually no follow up mechanism to ensure high environmental standards of the services and products outsourced. This can be explained by reliance on the regulating system of the airline industry which takes care about supplier assessment and auditing. Nevertheless, interviewee has mentioned a case where Finnair had to change the supplier due to some environmental issues related to the supplied products (children's books given away on the flight). Such case indicates that even in such a closed and highly regulated

industry as airlines there is a risk of moral hazard concerning environmental responsibility from supplier side.

Given the green image pursued by Finnair, substantial investments into green capabilities and CSER being integrated into strategic planning, Finnair obviously exceed the standard environmental requirements of the industry. Although rely on legislation in case of supplier assessment, company own environmental performance is above average, from which it can be concluded that Finnair environmental strategy is closer to pollution prevention strategy.

Agency problems inherent for every buyer-supplier relationships, doesn't seem to be critical in case of Finnair since suppliers are already pre-selected by the regulative system. Consequently, Finnair doesn't utilize any mechanisms to ensure required supplier environmental performance, because they are already considered as complying with the environmental requirements by default. Such finding supports the assumption about industry characteristics playing crucial role in addressing principal-agency problems. Evidently, for some industries problem of goal conflicting and information asymmetry can be minimized by strict regulation from the government and regulation authorities.

Interesting finding was made about communication tools between Finnair and its customers. Finnair representative has complained about inefficiency of current tools of communicating environmental information to the customers.

## 5.4. Discussion

It was found that companies that see corporate responsibility as a competitive advantage are keen to have high environmental requirements to their suppliers. These requirements are ranging from compliance with the Code of Conduct, serving as a baseline, to industry specific certificates and labels, such as EU eco-label for paper, strictly determined chemical lists and etc. All three companies acknowledged the risks associated with supplier non conformity to the environmental requirements, though such risks were different for each company. The reason behind that difference can be low environmental impact of supplier operations per se as in Lindström case. Whereas the variety of measures taken to improve environmental performance of the supply chain indicates higher degree of perceived risk; addressing such risks requires more comprehensive risk management tools.

The key findings from three cases are collected in the Table 5.

**Table 5. Summary of key findings**

<b>Area</b>	<b>Lindstom</b>	<b>UPM</b>	<b>Finnair</b>
<b>Industry</b>	Textile services	Forestry	Airlines
<b>Environmental strategy</b>	Pollution prevention	Environmental leadership	Pollution prevention
<b>Environmental impact</b>	Medium	Strong	Medium
<b>Supply chain regulation</b>	Self-regulated	Self-regulated	Strongly regulated by authorities and government
<b>Type of contract used</b>	Behavior-based	Behavior-based and outcome-based	Not applicable
<b>Largest stakeholder pressure</b>	Customers	Customers, media, government, society	Customer, media, legislation and authorities

All three companies have been found to have rather active environmental strategy and all of them assured that they see CSER as a competitive advantage. Nevertheless, each of them has different approach to managing supply chain and addressing principal-agent problems. Several factors have been found to cause such variation: how supply chain is regulated in the given industry and the scale of environmental impact caused by company operations.

Companies that can cause significant environmental damage as the result of its operations seem to be likely to utilize all possible measures to reduce unavoidable environmental impact caused by own operations and ensure the minimal impact of those of suppliers. This can be seen in UPM case, where company is not only investing in various monitoring mechanisms (assessment, auditing, certifications, chain of custody, labels, etc) and cooperate with suppliers to develop common environmental targets and plans, but also reward suppliers for advanced environmental performance (longer contract, extra money for obtaining certificates). Such outcome-based methods, however, seem to be applied on the case basis, as emphasized by the company representative.

On the other hand, Lindström case illustrates that for businesses which environmental impact is relatively low, yet CSER is perceived as a competitive advantage, addressing principal-agent problems does not require such a variety of mechanisms. Nevertheless, strict supplier selection process and auditing are used to monitor suppliers level of environmental performance; taking into account long-term orientation and absence of any compensation-based mechanisms such management approach refers to behavior-based contract.

In cases where supply chain is strongly regulated by legislation and various regulation bodies as in airlines situation, supply chain related environmental issues including supplier monitoring and assessment are taken care of by airport and international organizations such as the International Air Transport Association (IATA). Therefore, Finnair doesn't see as necessary to invest in supplier monitoring and supplier development mechanisms. All these issues are already addressed by above mentioned parties.

According to the literature review companies pursuing differentiation market strategy utilize behavior-based contract, whereas those pursuing cost-leadership strategy choose outcome-based. Elaborating on this topic, it was found that all three researched companies aim to be forerunners in their industries and utilize sustainability including corporate social and environmental responsibility as a differentiation factor as well. And both UPS and Lindström rely mainly on behavior-based methods.

Among the methods utilized to address goal misalignment and information asymmetry between buyer and supplier, the following methods relate to behavior-based: supplier assessment, supplier auditing, certificates, eco-labels, reporting and chain of custody. And outcome-based methods were represented by awarding longer contract for advanced supplier

performance and monetary reward for providing certified wood. Some of mentioned behavior-based methods are perceived as a routine practice such as supplier audit, supplier assessment and environmental information reporting (UPM, Lindström), others are implemented according to the needs of industry and the type of business: chain of custody, supplier training and supplier development programs. Outcome-based methods seem to be more an additional measure applied on the top of monitoring and interest aligning mechanisms. Therefore, it can be concluded that given the differentiation strategy of the buyer principal-agent problems in the context of CSER should be addressed with behavior-based contract at the first place. And outcome-based methods are effective as additional measures on the top of behavior-based contract. Due to the small number of cases, it is difficult to say whether findings obtained in this study apply to all cases.

Empirical research has resulted in a number of findings not directly related to the main research question, but representing important insights in CSER topics.

#### *Environmental vs. social*

Balance between social and environmental responsibility issues is shifting to one or another side depending on the country of origin, location of the suppliers and type of business. For instance, companies operating in Northern and Western Europe having suppliers from these regions display more concerns with environmental issues considering that level of social responsibility is high by default in developed countries with high living standards.

#### *Stakeholder relationships*

Increasing number of stakeholder groups is becoming interested in environmental and social performance of companies. Yet, customers seem to be the biggest source of pressure and motivational driver as well. However, type of industry can play an important role here.

It was found that for industries regularly drawing attention of the media and society due to their operations (e.g. airlines and forestry), stakeholders such as media can create strong pressure in terms of environmental and social responsibility topics. The reason behind this finding is that media and NGOs create publicity and company accused in inappropriate environmental or social behavior can make the news, which may result in negative consequences for corporate reputation.

### *Environmental reporting and communication*

All companies complained on numerous questionnaires received from customers to gather data about environmental performance of research companies. Such questionnaires were claimed to be very time-demanding since each of them have different format and require different information. Empirical results showed that annual sustainability report is still the main tool used to communicate information about company environmental performance. It was found as well that annual report seems to be disregarded by customers. The reason behind might be the format in which report is published. Annual report is usually published in PDF format which doesn't let the reader easily screen information and slows down the search. Moreover, customers often need specific information that is not published or not clearly stated in the report.

Some companies add special searching tools such as Emissions Calculator (Finnair) or Certificate finder (UPM) to enable information search. Nevertheless, customers still prefer to send questionnaires to assess environmental and social performance of their suppliers. Consequently, there is a strong need to develop and implement new format of sustainability data reporting, the format that enables information search. XBRL reporting could be a good option to address this problem.

## 6. Conclusions

This thesis has investigated how companies address principal-agent problems in the context of corporate social and environmental responsibility, namely what mechanisms are utilized to align CSER goals of both parties and to reduce information asymmetry concerning environmental performance of supplier. This chapter presents both theoretical and managerial contributions of this study.

### 6.1. Theoretical implications

With companies outsourcing their operations to the third parties and growing concern from stakeholders about corporate environmental and social issues, supplier are playing critical role in overall environmental footprint of the final product. Therefore, it is becoming increasingly important for companies to ensure conformance of their suppliers to necessary environmental requirements. However, each party is pursuing own interests and goals that may not be in alignment, for instance when supplier made chose in favor of economic performance improvement disregarding environmental issues. In addition, buying company cannot verify what supplier is actually doing, which may result in moral hazard, such as using cheaper but more polluting or dangerous substances in manufacturing, excessive waste generation, or harsh working conditions.

Agency theory describes such problems as conflicting goals and information asymmetry and suggests two approaches to address them: behavior-based contract and outcome-based contract. This study has conducted literature review discussing possible risks associated with supplier environmental performance and various mechanisms utilized to address them. Empirical study was conducted to answer the main research question: *how do companies address principal-agent problems related to corporate social and environmental responsibility?* Lasser and Kerr (1996) suggested that companies pursuing differentiation strategy are more likely to use behavior-oriented mechanisms, whereas those pursuing cost-leadership strategy are more likely to utilize compensation (outcome-oriented) mechanisms. The results of this study support such argument. Key findings of the study are structured according to sub-questions and presented below:

- *What mechanisms are utilized to align interests of both parties in supplier-buyer relationships in order to minimize risks related to corporate environmental responsibility and whether they have behavior or outcome based nature?*

Empirical results identified that buying companies use mechanisms aimed to monitor supplier performance including CSER issues and to align goals of both parties. Monitoring mechanisms include supplier evaluation and selection, supplier auditing, supplier assessment, reporting (can be a part of auditing or assessment) certificates relevant to the business sector and eco-label and in some cases chain of custody. Goal alignment refers to workshops and training sessions aimed to convey goals and expectation of both parties, collaboration on business plan and environmental targets development, programs aimed at supplier capabilities development and joint environmental projects. All mechanisms and methods mentioned above refer to behavior-based contract. There were found several mechanisms representing outcome-based approach: rewarding best performers with longer contract and paying extra money for procuring certified products. It was found that in order to ensure required level of environmental performance from the suppliers behavior-oriented mechanisms are utilized at the first place and outcome-oriented serve as additional motivation measures.

Empirical results illustrated that some monitoring mechanisms proved to be inefficient, such as reporting of environmental information. Currently, companies publish environmental information in the annual report or annual sustainability report. Such report contains information about company economic, social and environmental performance, but the format of the report doesn't enable relevant information search. All three cases claimed such report to be inefficient and disregarded by interested parties (typically customers) which results in the flow of numerous questionnaires and excel sheets that company is entitled to fill in order to report information concerning its sustainable performance. Such way of reporting was claimed to be extremely time demanding and very inconvenient. Consequently, there is a need to develop efficient mechanism to report environmental information.

*How does environmental strategy of buying company affect the nature of mechanisms utilized to address agency problems?*

All three companies participated in the study were found to have rather active environmental strategy: Lindstom and Finnair - pollution prevention and UPM - environmental leadership. Since studied principal-agent problems related to supplier management were discovered to be applicable only in case of UPM and Lindström, from the key finding of both cases it can be concluded that more active environmental strategy (as in UPM case) result in more broad and stringent requirements regarding supplier performance in CSER issues. UPM was found to



exploit both behavior-based and outcome-based contracts in order to provide stronger line of protection from risks of moral hazard and adverse selection related to CSER. Lindström pursuing pollution prevention strategy was found to rely on behavior-based mechanism based on monitoring and supplier evaluation underlying selection process. That was found to be sufficient for Lindström case, since no violations have occurred and textile service industry does not generate large environmental impact as such.

In addition, all three companies occurred to be pursuing business strategy based on differentiation and one of the critical differentiation factors was found to be sustainable performance. Since sustainable performance include managing environmental responsibility issues it can be assumed that companies following differentiation business strategy are pursuing active environmental strategy in managing CSER. Empirical results support such conclusion.

*Do companies from different sectors use different methods?*

It was found that industry sector significantly affects the way buyer manages supply chain and suppliers in particular. In sectors strictly regulated and controlled by legislation and various industry associations, such as in airline industry, CSER issues related to suppliers are taken care of by governmental institutions and non-profit organizations, since they are responsible for supplier selection, assessment and auditing. Airline companies themselves already have pre-selected list of suppliers that are supposed to be complying with necessary environmental, social and safety requirements relevant for airline sector. Airline companies rely on such system and do not seem to have direct need to address principal-agency problems. In this case the system itself plays a role of supplier management mechanism.

In less regulated industry sectors, buying companies have freedom to choose suppliers according to their own environmental requirements based on the minimal requirements set by legislation. For such companies principal-agent problems in the context of CSER are more relevant and addressing them can be critical for their operations. Consequently, buying companies from less regulated industries have to utilize mechanisms to ensure required level of environmental performance from the suppliers, as follows from UPM and Lindström cases.

Another finding related to industry sector is that the more polluting industry sector is the higher risks associated with supplier environmental performance and thus the broader selection of methods utilized by buyers to minimize such risks. UPM case supports such

finding, illustrating combination of monitoring, goal alignment and compensation-based methods utilized to ensure required level of supplier environmental performance.

## **6.2. Managerial Implications**

Environmental impact of suppliers is becoming an important issue to consider, increasing number of companies considers CSER as a competitive advantage. Opinions of case-companies about the strength of such trend varied: UPM contended that the adoption of CSER practices is still young and growing trend, whereas Lindström assured that having CSER practices is perceived as a routine. Such polar views can be explained by the industry characteristics. Nevertheless, both of them see sustainability as a competitive advantage.

From the managerial perspective, the results obtained in this study suggest that if CSER is an important part of company strategy and image, investing in monitoring systems such as supplier auditing, assessment, Code of Conduct, certification and others serves as a good baseline tool to ensure that suppliers live up to environmental requirements. Although, monitoring systems often requires significant financial investments, they have been proved to be efficient and well-functioning. Another practical insight is concerned with goal alignment, it is crucial to convey effectively goals and expectations from one party to another and work on development of mutual targets and ways of achievement. Often Code of conduct fulfills such “sharing” function, nevertheless, more personalized and close approach will help to estimate risks more precisely and establish healthy relationships with suppliers.

Since the characteristics of industry sector the company belongs to play an important role in defining corporate environmental strategy and the way supplier-buyer relationships are managed, companies from industries highly sensitive to any environmental impact should consider more advanced set of supplier motivation mechanisms, or a combination of behavior and outcome based contracts. For instance, on the top of baseline monitoring and goals alignment mechanisms various compensation methods could be applied. However compensation or outcome-based approach seems to be a good choice only as additional measures, as it may result in higher prices for the procured products.

Another suggestion for managers is related to the way environmental information is reported and communicated to the stakeholders. Efficient and convenient reporting format can help to reduce costs associated with filling numerous inquiries coming from interested groups. For instance, XBRL format, which allows tagging each piece of data, can be a good option.

### **6.3. Limitations and suggestions for further research**

Initially it was planned to conduct the study between buyer-supplier dyads, however this intention was constrained by limited number of companies agreed to participate in the research. Despite the efforts to contact the customers of case companies, none of them had found time for the interview. Thereby, the same company represents buyer and supplier side in this research; which allows gathering insights from both side perspectives, yet the findings are limited by the perception of one particular company. Limited number of case studies affects the validity of results, thus more case studies are needed to prove the findings to be applicable.

Another possible concern limiting the study results is that information about company motivation and green intentions might have been considered as sensitive for some companies, which affected their readiness to share their practices with third parties.

In addition, case companies belong to different industries, and strong correlation was found between supplier management contract and industry sector characteristics. That leads to two potential area of research. One implies more cases to be done within one industry in order to prove that conclusions made apply to the whole industry and eliminate probability that current case companies represent an exception. Another implies more case studies to conduct benchmarking among different industries with a sample of several companies from each industry sector. It can help to identify common patterns and differences regarding how CSER issues are managed in different industries.

Finnair case study provided interesting insights into highly regulated industry sectors, it would be valuable to explore what other industry and industry sectors have regulation system similar to the airline industry.

All three case companies were found to be pursuing differentiation strategy and the key findings only partly support the hypothesis developed by Lasser and Kerr (1996) about business strategy being correlated to the environmental strategy and supplier green management. Larger number of case studies can investigate how companies with other business strategies address agency problems regarding CSER and identify any dependencies between the strategies.

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# Appendices

## Appendix 1. Interview questions

### Facts about the interview

- What is your position in XXX?
- How many years have you been employed with XXX?
- What's your background?
- Motivation to be green, when did company implemented an EMS, what do you see as main driver for this action?

### Supplier relations

- How is XXX's strategy and traditions regarding suppliers (number of suppliers, length and the content of relationships?)
- What are the supplier selection criteria?
- How do you think suppliers view the relation to XXX?

### The supply-chain CSR work

- You have a Code of Conduct, What have been the considerations underlying the development of the code? and if there are any requirements concerning environmental responsibility?
- Do your suppliers have any environmental certificates, such as ISO 14001, Is it important for you? Are you planning to make it an obligatory requirement?
- To what extent is XXX in dialog with its stakeholders about its work on supply-chain CSR? Pressure from the stakeholders.
- Any future plans regarding strengthening environmental requirements? How do you see the future of environmental responsibility penetration?
- How far in supply chain CSR requirements are posed? 1<sup>st</sup>-tier suppliers, 2<sup>nd</sup> tier supplier
- Who controls if the CSR practices are implemented and maintained at the suppliers - internal auditors or third-party auditors?
- Have you ever encountered cases of violation of environmental requirements among your suppliers?
- What kind of risks do you see the company could be exposed to because of supplier non-conformance to environmental requirements?

### Information Asymmetry:

- How do you manage the information asymmetry between XXX and its suppliers?
- Reporting of environmental information? Monitoring?

**Sharing risks:**

- Which risks related to environmental responsibility in supply chain operations do you see as the most critical?

**Aligning interests:**

- How do you motivate your suppliers to be green? How effective it is? Any measures?
- Do you have any programs to improve environmental performance of your suppliers?  
For instance, training: LCA, recycling/reusing the materials, disposal of product waste, methodologies and techniques for eco-design.  
What can you say about willingness of this supplier to collaborate in order to improve environmental performance and social responsibility?

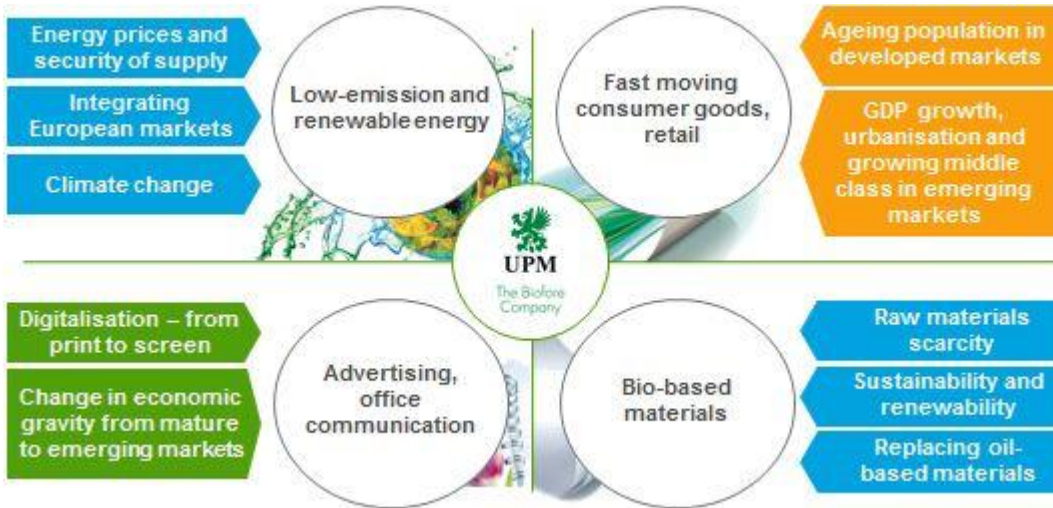
## Appendix 2. Methods to reduce environmental impacts

Source: Lindström Annual Sustainability report

<b>Problematic Area</b>	<b>Methods</b>
<i>Excessive consumption</i>	service planning calculates the exact amount of textile to buy
<i>Material efficiency of textile</i>	may be washed and used up to 200 times - long service life of product
<i>Service centers</i>	located closely to customers, in order to minimize the use of transport, and have ISO 14001 certificate.
<i>Industrial washing</i>	leads to less detergent, water and energy consumption, less emissions are produced
<i>Energy consumption</i>	<ul style="list-style-type: none"> <li>- lower washing temperatures</li> <li>- shorter process times</li> <li>- decreased water consumption</li> <li>- re-use of the heat of washing water</li> <li>- improvements in the recovery of heat of air from dryers</li> <li>- insulation and condition of machinery</li> </ul>
<i>Carbon footprints</i>	Calculation takes into account use of energy, heating, delivery and trunk transport, staff commutes to work. By reducing the impact of each component the overall level of CO2 emissions will decrease
<i>Water consumption</i>	water recycling and monitoring of hazardous contaminants concentration in waste water, energy
<i>Detergents</i>	careful selection of detergent based on optimal wash quality, consumption of detergents , energy and water and production capacity. Specific consumption objectives for each year
<i>Waste.</i>	shop towels, textiles, batteries: recycling, re-use, waste-to-energy combustion.
<i>Transportation</i>	optimized routes and high use of capacity

## Appendix 3. UPM business drivers

Source: UPM Corporate website, 2013



#### Appendix 4. Strategic objectives and strategic steps in 2012

Source: UPM Corporate website, 2013

	Business Area	Strategic targets	Actions in 2012
Growth Businesses	<b>ENERGY</b>	Expand in low-emission power generation	<ul style="list-style-type: none"> <li>• OL4 planning</li> <li>• OL3 construction continued</li> </ul>
	<b>PULP</b>	Grow in cost competitive pulp	<ul style="list-style-type: none"> <li>• Forest plantation development</li> </ul>
	<b>BIOFUELS</b>	Grow in advanced biofuels	<ul style="list-style-type: none"> <li>• Construction of Lappeenranta biorefinery to produce wood-based renewable diesel in Finland</li> <li>• Biomass-To-Liquid (BTL) technology development; NER300 technology grant</li> </ul>
	<b>LABEL</b>	Growth through product renewal and in emerging markets	<ul style="list-style-type: none"> <li>• Acquisition of Gascogne's labelstock operations in Switzerland</li> <li>• Special labels factory start-up in USA</li> <li>• Slitting and distribution terminals opened in Argentina, Mexico, Ukraine and Vietnam</li> </ul>
	<b>ASIAN AND LABEL PAPERS</b>	Growth in Asia	<ul style="list-style-type: none"> <li>• Investment in wood-free speciality paper machine in Changshu, China</li> </ul>
	<b>NEW BUSINESS DEVELOPMENT</b>	<p>Biocomposites market entry and business creation</p> <p>Futher application development of biofibrils and biochemicals</p>	<ul style="list-style-type: none"> <li>• UPM ForMi pilot manufacturing started for furniture, household and electronics end-uses</li> </ul>

Mature Businesses	<b>EUROPEAN PAPER</b>	<p>Consolidation in Europe</p> <p>Focus on European profitability</p>	<ul style="list-style-type: none"> <li>• Myllykoski integration completed</li> <li>• Divestment of packaging papers</li> <li>• Closure of Albruck and Stracel paper mills</li> <li>• Mill CHP power plant investment at Schongau</li> </ul>
	<b>FOREST AND TIMBER</b>	Secure competitive biomass	<ul style="list-style-type: none"> <li>• Finnish forestry development</li> <li>• Restructuring of Finnish saw timber and further processing businesses; sale of Kajaani sawmill, closure of Heinola and Aureskoski further processing mills</li> </ul>
	<b>PLYWOOD</b>	Operational efficiency and flexibility	<ul style="list-style-type: none"> <li>• Savonlinna plywood mill modernisation completed</li> <li>• Restructuring of operations, customer-driven organisation</li> </ul>
<b>GROUP</b>			<ul style="list-style-type: none"> <li>• Sale of RFID business</li> <li>• 11% of Metsä Fibre hares sold to Metsäliitto</li> </ul>



## Appendix 5. UPM's responsibility principles, targets and achievements

Source: UPM Corporate website, 2013

<p><b>PROFIT</b> Shareholder value creation</p>	<ul style="list-style-type: none"> <li>• Operating profit margin &gt; 10%</li> <li>• Return on equity at least 5 percentage points above the yield of a 10-year risk-free investment</li> <li>• Gearing ratio to be kept below 90%</li> </ul>	<ul style="list-style-type: none"> <li>• Operating profit margin, excl. special items, 5.1%</li> <li>• Return on equity, excl. special items, 5%</li> <li>• Gearing ratio 51%</li> </ul>
<p><b>GOVERNANCE</b> Accountability and compliance</p>	<ul style="list-style-type: none"> <li>• &gt; 90% coverage of participation to UPM Code of Conduct training by 2015 <sup>2)</sup></li> </ul>	<ul style="list-style-type: none"> <li>• By the end of 2012, 86% of employees had taken the Code of Conduct training.</li> </ul>
<p><b>LEADERSHIP</b> Responsible leadership</p>	<ul style="list-style-type: none"> <li>• Employee engagement index overall favourable score exceeding 70% by 2015</li> <li>• Employee engagement survey response rate reaching 70% and over by 2015</li> </ul>	<ul style="list-style-type: none"> <li>• Employee engagement index overall favourable score 63%</li> <li>• Employee engagement survey response rate 78%</li> </ul>
<p><b>PEOPLE DEVELOPMENT</b> High performing people</p>	<ul style="list-style-type: none"> <li>• Employee Personal Performance Review(PPR) coverage exceeding 90% globally by 2015</li> </ul>	<ul style="list-style-type: none"> <li>• Employee Personal Performance Review (PPR) coverage 84% globally</li> </ul>
<p><b>WORKING CONDITIONS</b> Safe and encouraging working environment</p>	<ul style="list-style-type: none"> <li>• No fatal accidents (continuous)</li> <li>• Lost-time accident frequency below 5 (per million hours or work) by 2015</li> <li>• Annual targets set for the reporting of near misses and safety observations</li> </ul>	<ul style="list-style-type: none"> <li>• No fatal accidents</li> <li>• Lost-time accident frequency: 9</li> <li>• Target setting for the reporting of near misses and safety observations conducted</li> </ul>
<p><b>COMMUNITY INVOLVEMENT</b> Local commitment</p>	<ul style="list-style-type: none"> <li>• Continuous development of strategic sustainability initiatives with leading NGOs</li> <li>• Continuous sharing of best practices of stakeholder initiatives</li> </ul>	<ul style="list-style-type: none"> <li>• Co-operation with IUCN started on biodiversity related partnership. Further co-operation with WWF in sustainable forest management and several other topics.</li> <li>• A comprehensive benchmarking study on stakeholder engagement conducted. Global stakeholder engagement process is under development.</li> </ul>
<p><b>RESPONSIBLE SOURCING</b> Value creation through responsible business practices</p>	<ul style="list-style-type: none"> <li>• &gt; 80% of UPM supplier spend qualified against UPM Supplier Code by 2015 <sup>5)</sup></li> </ul>	<ul style="list-style-type: none"> <li>• 56% of UPM supplier spend qualified against UPM Supplier Code</li> <li>• Supplier auditing continued.</li> </ul>

	<ul style="list-style-type: none"> <li>• Continuous supplier auditing based on systematic risk assessment practices</li> </ul>	UPM auditing framework and risk assessment practices further developed.
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<b>PRODUCTS</b> Taking care of the entire lifecycle	<ul style="list-style-type: none"> <li>• Environmental management systems certified in 100% of production units (continuous)</li> <li>• Environmental declarations for all product groups (continuous)</li> <li>• 25% growth in the share of eco-labeled products by 2020<sup>3)</sup></li> </ul>	<ul style="list-style-type: none"> <li>• A few small production sites are not yet certified</li> <li>• Environmental product declaration developed for UPM ProFi</li> <li>• Increase of eco-labeled sales in line with the target</li> </ul>
<b>CLIMATE</b> Creating climate solutions	<ul style="list-style-type: none"> <li>• 15% reduction in fossil CO2 emissions by 2020<sup>3)</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Small improvement in 2012, but not enough to be in line with the target.</li> </ul>
<b>WATER</b> Using water responsibly	<ul style="list-style-type: none"> <li>• 15% reduction in waste water volume by 2020<sup>4)</sup></li> <li>• 20% reduction in COD load by 2020<sup>4)</sup></li> </ul>	<ul style="list-style-type: none"> <li>• Wastewater volume decreased, but not enough to be totally in line with the target.</li> <li>• Reduction in COD load in line with the target.</li> </ul>
<b>FOREST</b> Keeping forests full of life	<ul style="list-style-type: none"> <li>• Maintain high share of certified fibre 85%</li> <li>• 100% coverage of chains-of-custody (continuous)</li> </ul>	<ul style="list-style-type: none"> <li>• Development of certified fibre share in line with the target</li> <li>• A few small recently acquired/established production sites are not yet certified</li> </ul>
<b>WASTE</b> Reduce, reuse and recycle	<ul style="list-style-type: none"> <li>• 40% reduction in waste to landfill by 2020</li> </ul>	<ul style="list-style-type: none"> <li>• Reduction in landfill waste in line with the target.</li> </ul>

1) Environmental targets: from 2008 levels

2) Social targets: from 2011 levels

3) Includes paper, timber, plywood, pulp and label

4) Numerical targets relevant for pulp and paper production

5) Covers all UPM business-to-business spend including wood and wood-based biomass sourcing and excluding energy

## Appendix 6. Environmental impacts and measures taken by UPM

Source: UPM Corporate website, 2013

<b>Key Environmental aspect</b>	<b>Main environmental impact</b>	<b>Measures</b>
<b>Wood and wood-based raw materials</b>	Use of the forest ecosystem (biodiversity, products and services from forest ecosystems, land use aspects); Indirect environmental impact by chemical pulp suppliers	Use of wood from certified sustainable forestry (chain-of-custody verification); assessment of chemical pulp suppliers.
<b>Chemicals</b>	Indirect environmental impact by suppliers; pollution due to inappropriate handling or storage.	Supplier audits; requirement for certified environmental management systems; choice of environmentally sound products.
<b>Fossil fuels</b>	Use of finite resources; climate change.	Co-generation of heat and power; maximise use of renewable fuels; efficient energy use.
<b>Airborne emissions from power plants</b>	Acidification of the soil (NOX, SO <sub>2</sub> ); air pollution (particles); climate change (from CO <sub>2</sub> from fossil fuels).	Compliance with limit values; continuous improvement; use of renewable fuels and natural gas; emission trading.
<b>Emissions to water</b>	Eutrophication (nitrogen, phosphorus); oxygen demand (COD, BOD); absorbable organic compounds (AOX) for chemical pulp mills.	Compliance with limit values; continuous improvement; modern elementary chlorine-free chemical pulp production.
<b>Solid waste to landfills</b>	Use of landfill sites and municipal waste incineration plants.	Increase or maintain high recovery quota.
<b>Noise</b>	Adverse effects on personnel and local area.	Compliance with limit values; continuous improvement
<b>Odours</b>	Adverse effects on local area.	Optimised operation of production facilities and effluent treatment plants.
<b>Transport</b>	Indirect environmental impact (energy consumption; airborne emissions; noise)	Use of appropriate means of transport; dual-purpose transports; electric fork lift trucks.
<b>Products</b>	Environmentally sound disposal after use.	Recycling (recovered paper processing).
<b>Soil</b>	Acidification of the soil by airborne and water emissions; risk of pollution by landfill sites or by chemicals and oil containing equipment.	Best practices for the storage and handling of chemicals; compliance with landfill permits and legislation (landfill insulation; gas collection and treatment, leachate water treatment).

## **Appendix 7. Finnair responsibility targets**

Source: Finnair Group corporate website

- to reduce emissions by 41 per cent in the years 1999-2017
- to reduce energy consumption and emissions in both flight and ground operations
- to increase material recycling
- to reduce the amounts of waste
- to help customers and interest groups reduce air transport emissions through cooperation and dialogue
- to promote the implementation of an global emissions trading agreement
- to increase the proportion of emission-reducing CDA landings
- to improve corporate responsibility reporting (GRI) and carbon disclosure project (CDP) reporting and boost the internal reporting process.