

Communicating sustainability for enhanced business opportunities

Use of centrally-driven initiatives to integrate sustainability in product
communication in decentralized multinational companies
Case study of Trelleborg AB

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Abstract

The particularities surrounding the way decentralized multinational companies are structured and governed can determine the success or failure of integrating sustainability aspects into their units' approach of doing business. The choice of pursuing a decentralized avenue over a headquarter-driven one in managing sustainability can have a significant influence over the coherence of Group¹-wide strategies and approaches to their implementation, but also over the level of ambition targeted at local level.

This research aims at describing the early results regarding attitudes, drivers and barriers surrounding a recently launched headquarter-driven initiative, aimed at encouraging the incorporation of sustainability arguments in the communication and development of products and solutions in a decentralized multinational company. Through a case study research of Trelleborg AB, the study is expected to increase the understanding of the challenges faced at Group headquarters level on one hand and at unit level on the other hand when it comes to advancing and communicating sustainability, particularly through products and solutions. A second objective of the research has been to contribute to revealing opportunities that could help overcome these challenges and strengthen the initiative. Trelleborg's business-to-business global presence can offer a comprehensive account of the different experiences, challenges, attitudes and expectations surrounding the integration of sustainability in product development and communication. A centrally-driven initiative was analyzed and assessed in order to demonstrate its role and effectiveness in advancing sustainability thinking in a decentralized multinational corporation, while keeping in mind the particularities of local conditions in which its units activate.

The study has shown that despite declaring to acknowledge the benefits that can be brought by integrating sustainability in external product communication, there is little incentive at this stage at business unit level to take the necessary action in this direction. The main obstacles to invest local resources in the promotion of a global communication concept that aims to reveal sustainability aspects in products and solutions were identified to be: low expressed customer demand for sustainability features in products, the specific customer criteria that products need to meet and limited awareness on how sustainability arguments can be applied to the individual business profiles in order to raise their profile on the market.

Keywords: corporate social responsibility, shared value, decentralized multinationals, sustainability, sustainable product thinking, product communication, the Blue Dimension.

¹ Throughout the study the word "Group" refers either to Trelleborg AB or to generic companies comprised of multiple entities

Executive Summary

This research endeavour aims to identify the underlying challenges and drivers that can influence the way communicating sustainability in products and solutions is approached in different units of a decentralized multinational company, in order to reveal the strengths and opportunities that can be used to reinforce centrally driven initiatives.

Large multinational companies face increasing pressure to comply with international and local standards set to control their negative impacts and guide their operations towards increased responsibility. Their immediate stakeholders, the competitive context and market trends put focus on different areas of the business, demanding companies to find ways to deliver results that go beyond the bottom line. Securing competitive advantage by integrating sustainability aspects into the business processes and models and addressing sustainability challenges through the core business is increasingly seen as the way for companies to go forward (Porter & Kramer, 2006, 2011; Orsato, 2009). This becomes even more a challenge when we consider the particularities of each company, their structure and strategies, the characteristics of the markets they serve and the embedded approaches to achieving their targets.

The present research presents the case of Trelleborg AB, a multinational industrial engineering company with operations in over 40 countries. One of the dominant features about Trelleborg AB is that it is a *decentralised* multinational, having businesses across very diverse markets in the industry sector. Its units are individually responsible for the achievement of organisational goals and of their financial targets, by deploying the approaches that best accommodate their context and capacity. Another distinctive feature of the company is that its business is almost entirely driven by customers, as the majority of its products are custom made, following precise customer specifications and requirements.

Trelleborg's efforts to advance sustainability to its units have always faced a multitude of barriers that influenced their success differently across the company. One recent central attempt aims to raise internal and external awareness on the potential business benefits that can be brought by using sustainability arguments in product communication. The initiative was launched in February 2012 and it offers a common framework applicable to all the units in the company to communicate the identified sustainable features in their products and solutions.

The Blue Dimension™ concept was launched throughout the Trelleborg Group at a time when the idea of creating shared value for companies and society is building momentum in many business sectors across the world. The shared value concept comes as a natural evolution of the corporate (social) responsibility work, which has received its criticisms along the years for not bringing substantial value to either the business, or society (Porter & Kramer, 2006, 2011; Linnenluecke, 2010). As creating shared value for the company and the society is at the core of the Blue Dimension™ concept, Trelleborg AB tries to encourage the investigation of new business opportunities that can be brought by addressing broader societal challenges in the geographical areas and industrial sectors where the company is active. However attractive and beneficial this initiative could be, challenges in adopting it throughout the Group were expected. For this reason, there was a need to form a picture of how the local context, the existing organizational structure and managerial approaches that drive Trelleborg's business across the world, influenced how the concept was perceived and the reactions it triggered. This increase in understanding of the contextual factors that are conducive or restrictive to integrating sustainability into product communication is expected to contribute to finding opportunities to strengthen the initiative for a wider support across the Group, but also contribute to the development of future initiatives that will have similar purpose. Therefore the main objective of this research was to *reveal the preliminary results with*

regards to attitudes, barriers and drivers towards communicating sustainability aspects in products and solutions in Trelleborg AB after the Group-wide launch of the Blue Dimension™ concept. The findings were used to develop grounded recommendations for strengthening the initiative in order to facilitate the integration of sustainability aspects in external product and communication.

In order to meet the objectives, the qualitative research was centred on the case of Trelleborg AB and its decentralised units in order to gain an understanding of the different drivers, barriers and perceptions on the role of the Blue Dimension™ concept in supporting the integration of sustainability aspects in product communication throughout the company. Data was collected from the Group headquarters mainly through personal interviews and from the company's units through telephone interviews and a Group-wide survey that aimed to investigate the propensity of the units to integrate sustainability aspects in their products' communication. There were a total of twelve semi-structured interviews carried out with managers at different levels in the company and 65 responses from the survey. The primary and secondary data were analysed following an approach inspired by the *grounded theory*, looking for convergence, divergence, patterns of behaviour, internal similarities and differences in the contexts of the units that exert significant influences on their propensity to integrating sustainability aspects in product communication.

The case study revealed a set of barriers perceived *at business unit level* for the incorporation of sustainability in product communication. The first one is the current *lack of expressed customer demand for sustainability aspects* in products and solutions. In spite of the wide recognition that these aspects will soon become business standard, there were little signs of intentions from the business units to capitalise on the opportunity presented by the Blue Dimension™ concept. Currently product communication is centred on what is considered to be *critical* to transmit the features and advantages of the products. As sustainability features are seldom demanded, there is little incentive for the majority of the investigated units to invest in such communication. Another perceived barrier was the direct *association of sustainability features with cutting edge technology*. As a large part of Trelleborg's current offer is not considered to be very technologically advanced, especially by comparison with other sectors that are driven by fierce competition, identifying the potential in the existing products is thus hindered. Another important barrier that was identified was related to the limited understanding of the *scope and applicability of the Blue Dimension™ to the local business*. Many of the respondents perceived the Blue Dimension™ as a corporate branding initiative, therefore the expectation to apply the concept in order to expose the added value in the local products and solutions was not clearly conveyed by the corporate headquarters.

On the other hand, the drivers that were identified to be conducive to the integration of sustainability aspects in product communication across Trelleborg's units were: using sustainability oriented communication to address customers' needs for lowering their environmental footprint; the provisions of the corporate policy to integrate such aspects and top management commitment and support for making sustainability part of the business model.

The challenges perceived at corporate level when attempting to advance sustainability issues to the units throughout the company derive mainly from Trelleborg's structure and strategy. By being a decentralised multinational, Trelleborg has encouraged its units to take responsibility for the achievement of the organisational goals and the overall success of their business. Therefore, in order for a central corporate responsibility initiative to be successfully adopted by the units, it needs to present clear financial returns. Considering the customer orientation of the company, the sectors in which it operates, the market it addresses, the types of products it manufactures, *sustainability is generally not perceived to bring business benefits unless there*

is an explicit external demand for it. Therefore, the challenge for the corporate headquarters is to *facilitate the identification of competitive advantage opportunities* coming from addressing sustainability through the business; and more specifically, through sustainable product communication and thinking. By being aware of the focus on meeting the (financial) targets and on the operational side of the units' businesses, it is *very difficult, if not impossible, for headquarters to impose additional objectives and responsibilities* on to the existing workload.

Based on these findings, a set of grounded recommendations were advanced for the strengthening of the Blue Dimension™ in Trelleborg AB and to facilitate taking the further actions needed for the integration of sustainability aspects in product communication at business unit level.

As the study only presents the case of Trelleborg AB, there are not many opportunities for generalisations. However, many other companies and organisations could probably resonate with some of the challenges faced by Trelleborg and its units when it comes to integrating sustainability aspects in product communication. By providing an overview of the complex context in which the research unfolds, together with the findings related to the attitudes, drivers and challenges perceived at local level, the study could offer insights about the importance that resides in the details of the local businesses.

The increase in understanding of the contextual factors that are conducive or restrictive to integrating sustainability into product communication aimed to contribute to finding opportunities for strengthening the initiative for a wider support across the Group, but also for the development of future initiatives that will have similar objectives. This is hoped to be of use also to other companies or organizations working in similar contexts as Trelleborg AB or its units and that face similar challenges in integrating sustainability into their business and their external communication.

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Abbreviations

BA	Business Area
BTO	Build-to-order
BU	Business Unit
CSR	Corporate Social Responsibility
FDA	Food and Drug Administration
GMO	Genetically Modified Organisms
GRI	Global Reporting Initiative
ISO	International Standard Organization
ME	Manufacturing Excellence
MNC	Multinational Corporation
OECD	The Organisation for Economic Co-operation and Development
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
ROHS	Restriction of Hazardous Substances Directive
UN	United Nations
USP	United States Pharmacopeial Convention
VOC	Volatile Organic Components

1 Introduction

Multinational companies across all sectors face a growing pressure from a multitude of stakeholders to integrate sustainability into their business models. The challenges that the world is facing today from an environmental, social and economic point of view and the pressures that are expected to increase in the future are undeniable. Therefore, by addressing these societal challenges through the businesses they run, companies will not only manage to secure their long-term economic viability and competitive advantage, but they will also play an important role in the movement towards a “green economy” (Porter & Kramer, 2006; UNEP 2010).

However, just as with any other part of the business, there are no guarantees that focusing on sustainability will automatically translate into a better reputation for the company, into differentiation of products or into securing competitive advantage. Therefore, it can be very important for the companies to be able to identify the opportunities that come from the challenges that are specific to their context, and to find ways to use their strengths to capture these opportunities in order to secure sustainable business benefits.

While the main goal for companies all over the world and from different sectors is to have a viable business that is able to withstand market pressures, changing the course towards more sustainable business models can be difficult. And especially for multinational companies that need to streamline their efforts across countries, continents and cultural borders. As there is no “one size fits all” solution that can be successfully deployed, there is the need to find the functional balance between being able to meet stakeholder demands and, at the same time, find the most appropriate ways to address the most relevant societal challenges at the local level. Coordination, prioritization and top management endorsement are key in securing this balance (Bergmans, 2006). Because corporate responsibility initiatives and requirements are usually added on top of existing organisational activities, they are usually given lower priority. These initiatives often face significant challenges and even failure because they are meant to change embedded practices and beliefs.

Therefore, there is a need to find ways to favour and encourage decision making processes at all levels in the organisation, which are compatible with the wider societal needs. And it is important to keep in mind that it is people who make decisions and take action across different levels of an organisation and their perception and interpretation of their reality will influence the success of any endeavour meant to bring a change (Osborne and Redfem, 2006).

The evolution of a corporate culture that fosters enhanced preoccupation with the organization’s surrounding environment and stakeholders was found to be very important for the success of corporate responsibility initiatives, despite the fact that (multinational) corporate cultures are complex and formed of a heterogeneous mix of features unique to each unit in its own context (Linnenluecke, 2010). It is important to point out the complexity of multinational corporations like Trelleborg AB and of the various contexts which influence and are influenced by their operations. This raises the need for enhanced flexibility in decision making, strategic planning, policies and management, but at the same time, the need for more focus on issues that are central to its overall strategy. Additionally, with decentralization being a focal characteristic for Trelleborg, particularly influencing the relationship with its units, it becomes necessary to investigate the unit perspective in order to find what forms the right balance between unit autonomy and Group involvement for unlocking the highest potential of shared value creation through strategic corporate responsibility.

1.1 Background information and problem statement

Multinational corporations (MNCs) face increasing demands from a multitude of stakeholders to answer to more and more requests that go beyond the traditional bottom line. There are also international formal guidelines, such as the European Union's Green Paper on Corporate Social Responsibility (CSR), the OECD Guidelines for Multinational Enterprises, the principles of the UN Global Compact, ISO 26000 standard on CSR, meant to lead international companies towards more responsible business practices (Commission Communication, 2011). The role of MNCs in society became highly debated in the business management literature, having the different sides ranging from those who support the purely economic approach, which emphasises a shareholders focus, to those supporting the philanthropic organization, driven by values built on a wider social dimension (Friedman, 1970; Senge & Carstedt, 2001; Linnenluecke & Griffiths, 2010; Berger, Cunningham & Drumwright, 2007, Porter & Kramer, 2011). As these two examples represent the extreme positions in the debate, there are also arguments in support of companies which try to balance the shareholders' interests to those of the stakeholders in order to strengthen their competitiveness (Crilly, 2011, p. 694). Moreover, there are authors who argue that there is no necessary, inherent conflict between corporate responsibility or contributing to societal development and a business focus on improving the competitive context, as companies can and should address social issues through their core operations first (Porter & Kramer, 2010, p. 2; Porter & Kramer, 2002, p. 68). Porter and Kramer (2002, 2010) repeatedly stress the fact that initiatives or areas of corporate responsibility action that neither create value, nor derive benefit should be left to individual donors who act out of their own individual charitable disposition. It can be argued that this stand is very much in tune with Friedman's (1970) criticized position on CSR, which strongly supports increasing profits as the right means to fulfil a company's social responsibility.

The dilemma becomes even more interesting when the issue of centralized vs. decentralized management is introduced. A centralized company is one in which decision-making attributions are concentrated at the top organizational levels (Caruana, Morris & Vella, 1998, p. 18). Whereas there is a consistent body of literature on decentralized management in a multitude of contexts and even more so, on corporate (social) responsibility, there is a quite limited amount of scientific work concerning sustainability aspects in decentralized multinationals. Moreover, there are some diverging views regarding whether multinational companies should encourage centrally-coordinated corporate responsibility strategies or whether they should have a more decentralized approach, giving the freedom to units in host-countries to make their own decisions and pursue their own path to sustainability (Muller, 2006, p. 189).

Different authors have emphasized that decentralization favours autonomy, which in turn increases the ability to respond to local needs and favours rapid decision making (Muller, 2006, p. 189; Caruana, et. al., 1998, p. 18, Brickley, Smith, & Zimmerman, 2001, p. 296; Williams & van Triest, 2009, p. 158; Kidger, 2001, p.70). Management control theory indicates that managers have the power to influence and guide behaviours in the organization in order to facilitate the achievement of organizational goals (Merchant & Van der Stede, 2003, p. 8). However, in a decentralized setting, where managers have more decisional and exercise freedom, it can sometimes happen that their choices might not always in line with the company goals (Williams & van Triest, 2009, p. 158).

Villers (2009) also brings forward two general challenges faced by companies when it comes to (de)centralized management. The first one is the difficulty to decentralize down to a small enough unit, as it can sometimes mean that there is little or no decentralization within such a unit (e.g. a plant with hundreds or thousands of employees). And second, the challenge of controlling decentralized units, as the traditional “return on investment” can be misleading for smaller units. These challenges are still of actual concern to companies and they can determine the success or failure of many centrally-coordinated initiatives.

When considering a multinational context, it becomes obvious that companies can face challenges which are different from the home-country conditions. This can influence their approach on adaptive strategies and corporate sustainability in particular. Both the centralized and decentralized approaches have their own sets of advantages and disadvantages. However, Muller’s research (2006) found that subsidiaries that identify themselves as being autonomous are inclined to have a more proactive approach to corporate social responsibility. The geographical, cultural, economical differences between the units of a multinational company can have a decisive influence on how sustainability aspects are approached and integrated into their operations and can impact the Group congruity and consistency on an international level. Therefore, initiatives brought forward to streamline the efforts aimed at promoting sustainability issues through products and solutions while accounting for specific market demands in a business-to-business (B2B) setting, can have very important contributions to the overall long-term corporate performance.

The centrally-driven initiative intended to be analyzed in this research is one that is meant to bring awareness on sustainability aspects in products and solutions of one large multinational company. The research will focus on the case of the *Blue Dimension*TM concept, recently advanced by Trelleborg AB, a B2B industrial engineering multinational. The Blue DimensionTM is an initiative designed to integrate the principle of *shared value* introduced by Porter and Kramer (2006) and aims at bringing forward the sustainability aspects in the company’s products and solutions, together with the benefits these products bring to society. The Blue DimensionTM was described to represent the added value Trelleborg’s products and solutions bring to customers, to the environment and to society (Jahja, 16 March 2012, personal communication). It offers a common communication framework that can be used by units all over the Group to promote the sustainability features that are found in their products. The concept was recently launched internally throughout Trelleborg’s units in order to raise awareness on the potential benefits brought by communicating the sustainability features in products and solutions.

As defined by Porter and Kramer (2011, p. 66), shared value is defined as “*policies and operating practices that enhance the competitiveness of a company while simultaneously advancing the economic and social conditions in the communities in which it operates. Shared value creation focuses on identifying and expanding the connections between societal and economic progress*”. This also translates into bringing social issues into the focus of the business strategy by linking corporate performance to social progress, but also by redefining markets based on current and future challenges of society.

Following this principle, the Blue DimensionTM concept advanced by Trelleborg AB therefore aims first at product marketing and development, attempting to raise awareness for those involved in related processes about the potential benefits brought by integrating sustainability attributes in the organization’s products and solutions and their subsequent external communication.

Trelleborg AB is a B2B industrial engineering company, which runs its operations in over 40 countries. Its experiences from its global presence are expected to contribute to building a

comprehensive picture of the challenges faced by individual business units when it comes to communicating sustainability aspects in products and solutions to their markets.

In conclusion, this research endeavour aims to identify the underlying challenges and drivers which can influence the way communicating sustainability in products and solutions is approached in different units of a decentralized multinational company. This is expected to reveal the strengths and opportunities that can be used to reinforce centrally driven initiatives such as the Blue Dimension™. The analysis of the reactions, attitudes and expectations of those directly involved into the processes related to the scope of Trelleborg's Blue Dimension™ is expected to provide an overview of the early results registered after the launch. The goal is to identify and help overcome the perceived challenges in using sustainability arguments in product and solution communication in order to create new business opportunities.

Despite this research being focused on the current practices within the Trelleborg Group, it is expected to generate transferable knowledge to other companies and organizations and their managers, as it offers a multinational, cross-contextual outlook of the challenges that come with bringing sustainability aspects at operational level. It will furthermore give hints on how such organizations can manage complex sustainability issues. By offering the perspective of an industrial multinational actor, found in the middle of the supply chain and showing the high reliance on the actors upstream to drive the integration of sustainability aspects in the product offering, this research could also complement to a certain extent previous research on addressing sustainability in the supply chain.

1.2 Research objectives

The successful fulfilment of this research paper relies on the following set of objectives:

- O₁ To reveal preliminary results with regard to attitudes, barriers and drivers towards communicating sustainability aspects in products and solutions in Trelleborg AB after the Group-wide launch of the Blue Dimension™ concept
- O₂ To provide suggestions on how to enhance and strengthen the implementation of the Blue Dimension™ Group-wide

1.3 Research question

In order to achieve the previously mentioned objectives, this research endeavour is guided by the following research questions:

- RQ₁ What are the barriers and drivers of different business units throughout Trelleborg AB when it comes to integrating sustainability aspects in product communication and development?
- RQ₂ What challenges does the corporate headquarters perceive when seeking to promote sustainability issues to their decentralized units?
- RQ₃ What are the early responses/reactions to the Blue Dimension™ concept, designed to influence sustainable product thinking in Trelleborg AB?

1.4 Methodology

The research will follow the *case-study research methodology* and attempt to use a mix of *induction and deduction* to frame the final findings which can then form the basis for grounded recommendations to strengthen the implementation of the Blue Dimension™ concept to ensure a better, long-term integration of sustainability in Trelleborg's units. Therefore, the aim is to find a balance between descriptive approaches to how the company rolled out the initiative and how it was perceived by its units and prescriptive approaches with regards to its future implementation. This methodology was considered to be the most appropriate one because it offered the flexibility needed to work with a highly complex company such as the one on which this research relies. Experienced managers of the organization admitted that it could take even 10 years until one can confidently appreciate and understand the workings behind its strategies, governance processes and business models (Jahja, 16 December 2011, personal communication).

In the context of Trelleborg AB, which is the overarching unit of study, the case studies will correspond to three of its four Business Areas (BAs) – Wheel Systems, Sealing Solutions and Engineered Systems, illustrating the particularities of the different Business Units (BUs) under investigation, when it comes to integrating sustainability aspects in external product communication, through the lens of the new Blue Dimension™ concept. This approach is meant to bring out both the similar and diverging perspectives on product communication/marketing and development with the purpose of identifying the main themes and factors which can influence the degree of support and pro-activeness towards sustainability-related initiatives.

The choice of business units investigated was dependent on the headquarters' recommendations and plans to expand/strengthen the Blue Dimension™ in the future, but also on the experiences which resulted of previous initiatives. To ensure learning from the best case, one of the business units which was studied is the one that has already deployed a similar product concept (*i.e.* Agri&Forestry Tires from Wheel Systems BA) and inspired the Blue Dimension™ to be promoted to the entire Group.

1.4.1 Primary data collection

Primary data was obtained through a total of 12 qualitative, semi-structured interviews that were conducted with (senior) managers working at corporate headquarters, but also at BU level. At the central level, the interviewees have responsibilities and mandate over functions like Internal Control, Corporate Responsibility Communications and Internal Communication, Human Resources, Legal Counselling, Internal Auditing and Plant Management. The corporate level managers were interviewed with the purpose to gain a deeper understanding of the structure of the organization and the challenges faced at headquarter level with regards to implementing different types of initiatives aimed to streamline Group efforts towards increased corporate responsibility levels. The personal interviews carried out at headquarter level also contributed significantly to the researcher familiarisation with the case study company.

The headquarter perspective was intended to be balanced by the local perspective and therefore, six semi-structured telephone interviews were carried out with managers and directors working in different BUs from all the BAs having mandate over Communication, Marketing, Sales, Customer Service and Purchasing, Finance functions. The majority of the interviewees were selected because they responded positively in an internal competition about the integration of sustainability aspects in existing products and solutions, thus reflecting the

Blue Dimension™. Their opinions and experiences were considered valuable because they have already shown some degree of understanding of the concept and its applicability to their business. One of the interviews mentioned before was a group interview with two people who worked together on the solution that received a Blue Dimension™ competition prize. The discrepancy between the number of business unit interviews and the number of functions listed is due to the overlap of functions of interviewees.

An overview of interviewees' position in the organizational structure, the countries in which they are located and function or markets (where applicable) is shown in Appendix I.

An additional in-depth interview was carried out with a manager working in a division of the Sealing Solutions BA in California, United States, with the purpose of gaining an overseas perspective of the challenges and drivers surrounding the communication of sustainability aspects in products. Although being one individual perspective only, this in-depth interview offered a thorough account of the overseas context, which is important to consider for two main reasons. First reason is the distance from the Group headquarters, which can have an influence over multiple aspects related to corporate governance and corporate culture, but also over the characteristics of the markets it serves. Second reason is that the Sealing Solutions BA has a very individualistic approach which was emphasized multiple times during other interviews. These two reasons combined make North American Sealing Solutions even more independent and decentralized from the Group, compared with other BAs. This has the potential to uncover many contextual variables which have a significant influence on how communicating sustainability in products and solutions is perceived and undertaken.

The average duration of the interviews was of one and a half hours. The majority of interviews were recorded, transcribed and coded around the most relevant themes depicted, for a more accurate and in-depth analysis. In order to ensure that the confidentiality agreement between Trelleborg and the researcher is respected and that the information provided is accurate, but also that it is not sensitive, the transcripts were provided to the interviewees who requested them, shortly after the discussions. Extensive notes were taken during the interviews which were not recorded. However, the majority of the interviewees expressed their concern of being identified based on the information they provided and preferred to remain anonymous. The interviews were conducted in English although the majority of the interviewees were not native speakers.

In order to get a more broad perspective on the challenges faced by Trelleborg's units with regards to approaching sustainability in general and through the Blue Dimension in particular, a Group-wide qualitative survey was distributed to 139 contacts representing Product and Production Managers, Marketing, Communications and Plant Managers from all three BAs. The survey registered a 46% response rate and its purpose was to gain further insights on what were the drivers or barriers in the respondents' specific contexts with regards to how their business works and how that influences their perception over integrating sustainability aspects in products and communication. The questions were designed to cover areas related to the following aspects and are fully presented in Appendix II, together with compiled responses to the questions that were considered to be most important to the purpose of the study, without risking to reveal sensitive information for the case study company:

- their perceived barriers to integrating sustainability aspects in product communication/marketing;
- their reactions to the introduction to the Blue Dimension;
- their expectations regarding the implementation of Blue Dimension,

- the local context influencing their decision making processes, operations and strategies (market, economic context, societal demands etc);
- understanding of the importance of integrating sustainability features in their products and their communication/marketing;
- their perceived individual role and power to promote sustainability throughout the BU and the Group (related to the corporate structure)
- their understanding of the advantages brought by integrating the Blue Dimension in their products and solutions
- their motivations when it comes to enhancing their efforts towards a more responsible approach to business
- their units' role in the greater Group perspective with regards to promoting corporate responsibility
- their opinion on potential solutions that can facilitate a more comprehensive integration of sustainability aspects in their products and solutions, but also in their units.

In the case of the rating scale questions in the survey, where the highest response rates were given to the mid-point category (i.e. relatively important/influential), the percentages were cumulated with the extreme positive rating, when this was the second preferred choice. This approach is supported by the fact that previous research shows that a preference for the mid-point category (central tendency) can indicate that the respondents are either undecided or neutral, or they do not have a clearly defined position. Thus, they are balanced between the extreme options or do not have an attitude towards the topic, despite the semantics used in the formulation of this category (Armstrong, 1987; Shaw & Wright, 1967; DuBois & Burns, 1975). However, as in this research the mid-point category was phrased to represent a more positive attitude towards the investigated factor, in order to avoid the risk of considering “non-answers” as significant and at the same time, exclude the possibility to leave out important information, the sum up of the two preferred options was considered by the researcher to be representative for the majority of the respondents. In situations where the first two high ranking options were the mid-point (which has a positive conotation) and the extreme negative option (i.e. not influential), then it was considered that the discrepancy is due to the specific drivers of the different sectors in which the respondents activate, together with the characteristics of the markets they serve. And consequently, these aspects were investigated deeper.

It is also important to mention that the survey data was collected and compiled with the help of an online survey tool provided by Google. The compilation and the automatic calculations made by the survey application for the different answers were found not to be entirely accurate. The researcher has not been able to find an explanation for the errors in calculation, but as the general trends are not significantly altered, it has been decided to keep the graphs and summaries automatically generated by the application, as shown in Appendix II.

1.4.2 Secondary data collection

Secondary data that supported the case study analysis was collected on the basis of the information gathered from consulting relevant internal policies and procedures governing

Trelleborg's work on sustainability, external communication materials, as well as employee submissions of examples of products and solutions that were thought to integrate the features of the Blue Dimension™. Moreover, annual company reports, website information, online clips with product presentations and trade show participations were included in the research, however, the latter to a lesser extent.

The qualitative study of the business units was supported by a thorough literature review on case study research design as well as on topics related to corporate governance and culture in multinational companies, integration of sustainability aspects in business strategies, promoting and managing change in multinational companies, strategies for creating shared value, factors that influence the propensity of companies to include sustainability aspects in marketing and product development etc., in the context of decentralized companies. The majority of these topics emerged from the set of interviews carried out with Trelleborg managers, in an iterative process aimed at understanding the way the company works and where its main challenges arise, but also to depict the main constructs that can guide the research further.

1.5 Data analysis

The *data analysis* aims to emphasize the relationships between the components and themes identified in the qualitative data gathered with respect to the implementation of centralised initiatives and their contribution to broader corporate sustainability. By looking at these topics from different angles, this is expected to contribute to a better understanding of the factors that influence centralised initiatives' effectiveness in promoting sustainability aspects to the units of a decentralized multinational company such as Trelleborg AB. Specifically, the analysis is intended to be carried out from three perspectives:

- influence of global corporate *structure* on promoting sustainability throughout the Group.
- *external influence on decision making processes* with regards to product marketing and communication; (e.g. markets, economy etc.)
- *motivations* to support and enable sustainability aspects in product thinking and communication

This will be achieved through a case study research, specifically, through a *within-case analysis* (or embedded case study) - where the particularities of each case (i.e. Business Unit) will bring out the main themes to be investigated, leading to preliminary theory generation, through a *cross-case analysis* which aims to find common patterns and divergent approaches to sustainability amongst Business Units and Business Areas. Case study research aims to increase understanding of the dynamics present in a single setting (Eisenhardt, 1989) and can be used to provide description, test or generate theory. The rationale for choosing building theory through case study research for this topic, is given by the process' tight connection with the data, which allows for great flexibility for data collection and research protocols and for diverse sampling methods. This created the premises for increased and fairly in-depth understanding of the organization as an overarching case study unit. Case study research was considered to be the most convenient approach given the limitations faced by the researcher combined with the fact that Trelleborg AB is a very big and highly complex company. One of the aims of data analysis through case study research is to become as familiar as possible with each case individually in order to be able to identify the unique patterns of each unit before being able to generalize patterns across cases (Eisenhardt, 1989, p. 540).

Identifying the salient variables influencing the way the different units approach sustainability in their business and communication will be a milestone in the present research, as it is expected to offer insights on how decentralized multinational corporations could ultimately advance sustainability throughout their units. Describing these factors and the interconnections between them, together with other contextual variables – such as local stakeholders’ expectations, local markets, resource dependency on higher levels in the company, strategic position within the Group, geographic and cultural distance to the headquarters – is expected to lead to insights on how decentralized multinational companies can use centralised initiatives to accomplish their sustainability related objectives.

The mix of inductive and deductive approach undertaken in this research is expected to contribute to a better understanding at Group level of the salient factors that can have a significant contribution to the adoption of sustainability aspects in its units’ communication and how they can be activated to facilitate a more coherent and conscious transition. Moreover, revealing the conditions in which a centralised approach, like the Blue Dimension™ for Trelleborg AB, can work in favour of advancing sustainable product thinking it can furthermore provide insights that can support future decisions at Group level.

Analysing the data gathered also from the diverging perspectives of *local vs. global* but also *centralised vs. decentralized* is expected to bring new insights on how more centralised approaches can advance sustainability aspects through products and solutions of global, decentralized multinational companies.

The chart below summarizes the research process and how the outputs of each stage contribute to answering the research questions and meeting the final objectives.

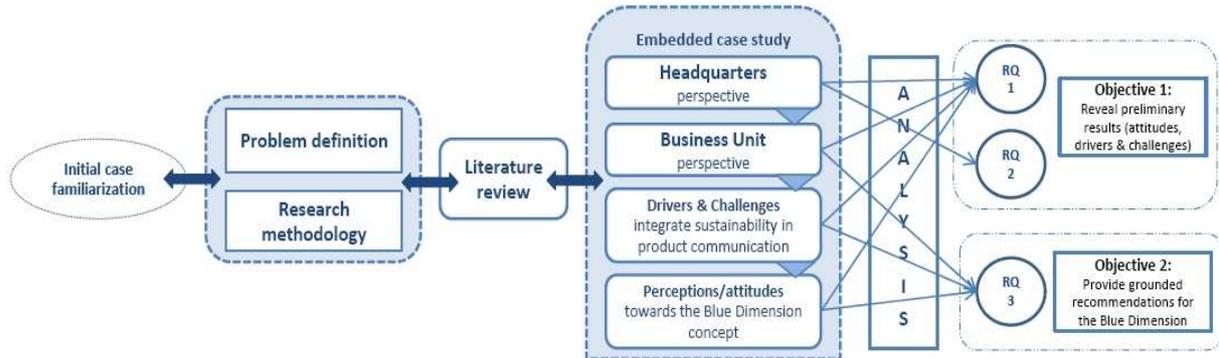


Figure 1-1 Overview of research process

1.6 Limitations and scope

The study is expected to be limited by a number of factors, exerting different degrees of influence over the accuracy and relevance of the final result. The first limitation is that there was no possibility to respect one of the most important prerequisites of grounded theory research, specifically that of being in direct contact with the studied entities, as Glaser and Strauss demand (1967). In the particular case of Trelleborg AB, which is a very large and complex organization, more direct and sustained contact would have increased familiarity with the company and also the understanding of its specific challenges when it comes to communicating sustainability aspects in products and solutions. However, there was direct and close contact with the corporate headquarters and multiple interviews were carried out in

order to provide clarifications and additional information that would enhance the researcher's understanding of the company's business model.

Secondly, at the moment, a variation of the Blue Dimension™ concept was implemented only in the Agri & Forestry Tires Business Unit, part of the Wheel Systems Business Area, which is one of the four BAs in which Trelleborg AB has operations. The Agri & Forestry Tires Business Unit launched its first Blue product one year before the Blue Dimension™ concept was communicated throughout the entire Group and it served as a model for the Group-wide adoption. The case study research therefore intends to balance the experiences registered within this BU with the reactions and expectations present in other areas, in order to evaluate the propensity towards integrating sustainability features in product development and communication throughout the Group. The choice of people to be interviewed and surveyed is based on the functions associated with the scope of the Blue Dimension™ concept, as well as internal recommendations from the Group headquarters.

As it was acknowledged at an early stage of the research that customers are a salient stakeholder for the company, it could have been very valuable to parallel the challenges and drivers of the different units of Trelleborg with their customers' perspective on the same issues. However, due to the limitations imposed by various factors and the difficulty to ensure access to data, the scope of the research was kept confined to the scope of the investigated concept, as it was defined by Trelleborg AB.

Another aspect that can influence the final results was the fact that due to time and availability constraints, it was recommended by Trelleborg headquarters that the Group-wide survey through which the main volume of primary data was gathered should not exceed 10 minutes to complete and should have multiple-choice answers already listed in order to increase the response rate. This could significantly lead the respondent's answers in a direction that does not necessarily represent their true view on the subject matter.

A fifth limiting aspect could be the headquarter recommendation to exclude one BA – Automotive, as it was undergoing a process of organizational restructuring at the time when the research was conducted. This BA could have impacted the research findings as it is perceived by top management to be comparatively ahead of other BAs in terms of environmental performance and uptake of sustainability issues, due to the more stringent regulations the sector is facing, together with a more motivating competitive context (Jahja, personal communication, 2011; Losa, personal communication, 2011).

Additionally, as the Blue Dimension has only been recently promoted for the first time internally Group-wide (on February 20, 2012) through an internal competition aimed to bring forward examples of products and solutions means that this study will only assess early results, attitudes and experiences with regards to bringing sustainability aspects into product development and communication/marketing. However, it is expected that this research will help reinforce the awareness on the initiative at an early stage and allow for substantive interventions with potential long-term benefits.

It is also very important to recognise the fact that the data collected, however detailed, cannot be representative for the entire company investigated and especially cannot ensure full applicability and generalization to other companies or organizations. Despite attempting to obtain a thorough coverage of Trelleborg's geographical and business segments, due to the complexity and diversity of its operations and orientation, only a partial account could be accomplished.

The researcher also acknowledges the risk of personal bias among the interviewees and respondents, who presented their own experiences, interests and perspectives on the matters that were investigated, but also due to the lack of multiple lens of interpretation from the researcher's side, which may have contributed to important omissions or fallacies in using and evaluating the data. In order to minimize these risks, a detailed research plan that included a data collection plan and analysis methodology was constructed prior to the research in order to assist the process. Moreover, the data was reorganized after different criteria in order to be analysed from different angles so as to minimize research bias and the risk of a narrow perspective. The main body of the primary data (i.e. the survey results) was compiled and made available to reader in Annex I. The limited familiarity with the company and its complex management processes, together with the researcher's limited experience with organizational management, may also exert an influence on the reliability of the analysis. However, these aspects are accounted for in the research methodology and data analysis framework that were chosen for this study and represented the main reasons that support the research avenue.

The main target audience for this research is represented by management at corporate level in Trelleborg AB. By offering an overlook of how the Blue Dimension™ was received and perceived throughout the company, can help the corporate headquarters to strengthen the initiative at a very early stage. Secondly, the research could contribute to an increased awareness about the underlying barriers and challenges faced at unit level when it comes to integrating sustainability aspects in the units' operations. The research is also intended for managers across the Trelleborg Group, who can use the findings to increase their understanding of the corporate level challenges and ambitions, but also to see that they are not the only ones experiencing the same barriers when trying to drive sustainability communication and product thinking. Moreover, by promoting a real example from the Group that shows how all these barriers were overcome, the research attempts to provide this target group with realistic suggestions that were already proven to be effective in a similar organisational context.

Another potential target group for this research is composed by other practitioners from multinational companies, working in a similar context to that of Trelleborg and that aim to launch or improve their own initiatives meant to promote sustainability throughout their company. Other researchers could also find this empirical study interesting for their endeavours meant to investigate how sustainability related initiatives are received by units of (decentralised) multinational companies. Students and NGOs who are interested in organisational management could also find this research interesting for the practical insights provided on the real challenges faced by companies in different parts of the world when trying to integrate sustainability aspects in their business.

1.7 Disposition and outline

- Chapter 2* Provides the reader with the scientific and contextual background of the major themes that were identified during the data collection and analysis in an iterative process of discovery and learning. The existing literature review attempts to offer an account of how sustainability can be supported considering the different managerial and organizational challenges that were identified as relevant for the overarching case study company.
- Chapter 3* This chapter introduces and describes the research context, namely the case study company, Trelleborg AB, a highly decentralized multinational company, together with its most challenging dilemmas. The chapter also describes two of the most important ongoing centrally-coordinated initiatives meant to streamline company efforts towards an improved environmental performance and an overall more a sustainable approach to business. The corporate vision with regards to integrating sustainability aspects in product communication through the Blue Dimension™ concept is offered.
- Chapter 4* Presents the findings and particularities of the case studies based on the themes that were depicted to be influential for the local units' approach to sustainability. The chapter brings forward the best Trelleborg example of using sustainability arguments in product communication to create a strong brand and secure competitive advantage.
- Chapter 5* Analyses and discusses the main research findings in relation to the existing body of literature, by focusing on the information needed to answer the research question and achieving the objectives of the research.
- Chapter 6* Provides the conclusions of the research and the recommendations on how the company can streamline its efforts to facilitate the integration of sustainability in product communication throughout its business units, in order to create competitive advantage and enhance business opportunities.

2 Literature review

This chapter aims at providing the theoretical grounds for the themes identified as being relevant for this study, but also for the themes that emerged during the case study research. Inspired by the grounded theory approach, the literature review attempts to provide guidance for the choice of analytical variables for the case study, without limiting other variables to emerge from the case data.

2.1 Sustainability and corporate culture

For the pursuit of authentic corporate sustainability, it is suggested that companies undergo consistent cultural change, as simply introducing policies, products or processes that address environmental pollution, resource use or stakeholder relationships has been criticized as being fairly superficial and ineffective (Linnenluecke, 2010). Linnenluecke (2010, p. 358) exposed the levels where corporate sustainability principles are integrated within organizations:

- *surface level*, represents the context for sustainability principles adoption, which is visible through technical solutions, corporate sustainability reporting, introduction of sustainability criteria in employee evaluations;
- *value level* is represented by the change towards more responsible and ethical employee values and beliefs – reflected in strategies and goals;
- *underlying level*, demands a shift in core assumptions about the relationship between human and natural systems – relies on unconscious beliefs and perceptions that are fundamental for establishing values and influencing direction of action.

Linnenluecke (2010, p. 359) also emphasises that organizational culture was found to be one of the most important factors that stood in the way of corporate change initiatives.

One tool which was presented as widely used in corporate culture research is the competing values framework developed by Quinn and Rohrbaugh (1983, p.369) and was used to identify the management dilemmas involved in finding the right balance between flexibility and stability on one hand and people and task accomplishment on the other (Linnenluecke, 2010, p. 359, 360; Yu, 2009, p. 37). The framework reveals that companies which focus more on control predominantly use formal mechanisms for coordination (e.g. rules, policies, direct supervision, planning, budgeting etc.) so as to ensure compliance with the norms. On the other hand, companies which accentuate the importance of flexibility ensure the achievement of the desired outcomes through more social oriented mechanisms, such as internalization of beliefs, training, commitment, socialization or peer-pressure. The other dimension of the framework is represented by the predominance of organizational focus on either the internal or external environment. Thus, four major culture types are revealed:

- (1) *Human relations model*, promoting the maintenance of cohesion and morale among employees through corporate values, the development of human resources, involvement and participative decision-making. Coordination and control are ensured through decentralized decision making and cooperation, whereas compliance with mandates stems from trust and long-term commitment to the organization (Quinn and Rohrbaugh, 1983, p. 372; Linnenluecke, 2010, p. 360);

(2) *Open system model*, advocates for growth and resource acquisition through flexibility and preparedness, visionary communication and flexible decision making; communication is horizontal and coordination largely informal, whereas employees are motivated by the meaningfulness of their tasks. (Linnenluecke, 2010, p. 360);

(3) *Internal process model*, also known as the hierarchical culture, focuses on equilibrium, conformity and stability through formal mechanisms of coordination such as information management and evidence-based decision-making. Vertical communication predominates, control is ensured through policies and procedures and compliance is based on rules and regulations. (Quinn and Rohrbaugh, 1983, p. 372; Linnenluecke, 2010, p. 360);

(4) *Rational goal model* encourages productivity and efficiency through planning, objective setting, instructional communication and centralised decision-making. Employee motivation stems from performance recognition and rewarding (Quinn and Rohrbaugh, 1983, p. 372; Linnenluecke, 2010, p. 360).

Quinn’s and Rohrbaugh’s framework is illustrated in Figure 2-1, containing the four models in a graphical depiction that allows descriptive parallels and comparisons. The four criteria that represent organizational outcomes are placed at the core of the scheme, surrounded by other four criteria reflecting processes or means to achieve them. Moving more to the outside, the third level is represented by the flexibility-control and internal focus-external focus values. For example, the open systems model is embedded in flexibility (decentralization) and external focus values (competitiveness), having as means the maintenance of flexibility and readiness towards reaching the organizational goals of growth, resource acquisition and external support.

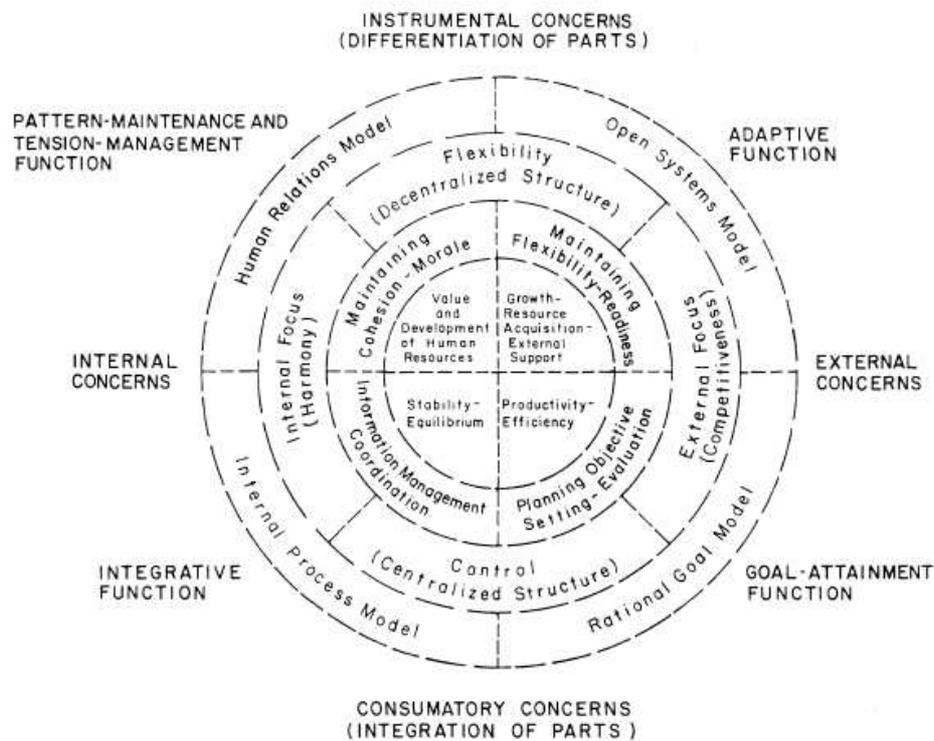


Figure 2-1 Competing values framework and Parsonian functional prerequisites

Source: Quinn and Rohrbaugh, 1983

On the outside of the models lay the four functional prerequisites of any system of actions which were identified by Parsons (1959). The vertical axis shows a continuum from instrumental to consumatory concerns (from differentiation towards integration of parts), while the horizontal axis displays a continuum from internal to external concerns, all building the four prerequisites defined by Parsons. Therefore, the open systems model accompanies the adaptive function, the rational goal model is associated with the goal attainment function, the internal process model parallels the integrative function and the human relations model is found next to the pattern maintenance and tension management function. The authors make a critical point, explaining that despite certain pairs of concepts finding themselves in opposite representations in the value space and being somewhat paradoxical, they are not necessarily empirical opposites or mutually exclusive in practice (Quinn & Rohrbaugh, 1983). Furthermore, the authors recommend that the propositions derived from the competing values approach should not be contradictory, as they simply need to account the potential contradictions in all organizational settings.

Acknowledging the fact that an organization's culture can be comprised from a mix of these models, Linnenluecke (2010) exposes the main features of the relationship between each culture and the integration of corporate sustainability. Thus, organizations placing more focus on internal processes are likely to accentuate economic performance and growth in their pursuit for corporate sustainability, where efficiency gains are translated mainly in operational simplifications meant to reduce costs and maximize production. However, there is a risk that such companies might overlook the innovation and business opportunities a wider focus, flexibility and openness to change could entail (Senge & Carstedt, 2001, p. 28). In conclusion, these organizations might only pursue corporate sustainability endeavours if they clearly present competitive advantage opportunities and contribute to the bottom-line figures. Even though corporate responsibility efforts are not necessarily designed and initiated to deliver competitive advantage to the company as a whole or to its units, they are more likely to be taken up and be allocated resources if they present this opportunity, as it is also described by Kramer's & Porter's concept of shared value, which will be described in detail further in Section 2.3.

On the other hand, organizations that place emphasis on the human dimension will likely undertake a corporate sustainability direction through capacity building and employee development. Such organizations display visible statements regarding equal opportunity, discrimination, ethics, diversity which can foster social entrepreneurship (Berger, Cunningham & Drumwright, 2007, p. 142). Such a company is guided by values that do not place a lot of emphasis on economic concerns, but which end up in questioning the legitimacy of the business purpose itself. Organizations having a culture of rational goals, where planning, forecasting and the actual organizational structure is designed to meet the external environment requirements, will follow corporate sustainability through resource efficiency. Whereas efficiency also enables cost reductions, companies can capitalize on them and reinvest in their employees for example, in order to create the basis for long-term gains by creating reward systems that can support value and innovation (Linnenluecke, 2010, p. 361). Increases in efficiency and in the quality of products and services can be obtained through investment in human resources, as well as through teamwork and networking.

Lastly, companies with an open systems culture will give room to innovation for ecological and social sustainability as part of their corporate sustainability undertaking, in order to be able to operate within the carrying capacity of the environment and minimize their ecological footprint.

To conclude, it can be stated that there are many sustainability oriented corporate cultures which guide the perceptions and actions of those who belong to specific types. However, despite companies' attempts to showcase a unified and coherent organizational culture, there can be group differences within organizations (Linnenluecke, 2010, p. 362). Strong corporate cultures, conducive to good coordination, control, high levels of motivation among employees and goal alignment among members appear to be related with high performance if they are aligned to the organizational strategy and are flexible in changing environments (Sørensen, 2002, p. 88; Kidger, 2002, p.71). Whereas many organizations can be multicultural, it can be argued that different subcultures may exist within the organizations and they can have different perspectives on corporate sustainability. Therefore, understanding these differences and similarities could form the basis for versatile and resourceful ways to pursue corporate sustainability and organizational change (Linnenluecke, 2010, p. 363).

2.2 Sustainability in decentralized multinational companies

All multinational organizations and their managers face the challenge of establishing the appropriate structures that would allow for the right, desired level of coordination and control of activities and that could facilitate the relationship between the corporate headquarters and its units (Kamoche, 1996). As they become more internationalized and active in increasingly diverse environments, they also face difficulties regarding how they can streamline all parts of the organization to contribute to the overarching company goals. Therefore, the structure of the company should be reflected in its strategy, with a *multi-domestic strategy* encouraging local responsiveness and offering a great deal of autonomy to its units and a *global strategy*, generally focusing on efficiency and requiring a structure that allows some degree of coordination of actions, policies and processes (Porter, 1990; Berggren, 1995). However, as successful companies need to meet the requirements of their customers and therefore, benefit from the global economy while being locally specialized and responsive, it is believed that an advanced stage of internalization for companies is represented by “global localization”, where top management has both a local and a global orientation (Ohmae, 1994; Berggren, 1995).

Another strategy, which is suitable for companies working in a complex environment is the “*transnational solution*” which requires a MNE to follow global efficiency, transfer of know-how and local responsiveness simultaneously (Ghoshal & Nohria, 1993). According to Ghoshal and Nohria (1993), the transnational firm is one that is flexible enough to find the right balance between central coordination and local adaptability for all situations, as the relationship between the headquarter and its units may vary with the different countries and also across certain functional areas. In a transnational MNE, the power is diffused throughout independent networks instead of being dependent on the corporate centre, as its three equal pillars structure is based on a shared perspective by managers instead of being represented in organizational charts. The transnational strategy requires a geocentric orientation, with the units being neither satellites nor completely independent, but part of an ensemble which has both a global and a local focus on objectives (Kidger, 2002). Despite the criticisms of being unstable and ambiguous, the transnational model encourages MNEs to look for global competitiveness, flexibility towards customers, stimulate organizational learning in a pursuit to take advantage of the emerging opportunities in new and existing markets.

In a multinational context it is clear that companies can face challenges different from the home-country conditions, which can influence their approach on adaptive strategies. Both the centralised and decentralized approaches have their own sets of advantages and disadvantages, however, Muller's research (2006) found that units that identify themselves as being autonomous are inclined to have a more proactive approach to corporate (social) responsibility. Moreover, their CSR strategies are predominantly in tune with the ones in the

home-country or with international policies, instead of being adjusted to the host-country context and level of ambition. Moreover, in places where regulation is poorly enforced, it becomes crucial that companies respect the transnational standards and guidelines enforced by international stakeholders (Crilly, 2011). This is especially applicable to units of large multinationals that are subject to scrutiny on the global arena. It appears that the main driver for a proactive approach to corporate responsibility is not related to the postulated responsiveness to the local circumstances, but to the fact that subsidiaries follow the vision of the parent company (Muller, 2006, p. 196). This leads to the conclusion that decentralization does not necessarily lead to conflicts with the Group's agenda and that a loose approach may be conducive to adopting practices which might be resisted if otherwise imposed (Muller, 2006, p. 196). However, this conclusion holds true when subsidiaries are integrated through informal control mechanisms such as socialization instead of using centralised, hierarchical approaches and when local managers have an information advantage on the local circumstances compared to host-country management (Hennart, 2005, p. 174). Hennart (2005, p. 175) emphasises that hierarchical control is better connected to operations like assembly lines production where the management is more knowledgeable about the functions and appropriate performance measures (such as output or profits). Muller (2006, p. 196) found in his study on the Mexican automotive industry that socialization was present in CSR oriented subsidiaries that conduct environmental and vocational trainings.

There are authors who put an emphasis on the centralised approach due to its power to facilitate the dissemination of strategies over to foreign subsidiaries, but also on internal integration between departments, which can contribute to a better communication between environmental managers on one side, and business managers on the other side (Christmann, 2004, p. 757; Hoffmann, 2001, p. 147). However, this translates into higher agency costs for environmental managers to integrate CSR practices at subsidiary level without support from a corporate vision and mandate. Christmann (2004) revealed that subsidiaries' dependence on the Group for resources is strongly related to a centralised approach to environmental policies. Or, alternatively put, agency is reduced by resource dependency on the parent company. But a globally standardised environmental policy was not necessarily correlated with a higher minimum level of internal environmental standards, possibly due to the fact that such levels may be determined by the organization's environmental capabilities rather than its internal structure (Christmann, 2004, p. 756). Effective integration and the spread of common standards across units could be achieved through a move towards a stronger international management (Berggren, 1995). However, such an approach can prove to be demotivating for the local and national managers who support decentralization because it provides a context of entrepreneurship and power.

Relevant for this section, but also for the purpose of this research, Muller's pilot study (2006) on Mexican subsidiaries of seven European multinational corporations in the automotive industry, seeks to reveal whether the subsidiaries adopt home-country CSR practices and if such an adoption was guided by centralised or decentralized parent-subsidiary rapport. This industry was selected due to its relatively high level of technology intensity, which creates the grounds for skills and knowledge transfer, it is constantly undergoing external pressure for social and environmental policies, it is a sector which is vertically integrated and it is a highly internationalized industry with additional managerial focus on ethical matters (Muller, 2006, p. 191). The main findings which, as already briefly described, revolve around the fact that the more independent subsidiaries are, they are more proactively engaged in CSR activities, are complemented by the Christmann's observations (2004, p. 757). These observations emphasise the existence of strategic reasons for going beyond local requirements, despite the potential lack of intrinsic valuation of environmentally responsible behaviour on the part of Group management. However, there is also a situation where the dynamics of the relationship

between the parent and the subsidiary allowed for a shift towards a more decentralized approach following sustained performance on the part of the subsidiary (Muller, 2006, p. 196). In situations where corporate control was more prominent and focused on efficiency and profits, a narrower stakeholder orientation was registered, whereas in more decentralized contexts, autonomy allowed for greater interaction with and resource allocation to local stakeholders and thus, created the premises for a broader scope of attention to stakeholders (Crilly, 2011). Different stakeholder orientations of units can have different impacts on competitiveness, with more positive outcomes when supported by strategic thinking (Bagnoli & Watts, 2003; Baron, 2001). In both centralised and decentralized approaches, it has been considered that the commitment and involvement of top management is crucial (Weaver, Treviño and Cochran, 1999, p. 539; Laszlo, Sherman & Whalen, 2006, p. 341).

To conclude, it is clear that if the local context provides strategic reasons for going beyond local requirements in terms of corporate responsibility, then the local management will likely take this opportunity, regardless of the value given to it by the corporate headquarters. However, it is not merely a matter of deciding whether to act to secure the emerging opportunities, but also a challenge in becoming aware of the benefits brought by the specific local context and by the specifics of the business itself that can be conducive to new and sustainable business opportunities.

2.3 Sustainability as a strategic choice for competitive advantage

2.3.1 Creating shared value

As CSR has captured a lot of attention from different stakeholder categories, it has become more or less a priority on businesses' agendas. However, the efforts involved in improving companies' impacts on the environment and society have been less fruitful than expected (Porter & Kramer, 2006, p. 1). The underlying reasons for this are first of all, the gap between business and society in an obvious interdependent setting and second, not aligning CSR endeavours to the corporate strategy (Porter & Kramer, 2006, p. 1). Porter and Kramer (2006) claim that if companies would analyse their CSR opportunities in a similar manner as to how they analyse their business, they would find sustainability as more than a mere cost, constraint or philanthropic pursuit and could actually identify real opportunities for innovation and competitive advantage.

Porter & Kramer (2006) state that integrating business with society starts by identifying the points of intersection between them and by emphasising the interdependences that create the premises for *shared value*. This means that the decision-making process should be mutually beneficial and reinforcing for both, companies and the society (Porter & Kramer, 2006, p. 6). The authors suggest a framework that companies could use for identifying all the impacts, both positive and negative, they have on society, establish which ones should be addressed and develop effective ways to tackle them. By carrying out its normal business and operations, a company finds itself impacting – either positively or negatively - the society throughout its entire value chain. These impacts, some of which can be extremely subtle even for experienced managers, are reflected in what the authors call *inside-out linkages*. These consequences are dependent on location and they might also change over time as social standards and science progress advances. Companies need to establish well rooted processes to identify and monitor even the finest evolving effects they may cause.

On the other hand, the external social environment also has a positive or negative influence on companies, reflected through *outside-in linkages*. They are exhibited through the competitive context in which companies operate and which affects their ability to implement their long-

term strategies. These very influential social conditions do not benefit of the same attention as value chain impacts although they are considered to be of far greater strategic importance for both companies and the society (Porter & Kramer, 2006, p. 6).

Porter and Kramer (2006) divide the competitive context into four areas:

- (1) *quantity and quality of available inputs* (e.g.: human resources, physical and administrative infrastructure, research institutions, access to capital);
- (2) *rules and incentives guiding competition*, such as policies that encourage transparency, investment or protect intellectual property;
- (3) *size and refinement of local demand*, which are determined by factors like standards for product quality or consumer rights;
- (4) *local availability of supporting industries* such as service providers and suppliers.

These contextual aspects can bring significant opportunities for strategic CSR and they were detailed and explained thoroughly by Porter (1990) using the diamond framework.

It becomes thus a matter of great importance to select the appropriate social issues to address, based on the opportunities they present for creating shared value both at local level, but also for the company as a whole. Porter's & Kramer's framework categorises social issues that affect and are affected by businesses into three main groups, which help make the choice of issues that are important and also strategic to the company. These are:

- (1) *generic social issues* which are important to society in general but are not affected by or affect the company operations;
- (2) *value chain social impacts* are those that are significantly affected by the company's daily operations;
- (3) *social dimensions of competitive context* which are of strategic importance to both companies and communities.

The authors suggest that all companies should group social issues under these categories for each business unit and primary locations and rank them based on their potential impacts. They also note that a given social issue may fall under different category depending on business unit, industry or location. From the myriad of social issues that need to be addressed only a selected few present the opportunity to make a significant difference to society or to secure competitive advantage. Therefore the top management, preferably CEOs and other executives, should lead the entire management towards an organized process of identification and implementation of a strategic contextual improvement endeavour (Porter & Kramer, 2002, p. 67). Business units play an important role in this by identifying areas of contextual investments that can contribute significantly to the creation of shared value. Porter & Kramer (2002) recommend that a company should pay close attention to the competitive context of each important geographical location and identify and assess the key constraints to competitiveness, growth and innovation. Or, in other words, identifying and assessing the contextual constraints that have an asymmetric effect on its strategy compared to its competitors, as these will be the areas where improvements can generate the most potential for competitive advantage. The authors also state that the more specific a contextual initiative will be designed, the more likely it is to create value and achieve the company objectives.

The next step is to create an explicit corporate social agenda that targets opportunities to achieve mutual benefits for both the company and the community, by going beyond mitigating negative impacts and moving towards reinforcing corporate strategy. Therefore strategic CSR is seen as the way through which companies will grant the largest social impact while securing the highest business benefit (Porter & Kramer, 2006, p. 7). This involves both inside-out and outside-in linkages simultaneously and thus exposes the real and tangible opportunities for shared value, as many of these opportunities that foster innovations which benefit both the company and society can be found in the product offering and in the value chain (Porter & Kramer, 2006, p. 11). Strategic CSR also brings out symbiotic relationships between companies and society by mutually reinforcing success between them through investments in social aspects that are of context and strengthen the company's competitiveness.

Another important aspect regarding CSR is the integration of the social dimension into the corporate value proposition, making social impact a part of the overall strategy. Authentic integration of business and society requires organizational adjustments, reporting relationships and strong incentive systems, besides mere good intentions and strong leadership. Therefore, companies need to identify and prioritize social issues based on their salience to the company's operations and their importance to the competitive context, they must assume an integrated approach instead of a fragmented one and they should put more emphasis on substance rather than image. Porter and Kramer (2006, p. 14) suggest that efforts to create shared value also have the potential of shifting how businesses and society perceive each other and shifting from thinking in terms of CSR and image to thinking in terms of "corporate social integration". Creating shared value should be perceived just as research and development – a long-term investment in ensuring future competitiveness (Porter & Kramer, 2006, p. 14).

2.3.2 The Sustainable Value Framework

In order to reap the most benefit out of the competitive advantage given by companies' particular context with the purpose of creating "sustainable value", Laszlo, Sherman & Whalen (2006, p. 337) propose the Sustainable Value Framework which can help companies manage stakeholder and shareholders interests in a way that brings most value to their business (as detailed in Figure 2-2).

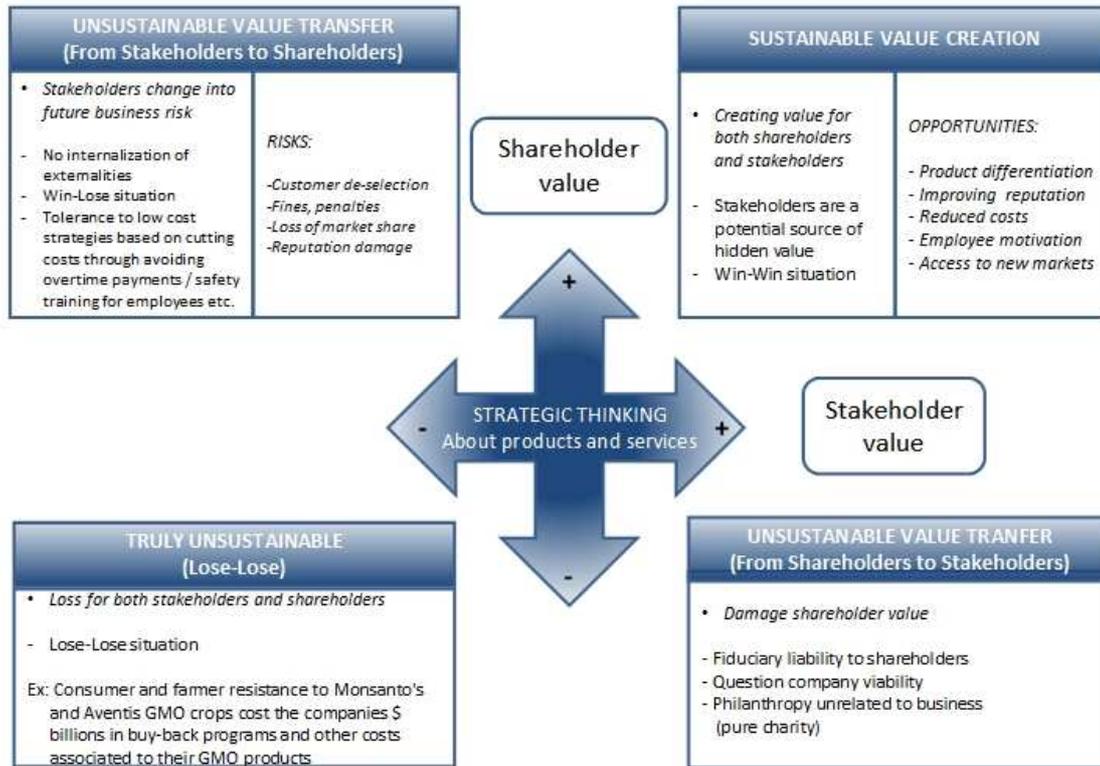


Figure 2-2 Sustainable Value Framework.

Adapted from Laszlo C, Sherman D. and Whalen J. in *Management Models for Corporate Social Responsibility* (336-343). Berlin: Springer.

The challenge for companies lies in being able to assess their true impact on their stakeholders, anticipate the developing societal requirements and use their innovation capacity to create business value from increased environmental and social performance.

After a *diagnosis phase* which focuses on broadening the company's perspective on value, that includes stakeholder risks and opportunities in relation to broader (societal) trends, but also increasing understanding of value flows to and from stakeholders, the authors suggest a *value-creation phase* that encourages managers to look into different levels of strategic focus (as depicted in Figure 2-3). The majority of companies focus on the bottom two levels, which relate primarily to eco-efficiency and reducing the risks associated with their license to operate. The top levels of the pyramid expose new opportunities for innovation and sustainable growth based on business solutions that address societal and environmental performance aspects (Laszlo *et al.*, 2006, p. 340). Popular examples that can fall into these top categories are Toyota's Prius that provides consumers with environmental and economical benefits during the use phase, Patagonia's open commitment to "live its environmental values through everything it does" which created a brand and reputation that attracts and retains customers and employees, but also the support of other stakeholders or the Equator Principles adopted

by a series of financial institutions, which created a standard which integrates environmental and social criteria into project financing.

The *value-capture phase* focuses on systematic implementation that aims to create appropriate types of actions that can change the dominant mindsets existing in the company in order to embed the stakeholder perspective into the managerial processes and operating models. One suggested way to do this is by expanding the scope of an existing initiative, such as the Six Sigma², to embed a full stakeholder orientation. At this stage, the authors emphasise the need to measure in a reliable manner the impacts of actions taken on increasing stakeholder value.

By gradually moving from exposing the opportunities that make present business sense with the available technologies, processes and markets, the change path progresses to securing the opportunities that arise with new technologies, new processes and markets and with product innovation. Finally, top management should find ways to alter “the rules of the game” by lobbying the government, doing social marketing and by taking any appropriate action that could shift the competitor playing field towards, and not away from, sustainable practices, which will create a significant competitive advantage.

Finally, the authors draw attention on the critical aspects that can facilitate the use of the framework. First, there is the recommendation to create and use networks of external partners that can be engaged in collaborative relationships that can inspire the development of innovative sustainable products and solutions which will enhance the company’s business performance. Secondly, they emphasise the need that CEOs and line managers “own” the process of increasing the company’s environmental and social performance towards enhanced business value in a win-win context both for the company and for society. Delegating these efforts to functions that do not have a profit or loss responsibility for the business will not lead to progress on creating sustainable value. Lastly, it is recommended that the entire business system is involved in order to create “a tipping point” in its business conduct, as the final goal is a new approach to managing and measuring value creation.

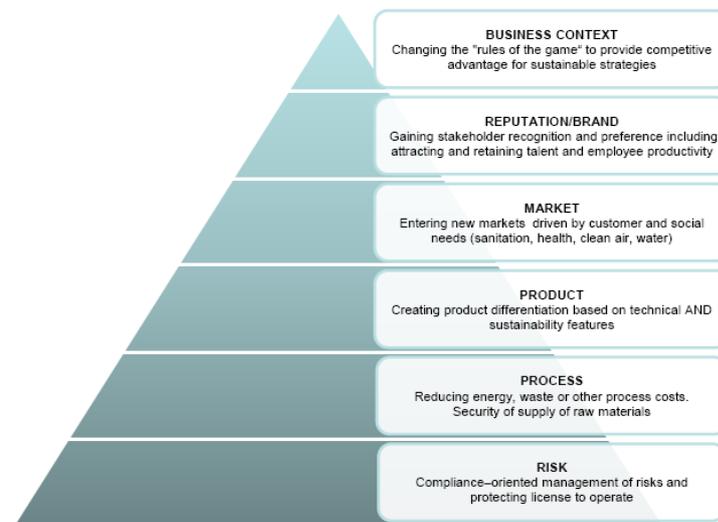


Figure 2-3 Levels of strategic focus and sources of value.

Adapted from Laszlo C, Sherman D. and Whalen J. in *Management Models for Corporate Social Responsibility* (336-343). Berlin: Springer.

² Six Sigma is a business management strategy that is applicable to any process improvement system that aims at enhancing the quality of outputs, eliminate the causes of defects and minimize variability in processes. It can be defined from three perspectives: as a management system, as a methodology and as a metric. As a management system, Six Sigma comprises a series of approaches meant to improve processes (e.g. zero defects, Continuous Quality Improvement, Total Quality Improvement etc.). As a methodology, Six Sigma focuses on understanding and managing customer demands and aligning key business processes to meet them, using rigorous data analysis to minimize fluctuations in these processes and driving fast and sustainable improvements to business processes. As a statistic, which is the dimension that actually gave it its name, Six Sigma stands for 3.4 defects per million opportunities. Source: Plaut, David. (2010). Six Sigma. *AMT Events*, 27(2), 86-87.

In conclusion, it can be agreed that there is much more to high business performance besides high quality, customer orientation, short time-to-market and low cost. The creation of sustainable competitive advantage also lies in understanding the needs and interests of key stakeholders, anticipating societal demands and making best use of the skills, knowledge and relationships created during the process to develop new products, services and solutions, to create and shape new markets, to define new business models and even redesign the business context so that it becomes conducive to the creation of true sustainable value.

2.4 Marketing sustainability in business-to-business environments

As it is becoming increasingly accepted that sustainability can create the premises of higher business performance and competitive advantage, strategies for implementing corporate sustainability programs in a business-to-business (B2B) context have not advanced at a similar pace, especially due to the segregation of functions related to sustainable product design (Sharma, Iyer, Mehrotra & Krishnan, 2010). For instance, as environmentally friendly products have been in the attention of production and operation management, the role of marketing in driving the demand for such products has been largely disregarded. Just as sustainability is becoming more and more attractive to business, practical implications have only been delegated to distinct and isolated functions of management, marketing, production and/or operations management. The complementarity between the demand focused marketing and its thorough insights of buyer behaviours both in consumer and industrial markets, together with sustainability oriented corporate policies can enable an approach that focuses both on supply and demand management along the entire value chain.

Customer power is considered to be a strong driver for companies to adopt sustainable practices and policies, as it can either favour or dismiss certain firms based on their environmental and/or social performance. Toyota, Patagonia, Ben & Jerry or Timberland are good popular examples of customer demand driven businesses (Sisodia, Wolfe & Sheth, 2007; Sharma *et al.* 2010). Moreover, (large) business customers can provide even more leverage that can drive their suppliers to subscribe to more sustainable practices. The previously mentioned firms and many others have shown that sustainable product strategies and a clear environmental positioning on the market can contribute to higher customer approval and recognition as successful societal marketing examples (Kotler, 2003).

Sharma *et al.* (2010) have developed a so-called *sustainable market framework* that aims to identify the crucial role of internal and external marketing for the successful implementation of sustainability oriented strategies, by focusing on two objectives of environmental performance, one of which being considered relevant to the purpose of this research: *reducing surplus-supply*. Reducing surplus-supply is a strategy that discourages over production by producing only after order placement (build-to-order – BTO) and it is also known as demand-driven manufacturing, falling under lean manufacturing. The main benefits of this strategy include creating customization opportunities which contribute to customer satisfaction and retention and significant cost savings for raw materials inventories, finished goods inventories and reduced space requirements. BTO is especially suitable for non standardized and low volume products, as the cost per unit sold of finished inventory is much higher. As BTO will be adopted more extensively, the focus of marketing will be on customer management instead of demand management, in order to provide the company with the customers that value the features the company can provide for them. The framework suggests that marketing could play a very important role in an organization's sustainability efforts if it would have a stronger involvement in information acquisition, knowledge development, interactivity, connectivity and ongoing relationship management so that it can be the key information provider for both demand and supply (Sharma *et al.*, 2010).

2.5 Summary and implications

The literature review provided an outlook into the existing body of knowledge related to the major themes that were identified as relevant for the case study. The complexity of multinational companies' organization and of the structures on which they base the implementation of their strategies, coupled with the complexity and diversity of contexts in which they unfold their activities, demands for a very careful analysis and evaluation of how the organizations carry out their business. Additionally, by evaluating how a company as a whole, but also considering its units independently, positions itself within different organizational models could contribute to a better understanding of the main values and drivers that determine their business model and their perception over integrating sustainability into product communication and development.

The general themes that were presented, together with the models and frameworks suggested to be used by multinational companies to reveal the opportunities for facilitating the integration of sustainability aspects into their business, supported the researcher in the process of getting familiarised with the case study company. The literature also emphasised the important factors to be considered in the data collection process and further in the analysis, by offering a benchmark for how different organizational dimensions and contexts can be used to advance sustainability thinking throughout the company.

The relatively new concept of shared value advanced by Porter and Kramer (2006) played a very important role in understanding, on one hand how to gain internal support for integrating sustainability aspects in the business – through the competitive advantage argument, and on the other hand, how to improve the competitive context of the company by integrating real social issues in the business model. The latter aspect has the potential to significantly enhance the local business by becoming the main provider for products and solutions that address social challenges. Moreover, as the Blue Dimension™, which is investigated in this study, is designed to support and motivate towards the creation of shared value for the company and the society throughout the Trelleborg Group, Porter's and Kramer's (2006) provisions offered a very comprehensive account of the building blocks of the concept and of the conditions that need to be met in order to sustain the creation of shared value.

In conclusion, the literature review was supported by and supportive of the process of discovering the particularities of Trelleborg's and its units' context and organizational structure that can be conducive or constraining to integrating sustainability aspects into product communication and development.

3 Introduction to the case study

This chapter aims to introduce the reader to the particularities of the context in which this research unfolds. Specifically, it presents Trelleborg AB as the overarching case study unit, its organizational structure and its current endeavours and ambitions in the area of corporate responsibility. Furthermore, the chapter describes two examples of centrally driven initiatives that aim to improve the company's performance and that offer different perspectives on the ways to use sustainability related aspects in order to achieve the desired results. One of these examples is the Blue Dimension™, which was initially launched in order to raise awareness on the potential business benefits that can be brought by integrating sustainability arguments in external product communication. The Blue Dimension™ is therefore described from the corporate headquarter perspective, detailing the aims and areas that were targeted in order to advance the integration of sustainability aspects in the external communication about products and solutions throughout the Group. The headquarter perspective about the Blue Dimension™ is balanced against the practical implementation of a similar product concept by one of the BUs within the Group. This experience motivated and inspired the development and promotion of the Blue Dimension™ throughout Trelleborg AB.

3.1 Trelleborg AB: brief company overview

Trelleborg AB is a global engineering group that offers innovative high-tech solutions that seal, damp and protect in demanding industrial environments. It is a world leader in providing solutions based on advanced polymer technology, with Group sales of approximately 90 percent of industrial rubber products and 10 percent industrial and agricultural tires (Trelleborg AB, 2010, p. 14). The company has its head office in Trelleborg, Sweden, it has operations in 44 countries and at the end of 2011 it had 21,307 employees (Trelleborg AB, 2011a). The company has a long standing history of over 100 years that shaped the way the company and its operations are currently set up globally. Trelleborg AB is organized into four major business areas: Trelleborg Engineered Systems, Trelleborg Automotive, Trelleborg Sealing Solutions and Trelleborg Wheel Systems, each of them being represented internationally by business units which focus on specific product areas.

Trelleborg's stated values are customer focus, performance, innovation and responsibility and in the global context of the company, their integration in each of the units falls under the responsibility of managers and employees.

The company differentiates itself through its values and innovative culture which enable innovative solutions in a decentralized organization. With innovation as an important element of its strategy, Trelleborg has established an international reputation of being resourceful and creative, which created lasting customer relationships. Besides innovation, Trelleborg's strategy also relies on operational, commercial and financial excellence secured through permanent improvements, on maintaining a leading position on selected segments and on organic growth, but also by acquisitions. Just as many other Swedish companies acting in the engineering industry (e.g. ABB, Alfa Laval, Electrolux etc.), in the mid 1980s, Trelleborg focused on achieving market leadership through mergers and acquisitions. However, this approach is criticised for fostering an inward orientation which eventually leads to losing market share (Berggren, 1995). Trelleborg AB, but also ABB overcame such unfavourable consequences by adopting a strategy centred on customers, with responsiveness, speed, short delivery times and fast development of new products as key parts of the strategy (Berggren, 1995; Aspegren, 2011, personal communication).

Trelleborg managed to establish its leading position through differentiation by providing unique application expertise, by reinforcing its global presence through enabling local knowledge to solve customer needs and through intrapreneurship³. Leadership is a very important aspect for the company as it is recognised to be the link between strategy and action, contributing to a “*high performance culture in a global environment through shared values and target-oriented leadership*” (Trelleborg AB, 2010, p. 16).

Trelleborg AB has a distinctively customer-driven business and there is a major focus on building long-term customer relationships aimed at providing unique expertise meant to contribute to the customized products and solutions that best answer to customers’ specific needs. As Trelleborg AB is a business-to-business company, the products and solutions it provides are not aimed at mass marketing as they are created closely with its individual customers, based on their specifications and needs (Jahja, 2011, personal communication). In many of its sectors, the product sales cycle is relatively long, thus re-enforcing the need to focus on creating long customer relationships. Most of the sectors in which the company is active are struggling with the pressure to deliver products at a very low cost, as the competition is dominated by small, local actors. These small actors do not have comparable overhead with Trelleborg, and are found to have little concern for sustainability aspects in their operations and/or their products. Another characteristic feature of Trelleborg AB is that it operates in sectors where the pace of innovation and intensity of competition are not considered strong enough to assist the integration of sustainability. In many places, Trelleborg AB addresses immature markets with local competition, driven mainly by price and thus, product communication and design that integrate sustainability aspects are not perceived as major differentiators or drivers.

The main trends recognised as drivers Trelleborg’s business could all be considered to form the premises for long-term sustainable societal development if addressed accordingly. The first one is related to population growth in developing countries and high living standards in developed countries which demand increasing supply of food, healthcare and general welfare. This is the overarching aspect that favours all sectors in which the company operates, but also the one that drives the following identified trends. The second important trend, for which Trelleborg AB has developed a broad range of products and solutions, focuses on energy supply and limited access to natural resources. Growing urbanization and associated infrastructure, together with the requirements for enhanced fuel efficient transportation has revealed other critical areas in which the company succeeded to deliver innovative solutions. These are applications related to roads and tunnel expansions, bridges, harbour systems, pipes and bearings, and key components for environmentally-friendly modes of transportation. Growing population is also associated with the need for higher quantity and quality outputs in agricultural commodities, which need to be obtained in a sustainable manner that ensures the long-term productivity of the natural systems they are based on. To address this trend, Trelleborg AB developed high performing solutions for the food and agriculture industries that also incorporate sustainability related criteria. An increased understanding of environmental and social challenges has enabled Trelleborg AB to develop solutions aimed at protecting scarce resources and focus on resource-efficient technologies (Trelleborg AB, 2011b).

³ Intrapreneurship is a concept which refers to entrepreneurship within an existing organization. It can refer to pursuing and entering new business avenues related to the company’s existing products or markets, to the creation of new products, services or technologies, it can foster strategic reorganization and organizational change and proactivity in terms of securing competitive advantage. *Source:* Antoncic, Bostjan & Hisrich, Robert, D.. (2001). Intrapreneurship: construct refinement and cross-cultural validation. *Journal of Business Venturing* 16, 495–527

These developments were also supported by the long history of corporate responsibility work that goes back to the mid '90s, when data on environmental started being collected and analysed and the environmental policy was established (Trelleborg AB, 1998, p. 11, 14). Currently, corporate responsibility at Trelleborg AB is guided by the following statement, which could be considered to form a working definition for CSR, emphasising the focus areas and the major stakeholders: *“Trelleborg’s corporate responsibility work spans the entire area of sustainability from environment, health and safety issues to ethical relationships with employees, customers, suppliers and society as a whole”* (Trelleborg AB, 2010, p. 53). The corporate responsibility work at Group level focuses predominantly on governance, policies, setting reporting guidelines and communication regarding workplace and environmental issues, marketplace issues, society and community issues. Whereas the responsibility for tackling these issues falls under each unit individually and independently (Trelleborg AB, 2010, p. 53).

The evolution of a corporate culture that fosters enhanced preoccupation with the organization’s surrounding environment and stakeholders was found to be very important for the success of corporate responsibility initiatives, despite the fact that (multinational) corporate cultures are complex and formed of a heterogeneous mix of features unique to each unit in its own context (Linnenluecke, 2010). It is important to point out the complexity of multinational corporations like Trelleborg AB and of the various contexts which influence and are influenced by their operations. This raises the need for enhanced flexibility in decision making, strategic planning, policies and management, but at the same time, the need for more focus on the environmental and social issues that are essential to its overall strategy. As decentralization is described as a dominant characteristic for Trelleborg’s structure, it is perceived to be particularly important at corporate headquarters level, having a significant influence on the way the relationship with the units is managed. Therefore it is essential to investigate the units perspective in order to find what constitutes an appropriate balance between unit autonomy and Group involvement for unlocking the highest potential of creating shared value through strategic product communication and development.

3.2 Using centrally-driven initiatives for increased environmental performance

Trelleborg AB has a long track of improvements in its environmental performance and so far it has managed fairly well to keep up with the expansion of the company worldwide. The company established a systematic approach to corporate responsibility work, covering sustainability topics, from environment, health and safety to its relationships with stakeholders and society as a whole. The company has set out a set of comprehensive guidelines to assist all of its employees, customers, suppliers and other interested parties to integrate sustainability criteria in their work and collaboration with Trelleborg. The main working document is Trelleborg’s Code of Conduct, which has areas that apply to all employees without exception (i.e environment, health and safety and ethics) and provides a basis of the internal work on corporate responsibility. The Code of Conduct also has provisions for customers and suppliers with regards to compliance with laws and is accompanied by an Anticorruption Policy and a Competition-legislation policy.

The company’s policy regarding the environmental work is mainly based on the Group’s Environmental Policy and requirements resulting from the ISO 14001 management system, which is mandatory for all manufacturing plants. The Environmental Policy is focused on four main areas: environmental management; energy, emissions and materials; development of products and processes; and stakeholder relations. In order to ensure better monitoring of the implementation and compliance requirements, together with a more consistent process of reporting and feedback throughout the Group, target indicators were developed for certain

key areas. The key areas with regards to environmental work were identified as: energy consumption, climate – CO₂ emissions, chemicals to be phased out according to the EU REACH regulation, waste reductions relative to sales, VOC emissions, environmental management systems, water consumption. The key areas with regards to the workplace are: implementation of the Safety@Work program in production units, human rights and discrimination, employee performance reviews. With regards to customers and suppliers, the key areas that were identified and monitored are corruption and implementation of applicable parts of the Code of Conduct. Transparency was identified to be the key area for society as a stakeholder and it is addressed by continuously developing the company's corporate responsibility reporting, in accordance with Global Reporting Initiative (GRI) guidelines.

In addition, Trelleborg AB has developed an internal environmental handbook which is implemented globally throughout the Group. The environmental handbook includes recommendations to tackle the most important environmental issues from a policy and risk perspective that were identified to be relevant for Trelleborg's operations. Based on this handbook, a process for environmental risk assessment has also been introduced in order to facilitate the identification and minimization of environmental risks associated with the company's operations.

The environmental policy, the Code of Conduct, the environmental handbook and the established target indicators are complemented by a corporate climate strategy that aims to reduce Trelleborg direct and indirect carbon emissions by minimum 15 percent by the end of 2015. An internal Energy Excellence program was set up to assist reductions in energy consumption and subsequent carbon emissions in the company's manufacturing units. This program is part of a larger, more comprehensive program - Manufacturing Excellence, which was implemented in all major production units throughout the Group.

3.2.1 Manufacturing Excellence

Manufacturing Excellence (ME) is a program based on a systematic, structured process which aims to contribute to the Group's ambition to continuously improve its processes and competitiveness, which will ultimately drive its growth. The program is targeted to the production units and it relies on a self maturity-assessment addressing 25 dimensions that evaluate a site's performance and hint on the most critical aspects that need to be improved in order to enhance its operations (Guillon, 5 January 2012, personal communication). Based on the maturity assessment, the sites deploy their own action plans meant to improve their key performance indicators (KPIs). Therefore, each unit individually defines its position with respect to the six common areas included in the program: on-time deliveries (e.g. customer satisfaction/customer service), productivity (i.e. resource utilisation), efficiency (i.e. return), quality (customer satisfaction/costs); assets (capital/resource utilisation), personnel (employee satisfaction). Even though this program was not specifically established to improve the Group's environmental performance, by targeting operational efficiency, environmental benefits were also obtained and monitored as such.

The program was launched in 2009 and was designed to allow units to specify their own customized approach to improving their performance, which was monitored through their locally defined sets of KPIs. The Group facilitated its implementation by providing a common communication platform where all units could share their knowledge and experiences, but also to report on their progress. The program was guided by a shared vision and promoted a Road Map that included the expected evolution of the program within the units, but it was reliant on each site to decide and act on its implementation, according to their possibilities and capacity. The Group provided all the necessary toolboxes that would assist the units to deploy

the activities that would help them improve their local operations, but the responsibility of their actual implementation was left to each of the units individually.

The challenges that were faced along the way by the units, but also at the central coordination level, were first related to the human resource component. First of all, there was never a fully dedicated person to coordinate the Program neither at central level, nor in the units. As the individual managers who took responsibility for its completion have many other obligations that are crucial for the achievement of their work related targets, there was an in-built conflict between managing the ME program and their primary work related duties, mainly in terms of workload. Another human resource challenge was related to the competencies that were necessary to run the ME program. As the implementation of the program at unit level required the development of an Action Plan that would cover the KPIs and the major improvement areas identified for each of the units, the right competencies needed to be developed across the Group. This issue was addressed by providing and promoting a toolbox for implementing all the lean manufacturing activities that were agreed for the entire Group, together with training opportunities for each of them. The purpose was also to encourage cooperation between plants across business units and business areas. It was observed that there was a preference for local collaboration, mainly due to language barriers (Guillon, 5 January 2012, personal communication). A second challenge that was encountered was related to how each of the units could run the ME program parallel to their operations in terms of workload and available resources. The reason behind this challenge is that there is a mandatory sequence of the tools to be deployed at each unit and their preparation and implementation span over a long time and require significant resources. This could make the ME activities appear restrictive and intimidating for smaller units that need to work at full capacity to meet their financial targets.

On the other hand, the main drivers that facilitated the program's uptake throughout the Group were related to the awareness on the components and benefits of the program, together with a relatively high involvement from Group headquarters. This program was assigned clear strategic importance for the Group and was treated and communicated as such. Resources were allocated for its development and its implementation is monitored constantly. By providing Group-wide areas of focus and targets, but at the same time, respecting the local context in terms of deciding how the targets are to be met, it was ensured that all units participate and are maintained engaged. The Group's further involvement in facilitating capacity building and knowledge sharing throughout the units strengthened the legitimacy of the program and at the same time, supported its implementation.

At the present, the use of the toolbox provided centrally is not mandatory as long as the units report results according to the Group's expectations. However, the units are demanded to share their tools and approaches with their colleagues in online training sessions, if they believe that their tools are better than the ones that are provided by the Group. If it is agreed that there is a local approach that can be more successful in reaching the goals for a specific area, then it would be integrated into ME toolbox as reference for the entire company.

Because of the high diversity of operations across the company and differences in levels of performance, not all plants are required to use the same tools to improve the same aspects. The decision on which areas to improve and which are the right tools to be deployed to address them is still taken at local level. However, by an increased use of the same tools for the same lean manufacturing activities throughout the Group, there is an expected shift towards a more centralised, uniform approach for the implementation of the program. As each of the units decide to start deploying the use of a tool on their site, they also open their site up to all other units to join them in the learning process in a 3-day training session on that

specific site to ensure that the tool is used correctly. The prospects of creating a central training centre and communication platform to build the internal capacity for using the tools within the ME program reinforce the idea of uniformity throughout the Group, but also raise additional opportunities for talent management and expertise sharing across the world.

In conclusion, from the discussions with the corporate level management, some of the main aspects that were identified by the researcher to be conducive to the increased involvement of the units in the program were:

- the *active central coordination and involvement* in streamlining the implementation of the program;
- assigning *strategic importance* for the entire Group and to the achievement of its objectives;
- *provision of a Group-wide set of areas* that need improvement, out of each all units need to choose three that are most relevant for their operations and decide how to best address them;
- *requirement to define local KPIs* associated with the expected improvements and to *create an Action Plan* by each of the plants to implement ME;
- *sharing experiences and results* beyond expectations increase motivation and desire to participate from all over the Group;
- clear *association of the implementation of the program and its results to the performance of the entire unit*, of the person who is responsible locally and to the bottom line;
- *central provision of the tools and platforms* needed to reach the targets and support in using them.

One of the main lessons to be learned from how this program developed since it was launched is the fact that, in order to achieve its targets, increase participation and drive improvements throughout the units, it had to change its approach from a laissez-faire, decentralized focus, to one which embraces a more centralised control and monitoring, wide collaboration and experience sharing.

3.2.2 The Blue Dimension™ – The original

Another centrally initiated initiative, which is in fact at the centre of this research endeavour, is the Blue Dimension™ concept, officially launched internally throughout the Trelleborg AB Group in February, 2012. The purpose of the concept is to “*demonstrate the simultaneous benefit of its (i.e. Trelleborg’s) solutions for both customers and society as a whole*” (Trelleborg AB, Corporate responsibility website; www.trelleborg.com/en/cr).

The Corporate Responsibility summary report for the year 2011 begins with the statement that “*Sustainability is part of Trelleborg’s business*” (Trelleborg AB, 2011d, p. 1) and continues by introducing the reader to the Blue Dimension™ and how the concept is applied in practice in several areas where the company is active. It could be therefore interpreted that sustainability is beginning to be established as a very important aspect of the company’s business and its strategy. This comes as a natural evolution of the corporate responsibility work in the

company, which started with a focus on the legal requirements and compliance and moved to evaluating the environmental risks and costs associated with the processes and how reductions in environmental impacts could translate in lower costs. The current stage is focused on making corporate responsibility work a more important part of the business throughout the Group and having it secure competitive advantage by communicating externally the added value that the company's products and solutions bring to customers, the environment and society (Jahja, 16 February 2012, personal communication).

The idea to communicate the benefits that can be brought by the sustainability aspects which are integrated in Trelleborg's products and solutions traces back several years at corporate level. It did not manage to advance because of the limited understanding at that time how this could benefit the business in markets that did not signal interest in these aspects. Therefore, the efforts in communicating such benefits were not believed to be balanced by equivalent returns, so the idea was kept at a relatively low profile, with only a limited exposure in the annual company reports. The tipping point was when one of the business areas, namely Wheel Systems independently launched a product that claimed and demonstrated sustainable features and called it TM Blue[®]. This proved to the top management that Trelleborg's customer base is beginning to show interest in such products and there is value in communicating that Trelleborg AB can deliver solutions for society's broader challenges. This triggered the top management support for expanding the concept to the entire Group and for all corporate efforts that followed.

The Blue Dimension[™] was launched internally by means of an internal competition which aimed on one hand to create a more comprehensive picture at corporate level of the units' advancements towards integrating sustainability aspects in products and solutions. On the other hand, the Blue Dimension[™] aimed to raise awareness on the Group's interest in promoting sustainable products and solutions. A complementary objective of the initiative was to make people across different functions, some of which have never been involved in sustainability related initiatives before, think and evaluate how the products and solutions in their portfolio benefit not only customers, but also society. And by making the association between the qualities of their products and solutions with the company's interest in sustainability opportunities, there would hopefully be a future orientation towards generally more sustainable products that not only satisfy customer needs, but also society's developmental needs. By positioning Trelleborg AB as a prime provider of solutions meant to solve society's sustainability challenges, significant competitive advantage opportunities are expected to be identified by the units all across the Group (Jahja, 16 February 2012, personal communication).

The decentralized management aspect was brought up as important in relation to the power of local knowledge in arguing for the characteristics of the products that address sustainability issues and which make them worthy of the Blue Dimension[™] "label". Additionally, decentralization places financial responsibility on each of the different units bearing the Trelleborg brand and this is considered to ultimately drive the organization. By combining these two aspects and bringing them at the core of the Blue Dimension[™] concept, it becomes possible to convey a message that can contribute to an increased awareness and motivation towards integrating sustainability aspects into external product communication.

It was acknowledged that fully integrating sustainability in the business is a lengthy process, especially considering the communication approach that was chosen with launching and promoting the Blue Dimension[™] concept internally. As the purpose of the initiative was to first raise awareness on the benefits of sustainability for the business and second, to get a measure of how widespread "Blue" products and solutions already are in the Group, there

were little expectations of changes in mindsets or concrete actions immediately following the internal promotion. This research will therefore be used as an evaluation tool of how the concept was received throughout the different units of the Group. Moreover, the research will help identify what are the perceived benefits from communicating the added value of the company's products and solutions. As these benefits are very well established as rationales for the way the company is running its operations, there is a perception at corporate level that the people involved in product-related functions at all levels throughout the Group perceive them as implicit and therefore, take them for granted. The launch of the initiative aims to provide the incentives to highlight these aspects and even if the benefits brought to society may appear obvious to those with product-related responsibilities, the Blue Dimension™ provides the brand-reinforced framework to support their external communication (Jahja, 16 February 2012, personal communication).

In contrast to previous sustainability initiatives which were very much concentrated on processes improvements at levels that could be controlled in order to bring increases in efficiency, the Blue Dimension™ places an emphasis on a different phase of the product life cycle and of the value chain. The Blue Dimension™ encourages thinking about the wider impact of the products during and beyond the use phase and in relation to the challenges that society is facing today. The stage in which the concept was at the moment of the research reflects awareness raising about opportunities that lay in using these arguments additionally to technical specifications requested by customers. The expectation is that when the market will start signalling stronger interest in such aspects, the company will already be prepared to capture the momentum and be able to deliver to the most diverse and demanding needs.

3.3 Blue Inspiration

In order to ensure learning from the best practice, special attention needs to be brought to the product concept that inspired the development and Group-wide promotion of the Blue Dimension™. The TM Blue® agricultural tire, launched by the Agriculture Division of the Wheel Systems business area approximately one year before the internal promotion of the Blue Dimension™, registered a very high success both internally, but also with customers and external partners.

The TM Blue® concept enables sustainability aspects being integrated into an innovative agricultural tire which uses a manufacturing technique with reduced consumption of natural resources, environmentally friendly oils and reduced use of hazardous chemicals throughout the supply chain (Trelleborg, 2011c). Moreover, as the TM Blue® tire is meant to provide a premium solution to sustainable farming needs, its special pattern enables lower fuel consumption and reduced working time per hectare for the farmers, while protecting the soil and the crops through its demonstrated lower soil compaction. This holistic approach to integrate all aspects of sustainable farming into a product solution and communicating and promoting it accordingly has brought the Agriculture Division and Wheel Systems numerous benefits. For example, it has generated a lot of visibility and leadership positioning for the Division and for Trelleborg AB on its market and it has demonstrated that it is possible to provide a sustainability oriented product that can further drive sustainability in the use phase. Additionally, their endeavour proved to generate an increase in awareness, both internally and externally on sustainability issues specific to the sector the division serves.

In order to use TM Blue® as an embedded case study, it is important to first delineate the special context in which this product concept unfolded. The Agriculture Division (BU), having its headquarters in Italy, covers the European, North American and Chinese markets. Two very specific characteristics of this BU and the industry it operates in are that its (second

tier) customers are also the end users of the products and it is an industry where customers demand the brand. Another feature of the industry is that it is fairly strongly related to nature and environmental aspects, agriculture being a sector with a high dependency on natural cycles, climate and responsible practices, but also one that is characterized by strong variability. Therefore, a technological solution that can enable features to address the sustainability requirements of the industry could find many opportunities to secure success.

The main differentiating aspect for the market is that in the case of agricultural machinery, tractors and combines particularly, the customers (i.e. farmers, farming entrepreneurs, contractors etc.) demand the brand of tire for the final equipment, as it represents an important share of the final cost of the machinery. This is something that marketing literature defines as *brand choice* and it implies visibility in the market, differentiation from competitors and clear benefits the product and the brand can bring to the consumers. And even though in this case Trelleborg does not directly sell the tires to the end users, but to the equipment manufacturers or to dealers, the farmers are the ones driving the demand of a specific tire brand and thus, they are the main target for communication and marketing (Ciferri, 4 April 2012, personal communication).

A very important factor in securing a competitive, marketing advantage is thoroughly understanding consumer needs and providing timely service. Therefore proximity to the end users helped understanding consumer behaviour, market trends and technological changes that needed to be introduced for a more competitive product that meets the quality requirements of the market in a sustainable way. For this purpose, attending industry specific exhibitions was identified as an appropriate channel to get in contact with both the farmers and the equipment manufacturers. Attending these fairs is supported by a considerable share of the marketing budget and it is considered to be of great value to the BU (Ciferri, 4 April 2012, personal communication). The farmers' opinions and needs were investigated at these fairs, but what is even more important, they were also informed about the benefits of sustainable agriculture and how Trelleborg's TM Blue[®] tire, together with other similar solutions could help them achieve higher long term productivity and efficiency in a responsible way.

A comprehensive survey was carried out with the occasion of one such event, having approximately 300 farmers and farming professionals express their interest in sustainable agriculture and their opinions on the importance of sustainable practices in the production and the use of a product like TM Blue[®]. The survey results were positive, showing that farmers are increasingly interested in the topic of sustainable agriculture and consider that environmentally friendly solutions are very important and attractive to their business. 84 percent of the respondents considered that the future tire designs should include considerations to lower environmental impacts, 73 percent believed that productivity and efficiency of farms could be improved by a tire with low environmental impact and 79 percent of the respondents expressed their appreciation towards the TM Blue[®] tire (Trelleborg AB, 2012). With these occasions, the TM Blue[®] tire and Trelleborg AB received a lot of exposure and recognition as being an innovative company, building up and strengthening one of the most important corporate values – innovation. This is especially important as the perception was that in the tire industry, the Trelleborg brand may not have been immediately associated with the term innovative. So it could be concluded that competitors were also partial drivers of the innovation that enabled the success of the TM Blue[®] and that raised the profile of the Trelleborg brand. It is important to emphasize the twofold effort in the case of the TM Blue[®] tire, to promote the benefits of the product and the product concept behind it, but at the same time positioning the Trelleborg brand as a powerful and innovative player on the market, as

one that can provide products and solutions that can bring significant multifaceted and long-term benefits to the customers and their businesses.

A common emerging topic identified for the agricultural activities across continents is sustainable farming, because of its high value creation opportunities (Ciferri, 4 April 2012, personal communication). It was interesting to observe that even in this BU, where the benefits of integrating sustainability aspects in the business model were very clear and demonstrated their effectiveness, there is a belief that integrating sustainability is an opportunity that is not found in many industries, where, by comparison with sustainable agriculture, taking advantage of an environmentally friendly solution, generally represents a cost, not a benefit. However, there was a clarification made about cultural aspects that can influence the perception over environmentally friendly solutions or products and the manner they are communicated.

It was recognized in many of the other interviews that were carried out that certain industries have an advantage, by being intrinsically sustainability oriented (e.g. solar power, wind power etc.), but their market success also comes from the way their benefits are communicated to the consumers. By showing that they not only have a positive environmental and social impact, but also a financial one due to, for example, resource savings in the use phase, bringing sustainability as an argument in marketing and communication has been proven to be successful. This is believed to be effective because in several industries, the term sustainability is now associated with returns on investments (Ciferri, 4 April 2012, personal communication). And for this reason, Wheel Systems - Agricultural Division realized the importance of driving the customer demand in a direction that not only makes financial sense, but it is also responsible towards the environment and the future generations.

For the creation of the TM Blue[®] tire concept, there was a mutually reinforcing process from the side of the customers, partners and the people working in product development and marketing in Trelleborg to come up with a solution that can enable productivity and efficiency at the same time. Productivity was defined through *“getting higher yields per hectare by being respectful to the environment”*, whereas efficiency, through enabling considerable fuel and cost savings by less operation hours due to the higher traction the TM Blue[®] tire can provide (Ciferri, 4 April 2012, personal communication).

Wheel Systems was a pioneer in its industry to bring these two major benefits under the umbrella of sustainability, enabling the leadership and innovation values Trelleborg stands for, but also to communicate it accordingly. However, it was also recognized that TM Blue[®] was partly driven by the advancements done in the tractor industry, which represents the actual business customer, but in order to meet an ever existing need of the farmers, which has only recently been framed as sustainable agriculture. With increased public exposure, it became evident that maintaining a balance between the stated corporate values and the company strategy and behaviour is very important. Trelleborg's leadership value was identified as being the motor for the efforts to drive the customer demand in the direction of the TM Blue[®] and transpose the company values into practice. As integrating sustainability aspects into business is expected to soon become common practice across industries, as revealed also by the Group-wide survey, the topic of leadership was brought up repeatedly as very important for being the first ones to make the best out of the opportunity that presents itself. It was also suggested that, considering the continuous advancements done in all sectors, where sustainability drives innovation and increasingly secures competitive advantage, Trelleborg's innovation value would be better reflected by the term *“sustainability”*. This way it would also become clearer for people in all units of the organization, in which direction the company is heading and what is the type of customer value Trelleborg AB must provide.

In the case of TM Blue[®], the term “Blue” was identified to be the best representation of going “beyond green”, by bringing the additional value for the customer and society, besides the already common environmental benefits, which were usually associated with higher costs. Moreover, it can be easily associated with Kim and Mauborgne’s Blue Ocean Strategy (2005), which calls for companies to create uncontested market space where competition is irrelevant, by lowering costs and increasing consumer value, while bringing increased environmental benefits and broader societal value (Orsato, 2009). This innovation value usually entails redesigning entire production and consumption systems, bringing a fundamental change in the reasoning behind the way the system is structured and organized within the industry it serves (Orsato, 2009).

The greatest challenge faced when trying to promote the TM Blue[®] to the wider public was twofold: external and internal. The first one was to win the trust of the specialized press that was not fully prepared at that time to be able to comprehend the complexity and depth of the new product concept. In order to address this challenge, the marketing team in Wheel Systems facilitated numerous encounters with the journalists in press conferences and workshops where they introduced the concept of sustainability and its integration in the new product and presented the trends that were driving other industries, explaining their spillover to the agricultural industry as well. The internal challenge came from the internal sales force that needed awareness raising and special sets of skills and knowledge to be able to effectively and confidently promote the product externally and the range of benefits it can bring to the customers. Raising the competence level of the internal sales force was identified as crucial for maintaining the premium offering and leader positioning of the Trelleborg brand. In order to address the high potential damage to the brand reputation, coming from the lack of awareness on sustainability issues and the meaning behind the added value brought by the TM Blue[®] tire, the sales force had to undergo a series of training sessions, workshops and exercises meant to build their knowledge on the topic and confidence to be the first ones to promote such a product (Ciferri, 4 April 2012, personal communication).

External support was also very important for the development of the product concept and the launch of the TM Blue[®]. Equipment manufacturers were very supportive in this endeavour as it matched their own initiatives. On the other hand, the Group supported it as well by promoting it in the external company magazine, on the website and at conferences or events. But what was equally, if not more important was the internal drive and the individual leadership and ownership over the initiative from the project team. This aspect was crucial for the success of the endeavour as throughout the process of rolling it out, it was noticed that there was generally a stronger internal resistance than an external one (Ciferri, 4 April 2012, personal communication). Therefore, probably the most important learning point from launching and promoting TM Blue[®] was to find ways to overcome the internal resistance to change that was fuelled by an intense preoccupation over how the market might react instead of what needed to be done and changed in order to effectively put the concept into practice. For this reason, having the clear commitment of top management was recognized to be vital for the entire endeavour. By looking at the broader implications of the initiative and realizing that it was in fact an initiative that involved the entire company and not just a local marketing exercise, having the commitment and support of the BU President first was crucial for its positioning as strategically important. This contributed to placing it accordingly within the different organizational functions and their objectives, but also to be given the correct priority.

Allocating the necessary amount of resources in the unit’s budget and giving the highest priority level to the initiative was something that could only be achieved with the endorsement of the top levels of the organization. This further enabled the mobilization of additional critical departments that needed to be involved in the design and production of the new

product concept, namely R&D and manufacturing. This could have otherwise been difficult to activate simply based on a marketing initiative that, to some degree, aims to bring organizational change. Moreover, it was crucial to also acknowledge that all efforts, all financial and human resources allocated to the initiative were an investment instead of a cost. Therefore, in this case, having a top-down approach was considered to be the best way to secure the necessary commitment throughout the organization for the success of the initiative.

The organizational structure of the company also played a somewhat important role in how the new product concept was designed and implemented. It was noted that being a decentralized organization contributed to the effective deployment of the local know-how and the expertise of the industry to best capture the particularities that made TM Blue® a premium sustainable solution. Having the Blue Dimension™ as a common denominator for similar initiatives across the Group is considered an additional advantage and opportunity to strengthen the individual, local efforts to integrate sustainability in product design and communication. This is believed to be achieved by demonstrating a coherent corporate vision across the numerous and diverse industries Trelleborg AB operates through an appropriate balance between decentralization and supporting a common approach that can enhance results throughout the organization.

In terms of the applicability of the Blue concept to other Business Areas in Trelleborg, the suggestion was to start by focusing attention on the cost saving potential of being environmentally responsible and the value that Trelleborg's products bring to customers and the environment at the same time (Ciferri, 4 April 2012, personal communication). Among the top most important recommendations and learning points from designing and launching TM Blue® were:

- *Raising internal competence for addressing sustainability issues* and communicating them accordingly;
- *Thorough internal communication of the initiative* before presenting it to external stakeholders;
- Defining the *strategic role of the initiative* to the company and *secure top management endorsement* for assigning it a top priority throughout the organization;
- *Using digital media* to promote the initiative externally and E-learning platforms to raise internal awareness of top-management and other employees.

The success of the TM Blue® resonated throughout the organization and brought a significant amount of external attention on the Trelleborg brand. The Agricultural Division of Wheel Systems is now probably the most visible unit of Trelleborg and its efforts inspired not only individual units to follow their example, but also the Group-wide movement to better integrate sustainability in the business. Their success also gave the people throughout the unit a sense of pride and reward for taking the risk and courageously working to transform their ideas and beliefs into reality. This feeling was easily noticeable in most of the survey entries that came from this division especially, but also from the entire Business Area (*i.e.* Wheel Systems), independently of the location of the respondents. This could be considered an indicator for the success of the efforts placed in raising awareness and competency over sustainability aspects, but also for the commitment individuals took for the success of the initiative. The respondents from this division were also the ones that stood out as explicitly content with the amount of involvement from the corporate level in the

direction of promoting and supporting the uptake of sustainability aspects throughout the company's operations.

In conclusion, having such an example of successful coherent integration of sustainability aspects throughout the value chain of a product could be used to support future developments in this direction within the organization. The valuable expertise resulted from creating and promoting TM Blue® must be captured and actively disseminated throughout the Group in order to continue to inspire people across different functions and industries to find ways to create their own opportunities that will secure them with competitive advantage by creating shared, sustainable value.

4 Exploring contexts, drivers, challenges and propensity of communicating sustainability

This chapter deploys some of the methods of analysis presented by Brown & Eisenhardt (1997) to reveal the empirical findings of the research. The local contexts of the units that were investigated and responses to the introduction of the Blue Dimension™ initiative in Trelleborg AB are presented in order to increase the understanding over the organizational challenges of the units. The data found is also expected to reveal the main analytical categories that will further guide the data analysis and discussion, that will then provide the basis for generating grounded recommendations for strengthening the Blue Dimension™ throughout the Trelleborg Group.

The primary data collected from the Group-wide survey is presented generally following the structure and sequence of the survey, but at the same time accounts for the need to answer the research questions and meet the research objectives. Therefore, the presentation is structured under sections which reflect the main themes that were identified as important for the purpose of the study. In order to provide different perspectives for looking at the data, the survey responses were transferred and processed on a chronological basis – as they were received in their entirety, but they were also grouped and processed based on the geographical positioning of the respondents and on their BUs and BAs. This avenue created the means towards revealing the specific contexts of each of the units, their business profile and market features that are conducive or detrimental to integrating sustainability-related aspects into external product communication. Next, the survey answers were compiled together based on each question, independently of any other criteria, such as respondent Business Area, geographical location or market orientation (as presented in Appendix II). This approach contributed to revealing the similarities across the units and helped define the unique characteristics of each of the units that could support the further formulation of grounded recommendations for the reinforcement of the Blue Dimension™ and to foster sustainable product thinking in a multitude of contexts. The table presented in Appendix I offers a brief description of the geographic and market context of each of the units that were surveyed. Further, for a more comprehensive presentation of the case study company and its units' perceptions, drivers and challenges to integrate sustainability aspects into product communication and development, the data collected from the in-depth interviews and, where relevant, from the internal Blue Dimension™ competition entries were used for triangulation or to provide additional insights.

It is important at this stage to bring to the attention of the reader the data presented in Appendix II, as it offers the full list of survey questions, together with automatically compiled answers. This data is at the foundation of the current chapter and of the further analysis and discussion chapter. It is also important to remind the reader that the compilation and the automatic calculations made by the survey application for the different answers may not be entirely accurate. The researcher has not been able to find an explanation for the errors, but as the general trends are not significantly altered, the graphs and summaries automatically generated by the application were kept.

The Group-wide survey was submitted to 139 contacts representing Product and Production Managers, Sales, Marketing, Communications and Plant Managers from all three business areas that were investigated. The survey had a total of 65 respondents (46 percent response rate), with respondents representing about 26 countries and states from Europe (70.7 percent), North America (16.9 percent), Asia (10.7 percent) and Australia (1.7 percent).

4.1 Findings

4.1.1 What customers appreciate

When investigating the perception of the importance attributed by customers to several aspects relating to the products and solutions offered by Trelleborg, the respondents identified *price, quality/performance and delivery time* as being critical (survey question 5). *Customer service* and *overall customer orientation* were also mentioned as being critical for the business. There were also several instances, both in the survey responses and the in depth interviews, where the B2B orientation was emphasised, together with the little contact with the end-users of the products and applications that Trelleborg develops. Trelleborg AB was often described as being a customer-driven company, where the specifications and distinctive needs of the customers define the features of the products and solutions that are provided.

This focus on customer relationships and customization enabled a business strategy that is based on innovative technological expertise, differentiation and strong leadership. Environmental and social aspects related to Trelleborg's suppliers and the benefits incorporated in the products and solutions, were not considered to be critical in the perception of the customers. For these aspects, the majority of respondents preferred the mid-point response, by rating them as relatively important. This position was maintained further in the survey when approximately 50 percent of the respondents indicated a moderate demand from customers for environmental and/or social features in the products and solutions (survey question 7). Among these demands, the most frequent ones related to chemical management according to EU's REACH regulations (Registration, Evaluation, Authorisation and Restriction of Chemicals), chemical contents of products, having certain certifications such as ISO14001, compliance with industry specific standards such as those imposed by the EU (e.g. EN 1672-2 Hygienic Design Guidelines), the FDA (Food And Drug Administration) or by USP (United States Pharmacopeial Convention), health and safety for workers and child labour provisions, low environmental impact of processes and energy consumption specifications for the use phase of the products.

4.1.2 Who and what influences external product communication

The fact that Trelleborg has a customer driven business was also evident when the respondents indicated the main *actors/entities* that influence the *types* of information that are included in external product and solution communication and marketing.

Market trends and market preferences were rated as very influential by 55 percent of the respondents and relatively influential by 34 percent of the respondents, whereas only 6 percent considered it to be unimportant (survey question 9). It could be worthy to note that 83 percent of the respondents who considered market demand for certain product features as irrelevant to the types of information that are included in external communication and marketing of products were Production Managers. This could reflect a certain disconnection between the function of the respondents and the awareness over market preferences towards different product features.

Survey responses have also shown that costs are not considered to be critical to the choice of the types of information communicated externally about the company's products and solutions. To some extent, this contradicts the frequent argument made in the interviews, emphasizing the problem of securing resources for communication of initiatives such as the Blue Dimension™, which was perceived to bring more global brand benefits than to the business units or to specific products.

Among the factors that were identified as being very important for the types of information included in external product communication were *new business opportunities, the marketing strategy provisions, maintaining the brand image and benchmarking against competitors*. Most of these factors were also emphasised during the in-depth interviews, where interviewees specified these factors independently, as opposed to the survey, where the respondents evaluated already given options for the question.

4.1.3 Drivers for integrating environmental and social aspects into external product communication

When narrowed down even more, the *drivers* that were perceived by the respondents as critical for the integration of environmental and social aspects into external product communication were: *direct customer requirements* – reinforcing the customer oriented approach; the *features presented by the competitors; industry standards, corporate responsibility requirements; and central/corporate demands* for the integration of such features (survey question 10). To expand this view, one of the interviewees said “*we do what the customer asks for [...] I would put the responsibility on our customers to choose the best products. Of course, our sales people can promote better components and more expensive materials, but it is up to the customer to decide which one they want in their applications*”.

The decentralization aspect, which was identified at corporate level as being crucial for the way the business is carried out at BA and BU level, emphasizing the limitations the corporate headquarters faces when trying to streamline efforts throughout the Group does not appear to be decisive at these levels, as the respondents seem to show a high reliance on corporate guidelines and requirements.

One remark coming from a Swedish Business Manager was particularly interesting, saying that „*Industry standards mostly dictate the environmental features of product offering. Social features make no difference between us and main competitors*”. Despite not referring to product communication, but to product offering which is even more substantial, this respondent makes a statement that could show the propensity of the industry towards environmental aspects over social ones, but also emphasizes existing standards as being a very important driver for considering environmental aspects in product development.

4.1.4 Who dictates communication

In terms of *actors* that are influential over *what* the business units communicate about their products and solutions, *customers and BU/BA management* were chosen to be the most important ones from the given options (survey question 11). Competitors, corporate headquarters, investors, industry associations, colleagues/other employees, legislation, other BUs/BAs and society in general as final user of Trelleborg’s products and solutions were rated as *relatively influential* by a high proportion of respondents.

On one hand these ratings could partly reflect an undecided opinion on the part of the respondents towards non-critical actors and/or a tendency towards the mid-point option, but on the other hand it could mean that the information currently presented externally about the products and solutions only needs to meet customer profiles and needs, but also to receive management approval or to comply with local company requirements. Due to the very specific technical features of the products and the high customization possibilities and associated expertise Trelleborg AB offers, it is once again emphasized that customers play a very important role in how the company runs its operations and processes. Among the mid-point dominated categories of actors, the ones that needed further in-depth analysis were the ones that came in contradiction with the headquarters perspective gained through the

interviews. For example, if we would set aside the mid-point respondents, we would find that there were more respondents considering corporate headquarters a critically important actor than those who did not. Out of the total number of respondents, only 6 did not find corporate headquarters as influential over what is communicated externally about their BA/BU's products and solution. The 7th respondent supporting this view is actually a senior manager who is working at corporate level in the company.

The opinions were relatively equally distributed between respondents with regards to how influential investors are. The majority remained neutral, but there was a higher support of investors as not having an influence over the information that is communicated externally about Trelleborg's products and solutions. This actor was revealed by the corporate headquarters as important for taking action for increased environmental performance, because on one hand this decreases operational costs, and on the other, it can contribute to higher profits through increased exposure and sales.

It was also very interesting to discover that non-governmental organizations were the least important actors to be considered when communication about products and solutions is involved. This is also in line with the 2011 Annual Report, reports from the past three years and the company website, where there are no mentions of such organizations being considered.

4.1.5 Importance given to sustainability oriented communication

When investigating the *importance of environmental and social aspects* in external product communication, 92 percent of the respondents agreed that it can be important to communicate social and environmental aspects to the external environment and their argued their opinion by providing reasons they believe to be drivers for this endeavour (survey question 12). There were many opinions advocating in favour of *maintaining and improving the company image* as a leader in the business towards the customers and the general public. Most of the entries were again very customer oriented, emphasizing the need to build trust by positioning as a visibly responsible actor in the market.

It was brought up on several occasions in the survey responses and in two of the interviews that in the B2B context, such a communication can show customers that Trelleborg could provide sustainable products and solutions that contribute to *lowering the environmental footprint and costs of their operations or products*. One example that was given was that by providing a lighter component, it could also reduce the shipment costs and worker effort. This aspect is particularly important for several industries Trelleborg serves, such as aerospace, and it could contribute to increased sales and customer retention, but at the same time, it could drive further demand in the market, by making potential customers more aware of the industry trends and requirements in terms of sustainability issues.

In this category, several responses also emphasized that by communicating environmental and/or social aspects in products and solutions, the company offering becomes highly differentiated from the one in Asia, which appears to be a strong competitor, especially on the more price sensitive markets. The respondents repeatedly pointed out that the Asian offering generally neglects such aspects both in design and manufacturing, but also in communication. Therefore, by communicating how Trelleborg AB considers and integrates these aspects into its products and solutions, by following high international standards, is seen as an opportunity to provide a valuable justification for potentially higher prices. Moreover, one General Manager from Sri Lanka made a very good case for environmental and social externalities being accounted for in the products, saying that "*the product with the lowest price tag may not*

necessarily be the lowest cost product”, thus arguing for the many differentiation opportunities for Trelleborg’s products.

Therefore, this type of communication is widely believed to *add value to the products, facilitate marketing and the contact with the 2nd tier customers*. Moreover, the respondents indicated that Trelleborg’s premium offering and leading position on selected markets needs to be supported by sustainability claims as well, in order to maintain its reputation, but also to indicate that the organization’s business strategies are not only driven by profits. Other respondents pointed out that *communicating these aspects is becoming more and more of an external requirement, an increasing demand from customers and the general public* and they believe that it will become standard in the near future, especially for large companies like Trelleborg.

There were also arguments indicating that these aspects are *not as critical* in external product communication as the technical ones or those regarding price or delivery time. Therefore, it appears that communication of products and solutions is centred around the critical aspects that customers and other stakeholders are looking for. As a couple of respondents delineate, in order for this type of communication to be effective as a sales or marketing support tool, it needs to be evaluated in terms of product lines, customer base, regions or markets where it can play a decision or choice driver, thus exposing certain new business opportunities that are otherwise neglected.

Standards, guidelines and policies such as REACH, ISO 14001, ROHS, Trelleborg’s Code of Conduct were also indicated as a reason for which environmental and social oriented communication is important.

There were also a few respondents – 5 in absolute numbers, claiming that such communication is not important to their customers or to other stakeholders, as these aspects are not the main selection criteria for their supplier base, even though they appear to appreciate these considerations in Trelleborg’s offering. It is probably important to note that these respondents serve relatively mature markets, as they were mainly based in Europe, where such considerations may be frequently implicit.

4.1.6 From appreciation to action

In order to assess the correlation between the importance given to communicating these aspects and the *actual actions or plans for actions* in this direction, the respondents were asked to briefly list their intentions that address environmental and social concerns in their external communication (survey question 13). The majority of the respondents (54 percent) indicated that there are no such initiatives or plans within their BU or BA. On the opposite, those who replied positively, included examples concerning the replacement of toxic components in materials or reduced VOC emissions; abiding specific customer requirements; promoting or obtaining certain certifications (e.g. ISO 14001); introducing new proprietary materials that offer unique solutions and that also bring environmental benefits to the customers; reduced raw material consumption; and process changes that are meant to reduce costs and the environmental footprint of the operations.

In order to assess whether these plans and initiatives are in any way related to the recent internal promotion of the Blue Dimension™ concept, the respondents were also requested to indicate for how long they were dealing with such matters. Only 7 percent of the respondents (2 cases) indicated a time reference that could be related to this initiative. The majority has been working with such issues for many years and based from their argumentation and description of the activities they have been undertaking, they accumulated a certain degree of

experience on the topic. The internal communication on the Blue Dimension™ did appear to signal and encourage them to strengthen and go forward with their sustainability related initiatives.

Approximately 30 percent of the respondents made references to communication that considers the Blue Dimension™ concept and highlights the initiative. However, with one exception, coming from the United States, all such responses came from the Wheel Systems BA respondents in many countries, referring to the communication on the TM Blue® agricultural tire, the product concept that inspired the Group wide promotion of Blue Dimension™. The development of this initial product concept, together with its learning points was presented in Section 3.3, where a comprehensive account of the TM Blue® tire is offered.

4.1.7 Salient contextual factors to sustainability oriented communication

When *contextual factors* conducive to a potentially higher integration of environmental and/or social aspects into product communication were demanded (survey question 16), the majority of the respondents appreciated as critical *the need to increase awareness on the benefits it could bring to the business*. As this answer may be perceived as contradicting with the previous ones regarding the importance attributed to using sustainability arguments in product communication, a clarification becomes necessary. The in-depth interviews with the managers who were amongst the winners of the internal Blue Dimension™ competition, revealed that despite the awareness and pro-activity they personally demonstrated, they believe that the general awareness level throughout the company is low when it comes to the concrete benefits that can be brought by integrating sustainability in Trelleborg's product communication, and even in other respects. The view was actually shared by all interviewees, whether they are active at corporate headquarters level, or at BU level.

In relationship with the low awareness on sustainability aspects and the full recognition of their benefits to business, senior managers active at headquarter level, but also top managers in some of the business units, identified that an even greater challenge actually comes from the *different managerial competency levels found across business units*. These differences are considered to hinder the way central communication is received and used, but also to have a considerable impact on achieving units' general objectives. The way corporate headquarters aims to raise the level of competency among the different units is, for example, by creating online knowledge sharing platforms, making local expertise available to the entire Group, organizing trainings, sharing best practices and offering toolboxes to be implemented in different areas.

Other critical and relatively important factors revealed through the survey to be conducive to a higher integration of sustainability in product communication were: *the clear and visible management commitment* (over 90 percent in total); having *more demanding or pro-active customers* towards these aspects (almost 90 percent of the respondents); and *making the integration of these aspects mandatory* from corporate level (over 80 percent).

It was interesting to observe that there is an almost dichotomous distribution between respondents who believe financial and non-financial could facilitate the wider incorporation of sustainability related aspects into their external communication and those who believe such incentives are not important. At a closer look, it was observed that only respondents from the United States and Europe marked incentives as being critical, whereas the ones operating in Asian countries rated them as not important (50% of total Asian respondents) and relatively important. This preference could have a cultural dimension attached to it, as the respondents

who chose incentives as not important also tended to recommend mandatory requirements from corporate level to drive such a communication forward in their BU or BA. This answer option was formulated generically as “incentives”, being explained further as referring to either financial or non-financial rewards, such as personal bonuses or promotion/recognition. The questionnaire design did not allow for expansions to test whether the respondents considered an incentive the financial benefits coming from the market, as influential of how they would communicate about their products and solutions. However, during one of the interviews, a financial director stated to have introduced financial performance bonuses for waste reductions in the manufacturing process and the results were remarkable: from 15 percent, generation of waste decreased to 3.5 percent. An even deeper probe in the interview to reveal the perceived relationship between communicating sustainability aspects in products and solutions and the potential rewards from the market has shown that the respondent did not have the context to consider it before. This reinforced the corporate perspective, which emphasises the built-in conflicts with the amount of workload and the specificity of the functions.

A central tendency was observed for the factors related to the cooperation with other BUs and BAs but also with corporate headquarters, legislation, improved skills and inclusion of sustainability related communication in job descriptions and performance criteria of relevant functions. These aspects could be interpreted as being of moderate importance to facilitating the incorporation of environmental and social aspects into product communication and development. The experience described in Chapter 3.3 through the TM Blue® tire example, has shown that some of these factors, namely skills and cooperation, could have a significant contribution to the success of such endeavours and to exposing new ways of reaping benefits out of integrating sustainability aspects in products and their external communication.

Another manager, this time from Finland, emphasized that social aspects make no difference to product marketing or new business opportunities in their industry. However, environmental ones could be useful only if the products have a clear technical advantage, as without a cutting edge product neither positive environmental aspects nor appropriate marketing would be possible. This perspective might suggest the need to first integrate sustainability aspects in product design and development so that appropriate communication could be carried out ethically and effectively for products and solutions that are truly innovative. However, it has to be acknowledged that sustainability and environmental considerations currently are, but should not be restricted or associated only to cutting edge technology, as they can also be reflected in the purpose of the product and how it contributes to serving societal needs. This is what is attempted to be emphasised through the Blue Dimension™. Additionally, the example of the TM Blue® tire presented in Section 3.3 demonstrated that it is possible to use an inverted path, by starting with an idea that has potential of securing competitive advantage and a leading position for the company, winning top management support to implement it and then developing the cutting edge product to be marketed as a sustainable solution.

4.1.8 How does the Blue Dimension™ fit in?

When looking at the awareness level on the Blue Dimension™ concept, it was discovered that almost half of the respondents (40 percent) did not previously get in contact with it. Considering the short time between its launch and the survey, it could be argued that such a result might have been expected. The geographical distribution of the respondents that were not aware of the Blue Dimension™ is as follows: 36 percent of the North American respondents (15 percent of the total non-aware respondents), 41 percent of the European ones (73 percent of total non-aware respondents) and 42 percent of the total Asian

respondents (12 percent of total non-aware respondents). Therefore, despite European managers being the ones with the highest response rate, they were also the ones that were not aware of the concept. In the e-mail invitation they received to participate in this research it was mentioned that the intention is to investigate the Blue Dimension™ and thus, it can be argued that despite the information being available, there was little initiative in finding information.

The most frequently indicated source of contact with the Blue Dimension™ concept was the Intranet, following the communication regarding the launch of the Blue Dimension™ together with the internal competition on products and solutions that best integrate this concept, and the T-Time Magazine, which is Trelleborg's magazine intended to customers and other external stakeholders.

The purposes identified by the respondents for the introduction of the Blue Dimension™ concept are very varied and they include:

- raising internal and external awareness on the company's impact on the environment through its operations and products;
- branding as an environmentally concerned business;
- collecting and promoting examples of environmental and social contributions from inside the company;
- contributing to environmental protection by providing products and solutions meant to address certain risks and/or inefficiencies;
- encouraging and motivating the development of more responsible,
- environmentally friendly products.

There were several references to the Blue Dimension™ as a tool meant to help reveal differentiation opportunities in the market, but one that is not to be used as a differentiator in itself. Furthermore, it was emphasized again that this concept is valuable from a corporate perspective, positioning Trelleborg AB as a responsible company and this was not perceived as useful to individual products or to business areas. In the in-depth interviews, this perspective further called for a more centrally coordinated and supported action plan, as local benefits were not that obvious to be worthy of local efforts. As these occurrences were not numerous compared to the total number of respondents and interviewees, there could not be any findings that could relate this observation more to a particular BA or a geographical region. However, these respondents and interviewees had functions related to marketing and product management.

Generally, the majority of the responses demonstrated an inward orientation towards employees' perception over the impacts and importance of Trelleborg's activities and products. The perceived aim was of raising awareness and knowledge on sustainability related issues and their further deployment throughout the company's operations. This observation could be explained by the phase in which the concept promotion was at the time of the investigation. The Blue Dimension™ was only recently launched throughout the Group (two months before the survey), internally first in order to assess the applicability to the various sectors in which the company operates. A secondary purpose was to collect examples of best

practices that would be further disseminated externally and used for an appropriate concept design for external promotion.

Given these perceived benefits of the concept, the actions that it triggered throughout the Group could be evaluated as not being very substantial (survey question 20). Out of the 38 respondents who had some contact with the Blue Dimension™ concept previous to the present study, 28 (73.6 percent) revealed that, to their knowledge, no actions were taken or planned at the level of their BA or BU following the launch of this initiative. Amongst the few initiatives triggered by this concept, the respondents listed the need to find opportunities to differentiate from the competition, finding new subcontractors that fulfil the new demands, expanding the TM Blue® to other product lines in the case of Wheel Systems BA and motivated the start of discussing and planning future actions. In this respect, it could be appreciated that to some degree, the corporate expectations were met with regards to the understanding of the concept and the immediate future of the concept implementation.

When asked to evaluate how the Blue Dimension™ contributes to their BU's or BA's objectives (survey question 21), the majority of the respondents (72 percent) chose the option that reflects the official definition and aim of the concept, specifically *"We have products and solutions that are good for our customers, the environment and society in general. We believe that the Blue Dimension™ will help us communicate this in a better way, which is harmonized throughout the Group"*. The second popular option indicates that the perceived value of the concept revolves around the contribution it brings to corporate responsibility; therefore it is likely appreciated as voluntary and without any business benefits attached to it. The third and fourth options, which were both chosen by 30 percent of the respondents, put an emphasis on the differentiation opportunity that the concept provides and on the motivation and increased awareness it brought to rethink the way the units communicate about how they run their businesses and how their products and solutions impact society and the environment.

The respondents' expectations regarding the future of the implementation of the Blue Dimension™ at BA/BU level (survey question 23), involved a series of recommendations that could be used at corporate level to design and support actions and activities to better suit local needs. The majority of the respondents emphasized the need for increased awareness throughout the Group, at all levels about the concept and the benefits it could bring, so that its uptake will increase and facilitate new business opportunities. There were several mentions of an increased focus on the design and development stages of the products, where the incorporation of the concept would generate more environmental friendly products and in turn, this would attract more customers and more external attention on the business itself.

The researcher found that the Blue Dimension™ was widely perceived mainly as a corporate initiative with an internal focus. There were many suggestions on one hand, to communicate it externally, by having large and/or aggressive marketing campaigns in many countries promoting sustainability within the Trelleborg brand through the Blue Dimension™ concept. At the same time it was recommended to provide the (financial) resources centrally for such campaigns, as the local benefits in investing in the global brand were not easily identifiable. On the other hand, there were suggestions to strengthen it internally by providing frameworks to be used in product management, product development, and communication, raising awareness internally on the benefits of the concept for the business and for the external environment. By making sure it is communicated to all levels in the organization, in simple and understandable terms, there are expectations that the concept will generate more ideas from employees which will contribute to strengthening the concept and foster new sustainable developments. E-learning and online experience sharing platforms, dedicated people having the Blue Dimension™ as a responsibility in each unit to track initiatives and results, making it

mandatory in order to facilitate its integration into the corporate culture and show top management commitment and involvement were also suggestions meant to reinforce the initiative internally and prepare it to be deployed strongly externally, or as one Polish manager put it, to “*walk the talk*”.

There were concerns about the high number of (internal) initiatives Trelleborg is carrying out in parallel and the difficulty to find an appropriate balance between them and to offer the right amount of attention, resources and priority to each of them. This is an issue that was also acknowledged from the corporate level. This created the recommendation to try and integrate the Blue Dimension™ into existing systems such as Manufacturing Excellence or ISO 14001 so that it has more legitimacy and connection with familiar processes that are already widely established and recognized as strategically important for the success of the company.

The majority of interviewees that were among the winners of the internal competition reported that without the occasion given by the competition and the lens of the Blue Dimension™, they would have likely kept the former, traditional style of product communication, thus not giving a special emphasis to environmental and social benefits. They also said that if their superiors assigned them the responsibility and resources to take the concept further and promote it internally and externally, they would be very glad to do so. Even more so, they possess relatively high knowledge and experience in working on the topic with other organizations/companies as well. However, their most important barriers in exerting their leadership qualities for the support of sustainability rely in their position and mandate in the company, the dependence on top management approval and securing resources to dedicate to their potential activities in this direction.

In terms of resources and general awareness about the industry trends, some of the interviewees stressed the need for more cooperation between units and BAs. As some of the units are smaller and do not have access to the same resources or the same exposure, it was suggested repeatedly that joint efforts to participate at trade shows or other similar events could help reinforce the Trelleborg brand and expose more of its products. The Blue Dimension™ was perceived as offering a framework for this, as it can bring several sectors under the same umbrella.

Corporate values were brought up several times throughout the survey responses but also in the interviews, with the recommendation that they should reflect a more sustainability oriented leadership which Trelleborg AB should promote on all markets where it is present. Some participants believed that the responsibility towards the environment and sustainability are already part of the corporate culture, but they need to be more consistently and more transparently promoted and put in practice. There were also several mentions about the visual fit of the Blue Dimension™ with the corporate colours, emphasizing that “*Blue is the new Green*”.

In conclusion, the general impression was that the Blue Dimension™ was widely perceived as applicable only to certain industries or sectors, particularly to those that need to demonstrate environmental concern (e.g. oil industry) or to those that are active in environmentally conscious markets (e.g. solar and wind power). Secondly, the competition and the low follow-up that was carried out afterwards from corporate level gave the impression that it was only a one-time event meant to gather good examples of how Trelleborg’s products and solutions generate benefits for the environment too and are not only a means to high profits. It is worth reminding that the social dimension and the social benefits that Trelleborg’s offering generates was repeatedly qualified as being of less importance and relevance to the business and to the competitive context in which the company carries out its activities. Thirdly, the Blue

Dimension™ was widely recognized only as a branding tool for the company in general, bringing the most tangible benefits to the Trelleborg brand instead of the particular products or business units which would deploy the concept. Therefore, the common suggestion was to provide resources and tools from a central level to support the local actions and integration of the concept, as the local benefits were not easily visible or their exposure opportunities were not clearly communicated. Lastly, the corporate communication surrounding the Blue Dimension™ did not manage to convey to what extent the units can adapt the concept to their operations and their products. The concept was evaluated as being targeted to the general, mass market, whereas the units have highly specialized and individualized customers with very specific communication and service needs.

4.2 Analytical categories

By clustering the conceptual categories that arose from coding the data and presenting the findings from the case study, revealed what is considered by the researcher to form the most important analytical categories. These categories are expected to guide the data analysis and further discussions towards achieving the research objectives, particularly in terms of providing grounded recommendations for the strengthening of the Blue Dimension™ throughout the Trelleborg Group. The identified analytical categories are briefly introduced in Table 4-1. The analytical categories are all interlinked, influencing and being influenced to some degree by each other. Therefore, the relationships between the categories will be explained during the analysis and discussion, where each of them will reflect aspects and influences to and from the others.

Table 4-1 Analytical categories

Analytical category	Description
Business model	Reflects the framework that guides all policies, strategies, decisions and activities throughout the company. It provides the overarching context in which the company exists in which all its activities and initiatives unfold.
Conflicts	Are represented by the misalignments between the expectations at different levels of the organisation and the real possibilities to meet them. They exert a lot of pressure on individuals and units and influence the outcomes of activities and even of the business itself.
Awareness	Indicates the level of knowledge and understanding that influences the perception over the benefits of using sustainability aspects in product communication and development. Moreover, in relationship with strong leadership, it can help bridging the gap between declarations and actions.
Cooperation	Indicates the possibilities to streamline efforts across the Group in order to achieve organizational goals. In relation to the business model, cooperation is seen as a potential driver for the generation of innovative ideas.
Leadership	Represents the central corporate and individual value that is perceived to contribute significantly to creating the opportunities needed to secure long-term competitive advantage.

Commitment	Expresses the organizational and individual support for certain activities/initiatives that contribute to the achievement of certain goals.
Roles	Are represented by the functions of the individuals and the formal responsibility for certain areas of the business and their outcomes.

5 Analysis and discussion

This chapter aims to analyse the empirical findings related to how communicating sustainability aspects in products and solutions is perceived throughout Trelleborg's units, by referring to the main analytical categories that were identified in the data. The empirical findings will also be paralleled by the challenges perceived at corporate level when attempting to promote sustainability throughout the company. Results are then discussed in relation with the existing body of knowledge and with the aim of providing the foundation to answer the research questions and achieve the research objectives.

The methodology of the present research, which was presented in detail in Chapter 1, provisions that in order to better understand the underlying factors that influence the effectiveness of centrally-driven initiatives to promote sustainability throughout the Group, the data analysis is to be carried out through the lens of three dimensions:

- influence of global corporate *structure* on promoting sustainability throughout the Group;
- *external influence on decision making processes* with regards to product marketing and communication; (e.g. markets, economy etc.);
- *motivations* to support and enable sustainability aspects in product thinking and communication.

5.1 The influence of the business model

The business model was identified as an analytical category as it reflects the overarching context of the case study company and of the initiative which is investigated. It was the one that had most occurrences in the data and the highest influence on all other categories. All information was provided through the lens of the business model, both at corporate and at business unit level.

The size and complexity of the company, together with the diverse contexts and sectors it activates in, required the establishment of a business model that would be able to cope with the heterogeneity that characterises Trelleborg. By deploying a decentralised approach to governance and management and placing the responsibility on each of the units to use their own local expertise to achieve the organizational goals, Trelleborg AB has managed to secure a very powerful position on most of the markets it serves.

Linennluecke (2010) found that corporate culture is one of the main factors that could hinder the organizational change towards more sustainable practices. The Trelleborg business model is very well established and recognised as part of the corporate culture, especially by supporting decentralisation. Therefore the challenges that derive from the way the organization is governed need to be approached also by keeping in mind the complex processes that influence the perceptions about the initiatives meant to introduce new approaches to the business.

Decentralization was revealed by the majority of the top managers activating at headquarter level to be a very important factor influencing the relationship between the Group and the local units, but also to the success of transmitting and integrating different policies, programs and requirements. A potential conflict arises here in relation with headquarters' attempts to

implement and follow up on actions meant to, for example, increase operational efficiency or support talent management at unit level (Jahja, 2011, personal communication; Guillon, 2012, personal communication). As important aspects of how the business is approached are based on entrepreneurship and autonomy of the units, it becomes a managerial dilemma whether direct intervention and control from the headquarters could or should be employed. There are numerous advantages for which this decentralized approach has been respected throughout the history of the company, but it appears that a more integrated approach is desired when it comes to specific areas connected with, for example, operational improvements. Despite the fact that there is a lot of emphasis put on self evaluation and self control of units, there is evidence of Group level involvement and control that goes beyond reporting requirements. However, the predominant approach is to provide support, mainly in the form of expertise sharing, toolboxes and guiding documentation, to those units that are proactive in their undertakings and/or demand attendance (Guillon, 2012, personal communication; Losa, 2011, personal communication).

By being such a large organization, with operations in over 40 countries, the corporate headquarters also values and understands the importance of deploying the local know how in capturing the best business opportunities brought by the markets' particularities. For this reason, the corporate headquarters generally avoids prescriptions on how certain targets should be met. Discussions with corporate management revealed low expectations in terms of results and performance from the units, which were attributed to the limited corporate influence over what needs to be done at unit level with regards to corporate responsibility initiatives.

Considering the scope of the Blue Dimension™, this conflict between the headquarter level and the business units has multiple implications for the way top-down communication and interaction was carried out. First of all, the promotion of the Blue Dimension™ started with very low ambitions in terms of engagement of the units towards adapting the concept to their businesses. This reflected into the priority given to the topic at business unit level and in the plans and actions that were reported after its launch. By starting with a competition that lasted only five days and which aimed to raise awareness about the potential benefits of communicating aspects which are currently considered implicit in the features of the products, gave the impression that the Blue Dimension™ campaign was a one-time event. This perception is probably generated also by the fact that there was not much follow up carried out afterwards. Moreover, by analysing the different materials and approaches that were used to promote the concept internally, there were no findings of clear mentions for specific expectations or recommendations to implement the concept. This could also signal a low priority and importance from the corporate level. While it is true that the launch of the concept through the competition had the role to uncover the already existing possibilities to communicate sustainability features in products, it may be that the concept and the initiative lost part of their legitimacy for future follow up, by not clearly presenting itself as strategically important for the company right from the beginning. Additionally, the broad terms of communicating about the Blue Dimension™ and the examples shared with the Group after the competition, created the perception of a conflict or misalignment with the specific characteristics of the local businesses. Many of the respondents found the Blue Dimension™ too general and did not recognise its applicability to their business or products. Some were strongly convinced that it makes no difference to address such aspects in the markets they serve and in the area they work in. Furthermore, some respondents were very dedicated to respecting the organizational chart in terms of responsibility for being concerned with specific issues. For instance, sustainability and the competitive advantages that it can bring up were considered to be strictly for the concern and attention of the sales and marketing departments

as it was perceived as simply a tool to be used for sales and not, for example, for product developments or cost savings.

The limitations felt at corporate level with regards to how much should be demanded from the units with regards to corporate responsibility initiatives, have placed the Blue Dimension™ in a relatively weak position throughout the Group. As the information disseminated about the Blue Dimension™ before this research was undertaken, did not include objectives, targets, guidelines, expectations or specific instructions for how to carry the implementation of the concept further, it could be stated that no substantial communication or action plans were initiated after the launch of the Blue Dimension™. However, as the scope and purpose of the communication associated with the launch of the initiative were fairly narrow, together with the short time span considered in this research, it could be argued that this result was to be expected. Only one of the respondents reported the intention of the represented unit to promote the use of the templates and visuals provided by Corporate Communications department. The outliers were respondents from the Wheel Systems business area, which had more contact with the concept which inspired the Blue Dimension™ and its practical implementation, and they reported that there are concrete plans to expand the initiative to more product lines and business units.

The respondents throughout the Group demonstrated a high reliance on corporate policies, guidelines and tools to be provided in order to assist them meet their targets. This observation can be used to argue that the limitations imposed by decentralisation, which were reported at headquarter level are not reflected at business unit level. By identifying the provisions of the marketing strategy as being very influential to the types of information communicated externally about the company's products and solutions could show a reliance on the decision makers of the company to guide the communication and marketing. Moreover, the respondents indicate that a more firm approach is needed to drive the process of integrating sustainability aspects into product communication. This could be explained by the fact that environmental and social aspects are still not clearly established as strategically important for the company as a whole and therefore, their integration in external communication is difficult to accomplish without more corporate involvement and support.

Another aspect that is strongly related to the business model is the fact that Trelleborg has a customer driven business. The research findings show a heavy reliance on the external environment to drive the integration of sustainability aspects into the units' communication and/or their business. Whereas at the moment, there is little pressure felt from the customers to consider such aspects, the respondents reinforced the idea that if there is an interest in integrating sustainability for Trelleborg, then there should also be more central involvement to support the units in this transition. The majority of the respondents however anticipate that sustainability aspects will soon become a standard in all sectors. They suggest that Trelleborg should be able to capture the momentum to establish itself as a leader. Leadership entails in this case, as demonstrated by the Wheels Systems BA, efforts towards driving customer demand in a direction where Trelleborg has the potential to offer additional value, by providing products and solutions that answer to broader social challenges. However, without being able to see the immediate business benefits of such an undertaking and by being confronted with the realities of their markets, the units may not feel an urgency to start acting in this direction. Therefore, the corporate headquarters has many opportunities to get involved in order to facilitate the integration of sustainability aspects in product communication without being criticised of diminishing the units' independence.

There was a conflict observed also between the leadership on which Trelleborg AB claims to base its business and the heavy reliance on other entities, particularly customers, to demand increased performance in products and solutions. As it is true that the markets on which

Trelleborg is present are price sensitive and the competition is not based on technological innovation, it can still be argued that the units are relatively passive when it comes to capturing new business opportunities. The current focus on responsiveness to customer demand could be criticised as being non-inclusive to actors or customer segments that look for products and solutions or for providers that can offer more than the basic, critical features. Therefore, many potential business opportunities are overlooked.

Porter's and Kramer's (2006) framework for creating shared value for the company could therefore help Trelleborg and its units understand the causes and implications of the challenges they perceive to the integration of sustainability in their business. This framework could also demonstrate how the adoption of the Blue Dimension™ could bring out the strengths of the local businesses in order to secure competitive advantage.

The decentralised business model, which favours independence, has influenced the level of cooperation between the units, regardless of the business area or country in which they are positioned. Many respondents and interviewees have raised this issue, as they believe that more cooperation could facilitate awareness raising about the benefits of integrating sustainability in product communication, but also the dissemination of best practices in this area. The communication of the Blue Dimension™ competition, but also of the TM Blue® tire success, was perceived as very motivational and inspirational for many of the respondents. They also believed that more cooperation between units of the same BA, but also from different BAs and countries could facilitate new innovative ideas and more efficient use of resources. Many respondents thought that sharing information and resources, for example through shared participation at trade shows, could enhance Trelleborg's external presence and at the same time, benefit the units directly in a more efficient way compared to the present independent approach. This view is supported by Quinn's and Rohrbaugh's (1983) framework of competing values, but also by Mueller's research of decentralised subsidiaries. These authors described the very important role of socialization and cooperation in supporting and motivating, on one hand, the increase in competency that can contribute to the achievement of organizational goals and on the other hand, to increase organizational flexibility towards the incorporation of previously discounted aspects such as sustainability.

In the attempt to understand what the organizational challenges are when it comes to integrating sustainability and how they could be explained by the existing theory, the researcher found that Quinn's and Rohrbaugh's (1983) framework of competing values did manage to capture the complexity of Trelleborg's organization and its governance model. The framework describes and compiles the characteristic features given by the dominant values that drive different organizations. Linnenluecke (2010) adapted the framework to analyse how the different types of organization models position themselves in relation to adopting sustainability principles in their business. Based on the values framework, it can be appreciated that Trelleborg AB is overall predominantly within the open systems model, moving more towards the rational goal model in the case of the individual units. The organization itself is governed centrally relying on flexibility and competitiveness, encouraging performance by strengthening local decision making. In order to ensure that productivity, efficiency and competitive advantage are secured, the units become more and more centralised as we move from the Business Area level to the manufacturing plants. Therefore, in order to encourage all different levels within the organization to consider sustainability aspects in their business, it can be more useful to differentiate the approach to accommodate the drivers behind the different cultures found in within the company. This would translate into a gradual move from the informal, visionary communication that encourages innovation and the motivation given by the meaningfulness of actions which is characteristic to the corporate level, to a more pragmatic approach, with goal-oriented and more prescriptive communication, accompanied

by a more centralised coordination and performance monitoring at unit level. The common drive of these two apparently opposite models is the focus on external concerns. In the case of Trelleborg AB, the customer was recognised as the most important stakeholder for the business at all levels that were investigated. Therefore using sustainability communication as a tool to meet and further develop customer demand has the potential to bring consistent business benefits throughout the company.

5.2 What can we learn from the local level?

When it comes to specific local conditions that may affect the integration of sustainability aspects in product communication and development, it appears that the consumer is again in control. Addressing the market needs is the primary concern for all units and therefore creating the best environment to make sustainability part of the business is fundamental. Increasing internal and external awareness on sustainability in general and on how it can be used to capitalize on the local aspects of the business and the market, can be expected to drive its take up by the units. As it was found, the level of awareness on the mentioned topics can vary significantly between units in different countries, but also between units within the same country and the industry altogether. Therefore adopting a local, specialized approach to build internal capacity for promoting sustainability is seen to be the most appropriate. At the same time, this could further drive market demand for sustainable solutions by creating customer awareness on the trends of the industry and the added value offered by Trelleborg's products.

Another powerful contextual variable identified as being especially conducive to integrating sustainability is the business profile of the units. It was generally believed that some sectors have an additional advantage and are more prone than others to addressing such aspects on the basis of the markets they serve. For example, serving the solar or wind power industry is considered to automatically require sustainability oriented communication and business model, as these industries offer more opportunities to communicate and take advantage of such aspects. However, one manager pointed out that even these sectors address such issues by emphasizing more the business benefits and returns of sustainability and not by appealing to an intrinsic fondness for sustainability and the environment of the decision makers that are active in this industry, either as manufacturers or final customers and users.

A third contextual variable that could drive the further integration of communicating sustainability aspects in products and solutions is the actual product typology that the different business units work with. With the occasion of the internal competition that aimed to expose examples of products and solutions that integrate all aspects of sustainability and at the same time are successful on the market, Trelleborg AB managed to demonstrate to the entire Group that it is possible to find and promote sustainability aspects in all Business Areas and in most of the Business Units. The Blue Dimension™ concept was successfully applied to products that were specifically designed to be used in environmentally friendly applications such as the wind and solar power industries or waste management, but also in applications with a reputation of having a relatively high environmental impact, like the offshore oil or aerospace industry. Because Trelleborg AB always strives to deploy the best technology and address customer needs in an innovative way, certain units saw the benefits in using sustainability to turn the negative aspects of the industry into competitive advantage opportunities. However, before the internal promotion of the Blue Dimension™ concept, they did not find external communication of such aspects as an area that they could use to their advantage.

One further contextual variable that was not found in many cases across the Trelleborg Group but which has a considerable potential for driving external communication of sustainability in

products was the proximity to the customers and/or end users of the solution that deploys a certain Trelleborg product. In cases where the units work directly or closely with the end users or need their endorsement, the opportunities to use sustainability aspects to meet their needs were identified much easier than in cases where there was a certain disconnection that prevented a better understanding of what society needs and where it is heading in its development.

5.3 Assessing reactions to the Blue Dimension™

It can be agreed that the general attitude towards the initiative and the concept on which it is based could be appreciated as positive. However, there was a limited correlation between the listed benefits of integrating sustainability aspects in product communication and indications of actions from the respondents to capture these benefits. This discrepancy is probably due to the fact that the Blue Dimension™ was perceived more as a branding tool for Trelleborg, rather than a framework to be applied at local level, for raising the market profile of individual products and solutions. Another explanation could be that despite being aware of the general benefits such an endeavour could bring, the respondents may not be fully convinced of the returns for their particular business sector. Therefore, it can be stated that the applicability opportunities of the concept to the local units and their business were probably not entirely recognised, which could explain the passive attitude of the units. However, there were many statements demanding further action that would support and encourage the practical implementation of the concept throughout the Group. As a general reliance on external entities (i.e. customers, policymakers – standards, regulations etc.) was found to drive the focus of business units, it can be interpreted that they rely on external drivers to initiate action towards integrating sustainability. On one hand, these external entities could be other business units within the Group, or the corporate headquarters, and on the other hand, they could be customers, by being more demanding and open to sustainable features in products.

Some of the interviewees who were among the winners of the internal competition, expressed their support to dedicate resources to the development, implementation and communication of the Blue Dimension™ and its benefits locally. The main constraint however was identified to be the endorsement of top management, which might not be fully aware or convinced about the potential benefits of the efforts in this direction. By entering the competition, they demonstrated leadership, creativity, enthusiasm and openness to sustainability and they could play a very important role in the future development of the Blue Dimension™. However, individual leadership can be hindered by lack of top management support or encouragement for taking initiative on non-core business actions, despite their potential returns.

Therefore, the very few actions and plans generated by the launch of the Blue Dimension™, were not surprising, especially considering the short time interval available until the research was carried out. Generally, the units that were previously engaged in activities towards more sustainable or environmentally-friendly business practices reported their intentions to carry these efforts forward and to develop increasingly ambitious targets. As the timeframe for these actions appears to have long preceded the conceptualization of the Blue Dimension™, they cannot be correlated. The introduction of the Blue Dimension™ and the awareness it created on the topic of sustainability, together with the benefits it can provide if it is integrated in product communication may have determined a re-evaluation of the previous or ongoing activities, their success and possibilities to carry them further. However, through a Group wide follow up that provides guidelines for local implementation and by continuing to share experiences and best practices could foster the adoption and external communication of the concept.

With very few exceptions, there were no drastic variations between attitudes among the different functions and their geographical positioning. The remarkable exceptions represented mainly respondents from one particular BA that had a longer contact with a similar concept, namely the Wheel Systems BA and their TM Blue[®] tire concept. These respondents have demonstrated a very high degree of awareness and knowledge on sustainability matters and the multi-dimensional benefits brought by communicating them accordingly. Considering the long history of the work done with the TM Blue[®] tire and the associated education and marketing efforts employed in supporting and promoting the product concept, it was very easy to observe a certain pride in the respondents' answers regarding the success of their endeavours. It can be appreciated that their attitude is generally very positive towards sustainability issues and the incorporation of environmental and social aspects in products and in their communication. This attitude is likely to be reinforced by the market success of their efforts, the visibility and competitive advantage their product and communication concept has offered. This experience and its learning points were presented in Section 3.3 where a comprehensive account of the TM Blue[®] tire development was offered.

Raising awareness about sustainability aspects was identified to be crucial for the success of the Blue DimensionTM by a high proportion of the respondents and interviewees. On one hand this awareness raising could be targeted internally towards the people who have a mandate over product development, communication, marketing and sales, but on the other hand, it can be targeted towards the customers, so that they would begin to realise the importance of such aspects to their business as well. Focusing communication about products and solutions on addressing customers' environmental or social commitments and requirements was found to have the potential to drive sustainable product thinking, even though the customers do not yet express or recognise them.

By looking at the way it was designed and promoted, but also at the organizational structure and size of the company, it can be concluded that the Blue DimensionTM concept managed to attract enough attention and support to be used for future action. Despite the generally low level of awareness relative to the size of the organization and compared to other, established initiatives (such as Manufacturing Excellence), the concept did bring to the attention of a fairly significant part of the target audience, the fact that Trelleborg AB has already developed products and solutions that integrate sustainability aspects and that there are business benefits and opportunities from doing more.

The barrier in carrying the initiative forward and adapting it to the local context and the local needs is double sided. On one side, there is the belief that the external environment, namely the customers and the market in general, is not interested in such aspects and therefore investing in integrating and promoting the Blue DimensionTM at the local level is not expected to bring any significant returns. Building strong relationships with customers is at the centre of the strategy and going above and beyond their requirements on aspects that are generally not demanded is not attractive from a business point of view. Environmental and social considerations are appreciated generally in more mature markets, but competition in the industrial B2B environment relies mainly on offering the lowest price, short delivery time and meeting specific industry standards and regulations (e.g. REACH, ISO etc.). Additional features, that also include environmental and social considerations throughout the value chain, are not considered to be of strategic importance or benefit for the company at the time being and are therefore largely neglected. It is generally believed that these features come in as last differentiators and not as initial or main customer selection criteria, therefore are given lower priority and value by the units.

On the other side, the barrier is to secure the internal resources that can be used to drive the market demand in a direction where Trelleborg AB has the potential to offer unique expertise and solutions that can ensure long term competitive advantage. The Blue Dimension™ encourages introspection, it tries to motivate employees in different functions and at different levels in the company to look at the way their business is organized and evaluate it based on the broader criteria that is put forward by sustainability and the need to be proactive and a leader in answering the current and future global challenges. The discrepancy between the external drivers that were identified as salient for the way the company carries out its business and the inward focus on the company's processes, strategies and impacts that need to be assessed in order to promote the Blue Dimension™, creates a conflict which hinders the discovery and development of new business opportunities that address customer requirements in a sustainable way. Instead of bridging the current needs of its customers with the future needs of society, it can be argued the Blue Dimension™ appears to be creating a gap by trying to move the company in a position that has not yet demonstrated its benefits in all sectors where it is active. The Blue Dimension™ therefore heavily relies on the same leadership qualities that Trelleborg AB encourages to drive its business, but it demands the company to take a different path towards the same organizational goals. And throughout its history Trelleborg AB has repeatedly demonstrated all the qualities needed to be able to undergo such a process of transformation.

6 Conclusions and recommendations

This chapter aims to create a bridge between the major themes identified through the data analysis and discussion and their practical relevance to Trelleborg AB and its Blue Dimension™ concept. Exposing how the findings contribute to the purpose of the research endeavour is expected to reveal the contribution this exploration brings to the knowledge base, but also to help identify areas of future research.

The research started with the aims of assessing the early results following the internal promotion of the Blue Dimension™ concept throughout the Trelleborg Group. By identifying the underlying challenges and drivers for integrating sustainability in product communication and development, it was also aimed to reveal avenues of intervention to strengthen the concept and support its further promotion and implementation. In order to achieve this goal there was a need analyse the contextual factors that may affect the propensity of the units to adopt such practices. Moreover, the headquarter perspective was expected to bring insights on the overall organizational challenges when seeking to advance sustainability throughout the Group. Therefore, the investigation aimed to capture as much as possible of the diversity found in the organization and the particularities that drive the units' approach to business and which justify their position towards integrating sustainability aspects into product communication and development. By also considering that the Blue Dimension™ concept was first launched with the purpose to raise awareness throughout the Group about the potential business benefits that integrating sustainability in product communication could bring, the case study research approach was chosen to be the most appropriate method for exposing the individuality of each unit and of the sectors they represent.

The preliminary results show that despite a relatively low awareness level about the initiative throughout the targeted functions (i.e. marketing, sales, production, communication, product development etc.), the concept was generally welcome and thought to be of value to the company on long term. However, there was a disconnection between how the concept was understood, together with how it is expected to benefit the company and the individual or units' expected role and responsibility to take it forward. Because the communication approach selected at corporate level to disseminate the information about the concept throughout the Group was different than the one typically used to influence operational processes to improve environmental performance, it can be argued that it influenced the level of understanding of what were the corporate headquarters' expectations with regards to the application of the Blue Dimension™ at unit level. The previous approaches were to drive the enforcement of certain regulations or goals that would improve the efficiency and environmental performance of the units, whereas this initiative was intended to motivate the beginning of an internal analysis and assessment of the existing product portfolio of each unit and matching it to current and expected societal needs.

The Blue Dimension™ concept was launched throughout the Trelleborg Group at a time when the idea of creating shared value for companies and society is building momentum in many business sectors across the world. The shared value concept comes as a natural evolution of the corporate (social) responsibility work, which has received its criticisms along the years for not bringing substantial value to either the business, or society. As creating shared value for the company and the society is at the core of the Blue Dimension™ concept, Trelleborg AB tries to encourage the investigation of new business opportunities that can be brought by addressing broader societal challenges in the geographical areas and industrial sectors where the company is active. However attractive and beneficial this initiative presents itself, challenges in adopting it throughout the Group were expected from corporate

headquarters. For this reason, there was a need to form a picture of how the local context, the existing organizational structure and managerial approaches that drive Trelleborg's business across the world, influenced how the concept was perceived and the reactions it triggered. The increase in understanding of the contextual factors that are conducive or restrictive to integrating sustainability into product communication contributed to finding opportunities for strengthening the initiative for a wider support across the Group, but also for the development of future initiatives that will have similar objectives. This is hoped to be of use also to other companies or organizations working in similar contexts as Trelleborg AB or its units and which are facing similar challenges in integrating sustainability into their business and their external communication.

6.1 Answering the research questions

RQ₁ *What are the barriers and drivers of different business units throughout Trelleborg AB when it comes to integrating sustainability aspects in product communication and development?*

Integrating sustainability aspects in product communication and development is generally perceived by Trelleborg management as a positive endeavour, with the potential to bring many benefits for the company, but also for the environment and society. However, several *barriers* were identified to hinder actions being undertaken in this direction.

First of all, there is a *significant reliance on the external environment to drive the business focus and strategy*. With customers being the main actors that influence the company's approach to business, in relation to what types of products it releases, what features they include and what is communicated externally about them, it can be concluded that the main current barrier is *lack of customer demand for sustainable features*. Despite having a great potential of becoming a future driver for integrating sustainability into product development and communication, as shown in the case of the TM Blue[®] tire, customer demand is at the present very much concentrated on technical specifications, price, customization opportunities and delivery time. Whereas, environmental or sustainability criteria are believed to be important to communicate mainly in terms of *differentiation from competition and maintaining brand reputation*. It was also observed that external product communication is focused on what is considered to be *critical* to be able to convey the advantage of choosing Trelleborg AB as a provider. The potential reason behind this prioritization could be that in an industrial engineering B2B environment, selection is done based on strict procurement criteria which may or may not include environmental/sustainability specifications. Therefore investing effort and being pro-active in communicating such aspects might not be considered to bring comparative returns. Survey and interview respondents reported that customer demand and interest in such aspects is generally low, with only few accounts being registered as explicitly requesting provisions in this direction. Therefore, considering Trelleborg's business model, the passive attitude of customers towards sustainability aspects being considered in products, there is no consistent incentive to invest resources in developing and/or promoting them.

Secondly, respondents appeared to generally *associate sustainability or environmental benefits only with cutting edge technology*. And as a large part of Trelleborg's current offer is not considered to be very technologically advanced, especially by comparison with other sectors which are driven by fierce technological competition, identifying the potential in the existing products is hindered.

A last important barrier identified for integrating sustainability aspects in external product communication is *lack of leadership* in this direction. There is little openness for risk taking and experimenting with such communication, probably because the awareness and expectations about the benefits it could bring are relatively low. Leadership plays an important role in advancing solutions that drive customer demand instead of reacting to it – as demonstrated by the case of the TM Blue[®] agricultural tire. In the majority of sectors in which Trelleborg AB is active, the demand for such aspects is very limited. Therefore, by enabling leadership at its true potential and value for the company, could also enable a new approach to business that could bring or create a new customer profile that is currently not considered for Trelleborg.

The main aspects that were identified as *drivers* for integrating sustainability in product communication across Trelleborg's units were:

- (1) addressing customers' needs for lowering their environmental footprint
- (2) sustainability is an emerging topic in industry
- (3) corporate policy
- (4) top management endorsement for positioning as strategically important and for proof of support in securing new business opportunities (differentiation, new markets and new customers).

The first potential driver is partially related with customer demand for innovative products and solutions that can contribute to reducing their environmental impacts and it was found to be a very powerful driver - *when this demand is explicit*. It has been recognized that whenever customers were pro-active and demanding for such criteria, there was no resistance in meeting their needs. As stated before, customer demand can be both a barrier to integrating sustainability in product communication, but also a very powerful driver when it is explicit and encouraging towards sustainability. The way the Agriculture Division in Wheel Systems business area turned this barrier into a driver, was by enabling leadership to *shift customer demand* towards more sustainable products. Raising awareness both internally and externally on sustainability issues was very important in acknowledging why sustainability is important for the business and the sector, but also to stimulate new ideas and proposals for strengthening the initiative.

The second driver currently supporting the communication of sustainability aspects in products is the fact that *the topic is emerging more and more in industry and is expected to soon become a standard practice*. Therefore, capturing momentum could make Trelleborg AB a true leader in the business, with an ever growing customer base. Managers from all over the company recognised this trend and they expect it to become a more frequent requirement. However, there were no indications of plans or actions that would prepare them to take advantage of this trend sooner than their competitors.

Corporate policy and requirements were also recognized to have the potential to drive advancements in the direction of integrating sustainability in product communication. *Explicit and specific* corporate guidelines, *targets and objectives* are usually given high priority at unit level and can motivate action towards areas that are currently seen as largely optional. The challenge here is to set a clear direction for the entire company towards sustainability, especially considering that at the moment, sustainability is not associated with the core business. The learning point here could be that a decentralized governance approach, with independent units in terms of decision making could be a barrier when the aim is to bring a substantial change to the organization. In the case of the TM Blue[®] tire decentralization only

enabled the local know how about the market and the industry, but the actual action towards promoting sustainability in the product was driven through a top-down approach.

This further leads to another identified driver, which is *top management endorsement* and support to position sustainability as strategically important for the business. Without this support and the motivation that cascades out of it, it can be very difficult if not impossible to bring the organizational changes required to fully capture the business opportunities that communication of sustainability aspects can bring.

In conclusion, there are many opportunities to turn the identified individual and organizational challenges into opportunities to expand and encourage the integration of sustainability aspects into product communication and development. There are many powerful drivers that can be used to bring the necessary support for initiatives meant to increase the interest and motivation to use sustainability communication as a tool for strengthening the business model.

RQ₂ ***What challenges does the corporate headquarters perceive when seeking to promote sustainability issues to their decentralized units?***

Probably the most important challenge faced by the corporate responsibility team at corporate headquarters comes from the fact that sustainability aspects and their integration in business processes *are not established as strategically important* Group-wide. Considering the profile of the company, the sectors in which it operates, the market it addresses, the products it manufactures and the fact that it is a generally customer-driven business, *sustainability is generally not perceived to bring business benefits unless there is an explicit external demand for it*. Therefore, the challenge for the corporate headquarters is to *facilitate the identification of competitive advantage opportunities* coming from addressing sustainability through the business; and more specifically, through sustainable product communication and thinking. The Blue Dimension™ concept aims to address this challenge by offering a common communication and branding tool for the entire Group. This tool is meant to help reveal new business opportunities by increasing awareness of the added value in the products, can be attractive to previously ignored customer profiles.

Many challenges at corporate level are derived from the company's organizational structure and its business model. By being very decentralised, Trelleborg AB relies on its units to drive its business, in accordance to the local conditions found in the countries where they are established and in the markets they serve. By being aware of the focus on meeting the (financial) targets and on the operational side of the units' businesses, it is *very difficult, if not impossible, for headquarters to impose additional objectives and responsibilities* to the existing workload. Therefore, the Blue Dimension™ was initially presented as an opportunity for those who are interested and willing to take advantage of it. And this, in spite of the tremendous business benefits demonstrated when strategic importance is given to communicating sustainability aspects in products.

The Trelleborg business model also places a lot of pressure on the corporate responsibility team when seeking to advance sustainability to the units because in order for an initiative to attract sufficient attention and support, it needs to be *designed and communicated in such a way that the (financial) business benefits are very clearly shown*. Therefore all initiatives meant to bring the company towards more sustainable business practices needed to first demonstrate concrete financial or business benefits (e.g. cost reductions, increased productivity etc.) and only on a secondary dimension, the environmental and/or social gains.

The corporate headquarters perceives this communication approach as effective because of the *limited awareness and interest* throughout the Group on sustainability issues, corroborated with a *limited managerial capacity* to address them in practice.

In conclusion, the perceived challenges at corporate headquarters may negatively influence the set ambition and expectation levels for the initiatives that are launched centrally in order to advance sustainability throughout Trelleborg's units. Without a periodical analysis to check if these challenges are validated at unit level and without cooperating to find ways to overcome them, many of the ideas that have a great potential to drive the company towards a more sustainable business model that could ensure Trelleborg with long-term competitive advantage, risk never even leaving the corporate headquarters or they face a significant delay.

RQ ₃ <i>What are the early responses/reactions to the Blue Dimension™ concept, designed to influence sustainable product thinking in Trelleborg AB?</i>

It can be stated that the Blue Dimension™ was generally received with a positive attitude. The investigated business units seemed to appreciate the interest of the company in environmental aspects and in their promotion. However, it appeared that there was *little understanding of the corporate intentions* for the units to evaluate their product portfolio to reveal products that already integrate sustainability features and to start promoting them accordingly. As these intentions were not explicitly stated, even when communication materials (e.g. online banners, templates, presentations etc.) were distributed throughout the Group, the corporate headquarters currently relies on the awareness generated by the concept to reveal opportunities to promote sustainability aspects in products and solutions in the future. As more and more successful examples from the Group will be promoted internally and as the external demand for the sustainability criteria is expected to increase, the Blue Dimension™ is also expected to gain more popularity within the Group.

At the moment, however, the *applicability of the concept to the individual local products and solutions is not fully understood*. Apart from the sectors that have a clear environmental orientation (e.g. solar, wind etc.), the *opportunities and motivations to use the Blue Dimensions™ are not very clear* throughout the Group. The Blue Dimension™ is a common tool and concept that covers the entire organization and it was understood as a Group branding tool. The Blue Dimension™ was widely perceived as the corporate way to communicate its support for the environment and society. Therefore, adopting the Blue Dimension™ at BU level is understood as just passing down to the customers the information that Trelleborg AB is environmentally and socially concerned. This is perceived as an effort to raise the profile of the corporate brand, without bringing tangible benefits for the specific units. For this reason, there was a clear expectation from the units to see the company “walk the talk”, without making the connection with their individual contribution in the process. Trelleborg is decentralised to an extent that business units actually make the distinction between themselves and the company. Many of them see the business area as the company they work for (i.e. Wheel Systems, Sealing Solutions, and Engineered Systems) and not Trelleborg as an overarching entity. This is probably due to the fact that these business areas are also very independent from each other and not just the headquarters. For these reasons, when the Blue Dimension™ was launched from the headquarters, there was no immediate connection established between the Trelleborg brand and its position towards the environment and society and the units' contribution to transposition it into practice.

Therefore, as the company as a whole continues to express its support and openness towards integrating sustainability into product communication and development, together with the

increasing demands coming from the market for such aspects, it is expected that the Blue Dimension™ will provide the framework and the tools to the units that are looking to enhance their business.

6.2 Recommendations

Considering the context of the research and the findings from the case study, the following recommendations are presented for the strengthening of the Blue Dimension™ within the Trelleborg Group, with the hope that – at least part of them – will be found useful to the company and its units in order to advance sustainability in product communication and development:

- *Define and promote the strategic importance of sustainability through the Blue Dimension™ for Trelleborg AB.* Despite requiring a considerable managerial effort to secure endorsement for the Blue Dimension™ to be launched throughout the Group, by establishing and promoting the initiative as strategically important for Trelleborg, could significantly motivate its implementation. The prospect of having several Blue Dimension™ flagship products for each BA, similar to the TM Blue® agricultural tire, could create an image of the tremendous benefits that can be gained by supporting this concept.
- *Communicate concisely, provide clear objectives/expectations.* In order to facilitate the implementation of corporate responsibility initiatives, clear expectations need to be presented to the target groups about what needs to be done in their respect. Because corporate responsibility is not part of the core business of the units and it will take a considerable amount of time until sustainability will be coherently integrated into the business model of the company, these initiatives will always compete for attention with the daily operations.
- *Promote success.* By promoting case studies of products and solutions that integrate the Blue Dimension™ concept and especially their success on the market, corporate headquarters, but also the BAs and BUs on their own, could provide the inspiration needed to bring forward new innovative ideas. By sharing experiences and success across BUs and also across BAs, can create the right environment to foster learning, but also internal competition. It is also very important to recognise and award the efforts to adopt and use the concept in external communication of specific products and solutions and even more so, in new product developments.
- *Providing a set of guidelines for the implementation of the Blue Dimension™, adapted to the profile of each of the Business Areas.* Through a collaborative effort - similar to the case of the Manufacturing Excellence program - to gather the necessary information, the Blue Dimension™ could be promoted internally from the angle of each of the Business Areas. Promoting case studies of products that are familiar to the target group and examples of product features found throughout the BA that could be representative for the concept, could increase the understanding over the applicability of the concept. Without being very specific on how it should be done, these guidelines could provide the framework, the inspiration and the incentive for the implementation of the concept.
- *Encourage and support cooperation between BAs and BUs.* Integrating the units across the world more in Trelleborg and helping them really sharing the corporate culture

would contribute to a wider adoption of the Blue Dimension™ and vice versa. The Blue Dimension™ has all the potential to become a very important part of the Trelleborg brand. And together they can create a mutually reinforcing drive for integrating sustainability considerations in the long-term business strategy. Online socialization and knowledge sharing platforms could play an important role in fostering the integration of sustainability in product communication and development. However, in order to be effective, they need administration and most important, facilitation. There is a risk that due to time and other resource constraints, the targeted functions will not pay sufficient attention to these platforms. It is not enough to create and advertise these platforms as new work spaces, they might also require training and motivation to be used. By better and more visibly integrating the Corporate Responsibility website within all other corporate websites and Intranet platforms, could also help reinforce the message that “*sustainability is part of Trelleborg’s business*”.

- *Developing internal competencies for sustainability.* Following the success of the TM Blue® tire and the awareness level registered on the concept of the Blue Dimension™ revealed by the survey, one strong recommendation is to focus on developing the internal competencies across the Group and across functions, related to sustainability. This can contribute to easier find the ways the Blue Dimension™ can foster competitive advantage, value for the consumers, end users and society in general. By investing in building capacity, could drive the development of new, possibly high-end/premium, ranges of products that address sustainability issues and secure competitive advantage. This approach can be helpful in the context of the future plans for promoting the Blue Dimension™ externally, as it will prepare the internal force of Trelleborg’s BUs to drive the demand in their specific industries and markets, but also to respond in an innovative manner to more or less obvious customer demands and/or trends regarding sustainability issues.
- *Consider integrating NGOs in the wider stakeholder consultation, especially at BU level.* Despite being clearly defined as non-stakeholders, NGOs are in ways representatives of the society that Trelleborg strives to protect and to develop through innovative products and solutions. They have the potential to contribute substantially to unveiling new business opportunities and new ways to overcome existing barriers to effective product communication.

6.3 Final reflections

Among the many reasons for choosing Trelleborg AB for this research, probably the most important was the challenge brought by the size and complexity of its structure and the influence this has on its propensity to promote sustainability, both internally and externally. Despite a general awareness about the benefits of integrating sustainability in product communication and development, but also into the business model, there were many discrepancies found within the company with regards to actions that reflect this openness towards sustainability.

As it was shown, there are many factors that are conducive or hindering to the incorporation of sustainability aspects in product and communication throughout the company. The Blue Dimension™ attempts to contribute to overcome the specific, contextual challenges of the units by providing a common framework to help them identify and communicate the contributions their products bring to their customers, but also to the environment and society.

The research however is very closely tied to the specific context of Trelleborg and of its units, therefore it does not allow far-reaching generalizations. Considering the complexity and diversity within Trelleborg and the limited possibilities for the researcher to thoroughly familiarise with the company and especially its units, there are probably few opportunities to make generalizations for the company itself. As there were few cases where respondents or interviewees represented the same BU, their personal perspective on the topic can hardly be considered as representative for the entire unit. However, there were similarities identified across the different units that contributed to discovering the analytical categories that guided the analysis of the data.

6.4 Future research avenues

In the light of the case study findings and its limitations, it could be interesting from Trelleborg's, but also from an academic point of view, to investigate if there were changes in perceptions about the Blue Dimension™ later after its launch and following the potential improvements that resulted from this research. It would be also interesting to see whether more units across BAs implemented the Blue Dimension™ concept and what were the barriers they faced and the success they registered.

By stepping outside the company borders, it can be of great value for Trelleborg, but also for other companies to investigate the perception of the market/customers regarding initiatives like the Blue Dimension™. By identifying the upstream perception (in the B2B context) over how important it can be to communicate sustainability aspects in products and solutions and how this could contribute to securing competitive advantage in the industrial sector, could contribute significantly to the understanding of the drivers that could support the integration of sustainability into product communication and development.

By moving even further from the case study company, another avenue of research could be about how integrating sustainability in the communication of products can drive a further integration of sustainability into wider corporate strategies and also how this can improve the company performance.

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Appendix I: Overview⁴ of respondents and interviewees BA/BU, country and markets⁵

No	BA/BU of respondent	Country/state	BU/BA's key markets in terms of geography and business segment
Survey responses			
1	Trelleborg Offshore (Engineered Systems)	USA, Texas	Offshore Oil and Gas
2	Engineered Systems	USA, Texas	Global Offshore Oil & Gas Drilling and Production.
3	Wheel Systems	USA, Ohio	Americas and Industrial Tires
4	Wheel Systems – Industrial Tires	USA, Florida	Industrial and Construction Tires, as well as Rubber Tracks for Global Marketing
5	BA Aerospace Hub Americas (Sealing Solutions)	USA, Indiana	Aerospace Markets for the Americas and Asia-Pacific.
6	Engineered Systems	USA	Offshore - Gulf of Mexico & Brazil
7	Research & Development	USA, Indiana	All segments in the Americas and provide some technical support in Europe and Asia markets.
8	Government Sale & Support	USA, Indiana	We service the US Government in procuring replacement product for their needs.
9	Trelleborg Sealing Solutions	USA	Life Sciences
10	Coated Systems (Engineered Systems)	USA, Tennessee	US, Canada and LA Printing Blankets
11	Global Operation Engineered Plastics - GOEP (Sealing Solutions)	USA, Illinois	Industrial, Marine, Hydro, Fluid power, Seals and Bearings
12	Trelleborg Industrial Solutions	India	Europe, Asia, India & Americas
13	Trelleborg Sealing Solution	China	Sealing solution for telecommunication equipment, power and ventilation industry, industrial anti-vibration for Asia.
14	Wheel Systems	China	Europe
15	Industrial Tires (Wheel Systems)	Sri Lanka	Geographical - Europe and USA Business - Industrial Tires
16	PTFE - polytetrafluoroethylene (Sealing Solutions)	P.R. China	Mainland China
17	Trelleborg Sealing Solutions	China	General Industry

⁴ data gathered from Group wide survey and interviews; minimal processing was carried out for uniformity

⁵ Function of respondents and interviewees was left out of the representation to protect identity. Function was however considered in data analysis.

No	BA/BU of respondent	Country/state	BU/BA's key markets in terms of geography and business segment
18	Global Operation Engineered Plastics - GOEP (Sealing Solutions)	India	Indian, and few Items for Europe Engineering Plastic
19	Trelleborg Engineered Systems	Australia	Defense Force and General Manufacturing - Australia
20	Corporate	Sweden	n/a
21	Trelleborg Offshore (Engineered Systems)	Norway	Oil & gas world wide
22	Sealing Profiles (Sealing Solutions)	UK	UK & Republic of Ireland Window & door manufacturing (UPVC, wood, aluminum & composite) Transport / Automotive DIY / Domestic
23	Trelleborg Offshore (Engineered Systems)	Norway	Oil industries
24	Sealing Solutions	Italy, Livorno	Fluid Power in European market
25	Sealing Solutions	Malta	Our products are distributed globally mainly through the logistics centers in LCE, LCA and China. Automotive is the current main business segment followed by Industrial.
26	Global Operation Elastomers - GOEL (Sealing Solutions)	Germany	Geography: global Segment: Automotive, Industrial, Aerospace
27	Wheel Systems	Latvia	Europe, agriculture.
28	Printing Solutions (Engineered Systems)	Italy	World wide spread business on off-set blankets printing solutions.
29	Material & Mixing (Engineered Systems)	Netherlands	Our customers, mainly Europe and also worldwide, buy our compounds to produce products for civil engineering, off shore, and consumer markets.
30	Sealing Solutions	Sweden	High tech polymer coated substrates
31	BU Sealing Profiles (Sealing Solutions)	Lithuania	Part of self adhesive profiles. Main markets are: Russia, Ukraine, Eastern and Northern Europe (Scandinavia); South and West Europe not so big. Small market in US and Chile.
32	Sealing Solutions	Denmark	Market: Europe Segment: Industry (basically all types), Automotive and Aerospace
33	Trelleborg Offshore (Engineered Systems)	Norway	Rubber product toward the Oil and Gas industry
34	Sealing Solutions	Italy	Rotary Shaft Seal / World Wide
35	Fluid Handling Solutions (Engineered Systems)	France	Industrial Hoses in industrial segments worldwide. 90% Europe
36	Sealing Solutions	Denmark	Europe Automotive - Industrial - Aerospace
37	Coated Systems (Engineered Systems)	Italy	All over the world. The business segment is solution for graphic industry

No	BA/BU of respondent	Country/state	BU/BA's key markets in terms of geography and business segment
38	Industrial Solutions (Engineered Systems)	Sweden	Sweden, Europe
39	Trelleborg Sealing Profiles (Sealing Solutions)	Germany	Buildings. Europe - all kinds of windows
40	Fluid Handling Solutions (Engineered Systems)	France	France, Scandinavia, Germany, East Europe, Australia, Brazil, China.
41	Trelleborg Industrial Solutions (Engineered Systems)	Poland	Norway, England, Switzerland, Sweden, Holland, Germany, Poland
42	Engineered Systems	Czech Republic	Europe - automotive, constructions
43	Offshore AS (Engineered Systems)	Norway	Offshore, worldwide
44	Global R&D	Germany	for Global R&D: all markets globally for R&D Germany: focus on European market Business Segments: Fluid Power, CPI, Automotive, Aerospace
45	PA OVS (Wheel Systems)	Italy	Agricultural and Industrial tires; all markets excluded Europe and North America: South America, Africa, South East Asia, Oceania.
46	Infrastructure (Engineered Systems)	Netherlands	Dredging; Oil sands World wide
47	Global Operation Engineered Plastics - GOEP (Sealing Solutions)	Italy	Key markets: Europe Business segment: construction equipments, agricultural equipments, hydraulic components
48	Engineered Systems	Lithuania	Europe, Scandinavian countries, Japan, US
49	Trelleborg Sealing Solutions	Germany	European Market of Fluid Power, Chemical - and Process Industry, Power Transmission and Life Sciences
50	Trelleborg Pipe Seals (Engineered Systems)	Spain	Pipe seals for iron, concrete and plastic pipes
51	Trelleborg Sealing Solutions	Denmark	Europe
52	Engineered Systems	UK	Offshore Oil & Gas
53	Trelleborg Fluids Handling Solutions (Engineered Systems)	France	Oil, chemicals and petrochemicals, steam hoses. Worldwide
54	Global Operations Elastomers – GOEL (Sealing Solutions)	UK	Aerospace
55	Printing Solutions (Engineered Systems)	Italy	Worldwide market on off-set blanket, metal back blanket, engineered fabrics and digital blanket.
56	Trelleborg Sealing Solutions	UK	Aerospace Airframe Seals and Wing Seals (Sales value £15.1M) Civil 80%, Military 20%, OEM and Spares UK 51% Europe 26% USA 8% ASIA 15%

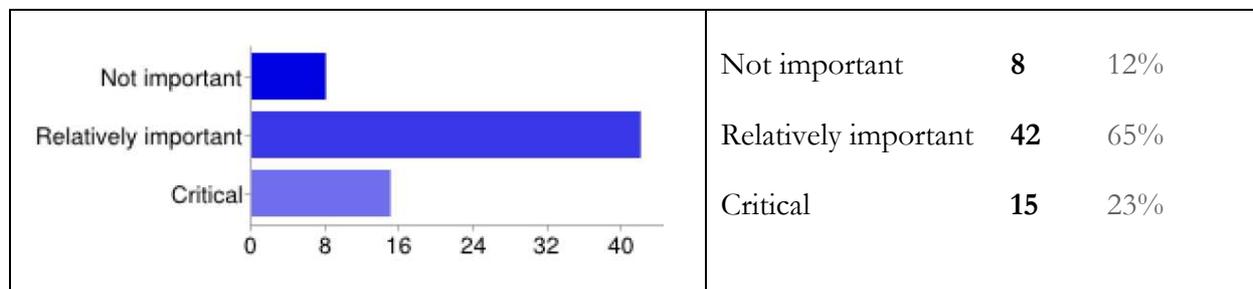
No	BA/BU of respondent	Country/state	BU/BA's key markets in terms of geography and business segment
57	Trelleborg Moulded Components (Engineered Systems)	Sweden	World wide Infrastructure Transportation equipment Offshore Oil/gas General industry
58	Wheel Systems	Austria	Austria, Radial agriculture tires
59	Industrial Tires (Wheel Systems)	Italy	Europe
60	Sealing Solutions	Denmark	Sealing in engineered plastic for automotive, aerospace and industrial marked primarily in Europe.
61	Materials & Mixing (Engineered Systems)	Sweden	European power cable compounds
62	Pipe Seals (Engineered Systems)	UK	Europe, Middle East, Australasia, South Africa, North & South America. Concrete, plastic, ductile iron and clay pipeline systems for water, drainage and sewerage transportation.
63	Agri & Forestry Tires (Wheel Systems)	Italy	Worldwide
64	Trelleborg Offshore (Engineered Systems)	Norway	World wide, but home marked will be Europe and North Africa.
65	Trelleborg Sealing Solutions	UK	Market: UK Segment: specialize in aerospace; industry-specific solutions for the following sectors: bearing applications within the following sectors: Aerospace, Automotive, Chemical Processing, Food & Pharmaceutical, Machine Tools, Medical Technology, Marine, Off-Highway, Oil & Gas, Propulsion Technology, Sanitary & Heating, Semiconductor
Interviews			
1	Corporate	Sweden	Function: Internal control
2	Corporate	Sweden	Function: Former legal counsel and director of communications
3	Corporate	Sweden	Function: Human resources
4	Corporate	Sweden	Function: Internal auditor
5	Corporate	Sweden	Function: Corporate responsibility communications and internal communication
6	Agri and Forestry Tires (Wheels Systems)	Italy	Responsible for marketing and Communication at BU level. Geographically: Europe, North America and China. Segment: Agriculture and Forestry Tires
7	Sealing Solutions	France	Aeronautic, Aerospace industries
8	Pipe Seals (Engineered Systems)	France	Europe South: France, Italy and Benelux Plastic and concrete pipes.
9	Engineered Systems	France	Europe; sales mainly in Sweden and France

No	BA/BU of respondent	Country/state	BU/BA's key markets in terms of geography and business segment
10	Life Sciences (Sealing Solutions)	USA, California	Focus on new, growing segments in US Sealing Solutions
11	Sealing Solutions	France	Manufacturing plant; main customers are marketing companies
12	Fluid Handling Solutions (Engineered Systems)	France	Geography: Europe/Middle East - North Africa - Asia/China - South America Business segment: Construction, Environment, Agriculture, Food Industry, Chemicals & Oil, Mining, Industrial Maintenance

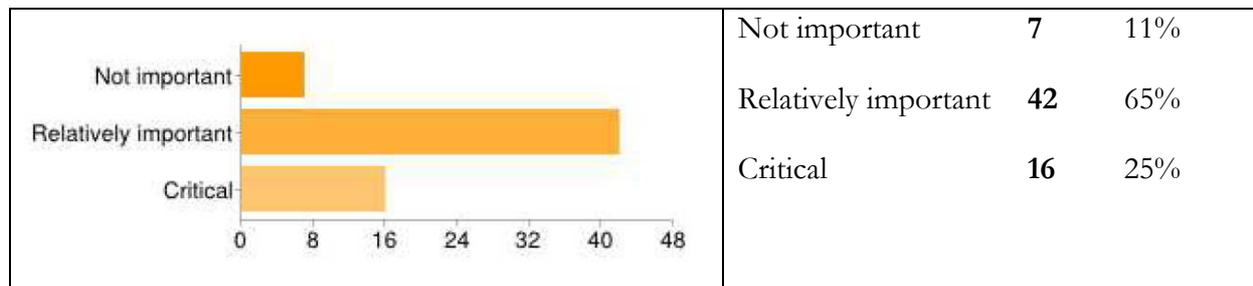
Appendix II: Group wide survey questions and results

1. What BU are you representing?
2. In what country/state are you located?
3. What is your position in the company?
4. What are your BU/BA's key markets in terms of geography and business segment?
5. How do you think your customers appreciate the following features in your BU/BA's products and solutions

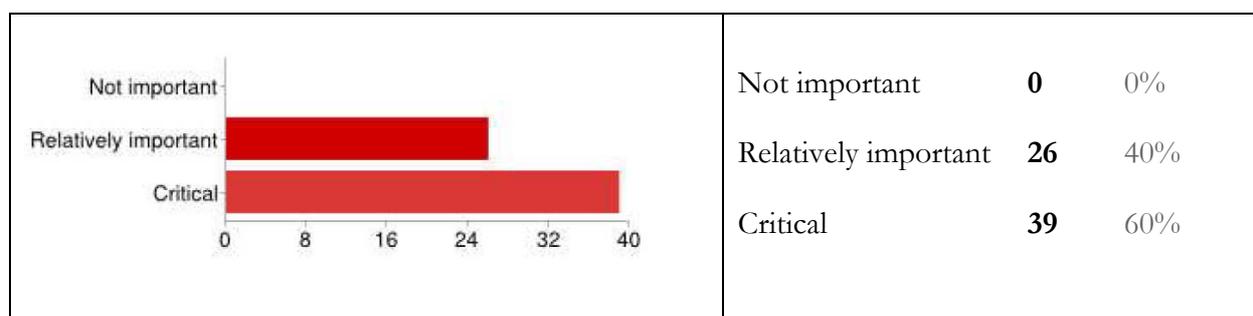
5.1. Environmentally and socially responsible suppliers



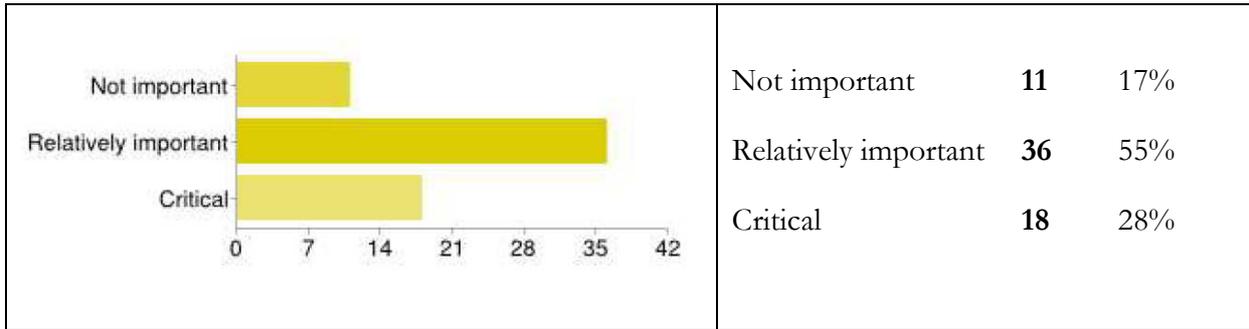
5.2. Good for the environment (no dangerous chemicals, low emissions, low energy consumption etc.)



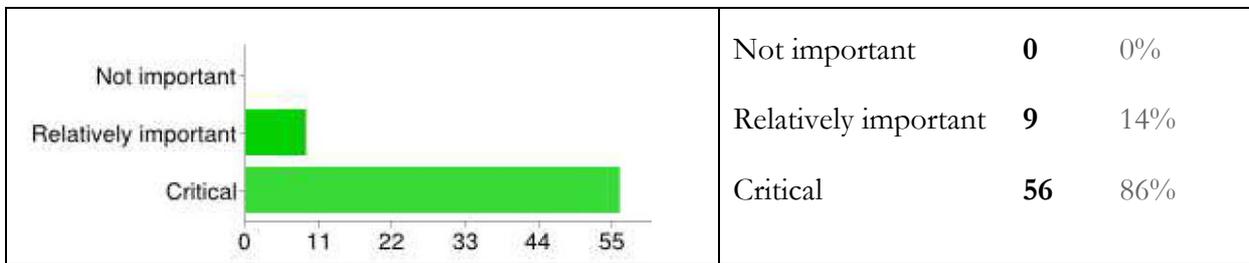
5.3. Price



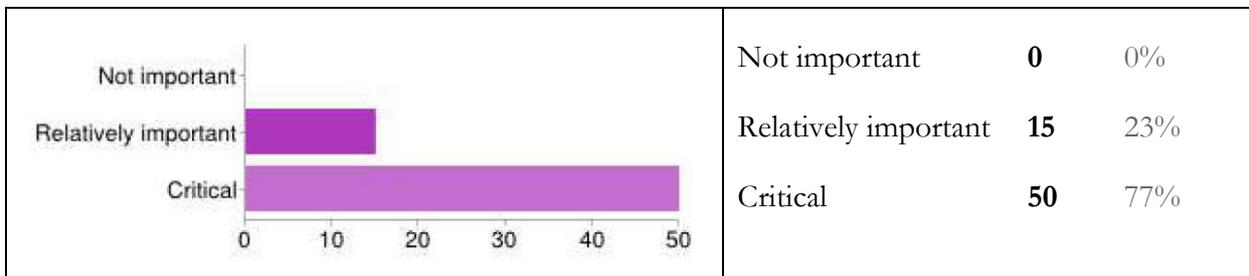
5.4. Good for society (protect people and infrastructure, high health and safety standards etc)



5.5. Quality and function (durability, flexibility/customization possibilities; fulfillment of technical parameters)



5.6. Delivery time

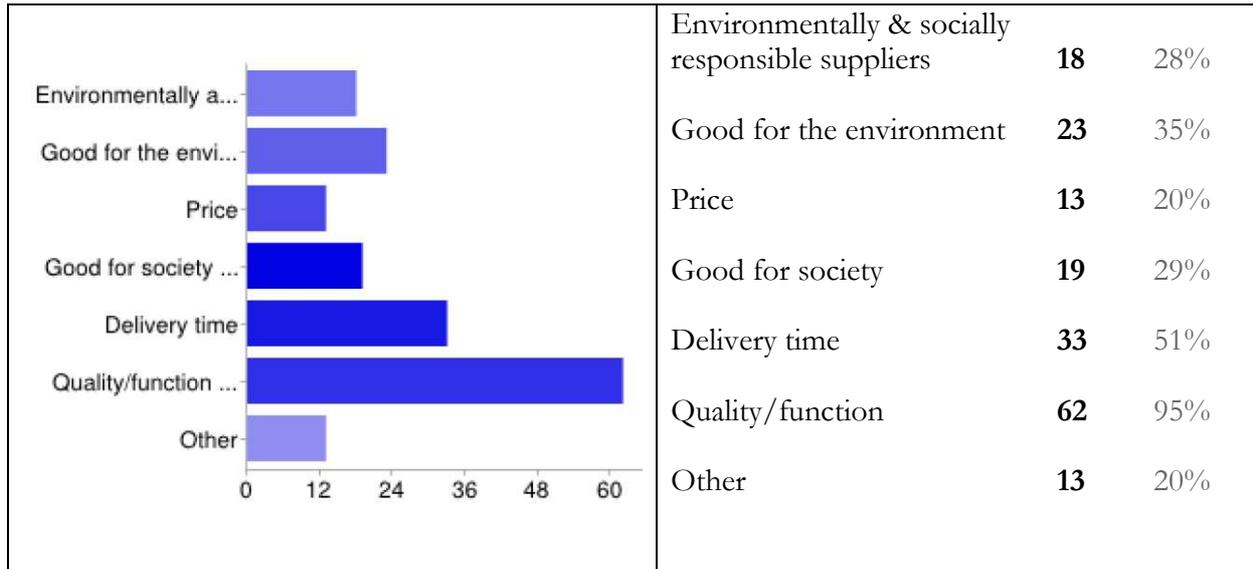


5.7. Other critical features (optional)

Service levels	General customer service	Performance, technical assistance, and quality	Technical competence and support in developing solutions for customer
Performance is key along with product life	Material development capability to meet future needs	Delivery, performance	Continuous development
Service (Technical support)	Important to note that we deal mostly with internal customers. Our interactions with the ultimate customer is very infrequent	Quality, flexibility communication	Aerospace approvals

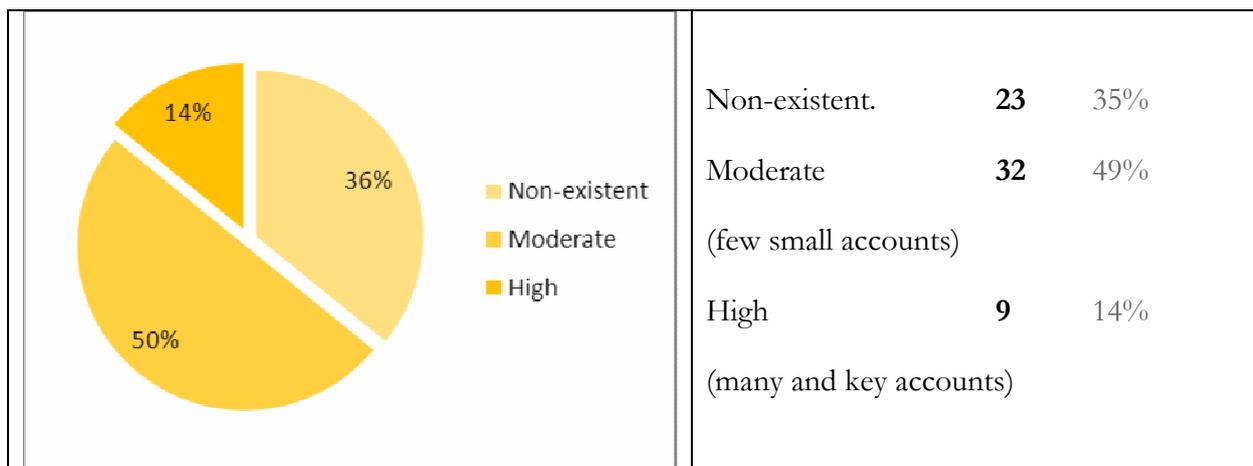
Full product traceability	To be the experts of the product	World Class Material	Minimum of ISO9100 rev C
Design responsibility	Value for money	Product training	Risk Share CAD/Catia system

6. What type of product features are highlighted in marketing and sales communication for your BU/BA's products (for most products)?



Respondents may select more than one checkbox, so percentages may add up to more than 100%.

7. Do your customers currently ask for environmental/social features in products? The demand for environmental/social features is currently:

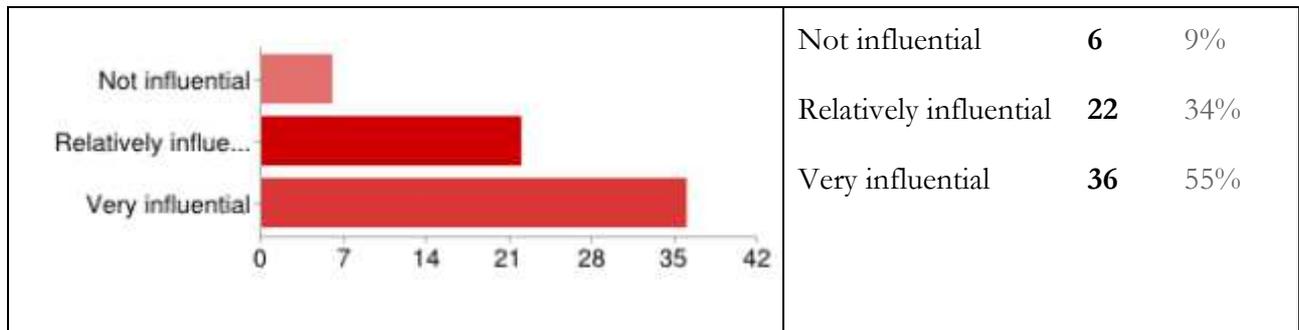


8. What environmental/social concerns did you register from your customers?

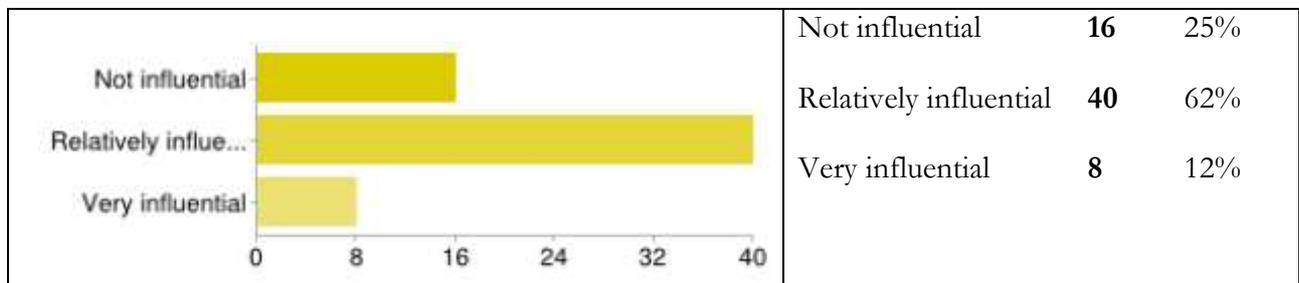
No child labour	Eliminate use of toxic or hazardous substances	Pollution of the environment	Health and safety training
REACH compliance	Industry standards (ISO 14001, IMDS, ROHS, USP)	Replace certain chemicals	Safety plans
Waste management	Sourcing based on effects of the Montreal protocol	EU regulation: ISO 10993-10/-11 & USP 6.6.1 EG VO 1935/2004 for Materials EN 1672-2 Hygienic Design Guidelines	FAR and DFAR requirements
Embodied Carbon, Water footprinting	energy consumption in the application	Few cases concerning packaging and its disposal.	Few cases concerning material recyclability.
Food compliances	Cleanliness requirements	Avoid soil compaction	Compliance with local social laws

9. How influential are the following aspects over the types of information that get included in (general external product communication/marketing)?

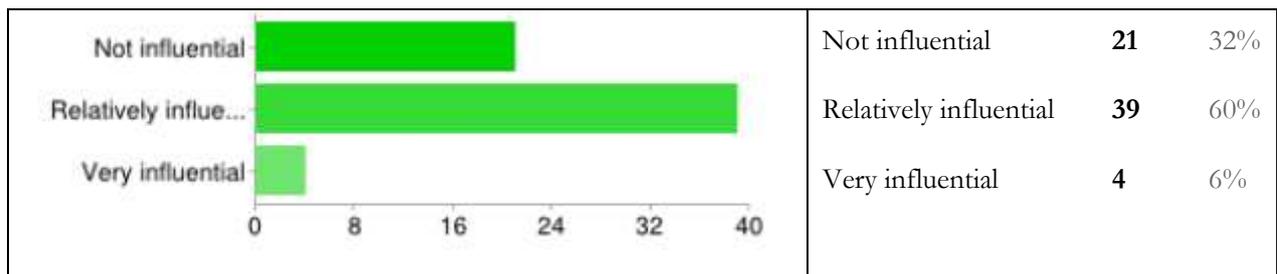
9.1. Market demand for certain product features



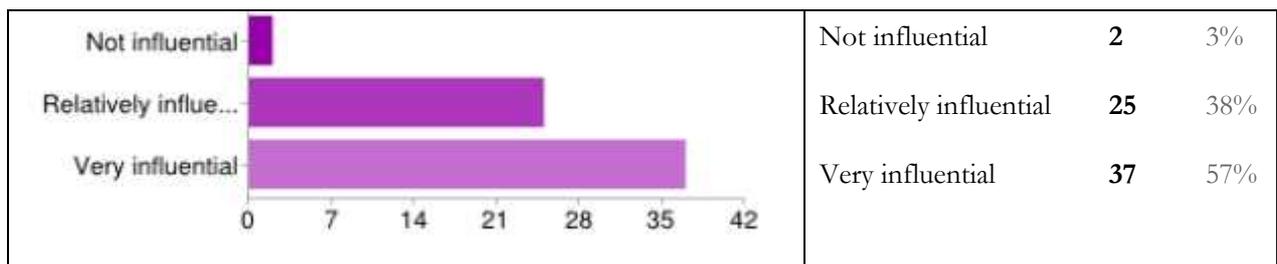
9.2. Legislative pressure



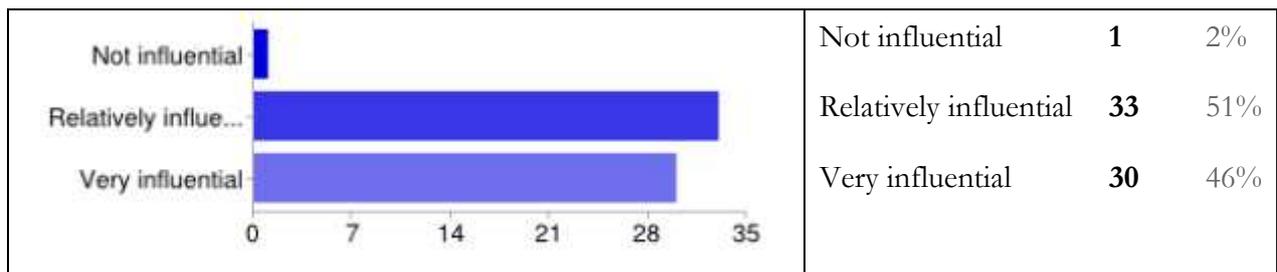
9.3. Communication costs



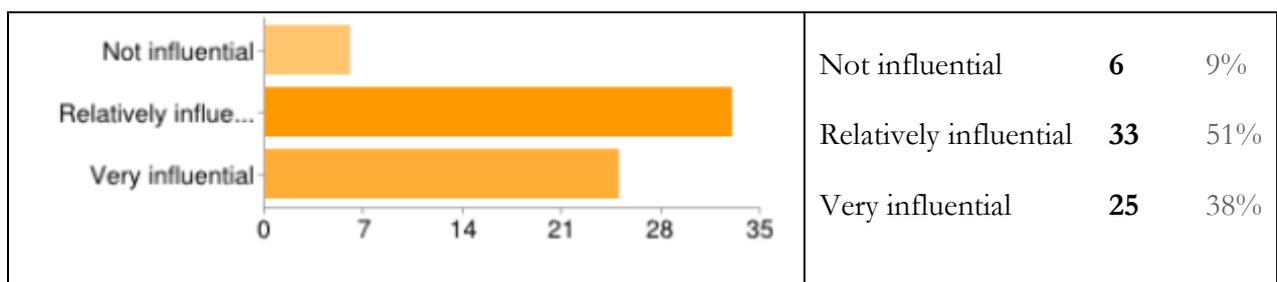
9.4. (New) business opportunities



9.5. Marketing strategy



9.6. Need to maintain a good image within the Group and/or our Business Area

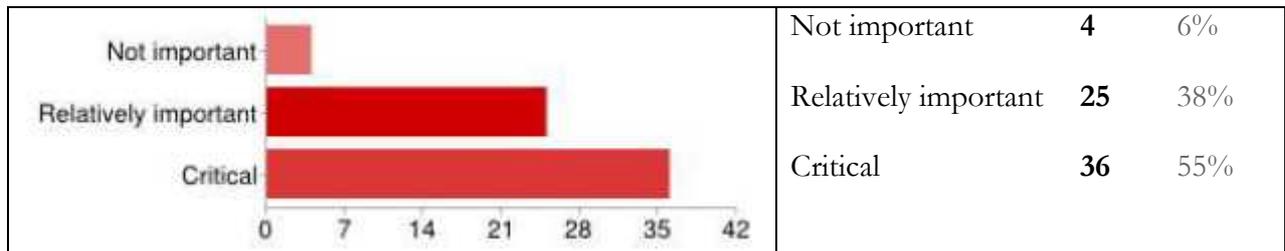


9.7. Other critical aspects you may have identified that influence what you communicate about your products:

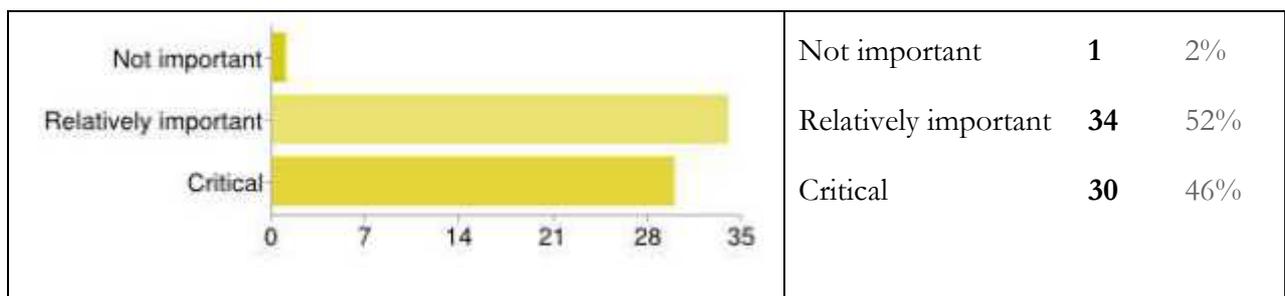
New solutions	maintaining the brand image	developing products/ systems with customers	added value
competition comparison	current customer testimonials	Ways to reach the proper people	Benchmarking with competitors
Design	Technical performance and specification	Life of Product	Track record
Weight	Cost	Customer support	Design Solution
Price Stability	Capacity Profile	Quality Systems	Service aspects: customizing, lead times and technical service.

10. How important do you consider the following concerns for the integration of environmental/social aspects in your BU/BA's product specifications?

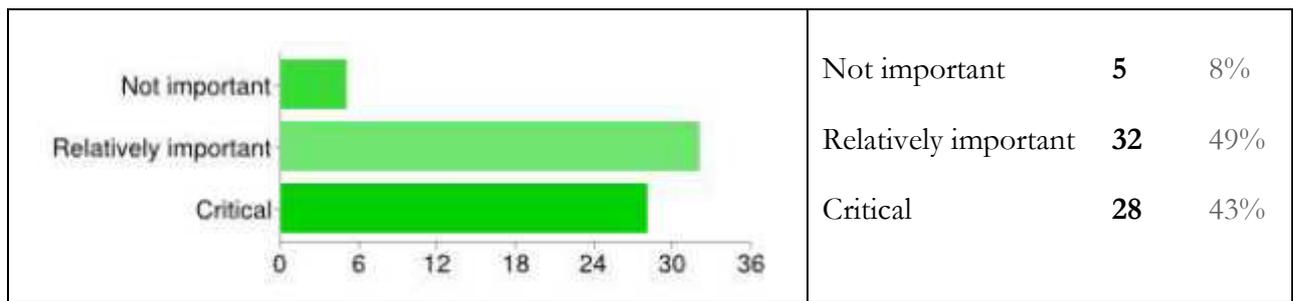
10.1. Direct customer requirements



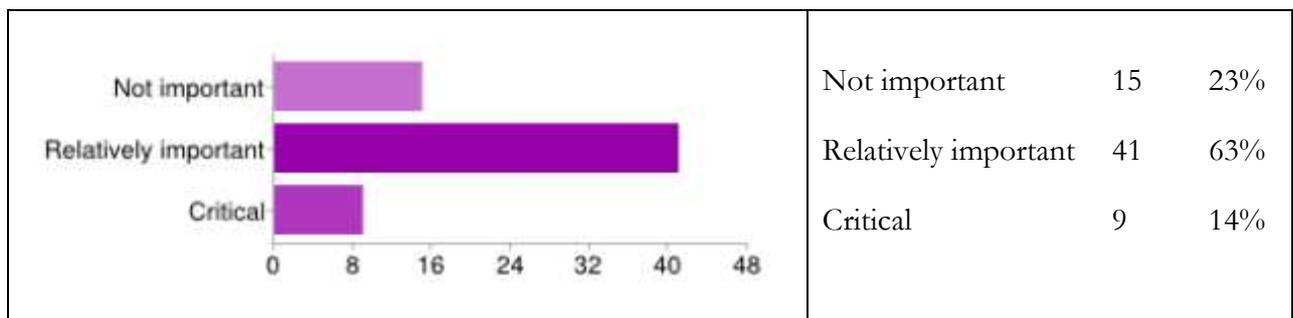
10.2. Market demand (wider perspective, including new potential customers)



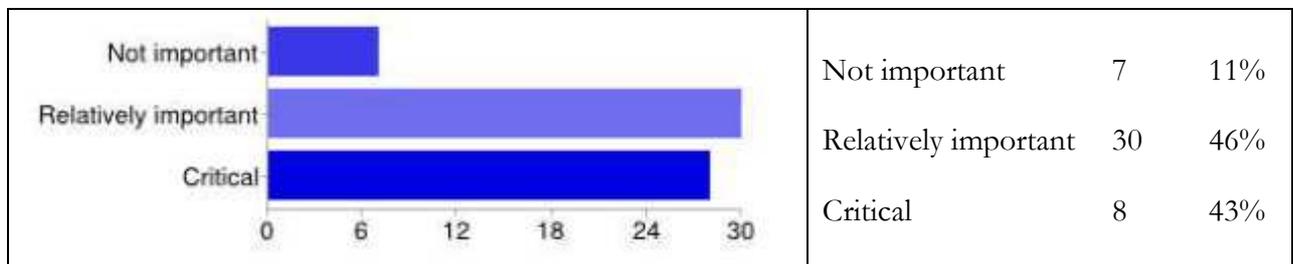
10.3. Legislative requirements



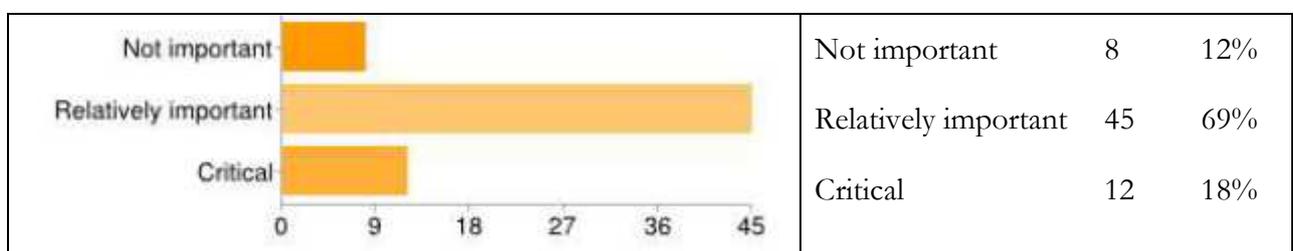
10.4. Societal pressure



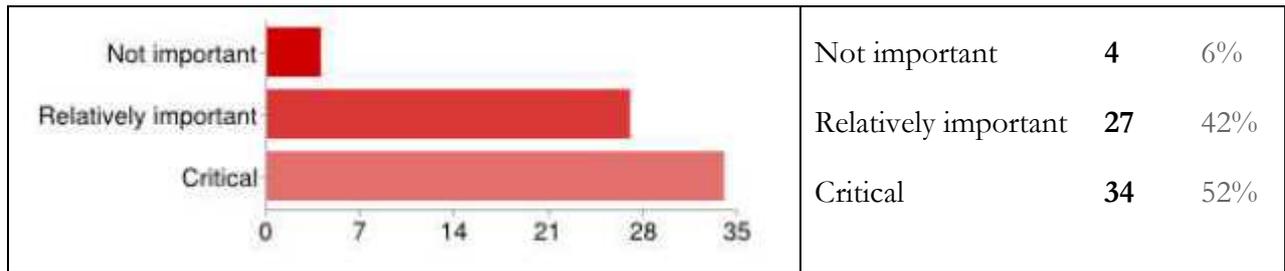
10.5. Costs



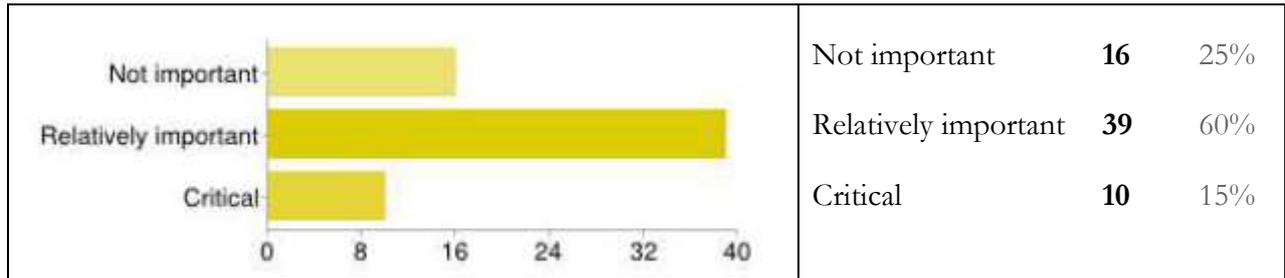
10.6. Internal (employees, colleagues) suggestions, inputs



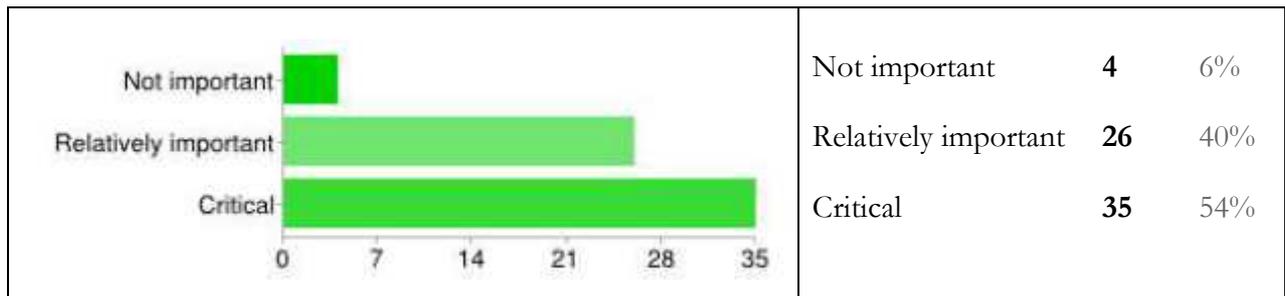
10.7. Competitors' product features (differentiation or trying to measure up)



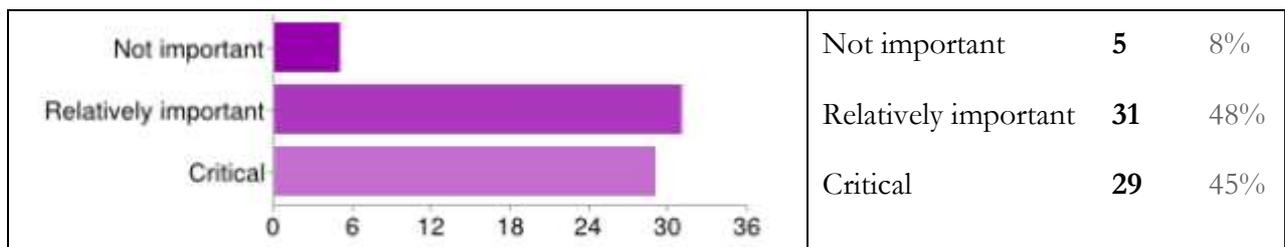
10.8. Other BUs' and BAs' initiatives



10.9. Corporate responsibility requirements



10.10. Central/corporate level demand for these features

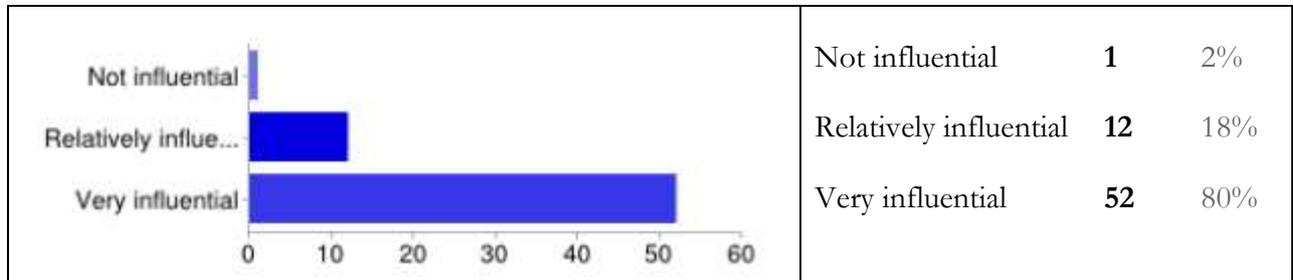


10.11. Other critical drivers you may have identified:

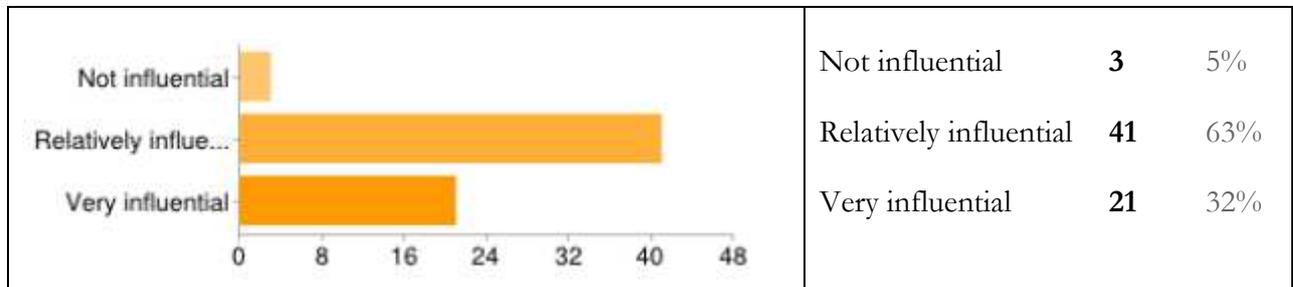
Understanding the Market	Aligning the business to customer expectations	World Class	On Time delivery in Full.
High Quality Standards	Having a strategy to meet aerospace needs Aircraft has 50 year life	Industry standards mostly dictate the environmental features of product offering. Social features make no difference between us and main competitors	

11. How would you rate the influence of the following actors on what your BU/BA communicates externally about your products and solutions?

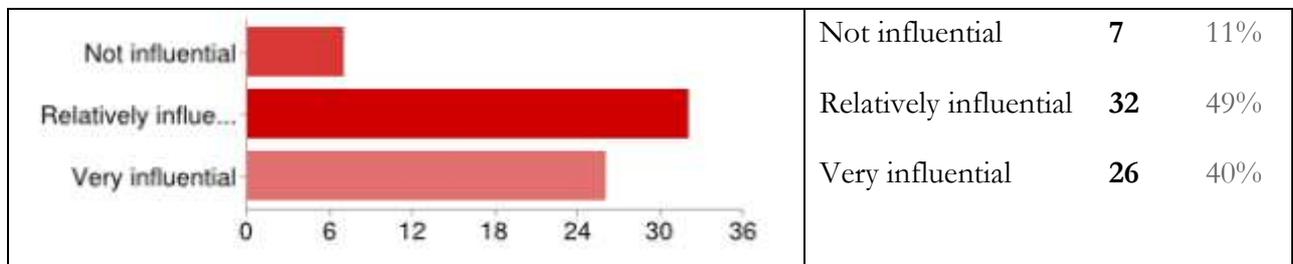
11.1. Customers



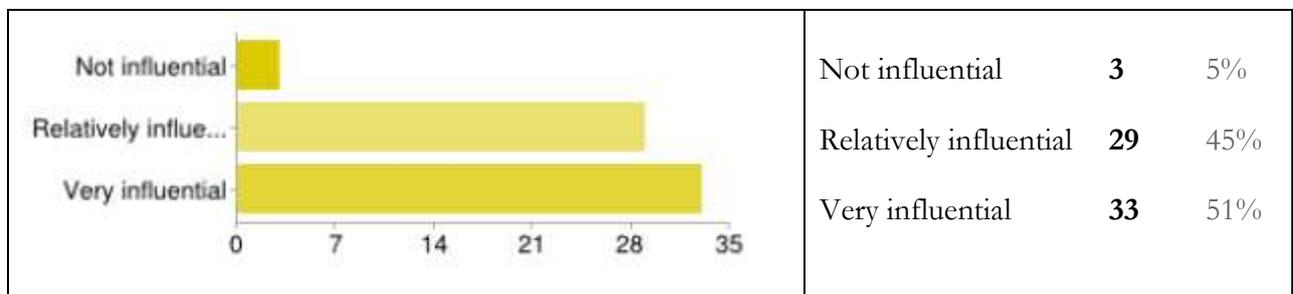
11.2. Competitors



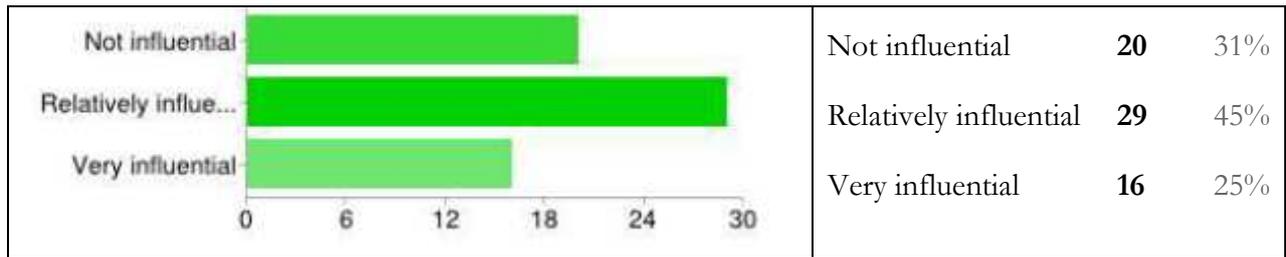
11.3. Corporate headquarters



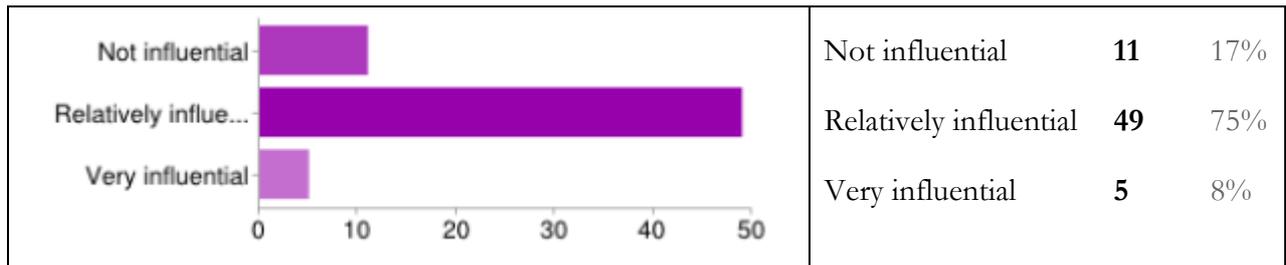
11.4. BA/BU Management



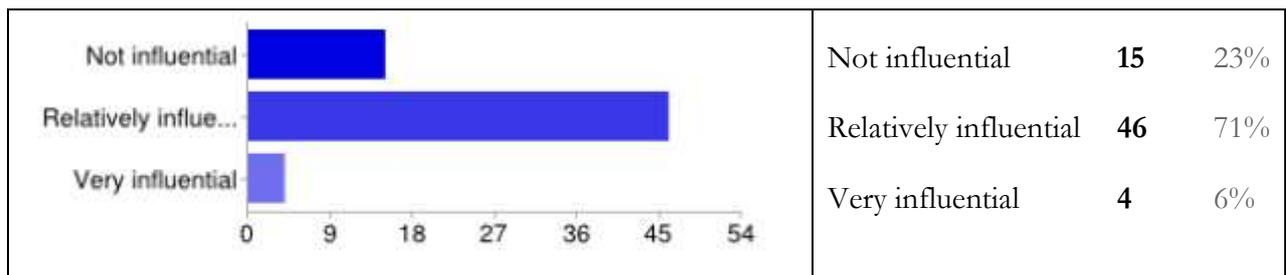
11.5. Investors



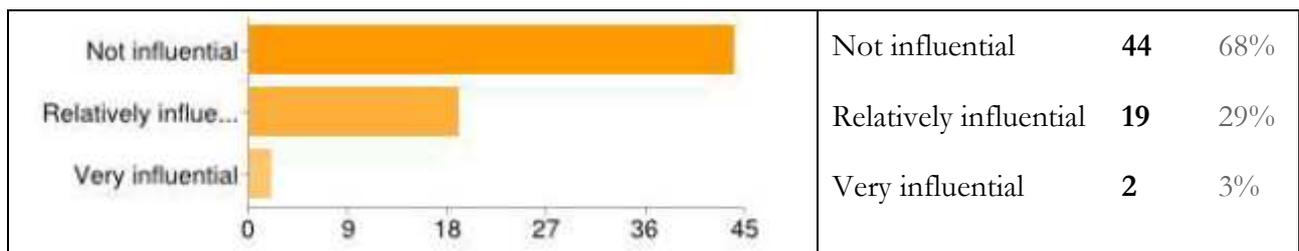
11.6. Your colleagues; other employees



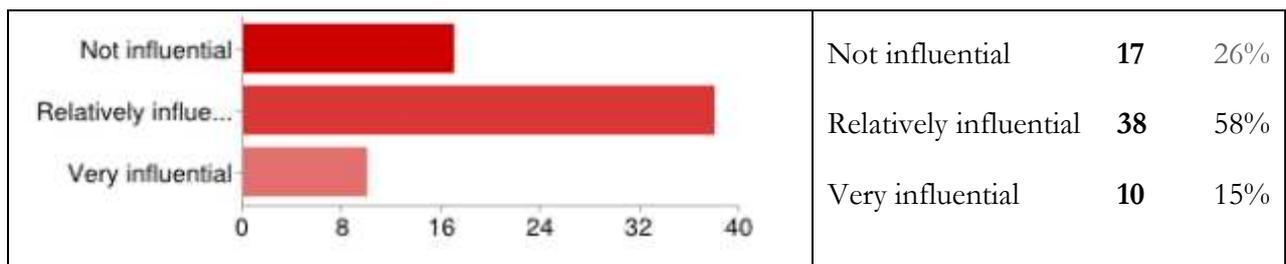
11.7. Other BU/Bas



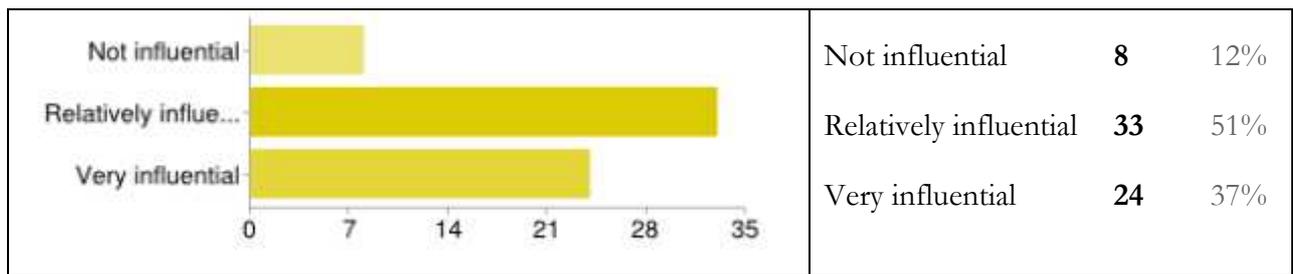
11.8. Nongovernmental organizations (like WWF, Greenpeace etc.)



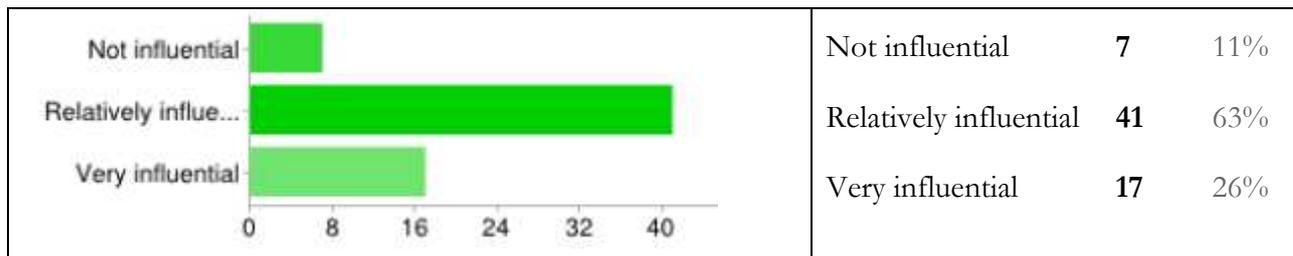
11.9. Industry associations we are part of



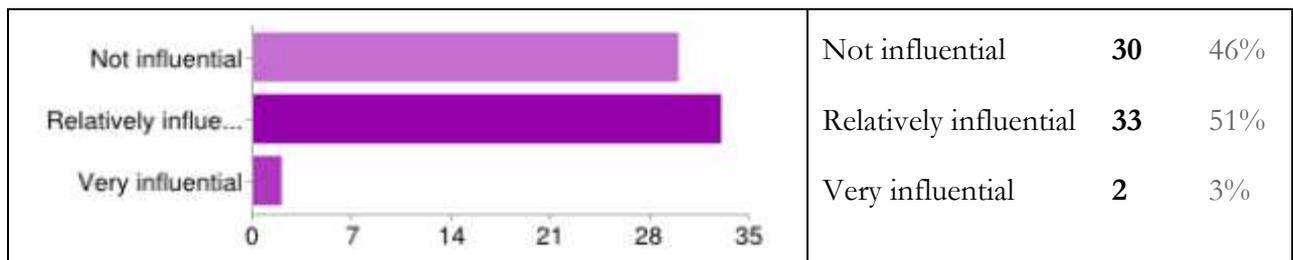
11.10. Government (legislation)



11.11. Society in general; the final users of our products and solutions



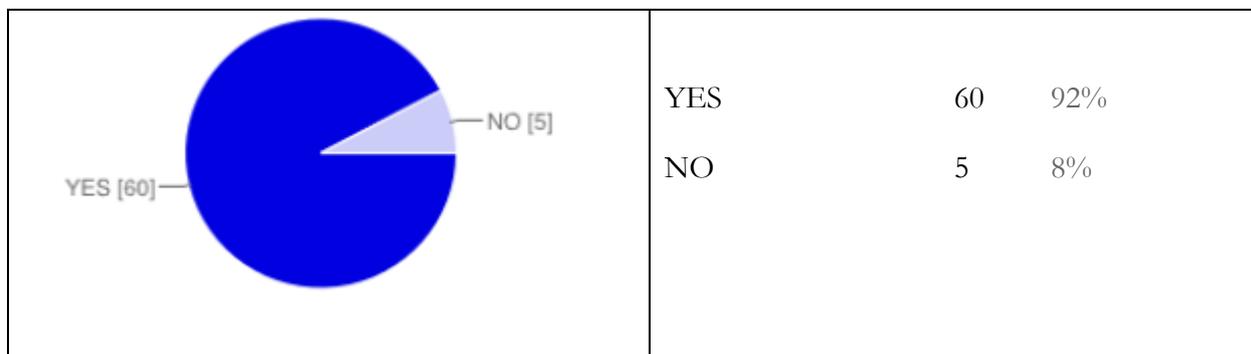
11.12. External Consultants



11.13. Other critical actors you may have identified

Global growth; market opportunities; In the case of Aerospace: lower weight materials which reduce the CO₂ footprint (aerospace requirement 20% reduction)

12. Do you think it is important to include environmental/social aspects into external product communication towards your customers and/other stakeholders?



12.1. Why do you think such aspects are/**are not** important?

I think including these factors in our external communications is a way to be seen as a positive influence in the world and that we care about the environment.	This aspect will be more in the minds of people in the future, and it is a way to separate us from our competitors
It is important to have a good environmental corporate image in the face of the general public to fight poor public image of the oil & gas industry in which we work.	Environmental aspects are drivers for certain business opportunities, as well as Key Sales Factors and Value Added
Effective communication of environmental/Social aspects helps to build trust within the customers & also shows to the customer that we are a caring organization whose business strategies are not merely driven by profits alone	Social aspects creates motivation and have positive influences, internal and as well to external customers
These aspects are important as Communication is dominated today with digital activity	If the customer is environmental/ social concerned.
This communication also facilitates further communication to the customers of your customers, this is free spin off.	It can improve social reputation for Trelleborg and emphasize our solution is environmental friendly.
Because we can differentiate or product offering and company/factory profile.	Information on the environmental aspect is definitely on the upward trend.
Because it pays off, e.g. cost saving on materials, energy and waste management.	Because nowadays they are part of the business integration.
BUT most of what is communicated outside comes from Marketing, not from us in the factory.	Because we WANT to be among the best (employee/management ambition)
.Business opportunities, corporate responsibilities for environment and social aspects.	Our products is for energy (heat, cooling) saving, seal windows doors etc. So our industrial customer and DIY whole sales can use as an argument for their end users.
Obviously it is important. In an ideal world, all customers/end users want a competitive price/good quality and green product, but at the end the main factor remains price and delivery time	More and more people are interested in environmental and social aspects when they buy a product. These aspects are a key point for products manufactured in Europe compared to Asian and Chinese products. So this is an advantage for us.
Environmental aspects are important for sustainability of business that is long term efficiency and competitiveness. Social aspects are more related to Brand and Company public image.	They are important to deliver that Trelleborg is considering those aspects as crucial.
It would help us to market our products better.	Should be considered as adding value of our products.
The dependency we have on raw materials, both for our own sourcing and for our customers, the focus gets more and more environmental. Lot of legislation affects our day to day work and also affects our customers. From a development point of view, our customers also need to focus on minimizing transport costs and weight of materials, so also in our future development work we need to consider environmental issues.	This is important because deterioration of environment/society itself is a hidden cost included in the product. A large segment of our end customers being corporate (Such as OEMs), this is a real cost which needs to be accounted for. In other words, the product with the lowest price tag in the market may not necessarily be the lowest cost product. Hence, this should be stressed as a point of differentiation of our products, from those of competitors.

These are perceived political/legislation/environmental drivers in the market place and therefore have to be covered in our external product communication. If we do not comply with the legal minimums we cannot function as a business	Customers are looking more and more to these aspects to integrate the business offer to their own sub-customers, creating a differentiation towards the competitors.
Yes, being able to show customers that we are participating in social groups (SAE) representing not the companies we work for but the industry as a whole. We are the driving force to provide a safe and reliable product to the market.	We are part of the nature. We need to take responsibility and think about future. Main focuses are to safe energy, use environmentally friendly technologies and machinery.
A company which pretends to be a premium manufacturer must invest in blue/green to maintain its reputation	We want to be a responsible actor in the market, and we want the market to be aware of that.
This issue is becoming more of a requirement with larger organisations.	Not as critical as other product aspects i.e technical aspects.
Because the awareness of these issues in the world is growing, and communicate our choices, can further improve the corporate image.	The aerospace market is moving (slowly) towards greener activities. Interest, participation and development levels are increasing. We synchronize with that.
Customers that I deal with are mainly concerned with the products they are purchasing and the relationships with the support network of TSS. They like the fact that we consider are environmental/social aspects but do not require it or base their selections of suppliers from it.	We don't include the environmental and social aspects at all. We are within comparison with China or India. No environmental or social aspect are there important. That's the reason that China is cheap.
Generally of no concern to customers at present. May be in future	Environmental and social responsiveness become ever more important differentiators
Because more and more pressure comes from outside to bring environmental and social aspects into the argumentation for sales.	Customer requirement in Europe. Product image vs. competition. Company image. Choice criteria for customers
Because our challenge is to produce more in a sustainable way, good for the environment.	Will be "value adding" for the future.

13. Does your BU/BA have any concrete plans about including the environmental and social features of your products and solutions into your external communication materials?

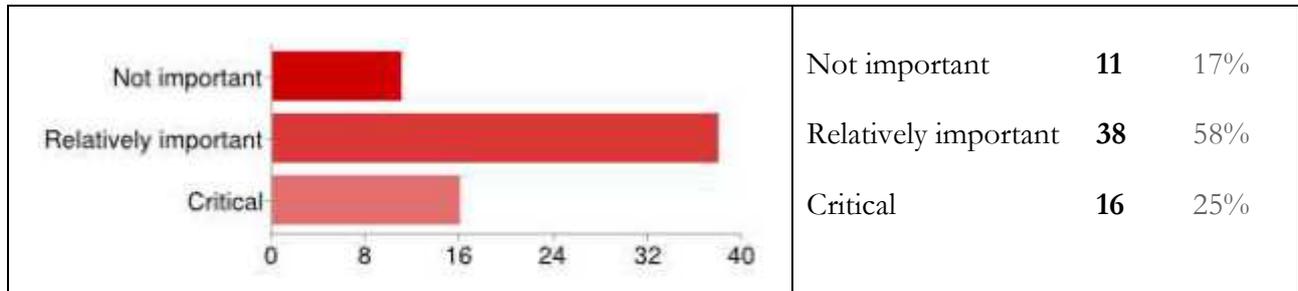
	<table border="1"> <tr> <td>YES</td> <td>29</td> <td>45%</td> </tr> <tr> <td>NO</td> <td>35</td> <td>54%</td> </tr> </table>	YES	29	45%	NO	35	54%
YES	29	45%					
NO	35	54%					

14. Briefly list your plans about including environmental/social aspects into your external product communication/marketing.

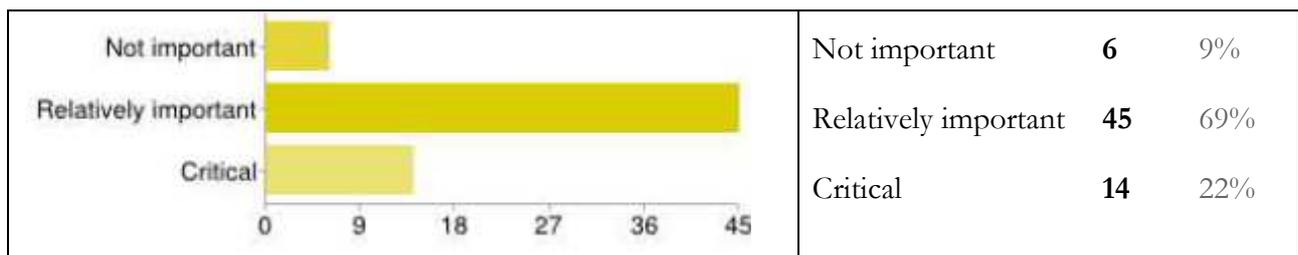
15. For how long have you been working on developing and/or implementing these aforementioned plans? (approximately)

16. What do you think would need to change in order to motivate or facilitate the wider incorporation of the environmental/social features in product communication and marketing in your BU? Please rate the following aspects based on their importance

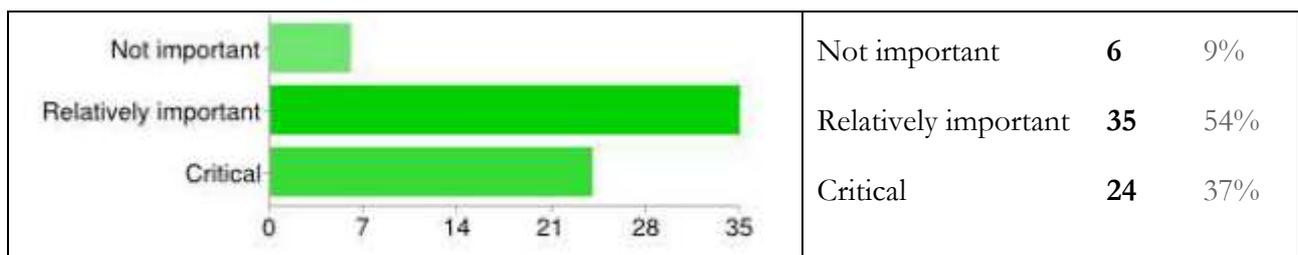
16.1. More resources (money, time, people, procedures, tools)



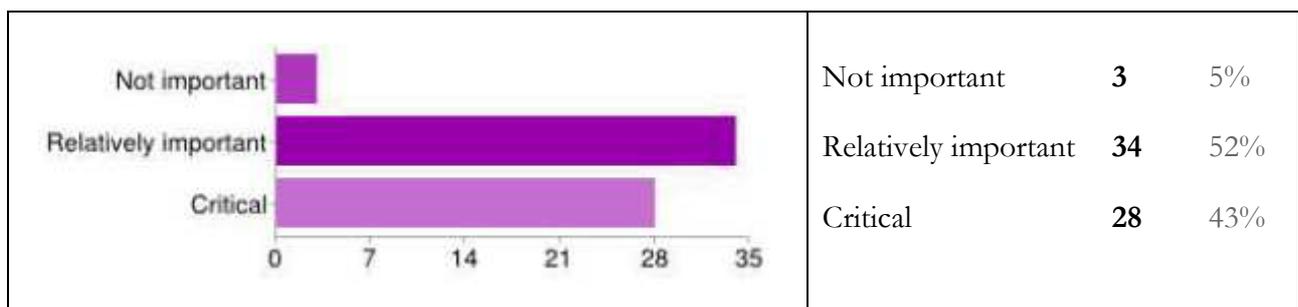
16.2. Increased communication/cooperation with other BUs and BAs and Corporate



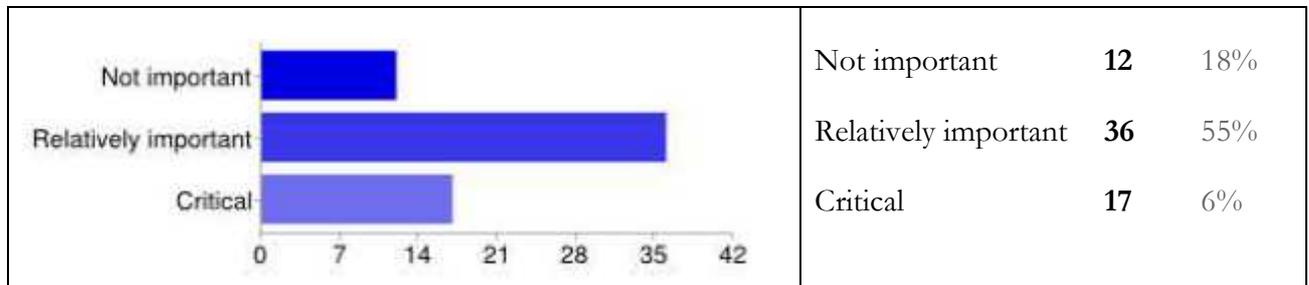
16.3. Have more demanding/pro-active customers



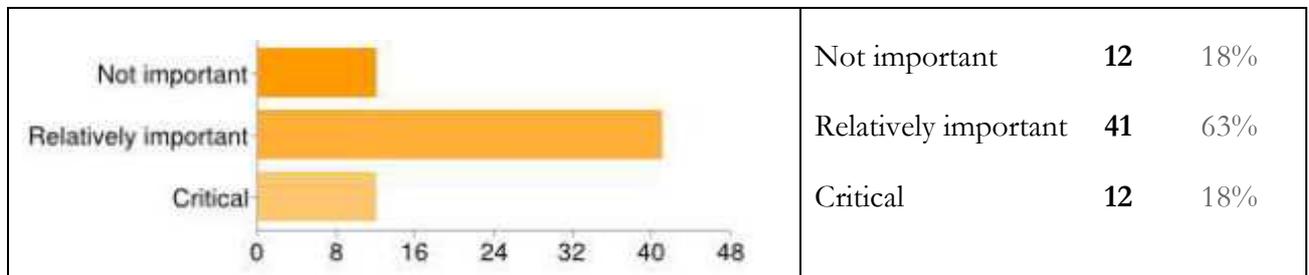
16.4. See clear top management commitment (BA and BU managers, CEO)



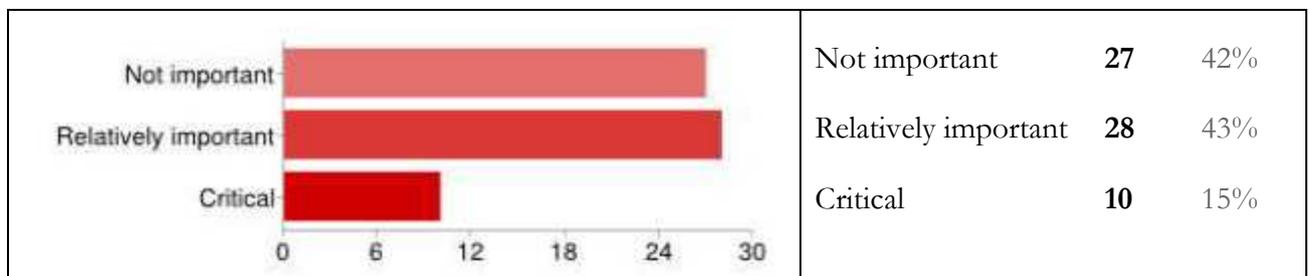
16.5. Better skills



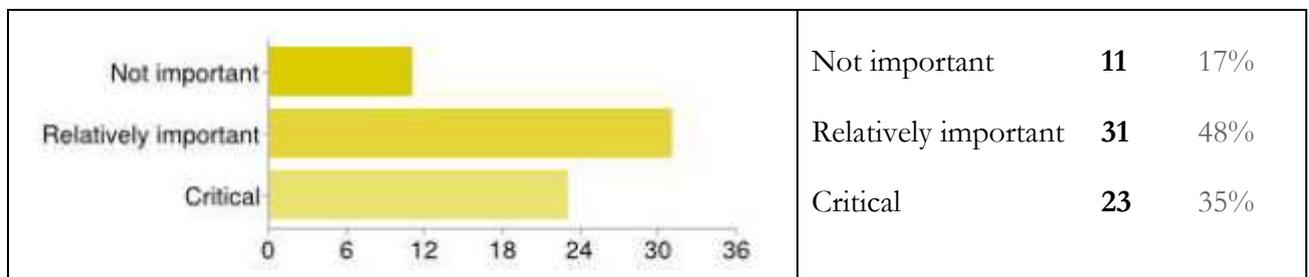
16.6. Legislative frameworks



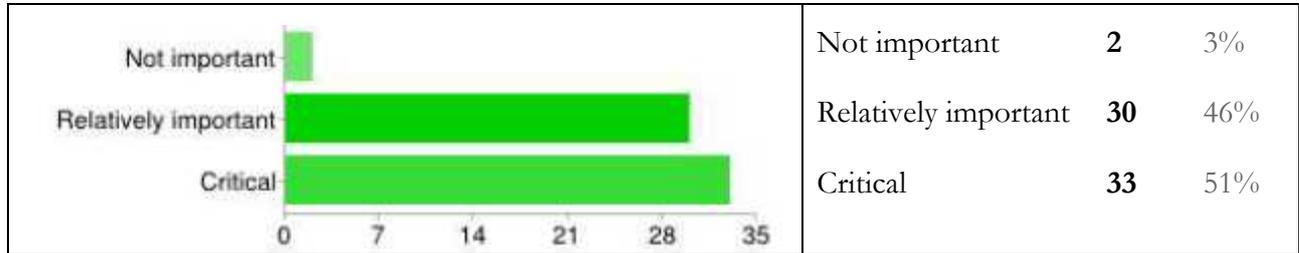
16.7. Incentives (financial, recognition, promotion etc)



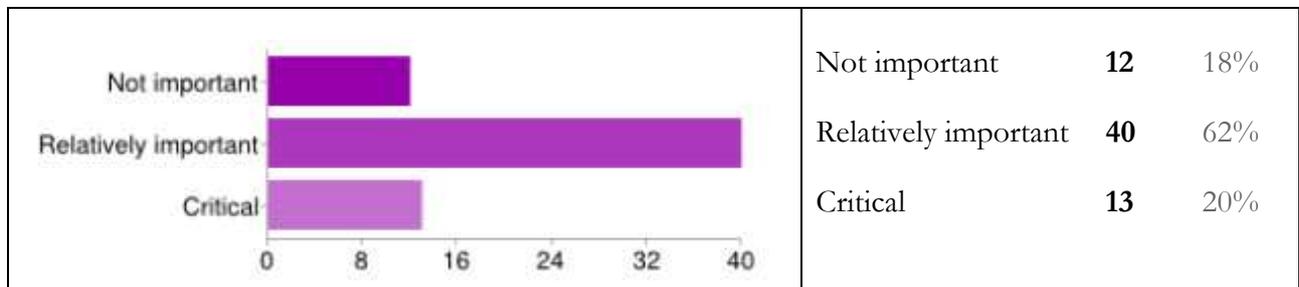
16.8. Make it mandatory from corporate level



16.9. Increase awareness on the benefits it can bring to the business



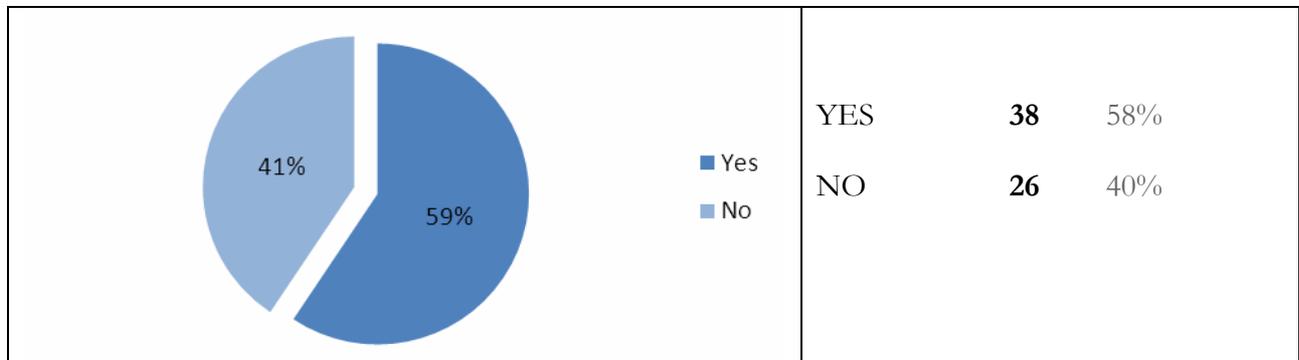
16.10. Include it in job descriptions of relevant functions and in performance evaluation criteria



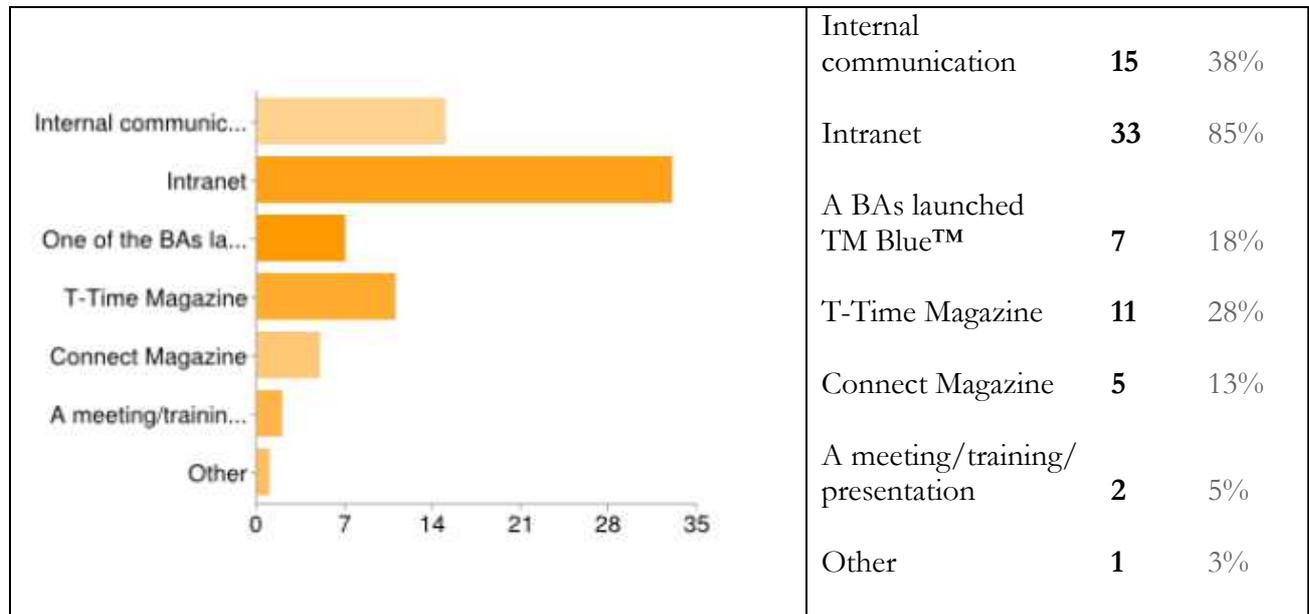
16.11. Other critical changes you suggest:

- It is predominately legislation or investor driven in response to eco-political requirements.
- I do not believe that using social aspects in marketing would create any new or better business opportunities for us. Environmental aspects would certainly create, but our offering then has to have a clear technical advantage. Top management can hardly provide those or marketing effort without cutting edge product.

17. Are you aware of Trelleborg’s Blue Dimension™ concept?



18. Where did you find out about Trelleborg’s Blue Dimension™ concept?



People may select more than one checkbox, so percentages may add up to more than 100%.

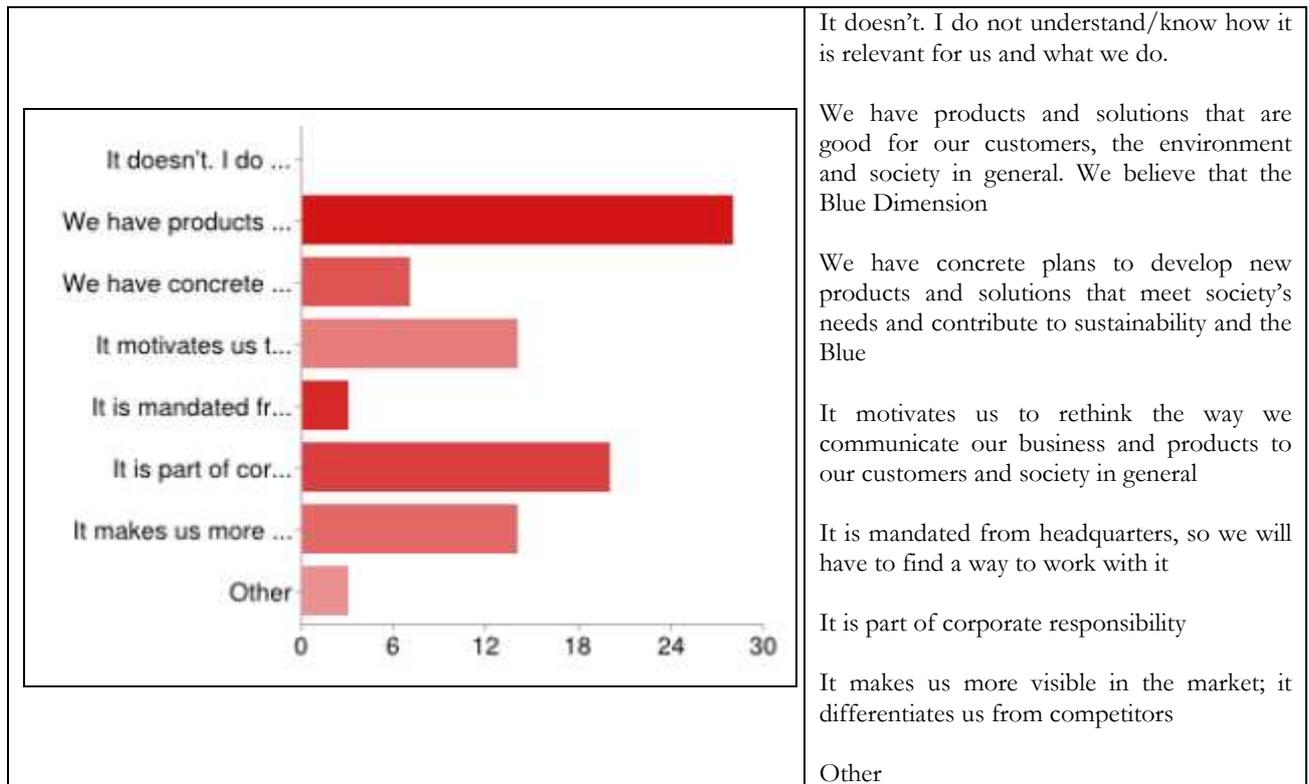
19. Where did you find out about Trelleborg’s Blue Dimension™ concept?

20. In your opinion, what do you think is the purpose of the new Blue Dimension™ concept?

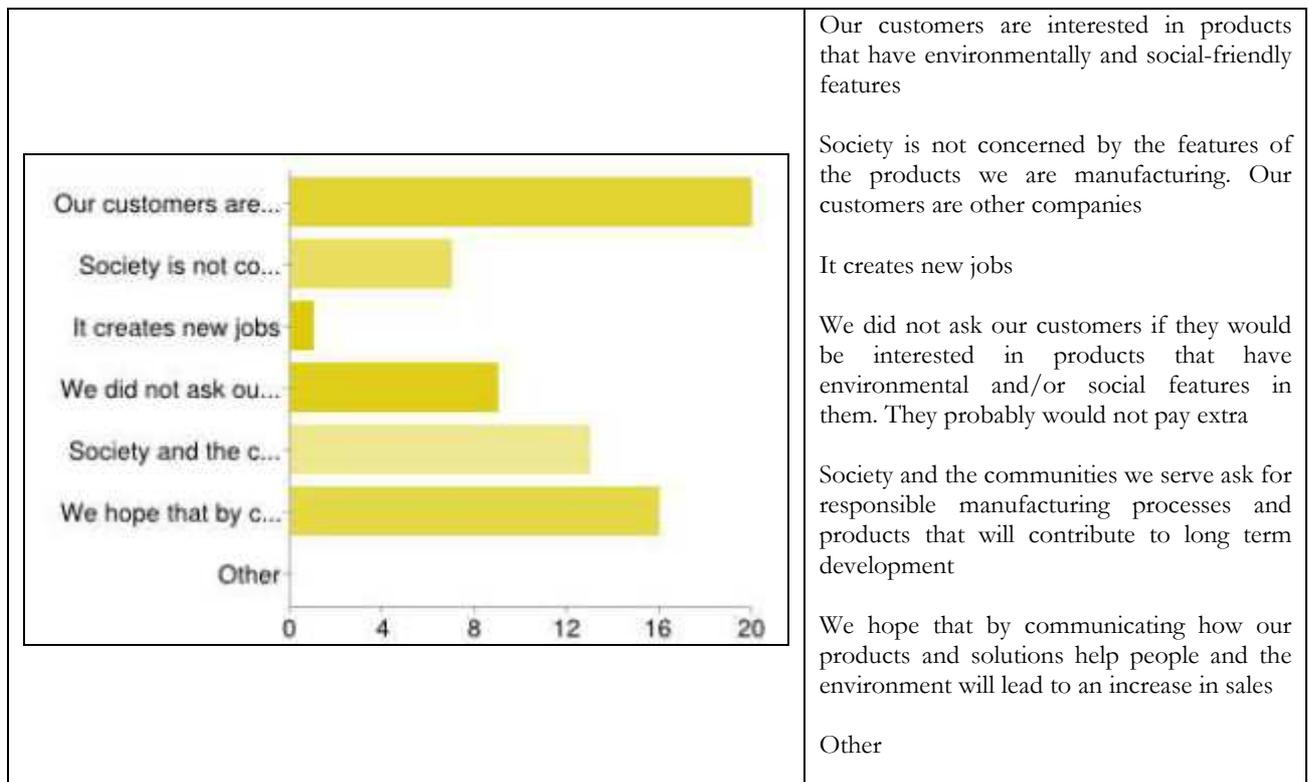
21. Did the introduction of the Blue Dimension™ generate any concrete actions or plans for concrete actions within your Business Unit/Business Area?

- No. Most people in my BU still do not know about the Blue Dimension concept.
- Not aware
- No
- Created a greater urgency to work in the industry to distinguish our difference compared to our competitors.
- It did get conversations started
- Had to find other subcontractors that could meet the new demands.
- No, but we drive our own initiatives on energy and waste at the factory.

22. How does the Blue Dimension™ concept contribute to your BU/BA's objectives?



23. How does the Blue Dimension™ answer to the identified needs of your customers AND the communities you are serving through the solutions you are providing?



- 24. How does the Blue Dimension™ answer to the identified needs of your customers AND the communities you are serving through the solutions you are providing?**
- 25. What are your expectations regarding the future of the Blue Dimension™ in your BU?**
- 26. How could Trelleborg assist you to facilitate efforts in communicating the environmental and social features of your BU/BA's products and solutions?**
- 27. Is there something you would like to add with regards to product communication and marketing? (Your comments, experiences, impressions, advice etc.)**