

## Article

# Social Sustainability Work in Product Development Organizations: An Empirical Study of Three Sweden-Based Companies

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**Abstract:** Companies responsible for product development (PD) and manufacturing play an important role in supporting society in achieving sustainability, and yet they do not always include full sustainability considerations in PD decisions. The social dimension of sustainability has been largely neglected in the PD field and there is very little empirical evidence of social sustainability implementation in general. The aim of this paper is to investigate how social sustainability is currently included in PD organizations and what their motivations are to do so. Results from a comparative case study approach with three organizations include rich descriptions across four dimensions: The scope of the work and their view of interdependencies with other social systems, their definition of social sustainability and the issues they work with, what guides strategic decisions, and how this internal work is structured. The results reveal that the three product development organizations are heterogenous in their approaches to social sustainability and that the more advanced approach shows a better understanding of the complexity of social sustainability and a broader perspective of its interdependencies, which goes hand-in-hand with a way of organizing that overcomes traditional hierarchies and allows for more collaborative and strategic work in this area. This systems perspective also drives what issues are included in an organization's work; scope and definition of social sustainability become more encompassing and aligned. Finally, our study shows that social sustainability impacts connected to products' lifecycles, when addressed, are done so by functions outside design activities, as opposed to product developers. A greater understanding of how companies currently approach social sustainability and what challenges they might face in integrating it in organizational and design related practices has been called for; our paper contributes to this but acknowledges that more work is needed.

**Keywords:** social sustainability; product development; strategic sustainable development; case study



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## 1. Introduction

### 1.1. Sustainability in Product Development

Worldwide production and consumption of products are a key cause of ecological and social problems that we face today [1,2]. Sustainability impacts can occur at many stages of a product's life-cycle—from raw material extraction and acquisition, production, distribution, use and maintenance, to end-of-life reuse, recycling, treatment or disposal, and are known to be largely determined by decisions taken during early stages of product innovation, that is, during product development [3]. Companies that are responsible for product development (PD) processes and manufacturing, therefore, can play an important role in supporting society to achieve sustainability and can, if doing so strategically, gain business economic benefits. In this study we refer to these companies as product development organizations (PDOs).

Starting from the 1960's, attempts to find solutions to environmental problems were mostly reactive, focusing on "end-of-pipe" and "repair" solutions [4,5]. After major acci-

dents and disasters, such as the Bhopal gas tragedy and the Sandoz chemical spill in the 1980's, public pressure led industry to take more responsibility for its actions. According to Simons et al. [6], two other generations of more proactive environmental strategies unfolded in the subsequent decades. Starting with pollution prevention and eco-efficiency strategies and moving on to life-cycle management and lifecycle thinking, the focus turned towards avoiding problems before they arise. Companies began to consider measuring the ecological aspects of products over their entire lifecycles and to attempt to use this knowledge to improve the products. This shift gave rise to a new wave of studies focusing on integrating sustainability considerations in the PD process. As part of these efforts, several concepts, methods and tools were developed, such as eco-design [7], design for environment (DfE) [8], and Life-Cycle Assessment (LCA) [9]. Amounting to over 600 unique tools and methods, these have in recent studies [10,11] still been deemed insufficient when it comes to facilitating sustainability integration in existing company processes and a resulting adoption by industry as a whole.

### *1.2. The Social in "Sustainability"*

Although there is widespread consensus of the concept of sustainability being composed by at least an ecological and a social dimension, the above-mentioned tools have largely focused on ecological aspects [12–14]. Gmelin and Seuring [14], when looking at the determinants of sustainable new PD, stress how the social dimension of sustainability has been largely neglected. This neglect of the social dimension in sustainable product development (SPD) research mirrors the general sustainable development field [15–20]. Due to the lack of agreement of how to define it [19,21], social sustainability therefore ends up as a "laundry list" [22], or "black bin" [23], where all the indefinable elements of sustainability seem to be placed.

However, for PD to be considered sustainable, the social aspects must also be taken into account, and support for dealing with social challenges require further research and development [14] (p. 2). An initial literature search combining the terms "social sustainability" with "product design", "product development" and "manufacturing" led to few results and little insight into how to integrate social sustainability in product design and development or how PDOs systematically work with social issues. On a product level, the greatest development has been on social lifecycle assessment methods, which up to date still lack a unifying framework that could allow the further development of the field and turn Social LCA into a more robust decision support tool for PDOs [24,25]. Social LCA, like many other tools and methods related to SPD, tend to be overly complex, focus too much on technical assessments, and organizational complexities are not understood enough to allow for successful integration of sustainability considerations in business operations. [10,26,27]. Another great challenge is that without a clear understanding of what social sustainability in fact means, it is hard for companies to assess how they and their products contribute or not to a sustainable society. Current methods and tools thus provide little insight in terms of supporting PDOs in strategically integrating a social sustainability perspective.

### *1.3. Empirical Evidence of Social Sustainability Integration in PD Organizations*

There seem to be little literature using empirical data to follow up on the implementation of social sustainability or on the organization of social sustainability work in general. In preparation for this project, we conducted a literature review using google scholar, the scopus and web of science databases as well as a database including PhD dissertations (summon.bth.se). The aim was to find research that included empirical evidence of how companies worked with social sustainability. So not what they are supposed to do (i.e., theoretical propositions of tools and approaches), but what they actually do and how they organize their work. The search focused on the terms "social sustainability" in combination with the terms "business" OR "corporate" and "management processes", "implementation", "organizational processes", "organizational structures", "management practice" OR "governance" in various combinations of title, abstract and keyword search. This search

produced more than 200 results, including duplicate results. Yet, on closer investigation, very few articles and sources included empirical data on social sustainability work in companies, especially PD ones.

Schulte and Hallstedt [28], who created a self-assessment method of the integration of sustainability in PD combining several maturity models and specifically added the social sustainability dimension in their questionnaire, show that the participating companies struggle with integrating social sustainability all the way into PD. The study, however, does not explain why it is so or what efforts currently exist to address the social dimension. Watz and Hallstedt [29], when conducting a multi-case study with seven PDOs, found that, in terms of integration of sustainability requirements in the PD process, only one organization had begun considering social aspects alongside ecological ones. Out of their five-level scale of sustainability requirements integration, that same company featured on level four, showing that even organizations with high levels of maturity in integrating ecological sustainability in PD struggle with doing the same for social sustainability.

Wang et al. [30] in their editorial to the *Academy of Management Review* call for a descriptive research agenda that investigates *how* and *why* corporations actually engage in social sustainability (framed as Corporate Social Responsibility) to only then derive a better understanding of *how they should* engage in social sustainability. The aim of this paper is to do exactly this, to provide empirical evidence of how social sustainability is currently included in PDOs and what their motivations are to do so. In meeting this goal, we also seek to begin addressing a more normative need, to support organizations to strategically contribute to overall social sustainability. Our research question is: *How do product development organizations strategically work with social sustainability?*

The article is structured in five parts. Section 2 summarizes the research approach and the different methods used. Section 3 provides in depth data on social sustainability integration in three case study organizations and Section 4 provides discussion and conclusions, and Section 5 discusses limitations.

## 2. Research Design and Methods

### 2.1. Comparative Case Study Approach

Case study research has been defined as “a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real-life context using multiple sources of evidence” [31] (p. 146). In this paper we use a comparative case research approach, which still seeks “thick descriptions” common in single case studies, but the main goal is to discover contrasts, similarities, or patterns across the cases with the intention to contribute to the development or the confirmation of theory. By choosing this approach we were able to go beyond the specificities of a single case, and through careful abstraction [32] provide a coherent framework to answer our research questions.

Analysis in the comparative case approach is iterative. This led to a sequential selection of cases (company A, then B, then C) and an initial analysis of one case had to be conducted prior to the selection of the following case. Organizations were then purposefully sampled from a group of companies engaged in an existing project based on their likelihood to present data-rich cases [33] on social sustainability integration.

### 2.2. Data Collection

In total, we collected data from three multinational PD and manufacturing organizations based in Sweden. A total of 21 semi-structured interviews of roughly 60 min were conducted. In organization A, a large product development and manufacturing company (about 2000 employees), we conducted 13 interviews between the years 2016 and 2017. In organization B, a large construction machine manufacturer (4000 employees), we conducted 4 interviews in the year of 2017. In organization C, a large construction machinery manufacturer (about 1200 employees), we conducted 4 interviews in the year of 2019. Selection of interviewees was done in dialogue with the organizations and in accordance with research needs and therefore interviewed roles varied see Table 1.

**Table 1.** Organizations and interviewee roles.

Organization	Function
A	Safety and occupational health
	Research and development/product sustainability
	Purchasing
	Environmental management
	Communication
	Manufacturing process owners for four different processes
	Product support and after market
	Quality
	Compliance
	Design leader
B	Sustainability and Corporate Social Responsibility (CSR)
	Marketing and after sales
	Research and development
	Human resources
C	Purchasing
	Product portfolio
	Human resources
	Environmental health and safety

In organization A, for example, we started with interviews at the operational level of product development activities to quickly realize that social sustainability concerns were foreign concepts to the interviewees and that we needed to search for insights elsewhere (also to understand why that was the case). Together with the research project leaders inside organization A we then selected a range of other roles at the management level, some directly connected to PD activities and others in adjacent areas such as purchasing, environmental health and safety and communication. When selecting the interviewees in organizations B and C we requested similar roles to take part in the project for the sake of comparison.

In the first part of the interview, participants were asked to provide their definition and understanding of social sustainability, describe how their organization defined and implemented goals related to social sustainability and explore what it meant for their individual role. We then provided the interviewees with the definition of social sustainability used in this study (see Section 2.3.1) and asked if they would add any projects, initiatives or practices given this new understanding.

Interviewees from organization A more directly involved in product development activities were also provided with an environmental impact assessment (EIA) of one of their products and asked to describe to the best of their knowledge the social implications of different lifecycle activities and how actively managed or not those aspects were. The purpose with the exercise was to create a common understanding and language of lifecycle activities and potential social sustainability problems related to these, to then explore in what ways the organization was or could be handling those problems. As the exercise yielded limited insights due to a lack of awareness of social sustainability problems, we adjusted the interview protocol for organizations B and C to cover broader organizational and decision-making aspects.

A workshop was also conducted with participants from organization A and B. The workshop was part of a larger project and company C had not yet been selected at the time

of the workshop. A force field exercise was conducted to explore barriers and incentives in the integration of social sustainability in their organizations.

All interviews were tape recorded and transcribed verbatim. Data from the workshop were collected in the form of observation during the session and the force field analysis produced by the participating organizations on a flip-chart sheet. To ensure data reliability, we triangulated the interview statements with publicly available as well as internal company documents (e.g., sustainability reports, codes of conduct, training manuals, etc.).

### 2.3. Data Analysis

Data from the interview transcripts were coded in multiple rounds using thematic analysis [34]. Data from case company A were coded inductively; the emergent themes were then used in the coding of data from case company B and C. We created subcategories when the new data fit into existing categories but were more specific in nature. In a new round of coding, we used the five-level model within the Framework for Strategic Sustainable Development [35], and specifically the social dimension of its definition of sustainability [36,37], to organize the data and interpret the findings. The interview data and the data obtained from the workshop and the company documents were triangulated, revealing overall consistency in the findings.

#### 2.3.1. The Framework for Strategic Sustainable Development

The Framework for Strategic Sustainable Development (FSSD) is intended to provide an overarching and unifying framework that is based on a systems science understanding and that allows for strategic planning as well as strategic selection and design of tools to help move any organization towards sustainability. It includes a five-level structuring model that suggests that, for strategic planning, it is of importance to agree upon the system (level 1) that is to be planned within, and only then to go on to define success (level 2) within that system. Once success is defined, strategic guidelines (level 3) can be used for the selection and prioritization of actions (level 4); all four of these levels can be supported with various concepts, methods, and tools or other forms of support (level 5) [35,38,39]. It is the interplay between defining success and clarifying the system boundaries with that in mind, that leads to the breakthrough in strategic thinking and planning. Table 2 describes the five levels in the context of strategic sustainable development.

**Table 2.** Five-Level Model of the Framework for Strategic Sustainable Development.

<b>The System Level</b>	describes the overall major functioning of the system, in the case of sustainability the organization within the human society within the biosphere.
<b>The Success Level</b>	includes the definition of the vision, bounded by basic sustainability principles.
<b>The Strategic Guidelines Level</b>	specifies guidelines for how to approach the principle-framed vision strategically, in an economically viable step-by-step approach.
<b>The Actions Level</b>	comprises everything done in concrete terms, the actions that were prioritized into a strategic plan.
<b>The Tools Level</b>	includes concepts, methods, and tools and other forms of support that are often required for decision support, monitoring, and disclosures of the actions to ensure they are chosen in line with the strategic guidelines to arrive step-by-step at the defined success in the system.

The sustainability principles of the FSSD (three of them being about the ecological system and five of them being about the social system) are designed for being useful for “backcasting” from a principle-framed vision, acting as boundary conditions for sustainable solutions. Backcasting means imagining success in the future and then looking back to



today to assess the present situation through the lens of this success definition, and to explore ways to reach that success [40]. The social sustainability dimension specifically is built on a complex adaptive systems understanding of human social systems and the mechanisms that destroy this social web. By re-framing the mechanisms of destruction as design constraints and declaring these as success or the goal, the approach can support organizations at all levels to strategically contribute to sustainability. Since we are interested in the potential contributions of products and PDOs to social sustainability, we here present only the principles related to the social system that were also used to clarify the meaning of social sustainability during the interviews. The Social Sustainability Principles (SSPs) of the FSSD posit that, in a socially sustainable society, people are not subject to structural obstacles to (1) health, (2) influence, (3) competence, (4) impartiality, and (5) meaning-making. Structural obstacles here refer to social constructions—political, economic and cultural—which are firmly established in society and upheld by those with power. Due to various kinds of dependencies and other factors, such obstacles are difficult or impossible to overcome or avoid for those affected by them [37].

While the five-level model was useful to structure the data and create a frame for interpreting how the case organizations, in their own terms, approach social sustainability, the whole FSSD was key to assess how their current approaches strategically contribute to (socially) sustainable development. The FSSD brings some advantages that lend themselves favorably as a basis for strategic planning and assessment. Besides providing a principled definition of social sustainability and thus responding to some of the challenges raised in Section 1.2, it is deemed useful as [41]:

- It is built on a scientific systems-understanding of both the natural and the social system.
- It includes a clear definition of sustainability, which due to its principled nature is generally applicable and yet concrete enough to guide action.
- It facilitates stepwise and strategic movement towards the goal of sustainability.
- It helps make better use of other tools, methods or frameworks for sustainability: once it has been used to identify the gap to sustainability, as well as desirable strategies to bridge the gap, it is easier to select and inform other forms of support needed for the transition [39].

### 3. PDOs and Their Approach to Social Sustainability

In-depth interviews with 21 professionals of three different large PDOs provided several insights into current organizational practices related to social sustainability and also into barriers and opportunities for PDOs to better contribute to social sustainability. Having interviewees in different functions such as manufacturing process leaders, project leaders in design and development processes, purchasing, R&D, health and safety, quality, human resources, communication, marketing and after sales, environment and Corporate Social Responsibility (CSR), and at operational, tactical and strategic levels of the organizations, allowed us to identify the locus of different aspects of social sustainability work and how integrated they actually are into practices of the organizations investigated.

Our findings are presented in four dimensions that characterize an approach to social sustainability and also provide the ability to distinguish essential attributes to each approach. The first three dimensions follow the five-level model for strategic planning in complex systems used in the FSSD. These dimensions are interrelated and help to inform each other. The fourth dimension, *how internal work is structured*, was added to support characterizing the realization of the approaches beyond static statements that can be found in company sustainability performance reports. Examples of actions and tools (levels four and five of the FSSD) were also identified and were used to illustrate enactment of the previous levels. Below we provide a brief description of the dimensions:

**System boundaries:** this dimension is about how organizations define the scope of their social sustainability work, both internally to the organization (stakeholders, roles, departments and areas of the organization that should be involved in the work) and

externally (other organizations, stakeholders, value chain actors). In this dimension organizations display their recognized interdependencies with other social systems, their sense of responsibility and their perception of what can be influenced and/or controlled.

**Success:** in this dimension organizations display their definition of social sustainability, what the common concerns and issues are, what it means to be successful in this regard, and in what ways such a definition is related to the organization's own success.

**What guides strategic decisions:** this dimension is about the organization's drivers and motivations for including social sustainability concerns in the planning and development of organizational action, and how priorities are defined.

**How internal work is structured:** this dimension displays the organization's choices for structuring social sustainability work including how goals and priorities are operationalized throughout the organization.

In Table 3 we summarize the key findings in each of the dimensions and for all three organizations.

**Table 3.** Summary of findings according to the dimensions of the companies' social sustainability approach.

Dimensions	PD Organization A	PD Organization B	PD Organization C
<i>System boundaries</i>	<ul style="list-style-type: none"> <li>Narrow view of interdependencies with other social systems beyond own organization</li> <li>Focus on own employees' wellbeing and their immediate surrounding community</li> <li>Product lifecycle aspects limited to safety concerns at own manufacturing and use phase</li> <li>First tier suppliers expected to comply with company's code of conduct (no evidence of verification)</li> </ul>	<ul style="list-style-type: none"> <li>Broad view of interdependencies with other social systems</li> <li>Engagement with actors up- and downstream the value chain</li> <li>Product Lifecycle thinking driving how system boundaries are set</li> </ul>	<ul style="list-style-type: none"> <li>Narrow view of interdependencies with other social systems beyond own organization</li> <li>Focus on own employees' health and safety</li> <li>Product lifecycle aspects limited to safety concerns at own manufacturing and inconsistently at use phase</li> <li>First tier suppliers expected to comply with social sustainability related requirements (ad hoc verification)</li> </ul>
<i>Success</i>	<ul style="list-style-type: none"> <li>Weak knowledge and awareness of social sustainability concepts</li> <li>Social sustainability agenda defined by expectations from local/national stakeholders and industry requirements</li> <li>Existing goals for employees are defined at site level and for product social performance by industry standards</li> <li>Organization's success not seen as dependent on thriving social systems</li> </ul>	<ul style="list-style-type: none"> <li>Good knowledge and awareness of social sustainability concepts</li> <li>Social sustainability agenda defined by international standards and multi-stakeholder expectations</li> <li>Goals are defined at corporate level and embedded in the corporate culture</li> <li>Organization's success seen as dependent on thriving social systems</li> </ul>	<ul style="list-style-type: none"> <li>Uneven knowledge and awareness of social sustainability concepts</li> <li>Social sustainability agenda defined by demands from local/national authorities</li> <li>Existing goals for employees are defined at site level and for product social performance by customers</li> <li>Organization's success not seen as dependent on thriving social systems</li> </ul>
<i>What guides strategic decisions</i>	<ul style="list-style-type: none"> <li>Compliance and competitiveness</li> <li>Risk and cost avoidance</li> <li>Present and future customer needs</li> </ul>	<ul style="list-style-type: none"> <li>Branding and reputation through core values</li> <li>Building trust among societal actors</li> </ul>	<ul style="list-style-type: none"> <li>Branding through product quality</li> <li>Compliance and competitiveness</li> <li>Risk and cost avoidance</li> <li>Expressed customer needs</li> </ul>

Table 3. Cont.

Dimensions	PD Organization A	PD Organization B	PD Organization C
<i>How internal work is structured</i>	<ul style="list-style-type: none"> <li>• Code of conduct defined at top management level but no clear processes to “bring it to life”</li> <li>• Social sustainability aspects not explicitly anchored at any level of the organization</li> <li>• Uncoordinated efforts at the tactical level and no structured collaboration between functions</li> <li>• First initiatives at product development level but without clear possibilities to influence higher levels of decision-making</li> </ul>	<ul style="list-style-type: none"> <li>• Social sustainability anchored alongside ecological sustainability at the strategic level of the organization, where strategic guidelines are defined</li> <li>• Multiple managerial functions develop specific strategies aligned with corporate values</li> <li>• Vertical flow of information and support for decision-making</li> <li>• Horizontal collaboration through cross-function dialogue routines</li> </ul>	<ul style="list-style-type: none"> <li>• No social sustainability guidance from top management</li> <li>• Social sustainability aspects not explicitly anchored at any level of the organization</li> <li>• Uncoordinated efforts at the tactical level and no structured collaboration between functions</li> </ul>

The following detailed account of the product development organizations (PDOs') approach to social sustainability further explores the findings presented above.

### 3.1. System Boundaries

Interviews indicate that the system in focus at company A is the organization itself and the relationships between the people directly employed by it and their immediate surroundings, such as employees' families and the communities that they are part of. When asked about examples of projects, initiatives or guidelines related to social sustainability, multiple interviewees refer primarily to the strong safety culture of the organization, from factory floor to office environment. Alongside the safety campaigns and procedures, interviewees were quick to mention efforts of being part of the local community by sponsoring sports associations and local clubs. A recent change has been to expand the work on safety to include broader employee health, so to promoting work–life balance, reduce stress and help prevent burnout. The occupational health representatives noted, though, that other subsidiaries of the organization outside Sweden performed much lower in this area to the point that it would be considered non-compliant from a Swedish perspective: *“there the employees work in their own clothes. They haven't got jackets. They wear their own private clothes and a lot of dangerous things, chemicals on the shop floor. ( . . . ) Here we see the whole employee, both soft issues, social at home, the work you do.”* Organization A thus seems to determine the scope of its social sustainability work based on local and national contexts and expectations.

In terms of their products' lifecycle, only some aspects of lifecycle activities or phases are included in their scope of social sustainability related activities. Interviewees in functions connected to product development recognized the existence of potential social impacts in their supply chain but explained that currently only first tier suppliers are expected to act in accordance with their code of conduct, and it is unclear how compliance with the code of conduct is guaranteed. Interview participants involved in purchasing related questions reported to usually rely on industry level supplier certification processes and did not know if requirements specifically related to social sustainability were part of certification and verification processes. The guiding document for supplier code of conduct, binding by contract, also does not guarantee compliance, and basically relies on supplier responsibility by asking them to contact the company in case they think they are not complying with such code of conduct. Social impacts connected to raw material extraction were mentioned by product developers as problems that should be addressed by product design or purchasing procedures at the same time that they recognize the lack of tools and organizational man-



date to allow necessary changes to happen. During the product use phase, safety is the one concern that interviewees can connect to social sustainability, as highlighted by one interviewee: *“the way we do our work here, we need to have this product safety very high in all our systems”*. Such requirement, however, is externally demanded by the industry regulations and certification needs.

Interviews with organization B representatives, in contrast, indicate that the company includes both upstream and downstream value chains in the scope of its social sustainability work. Moreover, it is through considering their products' lifecycle that value chain actors are identified and engaged in developing solutions to social sustainability challenges: *“what we really ( . . . are) trying to work with now, is this responsibility in the broader value chain, or in the whole value chain. And in that case, you start of course, with product development. You can start with a supplier. You go into your own operations and the next step is the sales and our customers or market. And so social responsibility is that we make sure that we act responsibly in all those different value chain parts. And in terms of suppliers—where I worked a long time in different kind of assessments and so on—in terms of supplier responsibility. Making sure that our suppliers are not dealing with child labor and that kind of things. No corruption and these kinds of topics. In our own operations, of course, we have our own code of conduct which is on the wall here. Which states very much how we should act both in the other environment, but also in the social dimension. And the same goes there, of course, with child labor, corruption, that we're very much act according to the human rights and so”*.

Employee wellbeing is seen as deeply embedded in the corporate culture and also the starting point of the evolution of the social sustainability work in the organization. This corporate culture also travels well to all of the organization's subsidiaries. One interviewee mentioned that entering another site in another country feels like going into their own Sweden-based site. Standards are the same, values are the same and people treat each other the same way. Legal standards play a role in the sense that they need to be followed, but the organization claims to have a performance expectation that is above legal standards and that are applied to all of its operations.

Interdependencies with other social systems beyond the own organization in different lifecycle stages are recognized and different initiatives are developed to create positive social impacts. Interviewees mention such initiative as win–win situations, where business can prosper as a result of well-developed societies and trusted relationships: *“I think vocational schools is a very good example, which we have—we are now running three vocational schools in Africa. We're running one in China and probably one or two others, both developing the country and society but, of course, also our business. So both sides.”*

From a product lifecycle perspective, social sustainability requirements are placed both on suppliers as on customers (dealers), who have recently started to use a screening process before contracts are signed. The screening includes similar aspects from the supplier code of conduct, as one way to avoid the products to be used in situations that may cause harm to people—*“What we're doing the most now we're putting a lot of efforts is to make a similar kind of assessment, or screening of our higher risk relations, in terms of sales and marketing. How our products are used in the market? So they are used in a responsible way but also the customers that we're selling our products to. That they are acting responsibly and they have similar kind of requirements as we have in our own code of conduct. Again, getting back into the same kind of questions with corruptions and these topics as you mentioned; child labor, human rights, etc.”*

Interviewees also speak about how the organization works systematically with suppliers and supply chain traceability in order to influence aspects that they may not have direct control over, such as second and third tier suppliers. Although this illustrates how the organization operationalizes strategic social sustainability goals, it also shows that the scope of what is considered as the organization's responsibility is considerably wider than in organization A. Interviews also revealed that social sustainability related requirements are often defined at higher levels of decision-making and work more as design constraints that are set outside product development activities per se. Exceptions are

product safety and safety of manufacturing processes, which are very much influenced by different design alternatives.

Organization C, similar to organization A, places its focus on the functioning of the organization itself and the internal relationships that are needed for the business to thrive in its own local context. Human resources, for example, when asked to describe the scope of the work done in the area explains it as *“hiring and firing. That is, of course, the basic. But one important thing is that we all follow the collective agreements and the law fulfillments and all the things around that, of course, taking part of my time.”* Unions in the Swedish context play a vital role in shaping the organization’s HR scope and employee related programs are a direct result of demands placed by active unions. Legal compliance appears to guide what human resources prioritize in their agenda, and since regulatory frameworks vary from country to country, it is unlikely that organization C uniformly sets a social sustainability scope and performance standard. Engagement or projects with the local community were not mentioned in the interviews.

Local and national authorities play an important role in setting the scope and the standard to be achieved when it comes to occupational health and safety and, similar to organization A, when operating in countries with lower regulatory requirements, organizational practices will also at best meet the local requirements. One interviewee says: *“We are very quick here (in Sweden) to report incidents, accidents. But if we go to India, there are more or less no accidents at all, absolutely no incidents. That’s a huge difference. The same in China.”* The interviewee then explains that this difference is probably due to a different cultural understanding of what an incident or accident is and what is worth reporting. Employees might hurt themselves but not miss work, which in turn is not reported. In addition, although subsidiaries and first tier suppliers are recommended to use certifications like OHSAS 18001 or ISO 45001, they do not necessarily do so, and non-conformities are often found during occasional site visits. *“It depends also or related to the local laws. Here we need to - we have to follow the laws here. And then we have to fulfill it. And, of course, we want to be a little bit better. But I think if we have this level of law, since they have this level of laws in India (showing different heights with the hands), they will fulfill the laws, but not more.”*

Another interviewee, whose role mainly involves purchasing decisions at product development, adds that *“with new suppliers, it needs to be audited. That’s the basic rule. Reauditing is mainly linked to problems that need to be solved, etc. That’s when we reaudit a supplier. It’s not like any structured plan. We don’t have the resource to do that.”* When asked about how problems would be identified then, the interviewee answered: *“I mean, that can be linked to quality problems or whatever, not linked to the social sustainability or anything like that. Those things we will not find unless we make an audit, and maybe not even then because it can be really hard to find those.”* The supplier checklist used when signing new contracts and also on the event of a site visit, covers a wide range of social sustainability concerns, such as child labor and forced labor, work environment, health and safety, discrimination, freedom of association and more, indicating that at some point it was decided a supplier’s social sustainability performance was relevant to organization C’s own social sustainability scope. However, apart from limited resources to perform regular audits and the challenges in verifying potential misconduct, the interviewee also mentions the lack of employee training on these issues to allow more thorough supplier site visits. So, with organizational resources being scarce, and problems being hard to track, the general responses become a reactive one: deal with problems in the case that they show up.

In terms of their products’ lifecycle, in addition to supplier concerns, company C’s social sustainability efforts also include health and safety aspects related to product use. One interviewee refers to their compacting machines as a work environment in itself, therefore the wellbeing of machine operators is considered an important driver in product design. One interviewee says that this is true however only for markets that also share values related to safe work environments and are willing to pay more for extra features. *“It’s a complex market situation since we’re working on a global scale. We have everything from machines that look like they did 50 years ago to what they preferably should be in 5 years’ time.”*

Within product design, issues related to conflict minerals were only once brought up by top level management when the company still belonged to the previous group and according to the respondent, at the time they deemed that the issue was not relevant to their product portfolio and even if it was, it would be very difficult to trace of influence changes so far up in their value chain. Unless it were to become a matter of legal compliance: *“If we would do something, I mean, to try to further investigate or to go further down the supply chain or up—oh, yeah, down, I can’t see that happening, actually, unless there is some specific action required like by law or something like that.”*

### 3.2. Success

When asked to reflect what social sustainability meant in the context of their business, none of the interviewees from organization A were able provide a company’s definition that encompassed different themes usually placed under the concept. Several “scratched their heads”, seemed confused, and asked for further clarification. After we gave them our definition of social sustainability, some were able to immediately relate to the work on safety in manufacturing processes and also the importance of creating a healthy work environment where people manage their workload well and feel that they contribute to the success of the organization in a fulfilling way. A few interviewees in fact expressed concerns that the organization did not seem to have a strong vision any longer to contribute to a purpose beyond economic ones. They explained that the organization used to be part of a bigger group that had clear core values and that those transpired throughout the organization. The health and safety culture remained after the change of management, but the higher purpose was lost and the organization turned inward, focusing on costs and avoiding risks. Themes typically included in a CSR agenda like human rights violation, discrimination and fair business practices, although featured in company’s policy, supplier code of conduct, marketing material, and company vision, were not listed as social sustainability concerns, translated into concrete organizational practices, and not related to any of the interviewees’ roles in their own perspective. These issues were considered important and relevant from a societal perspective, but not a responsibility of the organization besides taking care of their own employees. The interviewees directly connected to our research project, not surprisingly, expressed their wish to integrate social sustainability aspects (from a value chain perspective) in their product development practices despite the perception of lack of top management commitment to the topic. However, they felt that it was unclear what could actually be achieved considering the perceived lack of interest and direct communication channels with higher levels of the organization.

Success for organization B appears to go together with achieving social sustainability on a societal level. *“When we talk about corporate social responsibility, then we talk about our own part into it (sustainability). And for us, it means that we should enact with business ethics, in a good way. We should live up to human rights, and make sure that we treat people fairly.”* One interviewee also mentions the importance of the individuals in the organization connecting with the organization’s purpose: *“To me, it’s very important that my team, my organization, we as a team, make more than just money. ( . . . ) We are involved in developing society. But by being successful as a business compass, we can actually drive the society forward.”* At least, that is the vision communicated by top management and routinely embedded in the culture of the organization. All four interviewees at company B easily related to topics commonly included in the social sustainability agenda and provided similar accounts with respect to core values, that are lived throughout the organization and reflected in the company’s practices. Another interviewee speaks to living up to this vision consistently throughout the organization: *“Well, when it comes to business ethics, it could also be—even if we follow the law, for example, it could not be enough for us. We, as a company, want to conduct business in a certain way because we think that’s ethical. So we can even have much stronger requirements on our sales than what the law require us to do. And in certain cases, we might think that there are too big differences between different countries in terms to the local laws, regulations, and we might choose a*

higher practice. So our standards might be a little bit higher than what that local market recommends or what the law says in that market. So I think that's where business ethics comes in." Interestingly, all the interviewees were well-versed in the social sustainability challenge and could easily describe how related objectives connected to their own roles in the organization, indicating the presence of a good level of coordination between the overall definition of social sustainability at the top of the organization and the implications for different areas of the organization.

Interviewees at organization C were not as confused about why they were being interviewed as in organization A but we found that the level of awareness of social sustainability as a part of the sustainability concept was very uneven. One interviewee in a purchasing function, for example, could vividly describe how he sees the purpose of organization C in the context of social sustainability: *I like to be a bit grand when I talk to our salespeople because we build a foundation of the whole society in the sense that everything we do—most of us, every day—relies on proper compaction. If this ground wasn't compacted properly, the house wouldn't have been standing here for 50 years. If the roads are not built in the right way, transportation won't work, communication. We're talking about digitalization and connected societies. But in order to have connectivity, you need to build ( . . . ) 5G communication. They have to have a stable foundation that somebody has to compact. So if you go that far, our greatest impact on social sustainability or sustainability for the society is that the machines perform the way they're supposed to, and that we can help educate and support the users so that they do the best job.*" Although this vision speaks to the social impacts of the organization's product offerings during its use phase, it fails to include social sustainability impacts that are created in the remaining lifecycle stages, almost as if the ends justified the means. Other interviewees in organization C did not provide any specific vision of success regarding social sustainability but expressed a need of doing more in this direction.

### 3.3. What Guides Strategic Decisions

When it comes to guiding strategic decisions, several interviewees in organization A point out that the main driving forces are compliance and competitiveness, not goodwill. Representatives of the company during the workshop have also acknowledged several obstacles for integrating social sustainability into company strategy, such as cost and efficiency pressure, the lack of examples from the industrial sector that show the benefits of a social strategy and that they could follow, and lack of internal prioritization of social issues. When it comes to tracking and measuring social aspects in the supply chain workshop participants from organization A have also raised the problem of costly and lengthy assessments and the lack of internal awareness and specific knowledge to make use of assessment tools and results in a meaningful way. Interviews also showed that there is a strong message coming from higher levels of decision-making that cost is a critical variable and that for (social) sustainability to become a priority it needs to be monetized. The interviewees directly involved in this research project express this to be a challenge, as currently there is not enough knowledge or tools that can help justify additional efforts in social sustainability in monetary terms. Customer needs are the key driver for this organization that has other bigger industrial players as end customers. These customers usually operate within fairly long time horizons, which requires company A to include industry trends and potential future customer needs. Moreover, being part of an industry that is highly regulated and dictates product specifications from the outside-in, freedom is perceived to be limited. Since social sustainability specifications are not on the industry's agenda, interviewees in company A do not see a compelling business argument for more social sustainability integration. Relationships with close stakeholders such as the surrounding community, authorities and industrial customers do not flag the need for further action and, as long as these relationships are well managed, the organization will not change its approach.

Branding and reputation are identified from the interviews as key drivers for organization B when making decisions about social sustainability challenges. Social risk

management falls under the work referred to as “core value management” that focuses on infusing the organization’s core values in decisions taken at all levels of the organization. *“It becomes very important when you talk about reputational risk for a global company because we are not local in one market, we are global. So if you do something in one market, it will have echoes into other markets, and it will impact our possibility to do business worldwide. So it becomes very important for us to have policies, guidelines, and support for the business responsible to conduct business in as ethical way as we can. Of course, it won’t be perfect, but at least they’re setting up some guidance and some support for the business owners to be able to do this as a stringent and equal all over the world as possibly even as the challenges are very different in different markets.”*

Trust and being a trusted partner are highlighted as one of the values that guides the work: “Business is made by people. Business starts with relationships so of course, the more stable the communities, the societies, the easier it is to conduct business in an ethical way and the better relations we have with a society, the more positive society will be towards us as a brand also. So a lot of these values are built in”. Furthermore internally to the organization: “another area that is very important, or one of the values, the trust. This is about the respect for the individual and that we are transparent. ( . . . ) that we are empowered and that we have the courage, right. Collaboration is important. And that we as managers or leadership trust that our employees do their best, and that we actually can expect them to make decisions and to trust that they do take decisions that is the best for the company.”

Connected to branding and reputation, one interviewee raised the need for society in general to expect more of companies in order to accelerate social sustainability improvements: *“we are an engineering company and ( . . . ) we are quite good in following norms and requirements and these kind of things. So I mean to really take the next step, I think the society needs to challenge us to take the next step and put up some boundary conditions. And then we are quite good to adapt to that.”* If expectations are higher, companies that profit from such social capital will want to do more. However, this is not perceived as a reality yet in company B’s context. Talking about customer-driven requirements one interviewee said: *“I wouldn’t say that these kind of requirements (social sustainability requirements) are that frequent. I would say it’s a big discussion when there is a big site, most likely governmentally financed. Rebuilding trains or roads or big infrastructure investments that the government during their process are writing requirements on fuel consumption, driving CO<sub>2</sub> emissions down, etc. More focusing on the environmental side.”*

Interviews in organization C revealed some of the existing drivers for integrating social sustainability in the organizations. One interviewee in the human resources function talked about the importance of a certain leadership style that favors positive outcomes on social sustainability and referred to the “Swedish” leadership style as one very conducive of “good behavior” and good examples to be followed. According to the interviewee, “foreign” managers need to learn how things are done. So it appears that “doing things right” in company C is more reliant on elements of the surrounding national culture than on an corporate culture anchored in own values, policies and routines. *“How we, as a human being, drives off our emotions and, especially in this area what you’re discussing is, I think it’s from my perspective anyways, 95% driving from the emotion, not from code of conduct”.* Corporate culture and national culture are thus deemed to be the same thing and unlikely to travel, meaning that different leadership styles, regardless of if they are conducive of good behavior or not, will set the management tone in different parts of the world.

Another interviewee in the product portfolio function, speaks about creating a strong brand: “We want to have a strong branding, of course. But that brand name shouldn’t be just because it’s a big company because we won’t be as big as (the previous owner group) with 40,000-somewhat employees. But we want it to be that the brand is recognized as safe, nice to work with, backed by good relations, and good people, and all of those things. And in itself, we can do because we now own the brand ( . . . ). So we have a greater opportunity from that perspective. And of course, we, in a sense, own the distribution. We own all the channels towards the customer except we were represented by dealers. But at least

we have a direct connection into the dealers to give us opportunities". However, at the same time, the brand needs to speak to customer needs, another important driver for the organization: "when we talk about sustainability, we more talk about our products and the way they are supposed to be used by the customers, I would say. More the customer focus". Recognizing that costumers in different parts of the world express different needs, also in terms of their sustainability requirements, the company ends up downplaying this ambition to meet current market needs.

### 3.4. How Internal Work Is Structured

All three organizations presented differences as to how social sustainability initiatives are driven and structured. Organizations A and C, however, had several aspects in common. Ecological sustainability and social sustainability in organizations A and C are treated as two separate aspects. Ecological sustainability, often referred to as "sustainability", is anchored at the tactical level of the organization, with functions such as purchasing, quality and compliance sharing aspects of ecological sustainability initiatives, but still using the same umbrella concept. These different functions collaborate with each other and provide support to product development. Social sustainability on the other hand, is not clearly assigned to any function, but different themes targeting different stakeholders (employees, suppliers, communities) are somewhat part of different functions at the tactical level of the organizations, such as human resources caring for compliance with collective agreements and employment regulations and health and safety making sure manufacturing processes do not create obstacles to employees' health. To some degree, purchasing functions also anchor some social sustainability aspects with respect to first tier suppliers. From the interviews conducted, we could not see any structured collaboration between these functions to define strategy, implementation or progress. At organization A we could see a growth in interest from product development professionals to work with sustainability more holistically and therefore improve their capabilities to work with social sustainability as well. Organizational structure and processes to facilitate bottom-up change and innovation were not a reality then.

Another interesting aspect that is common to organizations A and C is that both used to belong to corporate groups that had a stronger top-down steering style with sustainability strategy being defined at the top and trickled down to the operational level through policies, guidelines and checklists. Interviewees at organization A who experienced the previous management, share fond experiences of that time when they felt part of a bigger purpose. In the case of organization C, however, some interviewees mention the benefits of having clear guidelines and priorities set while others complained of a lack of trust from top management and limited freedom to innovate. One interviewee from company C describes being part of a group that had clear rules and requirements that had to be fulfilled internally and also in the relationship with suppliers (first tier). After becoming part of a new group, where no clearly defined guidelines were provided and a lot of freedom was given, several of these practices slowly ceased to exist according to the interviewee. *"It was a listed company with a very strong focus on a lot of things. The way we do things was ( . . . ) clearly defined rules how to approach certain things. Now we are in a group that is more—it's not listed. It's a privately owned company. I think companies belonging to the new Group are more independent. There are no large group functions, really, telling everyone this is how we do it, blah, blah, blah. It doesn't really exist"*.

Organization B in contrast, includes social sustainability alongside ecological sustainability under the umbrella of sustainability. More precisely, it is anchored at the vice-presidency as Corporate Social Responsibility and Sustainability function, and in collaboration with the board of the organization and other counterparts at top-management level the strategic guidelines are defined. From top-management, functions in R&D, technology, marketing and after sales and human resources, receive the mandate to develop specific strategies, implement and monitor progress, reporting back to top management for consolidation and reporting. One interviewee talks about the vertical flow of information



and support for decision-making: *“There are no standards defined and such. We have in the policy some recommendations, or that there is guidance in the policy that our leaders and employees need to follow. But if there is risks, this is then escalated to council. And the council makes then a judgment, and it’s always a subjective judgment. and this is made by specialists. And we have two important specialists in the council. One from the legal departments, anyone from the CSR department, and they will then recommend it to business owners how to act in this case.”*

Interviews showed that having one common framework that defined priority areas and high-level requirements creates greater awareness of societal social sustainability issues and also what those mean to specific functions of the organization. Apart from clear organizational structures, regular cross-function dialogue was identified as an important practice by interviewees, because it creates an environment of constant learning and striving for improvement. *“Quite a lot of what we are doing here is based on the values of the company, but also the values of the employers here. And for example, in my leadership group, we have quite divided background, but we all share a quite positive approach about our core values environment, social care, these kind of discussions, we invite other people from other parts of the company and both internally and externally, locally and globally, to speak about what’s happening in the society to speak about their environmental tasks, to speak about the challenge and I would say the world is facing forward.”*

#### 4. Discussions and Conclusions

##### 4.1. Moving Organizational Boundaries towards a Systems Perspective

The aim of this paper was to provide empirical evidence of how social sustainability is currently included in PDOs and what their motivations are to do so. In addition, we wanted to assess if these companies are in any way strategic in their social sustainability work. We were able to notice several differences between the three case companies’ approach to social sustainability, in terms of how far they have advanced the integration of social sustainability practices throughout the organization, and in terms of the presence or absence of strategic thinking elements in the approach. A first key difference refers to the definition of the organization boundaries and their recognition of interdependencies with other social systems, be those other organizations, communities or society in general. In organization B the awareness of the complexity of social sustainability and the implications for them seem to be present in the whole management of the organization. Their lens goes beyond traditional organizational boundaries, meaning that targets and actions are being taken not only with an internal company focus but also upstream and downstream their value chain. Interestingly we found that there is a sense of civic duty or positive legacy towards people in all three organizations, although for company B it is much more pronounced through their values-driven leadership work. However, while this sense of responsibility for organization B embraces a wide range of interconnected social systems, for organizations A and C, who seem to have a more limited understanding of their social sustainability interdependencies within the value chain, their sense of responsibility to address social problems appears to be more limited, being directed only towards their own employees. The HR function putting the responsibility on “foreign” leadership provides a good example of a more limited understanding of system interdependencies. HR departments in Sweden-based organizations usually have the basic social sustainability work already laid out for them, due the country’s robust social welfare system and thoroughly unionized workforce. Creating such conditions in countries where similar foundations are absent require a much more proactive attitude from HR departments and possibly Sweden-based HR departments do not see this as being in their scope or responsibility, since in their home country it is not.

Previous models of Corporate Social Responsibility (CSR) and Corporate Sustainability also identify the setting of organizational boundaries as a central differentiator of corporate strategies. Aggerholm and Trapp [42] outline three generations of CSR approaches where the first two generations are focused on the functioning of the organization itself and slowly include closely connected external stakeholders. Dyllick and Muff [43] talk about sustainability strategies 1.0 and 2.0 mainly taking an “inside-out” organizational

perspective and only at 3.0 does it take an outside-in perspective. This means that it is only when companies begin seeing their contribution to (un)sustainability from a larger systems perspective that they can effectively contribute to addressing global challenges and create value for the common good. Dyllick and Rost [44] also posit that organizations can only claim that their products contribute to sustainability when they begin to systematically address societal challenges in a holistic way (both social and ecological aspects).

Expanding the scope to other systems creates the possibility for a wider range of stakeholders to be identified and also influence the social sustainability agenda and the breadth of topics considered relevant for the organization to tackle. While organizations A and C take a more reactive approach to stakeholder demands, such as employee collective agreements or industry requirements, organization B seems to actively engage a wider range of value chain stakeholders in the development of solutions to common challenges. Bolton et al. [45] have raised concerns over the stakeholder paradigm, such as that there is usually a focus on particular set of stakeholders, that it neglects the unequal possibility stakeholder groups might have to make their voice heard, and that it leads to taking a fire-fighting approach steered by maintaining corporate reputation, rather than a holistic and strategic approach.

Building on the above, organization B showed a broader coverage of social sustainability issues within their work whereas A and C stayed limited to internal issues such as health and safety of their own employees and some aspects of their products, particularly during the use phase. The broader awareness and perspective also allowed organization B to be more proactive and strategic in their social sustainability work while the other two companies were guided by existing local practices and regulations. This shows that it is hard to decouple how organizations identify (or not) themselves as part of social systems and their ability to develop social sustainability strategies that can contribute to addressing social challenges more widely.

A more systems-oriented framework, such as the FSSD, can support organizations in dealing with the stakeholder paradigm predicament as it asks organizations to be positioned as nested within socio-ecological systems and identify the interdependencies that create the conditions for their own long-term survival. In doing so, a wider lens is created for organizations to include stakeholders that would otherwise be missed in the process. The FSSD also provides boundary conditions for success (principles) based on this understanding of social systems functioning so that the organization can better identify root causes of social problems and develop solutions that have long-lasting impact. Furthermore, the use of the principles can help address Bolton et al.'s [45] critique of firefighting and lack of inclusiveness as organizations become better equipped to anticipate problems and be proactive in their social sustainability work.

For example, the first principle of social sustainability of the FSSD states that “in a sustainable society, people are not subject to structural obstacles to health” [37]. This means that people are not exposed to social conditions that systematically undermine their possibilities to avoid injury and illness; physically, mentally or emotionally. The principle does not stipulate minimum wage, maximum work hours, or ergonomic requirements, because it should be used by any social system, any organization, and not only today, but also in the future. International standards and best practice examples can support organizations in creating goals and a set of performance indicators, but due to the dynamic property of social systems, without clear guiding principles it becomes difficult to know if actions are taking organizations in the right direction. Artificial intelligence or increased digitalization of workplaces are good examples. Who could have predicted ten years ago the level of automation in our industries or the level of virtuality of social relations? New ways of creating healthy work environments need to be developed and new indicators must follow [46]. Our interviews indicate that while organizations A and C show a high skill level as regards working with health and safety issues, that skill was not always used to help address health and safety issues in the supply chain and sometimes among subsidiaries. Although in organization B we found that there is evidence of systematic

work to prevent injury and illness of value chain actors in addition to own employees, we could not verify a clear high-level framework to help define and guide present and future actions. Top management is tuned into the latest trends and stakeholders demands, but not necessarily taking a precautionary principle approach to planning.

#### *4.2. Implications for Organizational Structure and Process*

In terms of setting targets related to social sustainability at organizational and project levels and defining related product requirements, organization B defined those at the strategic management level in the organization and ensured that lower levels of the organization were able to formulate specific targets accordingly. The other two did not have such a centralized decision-making forum and different parts of the organization decided on social sustainability issues they deemed important.

Based on the results of this study, it seems that better understanding of the complexity of social sustainability and a broader perspective of social sustainability interdependencies goes hand-in-hand with a way of organizing that overcomes traditional hierarchies and allows for more collaborative and strategic work in this area. At the same time, strong commitment from top level management creates opportunities for different roles and functions to play a part in whatever changes are deemed necessary. The literature on eco-design as well as CSR points to the importance of organizational structures to ensure sustainability integration. Brunes and de Carvalho [10] state that macro, meso and micro levels of an organization should be integrated with top-down and bottom-up flows promoting vertical integration, while a transversal integration should occur through change and people management based on the organization's culture. Asif et al. [47] describe full CSR integration as "elements of organizational strategy cascade down to all levels and, thus, create a fit among organizational objectives, targets, and processes" and that "coordination among the departments is key to ensuring smooth processes and a coherent pursuit of corporate objectives to efficiently use resources and competencies" at the operational level is key. In organizations A and C we could identify such structures in place to deal with sustainability goals, but those most often referred to ecological aspects, possibly due to a narrow definition of sustainability. In organization B, who worked with a more holistic definition of sustainability that includes social aspects alongside ecological ones, organizational structures ended up serving social objectives equally well, allowing strategic social sustainability work to happen.

#### *4.3. Implications for Sustainable Product Development*

Last but not least, our research sheds light into aspects specific to product design and development. Sustainable product development, according to Hallstedt and Isaksson [48], is when a strategic sustainability perspective is integrated and implemented into the early phases of the product innovation process, that is, in the design stages, including lifecycle thinking. Schulte and Hallstedt [49] further detail that, for this to happen, changes in processes and support tools are required across all levels of decision-making; that is, the strategic, tactical, and operational levels of the organization. Our case study brings evidence that currently very few social sustainability impacts connected to a product's lifecycle stages are managed by product developers within design related decisions, besides design of manufacturing processes and some user related activities. In all three organizations, health and safety issues connected to manufacturing activities featured high in the product developers' agenda, similarly to user safety. Social sustainability impacts connected to raw material extraction, transportation or end-of-life activities, when taken into consideration, appear to be dealt with by other functions outside design activities, such as purchasing or marketing although in rare occasions in dialogue with product developers. Product developers, however, have an opportunity to influence the social sustainability performance of a product by focusing their design efforts on the use phase, not in meeting expressed customer needs, but focusing on needs from a societal perspective. According to Bjørn et al. [50], changes in *how* things are produced must be enhanced by changes in *what* is

being produced. Dyllick and Rost [44] talk about an enhancement of the product life cycle through positive handprints, contributing to public value creation as a result from the primary product purpose. Because product development organizations should be asking how their products help meet the needs (as opposed to wants) of current and future generations [50], design activities also need to be supported by higher levels of decision-making and aligned business models.

Meuer et al. [51] identify three essential attributes that differentiate shades of corporate sustainability: (1) the level of ambition, (2) the level of integration and (3) the specificity of sustainable development. A joint appraisal of these attributes helps determine if firms are in fact contributing to sustainable development or only creating a marketing piece. In this study we have explored all three essential attributes. The authors stress, however, the importance of being clear and specific with what is included in a firm's definition of sustainability. Moreover, the authors acknowledge that sustainability progress and maturity do not consist of a single linear journey, but multiple and uneven ones, as different sustainability challenges may bring different managerial implications. The relevance of our research speaks directly to this. Because social sustainability has been overlooked for so long in PD research, there is a need to build the foundations in this area and develop descriptive research that contributes to a greater understanding of how companies currently approach social sustainability and what challenges they might face in further integrating it in organizational practices. Previous theories within SPD and related areas might transfer well to the challenges that social sustainability pose to PDOs, but this should not be taken for granted as there is a possibility for significant differences and therefore needs to be done critically assessing implications to practice or new theory development.

Finally, we would like to express that exploring social sustainability with our interviewees has led us to confirm some of our assumptions but also to challenge others, starting with the concept of social sustainability itself. We came to realize that often times it needed explaining, even to functions that we expected to be well versed in it. Other times, the depth of understanding of its foundations and implications was high, even if it was not wrapped by a unifying concept. Some interviews flowed easily, and respondents felt comfortable in discussing the topic. Others struggled, were puzzled by the questions, and felt they had nothing to contribute with. The majority of those we interacted with, however, expressed curiosity and a wish to learn more in order to have their work contribute to a better world.

## 5. Limitations

Despite the above-mentioned contributions, this study has some limitations that need to be acknowledged. Data were collected from only three organizations, all of them located in Sweden. Although their sectors slightly differed, the study still focused on an industrial business area that presents several similarities in terms value chain complexity and business to business activities. This was an exploratory study based on a case study design, which naturally excludes a statistical generalizability of our findings. Such generalizability should be tested in future work using a greater number of companies from different sectors and also operating in different national contexts [32]. In addition, only a limited number of interviews could be conducted at the case companies, especially at organizations B and C, which makes the phenomenon in this study, even if common for this type of research, closely connected to our interviewees' perceptions. Since the selected participants are key organizational members that should enact social sustainability strategies, we argue that their views constitute relevant evidence of the different social sustainability lenses present at the case organizations. Finally, we acknowledge the time delay between conducting interviews and the writing of this article, which could mean that the participating companies have advanced in their social sustainability integration work. The final version of the article has, however, been approved by the companies.

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