

Buyer Networking in Supplier HSEQ Development – A Macroergonomics Analysis in a CSR Framework

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Abstract. Process industries focus on their core processes whilst certain activities are bought as outsourced services from a variety of suppliers. Corporate social responsibility highlights the need to manage and develop suppliers' HSEQ capabilities. This study focuses on large Finnish industrial companies' HSEQ cluster, and its' actions for supplier development. This study includes interviews for large Finnish industrial companies and a database analysis on a sample of supplier audit reports. A macroergonomics analysis is conducted to show how the observations made in the audits, i.e. identified development topics or deviations, are of internal origin and mainly identify issues related to suppliers' management processes and health and safety performance. In addition, suppliers' own stakeholder management practices and processes were questioned in some cases. This study shows that this current HSEQ assessment practice by the cluster somewhat strongly identifies issues related to CSR. Yet, some development topics and future research aspects are identified that could help in tying the assessment procedure better with CSR.

Keywords: Corporate social responsibility, HSEQ, Integrated management systems, Macroergonomics, Supplier development

1 Introduction

The trend in process industry has been to focus on core processes and purchase other services as outsourced support services from various suppliers. Often these support services include high-risk activities, such as industrial construction and maintenance. As a result of this outsourcing, industrial plants can be considered as multiemployer worksites (or shared workplaces) where employees representing different employers work together. Yet, the overall management of, and responsibility for this complexity lies under one principal actor (later buyer). In practice, industrial buyer-supplier development actions and work at such workplaces is often managed from an Integrated Management System (IMS) perspective [1] that ties together quality, environment, health and safety management perspectives. Often in an industrial context this entity is discussed under integrated Health, Safety, Environment and Quality (HSEQ) management framework (or another similar acronym, e.g. SHEQ, EHSQ, see [2]).

Based on the macroergonomics foundations [e.g. 3-5], such multiemployer worksites can be discussed as complex work system entities, where organizational, technological and personnel subsystems interact together. The organizational sub-system includes three interacting characteristics: complexity, formalization and centralization [4]. Complexity relates to segmentation of the organization [4] where-as formalization relates to the degree of standardization and centralization of the decision-making processes and the extent to which authority is concentrated within a few individuals. Personnel subsystem constitutes of those doing the work and technological subsystem relates to the means how the work is actually accomplished [4]. Design and management of such a complex work system and the stakeholders included is challenged by various forces set by the external environment [5].

Suppliers' HSEQ performance affects, directly or indirectly, the total performance of the buyer. Thus, supplier development is of interest for both the supplier and the buyer [6]. Local laws provide grounding for suppliers' and buyers' actions. However, research and practice has shown that merely focusing on fulfilling the laws is often considered inadequate and buyers and suppliers also have their own processes and procedures to raise the bar for their HSEQ performance below these minimum requirements. Corporate social Responsibility (CSR) is one framework that has been used for supplier development in this context [7]

and for instance, Zink and Fischer [8] have highlighted the need for empirical CSR oriented macroergonomics studies focusing on whole value creation chains in industrial contexts.

Nordic countries are generally considered as forerunners in CSR. Despite this companies in the Nordic countries should not be considered a homogenous group as the level of CSR varies greatly between companies [9]. In this study, we focus on a Finnish HSEQ cluster and their approach on supplier's HSEQ performance assessment and development [10,11] thus providing insight into Finnish industrial buyer-supplier context from the CSR perspective. The supplier assessment procedure, with supplier audits and the criteria utilized include various aspects that can be discussed under the topic of CSR from the supplier management perspective. Our objective is to deepen understanding about the nature of the assessment procedure and the development topics and deviations identified in the audit sessions by discussing them in a CSR framework. Within this approach, we aim to increase understanding on how well this established HSEQ assessment procedure corresponds to CSR.

2 Methodology

This study focuses on a Finnish HSEQ cluster, its' supplier assessment procedure and assessment database. HSEQ cluster is a network of twelve large industrial buyers. The cluster has actively developed procedures and processes for assessing and developing their industrial suppliers' HSEQ performance. Current assessment procedure is a product of a long fifteen-year collaboration process. During that time, a common procedure for assessing industrial suppliers' HSEQ performance and capabilities with altogether 41 criteria has been developed in collaboration within the cluster. The criteria include the following nine sub categories where these 41 criteria are divided; 1) Leadership, 2) Policy and strategy, 3) Personnel, 4) Partnerships and resources, 5) Processes, 6) Customer results, 7) Personnel results, 8) Social results, and 9) Key performance results [12]. Every criterion is assessed on a four-step scale. Through the audit process, the auditees are provided with a numerical score on their HSEQ performance in total, and HS, E and Q performance separately. Numerical score is comparable with other audited companies' HSEQ audit results. In addition, a written audit report showing possible development topics and deviations is provided.

The assessment procedure includes self-audits by the supplier, followed by third-party audits where the buyers included in the cluster can participate at their will. The process is led by a lead auditor representing an external certification body. As a result of this cluster network the buyers have saved their own resources whilst HSEQ performance has been improved from the supplier perspective. There is also evidence on improved economic performance by the suppliers [10-12].

2.1 Study process

The objective of this study was approached through buyer interviews and an analysis on the HSEQ audit database. The interviews were conducted at seven buyer companies in 2017. These companies were considered having the longest experience concerning HSEQ cluster networking. The interviewees were individuals responsible for HSEQ cluster actions at the company. In five companies the interviews were performed as group interviews with two interviewees participating, whilst in two companies the interviews were conducted as individual interviews. The interviews were arranged at companies' premises. Interviews were semi-structured in nature and they were recorded and transcribed. In this study, we focused on this interview material from the CSR perspective. Interview material has been analyzed earlier by Jounila et al. [10] who have analyzed the data as a whole from the HSEQ management perspective.

In the latter part of this study, a database analysis was conducted to the HSEQ audit database. The database covers over 340 supplier audit reports. In this study, we randomly selected a sample of 20 audit reports for further analysis. The audit reports contained in total 236 development topics and deviations (later observations). In the analysis phase, we applied a CSR framework by Baumgartner and Ebner [13] and

re-categorized these 236 observations accordingly in eight CSR categories based on their origin. The eight categories in this CSR framework by Baumgartner and Ebner [13] include Corporate governance, Motivation and incentives, Health and safety and Human capital development as internal categories, and Ethical behaviour and human rights, No controversial activities, No corruption and cartel and Corporate citizenship as external categories.

3 Results

Buyer interviews focused on the benefits of the audit process, audit data utilization possibilities, experiences on supplier performance development, development topics for the audit process and the total coverage of the audits. In this study, we focus on buyers' views on the audit process from a CSR perspective. As a whole, the interviewees emphasized how HSEQ performance in practice can be comprehensively assessed through the criteria discussed and verified in the audit session. In general, the interviewees emphasized that the audit criteria coverage is in many ways adequate also from the CSR perspective. Interviewees highlighted that the audits were mainly conducted to Finnish suppliers. Accordingly, they considered that suppliers in Finland in principle have a high level of CSR in their actions. An interviewee quotation [translated from Finnish by the 1st author] from one interview concretizes this view in practice:

“...on the other hand, there is this thing that these [audited] companies are from Finland. Surely, we have in our internal audits seen different violations [concerning CSR], but certainly not on that level, that in Africa, East Asia and Southern America. There such ethical questions are somewhat different, and I don't think that we would need to focus on such ethical issues in Finland”.

Interviewees mentioned that the time might not be right to consider such issues in Finland. However, they pointed out that in the future buyers most likely will put more demands on CSR and especially on environmental efficiency. Partly, they considered that environmental responsibility might be an area that could be considered more in-depth in the audits and for instance raw material sourcing might be an area to consider more profoundly also when assessing suppliers and their sourcing processes.

As a whole, the interviewees were highly satisfied in HSEQ cluster networking and on the HSEQ audit process itself. The audit process was deemed comprehensive considering all major aspects that should be notified when assessing suppliers. However, we wanted to take a closer look on issues that have been identified in the audits to provide an external view on the coverage of the audits from the CSR perspective. Thus, we focused on the latter part of our analysis on the development topics and deviations that have been issued for the audited suppliers. For that purpose, we extracted a random sample of 20 audit reports from the audit database and categorized the observations on eight categories based on their internal or external origin. The analysis results (Table 1) show the division of the observations on eight categories.

Two thirds of the observations were of internal origin and roughly one third of the observations included in the analysis related to Corporate governance and on issues like the transparency of top management actions and unclearly defined processes and policies. One fifth of the observations related to Health and safety and on challenges related to its' arrangement, tools, and processes and on inadequate personnel health and safety training. Similarly, one fifth of the observations were categorized under “No controversial actions” category. Non-transparent partner selection processes and unclear customer relations management processes can be mentioned as typical examples of the observations in that category. One tenth of the observations related to the category “Corporate citizenship” with unclear communication with local communities and different environmental issues as typical examples of such observations. None of the observations in our sample related to “No corruption and cartel” category.

4 Discussion and conclusions

This study focused on supplier development processes and actions by a Finnish cluster comprised of large industrial buyer companies. The companies involved in the cluster include process industry companies and energy production. The companies are among the largest in Finland at their business sectors; thus, the cluster can be considered to represent adequately Finnish heavy industries in general. In this study, we focused on CSR issues related to supplier audits by the cluster. In general, we see that this study illustrated in practice the general development on CSR discussion in Finland during the past few years. Our empirical interview material from 2017 concluded that CSR was at that time mainly considered a by-product of the supplier audits whilst buyers' focus was merely on practical HSEQ performance issues. However, during the last years we, as long-lasting research partners of the cluster, have witnessed how the general discussion inside the cluster has shifted towards larger entities, like the ones of sustainability and CSR. This observed shift in the attitudes, along with current large-scale initiatives such as the European Union's Green Deal act which promotes CSR [14] and a growing trend to develop and deepen CSR reporting [15], made us ponder how well does this supplier audit process contribute to CSR in practice? Thus, we conducted an analysis on the audit database. In that analysis phase, we took a random sample of 20 audit reports and analyzed the development topics and deviations issued at the audits, i.e. observations, in a CSR framework, applied from Baumgartner and Ebner [13].

Our analysis shows how two thirds of the observations related to suppliers' internal processes and practices and a majority of those related to corporate governance and health and safety. From a macroergonomics perspective, we see here signs of unmaturing organizational and technical subsystems. From the organizational subsystem perspective, we see centralization a challenge. In practice, centralization relates to suppliers' concentrated management decision making processes and practices, that seem not to be transparent at all levels. In addition, our analysis shows some signs of challenges related to stakeholder management from the supplier perspective as there were several observations that showed how suppliers' own supply chain processes were unmaturing and not always transparent. In addition, there were some cases, where suppliers' own environmental practices and processes and interaction practices with the local communities were questioned.

Issues related to health and safety also stand out in our empirical material. This is not surprising considering the challenging nature of work that the suppliers perform at industrial sites. Being an important element of organizational subsystem that is also a challenge from the perspectives of personnel and technological subsystems. Our material showed challenges related to suppliers' personnel development systems and processes, practices on orientation to work and personnel training systems and their documentation.

Our macroergonomics analysis approach provided us with some evidence on IMS in industrial supply chain context. Contributing to the future research call by Nunhes et al. [16], we argue that the HSEQ supplier assessment approach studied provides means for systematic supplier management with standardized measures. Further, we argue that the assessment process provides knowledge that can be utilized broadly at strategic, tactic and operational levels. To support that, the assessment scores and reports can be utilized for inter- and intraorganizational learning steering thus towards continuous improvement actions.

As a future topic for research, we propose to study more in-depth the connections of and incentives for CSR and sustainability and health and safety in supplier development. For instance, Nawaz et al. [17] have in their recent review highlighted the close connections between safety and sustainability and concluded how the former offers in a sense an operational command on the latter one. This is a perspective that should be studied more in-depth in our HSEQ cluster environment. As another topic for future research, and for practical development actions inside the cluster, we propose a study that focuses on external CSR issues; like identifying challenges related to possible unfair operating practices. Our sample of 20 audit reports did not reveal any development topics or deviations related to unfair operation practices. However, considering our rather small sample size, we propose to study that more in-depth from a larger sample. In

addition, we propose that to be discussed when the audit process and its's audit criteria are being developed.

4.1 Limitations

Our study was based on a fairly narrow sample. We highlight the need for more in-depth studies on the subject based on larger empirical data. The HSEQ assessment database introduced in this study is growing and will provide possibilities for such studies in the future. It should be noted that the audit process might contain potential biases as the audits are performed by humans. Supposedly it is possible that for in-stance the lead auditor might prefer some issues that he/she is more familiar with, thus making it possible for some other important topics to be left for a smaller discussion. However, a study by Jounila et al. [12] provides some indication on the objectivity of the audit process when different lead auditors' observations from a video material from one audit session were compared.

In addition, we highlight that the interviews we analyzed did not strictly focus on CSR as they were designed to cover the audit process more in general. It is possible that more specific CSR questions would have provided more in-depth information on CSR aspects from the buyer perspective.

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