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Products in environmental management systems: the role of auditors

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Abstract

For standardized environmental management systems (EMS) to be environmentally effective tools, they should affect important environmental aspects related to flows of materials and energy, which for manufacturing companies are closely connected to their products. This paper presents how external environmental auditors interpret and apply important product-related requirements of ISO 14001 at manufacturing companies in Sweden.

The results indicate that the link between EMS and products is rather weak. Products are seldom regarded as significant environmental aspects and are therefore not within the main scope of many EMS, which are mainly focused on sites. However, all of the interviewed auditors require that some kind of environmental considerations be incorporated into product development, but these considerations are to large extent site oriented; how they are prioritized in relation to other factors such as economics and other customer priorities appears to be up to the companies.

The paper includes some recommendations to strengthen the role of products within the framework of standardized EMS.

Keywords: Design for environment; DFE; Environmental management systems; EMS; ISO 14001; EMAS; Auditors

1. Introduction

Several recent studies indicate that it may be fruitful for companies to integrate concepts of design for environment (DFE) into environmental management systems (EMS), although there are many important barriers to overcome [1]. DFE thinking might enrich EMS by contributing with a life cycle perspective, thereby helping the organization to identify the most important flows of materials and energy upon which to focus. On an organizational level, this integration could induce better relations with stakeholders. At the same time, EMS may be useful to make corporate DFE efforts more permanent, i.e. lead to consistent and systematic DFE activities (ibid.).

Some empirical findings indicate that EMS certified in accordance with ISO 14001 lead to increased DFE activities [2–4], while other results are more pessimistic and bear witness to a weak link between EMS and DFE [1,5,6]. From this perspective, and as the number of standardized EMS increases rapidly around the world [7], it is of utmost importance to study what is required concerning product development for an ISO 14001 certified company. Karlsson [2] has pointed out external environmental auditors as important actors regarding the integration between EMS and DFE. In addition, Ammenberg et al. [8, cf. 9] argue that such auditors are key players concerning the connection between standardized EMS and environmental performance.

The relevance of this study rests upon four fundamental cornerstones. Firstly, the societal relevance of environmental issues is taken for granted. Secondly, the fact that standardized EMS is frequently used in many parts of the world makes them important to study from an environmental (and business) point of view. Thirdly, EMS certification is voluntary, the formulations in ISO 14001 leave a lot to be interpreted by its users and the results to large extent depend on the aspirations of the companies and the role of external environmental auditors. In addition, there is an ongoing debate concerning the trustworthiness of EMS, for example,

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regarding regulatory relief for certified companies. Fourthly, for EMS to be effective and efficient environmental tools, these systems have to encompass and affect important aspects from flows of materials and energy. For a manufacturing firm, in general, many of these flows are directly linked to its products. Combining these four cornerstones, it seems important to illuminate how EMS are connected to DFE activities, thereby getting a better grip on how they affect the most relevant resource flows.

To illuminate these issues, this paper focuses on the role and perceptions of external environmental auditors, who could function both as a driver and as a barrier for the integration of DFE concepts[1] into standardized EMS. This study is based on interviews conducted with auditors representing all nine Swedish certification bodies.[2] It presents how auditors interpret and apply the central requirements of ISO 14001 and their experiences and visions within this area, focusing on manufacturing companies. The paper consists of three main parts. Firstly, it is shown what ISO 14001 and the related standards include concerning products and product development. Secondly, the methodology for the interviews is described, including information on the central questions used. In the third and final section, the results are presented and discussed, which leads to some conclusions and recommendations concerning the future application of standardized EMS, focused on integration with corporate DFE activities.

2. To what extent do requirements for standardized EMS encompass product development?

It should be emphasized that the formulations in the ISO 14001 standard leave much to be interpreted by its users, e.g. companies and auditors [8]. Generously interpreted (from a DFE perspective), many requirements directly or indirectly affect product design [10]. In this section, the most relevant requirements concerning products in ISO 14001[3] and the closest related standards in the ISO 14000 series[4] are presented and discussed. Table 1 shows a selection of important standard formulations.

It should be observed that only ISO 14001 of the chosen standards in the ISO 14000 series uses binding requirements in terms of what shall be done. The other standards only contain guidance and recommendations. Concluding from Table 1, there are many phrases, that directly or indirectly, affect products and product development. However, it is clear that product development is not emphasized in ISO 14001 and that most of the existing product-related requirements leave substantial room for interpretation. Nevertheless, based on common environmental facts (all flows of materials and energy are relevant from an environmental point of view and many important flows are connected to products/consumption [cf. 14,15]), together with the wording presented in Table 1, most certified manufacturing companies (conducting product development) should have:

- product-related language in their environmental policy;
- identified issues in relation to products and product development processes as significant environmental aspects;
- environmental objectives and/or targets concerning products (otherwise product development must have been considered as an irrelevant function);
- procedures to ensure that product development is handled within the EMS.

3. Methodology

The study was conducted through interviews with nine auditors, one from each of the nine Swedish certification bodies. These firms cover an absolutely dominant part of the EMS certification in Sweden, but there are also some foreign companies on this market. In most cases, the selected auditors represented the certification body in a joint group, where common topics of interest to the certification bodies are discussed[5] and common practices are developed, e.g. issues concerning interpretation of central requirements of ISO 14001. In addition, many of them are responsible for the environmental certification activities within their firms, which means that they are well informed about the work of many other auditors and that they probably are regarded as successful within their line of business.

To be able to compare the answers without steering the interviewees too much, semi-structured interviews were used [see 16]. This means that some main questions, presented and theoretically motivated later in this

[1] For an orientation concerning integration of EMS and DFE [see 1].

[2] I.e., firms accredited by the Swedish Board for Accreditation and Conformity Assessment, SWEDAC. Together these firms represent close to 100% of the EMS certification market in Sweden.

[3] Since ISO 14001 dominates the market for standardized EMS today [7], this standard will be emphasized in this paper. However, most of the reasoning and the results are valid for the European regulation EMAS [see 11], as well.

[4] The technical report ISO 14062 contributes with a lot of guidance on how to integrate environmental considerations into product development. However, it only contains very limited information on how to incorporate such efforts into EMS.

[5] To select auditors from this special group was a conscious choice in order to get successful auditors with extensive experience.