

Abstract: The Drivers of Ecodesign

Based on a case study of three large, Danish companies, this paper explores what the drivers of ecodesign are. Since 2005, the EU Ecodesign Directive (2005/32/EC and 2009/125/EC) and its implementing measures have set up ecodesign requirements for energy using and energy related products. In the early adopted implementing measures in particular, the focus of the requirements are energy consumption in the use phase and energy efficiency. Furthermore, the requirements for some product groups have been criticised for being too ambitious. The more recent adopted implementing measures have included requirements to resource and material efficiency aspects as well. The outset of this paper is to analyse what actually drives the ecodesign agenda in companies covered by the Ecodesign Directive and what the effect of the Ecodesign Directive is.

A multiple case study approach is chosen and the case companies were chosen as they are covered by an implementing measure of the Ecodesign Directive. The aim of the case selection was to find companies that perceive the influence of the Ecodesign Directive differently and have different options for responding to the influence of the Directive. The case companies in the study are Grundfos, Bang & Olufsen and Danfoss Drives. Their background and strategic focus regarding sustainability and ecodesign are different. Grundfos was selected, representing a frontrunner company, based on the company's long history of focusing on energy efficient pump solutions, and has been active in influencing the legislative process regarding the Energy Label. Bang & Olufsen was chosen, representing a company whose environmental efforts are mainly driven by legislative demands. Bang & Olufsen is well known for its high-end, quality design and design products, but has taken the standpoint that environmental issues are not an area for differentiating their products. Danfoss Drives represent a company in between Grundfos and Bang & Olufsen in terms of strategic environmental focus, and they describe themselves as 'fast followers'.

The analysis of the three companies shows that even though the three companies have different strategies towards sustainability, the employees are facing similar challenges when working with sustainability. In all three cases, the organisational structure is not yet in line with the ambition level, the product development and the environmental support functions are separate entities with limited interaction and the initiatives to integrate environmental issues in the product development projects are often met with scepticism. Furthermore, single staff members are a driver for working with ecodesign and sustainability in all three companies.

Concerning the drivers and barriers of ecodesign, the analyses reveals that the companies' business strategy is a major both driver and barrier for practicing ecodesign in the companies. The main focus in all aspects of their activities is the core business, i.e. the business case. Grundfos has found a business case in producing energy efficient pumps, and to some extent, this also the case for Danfoss Drives. This, however, also implies that the environmental focus of Grundfos and to some extent Danfoss Drives is limited to energy efficiency. At Bang & Olufsen, the core business is producing high-end quality products, where differentiation is a key term. Environmental issues are seen as an embedded aspect of quality and as such there is no particular focus on environmental issues besides legal compliance. However, due to Bang & Olufsen's focus on high-end quality products significant environmental benefits are related to the products. This is a result of the long life time of the products, the extended warranties, the repair and service

schemes, spare part availability and aftermarket and leasing schemes, which all are characteristics of high-end quality products.

The companies' core business is also reflected in the company culture that has a significant influence on the practices in the product development. This is especially evident in Grundfos and Bang & Olufsen. In both companies the interviewees emphasise that it is almost part of their upbringing in the companies to focus on energy efficiency, quality and high-end solutions, respectively, and it is connected with a great deal of pride to succeed in the endeavours to achieve the se goals.

In the product development, the product concept specification and the product requirement specification are the main guides for the product development, and these are, therefore, determining the approach to ecodesign. Another major both driver and barrier especially regarding energy efficiency is technological development. Regarding the specific influence of the Ecodesign Directive, the Directive influences the companies, no matter at what strategic level the company is working with sustainability.

This paper is primarily based on a PhD dissertation from 2015.