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Improving Product's Environmental Performance by Integrating Ecodesign Methods into a Reference Model for Product Development Process

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Abstract

The rising consumption of products is the origin of most of the pollution and resources depletion that our society causes. The environmental impacts observed throughout a product lifecycle are, largely, determined during its development phase. Hence, taking environmental aspects into consideration during the product development process (PDP) phase plays an essential role in reducing product lifecycle-related environmental impacts.

Despite the fact that the number of available ecodesign methods and tools has been increasing in the last decade, its implementation has not reached companies worldwide mainly due to the gap between eco-oriented and product-oriented researchers. The eco-oriented researchers fail to see PDP as a business process crucial to competitiveness, leading to partial and poor integration of ecodesign methods and tools into PDP, not generating the expected ecodesign competitive advantages. On the other hand, product-oriented researchers pay too little attention to environmental aspects, focusing generally on legal compliance and 'end-of-pipe' solutions due to little knowledge about ecodesign methods. This gap generates a lack of systematic use of ecodesign methods and tools in NPD leading companies to low levels of environmental performance.

This paper aims to propose a systematic approach to bridge the aforementioned gap by introducing some ecodesign methods and tools into the early phases of a reference model for NPD, which is a way to structure activities in a business process. The ecodesign methods to be integrated have been selected through literature review using a structured classification method. The reference model, used as integration baseline resulted from experiences accumulated since 1990. The expected result is a set of NPD-oriented structured activities that can successfully combine environmental and business perspectives to help companies worldwide to follow the path of sustainability by making new and "green" products successful into the market. This paper presents some preliminary results conducted by the authors.

Keywords: Product development process, reference model, ecodesign, methods.
