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Implementing environmental considerations within product development practices: a survey on employees' perspectives

Siru Sihvonen, Jouni Partanen



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Authors name: Siru Sihvonen^{a*}, Jouni Partanen^a

^a Aalto University School of Engineering, Department of Engineering Design and Production, P.O. Box 14300, Aalto 00076, Finland

* Corresponding author. Telephone: +358 40 552 6933. E-mail address: siru.sihvonen@aalto.fi

Abstract

Ambitions toward a circular economy will necessitate more pro-activity in the current practices of many organizations in order to reduce environmental impacts. Since a product's environmental fate is dictated by organization's product development, it is essential to better understand how environmental issues are taken into account in product development practices. Building on constructs from empirical research in eco-design, this paper investigates how these issues are integrated into product development practices based on the perceptions of employees drawn from a non-probability sample. We assessed employees' perceptions of how frequently these environmental considerations are applied within individual product development phases, and how are they managed. We also explored whether employee's attitudes influenced perception of these practices, and if so, how. For instance, different attitudes seem to influence product development practices at different levels of abstraction. Furthermore, these results suggest that indeed environmental considerations have not yet become a mainstream topic within product development practices; for instance, there remains much potential for more frequent inclusion of environmental considerations within various product development phases, and for highlighting their role as criteria in decision-making.

Highlights

- This is an empirical study concerning eco-design practices.
- Environmental consideration is not viewed as a requirement in product development.
- Incentives linked to environment considerations early in the product development.
- Attitudes associated with considering environment early in product development.
- Ecological worldview associated with few product development practices.

Keywords

Product development, eco-design, implementation, requirement, attitudes

List of abbreviations

EC, environmental considerations

EPD, early product development

ENV-EPD, environmental considerations in early product development

NEP, new ecological paradigm

PD, product development

1. Introduction

It has been widely recognized that the current use of natural resources is consuming opportunities for the sustained wellbeing of our and future generations (Brundtland, 1987). This has led to the emergence of a new approach, the circular economy, for framing discussion of a more balanced relationship between the natural environment and society. A circular economy focuses on maintaining for as long as possible added value from products and materials introduced into a system, such as the European Union (EU). The EU is preparing to explicitly articulate political ambitions, and to potentially set targets for a circular economy; however, this is not without its hurdles in trying to combine the conflicting interests of different actors. For instance, a stakeholder consultation revealed that industry and trade

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