

# Sustainability within Product Portfolio Management

R. Wever<sup>1</sup>, C. Boks<sup>2</sup>, C.A. Bakker<sup>1</sup>

<sup>1</sup> Design for Sustainability Group, Faculty of Industrial Design Engineering, Delft University of Technology, Landbergstraat 15, 2628 CE Delft, The Netherlands  
Phone: +31 15 2782120, Email: r.wever@tudelft.nl

<sup>2</sup> Department of Product Design, Faculty of Engineering Science and Technology, Norwegian University of Science and Technology (NTNU), Kolbjørn Hejes vei 2b  
NO-7491 Trondheim, Norway, Phone: +47 73 590102, Email: casper.boks@ntnu.no

**Keywords:** Innovation processes, Eco-entrepreneurship, Product mix, Fuzzy front end

## Abstract

On both a strategic level and a product level a lot is known on how to integrate sustainability aspects. On the intermediate level of product portfolio management this is not true. Here the strategic sustainability goals of a company need to be translated into products. A company wanting to innovate in a green way automatically has to make product portfolio decisions through the choice of where to start. Resources and time are always limited, so a company will want to utilize its R&D capacity most effectively. This aspect has received little academic attention.

This paper will identify the different decisions that companies can take related to product portfolios. These decisions are only partly covered by classical EcoDesign tools and methods. These decisions can be clustered in three groups (see Figure 1). The first group of actions focuses on the existing products:

- One or more products in the current mix could be discontinued due to sustainability issues,
- The product that is currently the most sustainable could be pushed to increase its market share compared to less sustainable alternatives within the product mix (e.g. energy-saving lamps vs. incandescent bulbs),
- The product that is currently the most sustainable could be pushed to increase its market share compared to competitor products (i.e. green marketing).

The second alternative is to redesign products currently in the product mix, by:

- Considerably lowering the environmental impact of one (or more) of its products,
- Introducing a program to gradually reduce the environmental impact of all products in the portfolio.

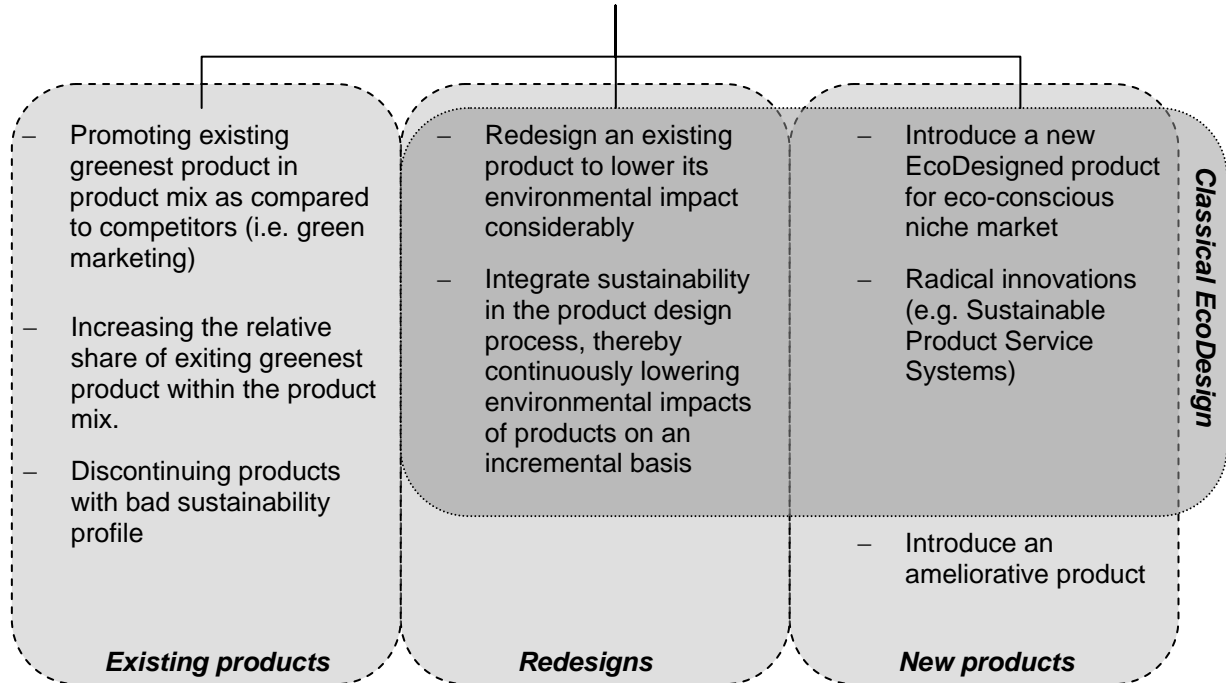
The third group of actions would be to introduce one or more new products or services in the product mix:

- To design and introduce a new product specifically for a low environmental impact, specifically aimed at the market niche of eco-conscious consumers,
- To aim for more radical forms of innovation, for instance a move to Product Service Systems, getting involved with third parties in the supply chain,
- To introduce a product aimed at solving an external sustainability problem, a so called ameliorative product (a term coined by Ryan et al., 1992), which is defined here as *a product (or service) that is aimed at reducing an existing social and/or environmental problem that is not caused by the product's life cycle itself.* (see Table 1 for some examples).

As little research has dealt with the concept of ameliorative products (Wever, Boks, 2007 being one of the exceptions), three cases of such products (Interflush, Energykeeper and Evening Breeze) will be elaborated on, specifically with the purpose of gaining insight into the business settings and development processes that led to these product ideas.

Finally, the dilemma of how to choose a specific strategy will be discussed, illustrated with some examples from established businesses (P&G, TNT). Also some potential adaptations of existing innovation tools will be discussed.

### **Green Product Portfolio decisions**



**Figure 1:** Typology of product mix decisions from a sustainability perspective.

<b>Types of ameliorative products</b>	<b>Example products</b>
Preservation of resources (most commonly focused on energy and/or water saving)	<ul style="list-style-type: none"> <li>Grey water systems to flush the toilet</li> <li>Systems for letting daylight in rooms with little or no windows</li> <li>Furniture specifically aimed at allowing flexible offices</li> </ul>
Prevention, containment and cleaning of pollution	<ul style="list-style-type: none"> <li>A floating device for quick containment of oil spills in yachting marinas</li> </ul>
Protecting human health	<ul style="list-style-type: none"> <li>UV watch, that signals maximum exposure to solar radiation</li> </ul>
Disaster relief and Base-of-the-Pyramid*	<ul style="list-style-type: none"> <li>The Lifestraw, a hand held filter that allows people to drink from contaminated water</li> </ul>

**Table 1:** Types of ameliorative products with examples. \*The inclusion of this type of products depends on how extensive the social component of sustainability is taken.

### **References**

- Ryan CJ, Hosken M, Greene, D. EcoDesign: design and the response to the greening of international markets. *Design Studies* 13 (1) 1992, 3-22.
- Wever R, Boks C. Design for Sustainability in the Fuzzy Front End. *Proceedings of Sustainable Innovation 07; Global Building and Construction*, Farnham, UK, October, 29-30, 2006, 199-205.