

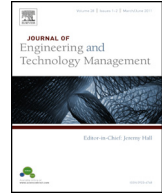


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Contents lists available at ScienceDirect

## Journal of Engineering and Technology Management

journal homepage: [www.elsevier.com/locate/jengtecman](http://www.elsevier.com/locate/jengtecman)



# Integrating sustainability into innovation project portfolio management – A strategic perspective

Jacques W. Brook\*, Fabrizio Pagnanelli

Maastricht School of Management, P.O. Box 1203, 6201 BE Maastricht, The Netherlands

### ARTICLE INFO

#### JEL classification:

C6  
C5  
M1  
O1  
O3

#### Keywords:

Sustainability  
Innovation strategies  
Product development  
Project portfolio management  
Decision aid methods

### ABSTRACT

Project portfolio management in relation to innovation has increasingly gained the attention of practitioners and academics during the last decade. While significant progress has been made in the pursuit of a process approach to achieve an effective project portfolio management, limited attention has been paid to the issue of how to integrate sustainability into innovation portfolio management decision making. The literature is lacking insights on how to manage the innovation project portfolio throughout the strategic analysis phase to the monitoring of the portfolio performance in relation to sustainability during the development phase of projects. This paper presents a 5-step framework for integrating sustainability in the innovation project portfolio management process in the field of product development. The framework can be applied for the management of a portfolio of three project categories that involve breakthrough projects, platform projects and derivative projects. It is based on the assessment of various methods of project evaluation and selection, and a case analysis in the automotive industry. It enables the integration of the three dimensions of sustainability into the innovation project portfolio management process within firms. The three dimensions of sustainability involve ecological sustainability, social sustainability and economic sustainability. Another benefit is enhancing the ability of firms to achieve an effective balance of investment between the three dimensions of sustainability, taking the competitive approach of a firm toward the marketplace into account.

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\* Corresponding author. Tel.: +31 6 12990878.

E-mail addresses: [jacques.brook@ig-nl.com](mailto:jacques.brook@ig-nl.com) (J.W. Brook), [fabrizio.pagnanelli@vodafone.it](mailto:fabrizio.pagnanelli@vodafone.it) (F. Pagnanelli).

## Introduction

The current challenging economic conditions resulted in a drastic slowdown in vehicle sales for the automotive industry. As a consequence carmakers have pursued radical cost reduction through cuts in production and staffing that affect manufacturing plants worldwide. These measures may be helpful to avoid a rapid deterioration of their financial positions in the short term. However, carmakers need innovation strategies for growth that enhance their ability to focus their investment on selective innovation projects aimed at tapping into new customer demands constraints by the sustainability trends. This requires an effective project portfolio management that is supportive of such sustainability driven innovation strategies.

Innovation project portfolio management is a rolling forecast process that consists of allocating corporate resources to new product development projects (Roussel et al., 1991; Archer and Ghasemzadeh, 1999; Cooper et al., 2001). However, studies have suggested that the strategic side of innovation project portfolio management is generally poorly addressed (Archer and Ghasemzadeh, 1999; Cooper and Edgett, 2006). This could result, for example, in overcommitted capacities and many projects in the portfolio that are strategically irrelevant. During this study, preliminary interviews were conducted with senior managers of one of the world leaders in the automotive industry, headquartered in Europe. The following problems were identified, associated with characteristics of weak project portfolio management: (a) non satisfactory decision support tool addressing sustainability issues; (b) lack of appropriate selection criteria for vehicle and power-train innovation projects in relation to sustainability; (c) difficulty in establishing a methodology for measuring criteria such as the “brand”, for example; (d) lack of a clearly defined process that deals with the dynamic nature of the demand, constantly reviewing and readapting the portfolio to strategic and tactical objectives of the corporation in times of economic uncertainty.

This study builds on various research streams in the literature in relation to sustainability, innovation, strategy, and portfolio management (Bohanec, 1995; Banbury and Mitchell, 1995; Roussel et al., 1991; Ghasemzadeh and Archer, 2000; Archer and Ghasemzadeh, 1999; Cooper et al., 2001; McDonough and Spital, 2003; Burgelman et al., 2004; Albright, 2007; Pearce and Robinson, 2007). We focus on the development of a framework for integrating sustainability into innovation project portfolio management in the field of product development. The objectives are to (1) understand current difficulties in using project portfolio management methods to implement a sustainability driven innovation strategy; (2) review the current state of the art on decision aid methods and prioritization techniques of projects in order to select an appropriate combination of methods for the automotive industry; (3) develop a framework grounded in empirical data to encourage fact-based discussions and decisions (4) develop a tool to test the usability of the framework in order to ensure the buy-in of the senior management.

The paper is structured as follows. Section “Global trends driving the sustainability agenda in the automotive industry” presents a brief review of sustainability trends in the automotive industry”. Section “Strategic implications of integrating sustainability management of innovation project portfolio” addresses the strategic implications of these sustainability trends for the management of innovation project portfolio. Section “Sustainability driven innovation project evaluation and selection” discusses the various innovation project evaluation and selection methods. Section “Methodology” presents the proposed framework for integrating sustainability into the different steps of the innovation project portfolio management process. Section “The Proposed framework for integrating sustainability into innovation project portfolio management” presents the methodology, and Section “Conclusion” presents the conclusion, including the theoretical as well as the managerial implications.

## Global trends driving the sustainability agenda in the automotive industry

The sustainability agenda of firms in the automotive industry in major geographic or national markets is increasingly driven by global trends. While the term sustainability has been used in the literature with different definitions and different content, in this study we have retained the definition as presented in the sustainability framework by stakeholders in the automotive industry (CARS 21

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