

Preface

This book was born from the idea that Design for Environment (DfE) methodologies could be used as a tool for the development of a more sustainable supply chain. This idea led the authors of this text to focus their research toward the development of new procedures and techniques that allowed the designers to integrate DfE methods and Environmental Supply Chain Management.

In the past decade, Environmental Design ('Eco Design' or 'Design for Environment') has become one of the most significant agendas for many manufacturing companies. Yet, there is a wide variety in their approaches, strategies and in their levels of execution. The initial reaction of many companies in the late 1980s to the challenge posed by environmental concern and the need to move toward sustainability was often a relatively superficial change to their products and their approaches to marketing communications. With the emergence of the entrepreneuring paradigm, and the acceptance of the business logic, which underpins the need to consider eco-performance, more substantive changes could be expected.

The development of innovative methodologies in Environmental Management fields and the application of these in several case studies allowed the authors to publish several papers in international journals and proceedings. These case studies have been used in this book in order to better explain the theoretical topics. The integration of case studies and basic concepts such as Design for Environmental, Supply Chain Management and Life Cycle Assessment could be useful in order to make these topics understandable for large numbers of readers.

This text is directed to several professional figures such as industrial designers, production process owners, heads of technical/marketing/sales departments, mechanical/managing/production engineers and to everyone involved in environmental issues. The aim is to provide to all of these professional figures some guidelines to develop, within their area of interest, Design for Environmental (DfE) programs with the objective of redesigning the entire supply chain.

Moreover the aims of this book are to set target specifications for the product and its life cycle, and to establish eco-design concepts.

In this text the Design for Environmental concepts have been enlarged. In fact we want to evaluate not only the way in which the product design phase could influence environmental performances of a supply chain but also how re-designing the supply chain could provide a decrease of environmental impact. While much early environmental new product development (ENPD) work employed a design-for-environment approach, which emphasized the reduction of the post-use environmental burden, more recently, there has been an increased emphasis on the “embodied” environmental burdens of the materials used. Suppliers have an important role in determining all aspects of product quality including eco-performance. ENPD requires a detailed understanding of the socio-environmental impacts of the whole supply chain, down to the simplest ingredient, which may previously have been perceived as standardized and unlikely to pose quality problems.

Design for Environment as a Tool for the Development
of a Sustainable Supply Chain

Bevilacqua, M.; Ciarapica, F.E.; Giacchetta, G.

2012, X, 374 p., Hardcover

ISBN: 978-1-4471-2460-3