

Preface

Supply Chain (SC) planning is intended to maximize financial returns by synchronizing material, cash and information flows across interconnected entities (e.g., suppliers, manufactures, distributors) that seek to provide goods or services to consumers. Lately, it has been recognized the necessity for integrated SC planning solutions which incorporate decisions from several business functions and different hierarchical levels. Current changing and uncertain market environment and internal business concerns make it even more difficult to synchronize all the activities taking place along all SC components. Otherwise, to maintain and create a competitive advantage, decisions within organizations ought to be carried out by quantitatively understanding the trade-offs among the risks and benefits that imply the different available alternatives. This book presents concepts, methods, tools and solution approaches, based on mathematical programming, which can provide the quantitative support needed for integrated decision-making and ultimately for improving the allocation of the overall corporate resources (e.g., materials, cash and personnel). Through a systems perspective, the integrated planning of the SC also promotes activities of reuse, reduction and recycling for achieving truly sustainable environmental impacts of production/distribution networks. Thus, this book presents, for the first time, a unique integrated vision of the whole Enterprise Supply Chain Planning.

The reader is guided through abundant illustrations (110) and tables (85) that facilitate reading and understanding. The training is complemented with motivating examples and industrial applications. It is intended as a textbook for academics (Ph.D., M.Sc.), researchers and industry decision-makers, who are involved in the design, retrofit and evaluation of alternative scenarios for the improvement of the supply chain. Teachers can also greatly benefit from this book in the teaching of advanced courses, and industry professionals are provided by this book with know-how to evaluate and improve existing networks or to support the design of new ones.

Barcelona, June 2014

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Advances in Integrated and Sustainable Supply Chain
Planning

Concepts, Methods, Tools and Solution Approaches
toward a Platform for Industrial Practice

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2015, XX, 309 p. 99 illus., Hardcover

ISBN: 978-3-319-10219-1