

Preface

Since their inception in 1982, supply chain and supply chain management (SC/SCM) has come to achieve a dominant role as integrative concepts concerning the broad field of management. Among the reasons for this success can be pointed out, first, that SC/SCM is an updated attempt to give a systemic view of activities and flows that occur when supplying, producing, distributing and recovering one or more products and, second, that they establish the appropriate framework to describe, analyse and solve the new problems that have emerged as a consequence of the evolution of the increasingly complex real production systems. Hence, powerful decision support system (DSS) and optimization tools are required to deal with the new management challenges.

The triennial Erasmus project “Optimization and Decision Support Systems for Supply Chains” that was held in the College of Technology and Management, Portalegre Polytechnics Institute, Portalegre, Portugal, from 2011 to 2014, was conceived, in the light of the preceding considerations, as a contribution to help researchers and practitioners to face the problems that arouse in supply chains. It has been for us a pleasure to edit and now introduce the present volume as a follow-up of the project.

The Erasmus Intensive Programme (IP) explored the training on modelling and optimization of production–distribution facility networks, considering material and financial flows in a multi-echelon system, while also addressing a green logistic approach to supply chains.

The contributions for this volume are mainly based on the IP lectures, which addressed transversal and complementary SC topics: from the main topics on SCM until optimization advanced techniques, and by covering either information systems to planning and scheduling of production processes usually found in manufacturing or petrochemical. In addition, SC sustainability and reverse logistics have been also treated, being the computational sessions supported by IBM.

During three academic years, more than one hundred participants originated from more than twenty countries got together to share the most recent advancements on industry-based SC and to discuss their current challenges. Thus, as a result

and in line with the IP purposes, this book is developed and directed for M.Sc./Ph.D. students or researchers on engineering/logistics or mathematical specialties and industry professionals.

Thus, this book on “Optimization and Decision Support Systems for Supply Chains” hopefully will serve as an important reference to the European higher education area on SC, namely providing an overview of very important SC topics that can be used for M.Sc./Ph.D. works and helping SC researchers and practitioners in practical developments.

Finally, we would like to thank all the contributors for their quality manuscripts, so as to the reviewers for their due time appreciations.

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