

Editorial

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Supply chain design and management is a primary issue of today's enterprises. Global competition and shorter product life cycles are forcing companies to efficiently manage their supply chains and accurately measure their performance. Moreover, modern supply chains are becoming even more complex in structure. They can encompass owned or contract manufacturing and transportation facilities, suppliers, distributors, and customer service centers scattered over the globe. This is why new strategic priorities, besides costs, have emerged as important enablers for competition. Examples of such priorities are flexibility, agility, customer service, after sale service, cycle time and control of stock-outs.

The proper design and management of supply chain echelons and corresponding interrelations is a relevant issue to ensure the right functionality of the logistics channel. An effective design, planning and control of supply chains offers opportunities in terms of quality improvement, cost and lead time reduction, rapid response to changes and ultimately allows excelling in performance level. Hence, there is an increasing need for investigating how supply chain design can affect the performance of the logistics channel. Recently, some major techniques that can be exploited both for the design and performance management of supply chains have emerged, such as simulation models, operation research models (e.g., linear programming), or artificial intelligence algorithms.

On the basis of the premise above, our main aim with this special issue is to present a collection of high-quality contributions related to the most recent advancements in supply chain design, supply chain optimisation and supply chain performance measurement. We can truly say that our special issue has received considerable attention among researchers: we received an overall amount of 23 submissions, 13 of which were considered for the special issue. After review, nine papers were accepted for publication. The papers we present in this special issue cover a wide range of topics related to supply chain design and performance measurement.

The first two papers of this special issue deal with the issue of supply chain performance measurement. In the first paper, Khalili-Damghani et al. analyse the problem of agility measurement. Agility is winning strategy for growth and survival in modern business environments, and thus measuring the agile capabilities of supply chains is a relevant issue of supply chain management. The authors propose an integrated model for agility measurement, grounded on the application of data envelopment analysis (DEA), which links agility enablers with supply chain performance. In the second paper, Dweiri and Khan develop a supply chain management performance index which is useful to evaluate and monitor the overall supply chain performance, as well as to set the desired target level for some performance indicators.

A relevant amount of papers focus on the use of simulation for supply chain design. Specifically, Grittner and Valverde investigate, by means of an agent-based object-oriented model, a reference supply chain operating in the embedded devices industry. The purpose of their study is examine the performance of the supply chain by using a simulation, in terms of stock-outs and percentage of items delivered from stock. Vojdani and Lootz focus on the re-design of production and logistics networks in the emerging context of offshore wind farms. They provide insights and approaches as regards the necessary logistics activities as well as networks structure in that context. Bevilacqua et al. propose a new model to design and manage a supply chain, with a particular attention to performance analysis of the stakeholders involved in production chains. The methodology proposed is grounded on timed coloured Petri nets (TCPNs), and its application is highlighted by means of a case study related to the footwear supply

chain. Ren et al. investigate a NP-hard problem related to distribution design, i.e., the three-dimensional loading capacitated vehicle routing problem. They solve this problem by means of an effective method to generate possible points for loading items, thus greatly reducing the search scope. The validity of the algorithm is provided by comparing its results with those of published algorithms using the same data. Bruzzone and Bocca develop and describe a simulation model to support decision-making in the context of marine logistics. The aim is to identify innovative and effective solutions for maritime logistics problems with a particular focus on petrochemical industries, where different production sites need exchange intermediate products by marine lines.

The remaining papers of the special issue address general supply chain management issues. Shah and Samuel conduct an exploratory study focusing on Indian apple supply chains. Their study discusses various procurement, marketing strategies and business models existing in India. Kasim et al. examine the value creating supply chain management practices of two selected manufacturing case study companies in Malaysia. Their findings indicate that both companies have engaged in an integrated supply chain management practice, involving logistics, information technology, supply chain integration and networking and relationship management.

Thanks to the variety of topics addressed, we believe that this special issue provides the scientific community with valuable information and knowledge in the field of supply chain management, supply chain design and performance measurement. Nonetheless, the value-added by a special issue is only as good as the contributions of the manuscripts it receives, and the quality of the feedback provided by its reviewers. We are therefore very grateful to all the authors, who supported this special issue through their contributions, and we are indebted to the reviewers, who helped us in managing the papers received in a timely manner and provided useful and professional reports about the papers. Finally, we would like to express our gratitude to the Editor-in-Chief of *International Journal of Business Performance and Supply Chain Modelling*, which gave us the possibility of organising the special issue and helped us in its successful completion.