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## Editorial

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### Michael Doumpos and Evangelos Grigoroudis\*

School of Production Engineering and Management,  
Technical University of Crete,  
University Campus, Kounoupidiana,  
GR73100 Chania, Greece  
Email: mdoumpos@dpem.tuc.gr  
Email: vangelis@ergasya.tuc.gr  
\*Corresponding author

**Biographical notes:** Michael Doumpos is an Associate Professor of Operations Research at the Technical University of Crete. His research interests include multiple criteria decision making, decision support systems, business analytics, financial risk management, and energy economics. He has published over 70 research articles in premier international journals. He has also co-authored several books, edited volumes, book chapters, conference papers, and edited special issues. Since 2011, he is the Vice President of the Financial Engineering and Banking Society and he has extensive consulting experience with the financial industry on projects related to credit scoring systems, banking risk management, and real estate appraisal.

Evangelos Grigoroudis is an Associate Professor in Management of Quality Processes in the School of Production Engineering and Management of the Technical University of Crete, Greece. He has received distinctions from the Hellenic Operational Research Society, the Academy of Business and Administrative Sciences, the World Automation Congress, the Foundation of Ioannis and Vasileia Karayianni, the Technical University of Crete, and the State Scholarships Foundation of Greece. He acts as reviewer for more than 60 scientific journals, and he is Associate Editor and member of the editorial board of several scientific journals. He is author/editor of 20 books on the measurement of service quality, the business strategy and management, and the multi-criteria decision aid approaches, as well as of a significant number of research reports and papers in scientific journals and conference proceedings.

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Operational research (OR), as a multidisciplinary analytical field, contributes in many different ways in the design, dissemination, and management of several new technological innovations in management and engineering. Among others, these include areas such as advanced manufacturing systems, green technologies, supply chain networks, transportation systems, route planning and distribution systems, product design, and commercial networks. The complexity of such problems justified the development of innovative OR tools and approaches. In several cases, a decision support system (DSS) should be adopted, where OR, information technology, and management science cooperate in an integrated manner.

This special issue entitled ‘OR and new technologies in management and engineering’ focuses on the latest advances with respect to the contributions of OR approaches in technology-driven areas of management and engineering, covering both

theoretical/methodological developments, as well as real-world case studies. The special issue has been prepared on the occasion of the 4th International Symposium and the 26th National Conference on OR, organised by the Hellenic Operational Research Society (HELORS) and held in Chania, Greece, during June 4–6, 2015. In addition to the conference papers, several other works within the theme of the special issue have been submitted. After a rigorous reviewing process, 11 papers were finally selected for publication, covering many different aspects of OR contributions in engineering and management.

The first two papers examine two well-known OR problems; the facility location and the optimal trading strategy problems. In particular, Karakitsiou and Migdalas focus on the application of the Nash equilibrium to the competitive facility location problem, presenting an updated review of the literature. The next paper by Singh and Dharmaraja examines the constrained optimal trading problem, where the expected execution cost is minimised subject to non-negativity constraints for risk neutral as well as risk averse investors; in the latter case, the conditional value-at-risk (CVaR) is taken as a risk measure.

The second group of papers covers topics related to the application of OR techniques in management. In this context, Tarnanidis et al. propose a measurement model for sustainable entrepreneurship, incorporating the triple bottom line (TBL) concept of economic, ecological and social goals. Their results focus on the critical success factors of sustainable entrepreneurship. In the fourth paper, Nikolaou proposes a decision making model for incorporating occupational health and safety (OHS) topics within a corporate social responsibility (CSR) context. The proposed approach is based on a system dynamic balanced scorecard model with the critical variables of CSR-OHS agenda.

The next two papers discuss well-known OR problems in production and transportation systems. The paper by Morinaga et al. examines the optimisation of a multi-objective flexible job-shop scheduling problem in small and medium-sized enterprises, where various products are manufactured in a make-to-order (MTO) mode. The optimisation problem is solved using a hybrid genetic algorithm with a tabu search strategy. In the next paper, Geranios et al. evaluate the performance of a merge supply network with supplier interruptions. The supply network is modelled as a continuous time Markov process with discrete states and the authors propose a set of optimisation algorithms in order to determine the optimal values of the supply network's characteristics. The paper by Stavrou et al. focuses on the risk assessment of ship-to-ship (STS) transfer operations. The authors propose an outranking multi-criteria decision aid model for evaluating risks of an STS transfer, using confidence indices to compare alternative risk scenarios on stochastic risk criteria evaluation. In the next paper, Tournaki and Ballis propose a model for the investigation of energy and emissions in rail freight transport. Their approach focuses on the estimation of the actual parameters that affect energy and emissions, which include train load factor and speed, gradient profile of railway track, rolling stock types, payload of transported loading units, rules of efficient wagon loading, fuel type and others.

The last group of papers in this special issue examines the application of OR techniques in popular engineering problems. More specifically, the first paper of the thematic area by Kyriklidis and Dounias focuses on the use of intelligent techniques (genetic algorithms) for resource levelling optimisation (i.e., optimal handling of available resources of a project). The proposed approach is applied to a case study

involving the construction of a power plant boiler. In the next paper, Rentoumis et al. propose a simulation-based approach for managing the recycling of photovoltaic (PV) cells. Their approach focuses on a unified management of PV end-of-life (EOL) process, in order to achieve a successful recovery of materials such as silicon, aluminium, silver and glass. Finally, the last paper of this special issue, by Santhi and Padmaja proposes a minimum spanning tree (MST) approach for studying large water distribution systems (WDSs). The approach proposed by the authors is based on a divide-and-conquer mechanism for finding the approximate MST and the presented experimental results show the computational efficiency of the proposed model.

We would like to sincerely thank all the authors who submitted papers. Their contribution has been essential in developing this special issue. We would also like to thank all the colleagues who worked hard to review the submitted papers. Their support was crucial in assuring the high standards of this special issue.