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Editorial

Martin Grunow · Hans-Otto Günther · David Pisinger

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1 Logistics in supply chains (part 1)

The logistics function in supply chains is concerned with the efficient coordination of all entities, activities and resources involved in moving a product or service from its origin to final customers. Beyond the control of material flows, logistics management seeks to integrate transportation and material handling with the flow of information and financial values in the supply chain in order to fulfil customer requests. Altogether, inbound and outbound logistics of a company along with external logistics services constitute a market value that ranks logistics clearly among the top business sectors in any industrialized economy.

Based on the tremendous importance of logistics in supply chains and the considerable research contributions that have been achieved from disciplines like Production and Operations Management, Industrial Engineering and Operations Research, the primary objective of this special issue is to examine research issues concerned with logistics management in supply chains. For the first part of the special issue five papers have been selected for publication after a thorough peer-review according to the standards of the FSM journal. The second part of the special issue will appear in due course.

M. Grunow (✉)
Technische Universität München, Production and Supply Chain Management, Leopoldstr. 145, 80804 Munich, Germany
e-mail: martin.grunow@tum.de

H.-O. Günther
TU Berlin, Department of Production Management, Straße des 17. Juni 135, 10623 Berlin, Germany
e-mail: hans-otto.guenther@tu-berlin.de

D. Pisinger
Technical University of Denmark, DTU Management Engineering, Produktionstorvet 424, 2800 Kgs. Lyngby, Denmark
e-mail: pisinger@man.dtu.dk

2 Papers in part 1 of the special issue

The first paper by *W. J. M. Meuffels, H. A. Fleuren, F. C. A. M. Cruijssen* and *E. R. van Dam* proposes a new tactical network design model for express service carriers that is able to include fleet scheduling characteristics like vehicle capacities, vehicle balancing, and drivers' legislations in the network design. The model is tested on benchmark data based on instances from an express service provider, resulting in significant cost reductions.

In their paper *F. P. Deflorio, G. Perboli* and *R. Tadei* present a methodology to evaluate a priori how the transportation cost level of a freight distribution service with time windows, operating on a given road network, is affected by the established quality of service. For this purpose statistical indicators are defined which measure the compatibility of delivery requests. Numerical experiments show the ability of these indicators to describe the difficulty to solve instances of the related vehicle routing problem.

The subsequent paper by *S. C. H. Leung, J. Zheng, D. Zhang* and *X. Zhou* addresses the capacitated vehicle routing problem with two-dimensional loading constraints. A simulated annealing algorithm to solve the problem is presented, in which the loading component of the problem is solved through a collection of packing heuristics. Extensive computational experiments prove the effectiveness of the algorithm.

The vehicle routing problem with time-dependent travel times, e.g. due to traffic congestion, and driving hour regulations is addressed in the paper by *A. L. Kok, E. W. Hans, J. M. J. Schutten* and *W. H. M. Zijm*. The authors propose a heuristic solution approach for constructing the vehicle routes and for determining the vehicle's departure times. Computational experiments demonstrate the trade-off between travel distance and duty time minimization.

The final paper by *C. -F. Chien, J. -Z. Wu* and *Y. D. Weng* investigates outsourcing decisions in the semiconductor industry under multiple objectives. To meet these objectives in practice, the authors develop an approach that employs mixed-integer linear programming and goal programming for integration in an order assignment decision support system. The results show the practical viability of the proposed approach in terms of decision quality and computational efficiency.

3 Concluding remarks

This special issue has greatly benefited from the cooperation among the authors, reviewers, and editors. We would like to express our sincere thanks to the reviewers for their excellent and timely refereeing. Last, but not least, we thank all authors for their contributions which made this special issue possible.