
Editorial

Petri Helo

Logistics Research Group,
University of Vaasa,
P.O. Box 700, FIN-65101 Vaasa, Finland
E-mail: petri.helo@uwasa.fi

Algirdas Bargelis

Department of Manufacturing Systems,
Kaunas University of Technology,
Kęstučio 27, LT-3004 Kaunas, Lithuania
E-mail: algirdas.bargelis@ktu.lt

Maqsood Sandhu

College of Business & Economics,
United Arab Emirates University,
P.O. Box 15551, Al-Ain, United Arab Emirates
E-mail: maqsoods@uaeu.ac.ae

Biographical notes: Petri Helo, PhD, is a Research Professor of Logistics Systems at the University of Vaasa, Finland. He received his PhD in Production Economics from the University of Vaasa, Finland, in 2001. His areas of expertise include agile manufacturing, technology management and system dynamics. He is also partner at Wapice Ltd and president of ICIL.

Algirdas Bargelis is a Professor in Mechanical Engineering in the Department of Manufacturing Technologies at Kaunas University of Technology (KTU). He has received PhD from Kaunas Polytechnic Institute in 1974 and Dr. Habil. from Kaunas University of Technology in 1997. His research interest is in computer-integrated manufacturing, computer-aided process planning, enterprise resources planning and logistics, and development of knowledge-based systems in manufacturing including application of internet-based information technologies for new products development and manufacturing engineering.

Maqsood Sandhu is an Assistant Professor at the Department of Management, College of Business and Economics at UAE University. He earned a PhD from Swedish School of Economics and Business Administration in Management. He has been working over five years in project-based industry. He is author or co-author of about 15 international journal articles and book chapters. He has presented over 30 papers and published about 30 articles in international conferences. Currently, he is interested in doing research in the areas of project management, supply chain management and knowledge management.

This special issue, 'Extended View of Logistics Research and Applications', aims to present some examples of how a modelling approach in the field of industrial logistics can be used to combine theory and practice in a range of applications.

The first *International Conference on Industrial Logistics (ICIL)* was held in 1993 in Rennes (France). Since then, conferences have been hosted biannually by the International Centre for Innovation and Industrial Logistics (ICIIL). Following the initial conference in Rennes, the ICIL has been held in Minas Gerais (Brazil), Chico (USA), St. Petersburg (Russia), Okinawa (Japan), Vaasa (Finland) and Montevideo (Uruguay). In 2006, the conference was held at Kaunas (Lithuania) from 26th to 29th June. The scientific program consisted of 32 talks and presentations from more than 50 authors, covering many aspects of logistical management. On the basis of these contributions to the ICIL 2006 conference, *IJLSM* invited submissions of competitive papers for publication in this special issue of the journal.

The present volume, which consists of selected and revised papers from the conference, represents one-third of the total number of submitted research papers. After a review process, eight papers were selected on the basis of their relevance and potential contribution to the area of logistics research and applications. The final selection is diverse. It includes both theoretical and practical papers on the improvement of logistical operational management in a range of industries. It is hoped that the publication of this selection will augment the benefits of the conference at which they were first presented.

The first paper, by M. Zygmunt, discusses potential areas of application for improved information-flow technologies in Supply-Chain Management (SCM). The paper presents the 'Manufacturing Intelligent Logistics Builder' (MALIBU), which is a decision-support platform based on semantic technologies. The author presents the idea of a 'semantic web' for SCM, which is basically a network of data and researchers to support effective SCM. It offers two levels of collaboration:

- for low levels of traffic or low revenue volumes, whereby partners gain access to an order-tracking portal
- for higher volumes of traffic or revenue, whereby EDI access is available when this is economically realistic.

The 'semantic web' and ontology integration can move this break-even point by allowing automatic interoperability.

The second paper, by L. Anuziene and A. Bargelis, is entitled 'Decision-Support System for industrial logistics distribution: cost minimisation applying an agile production approach'. This paper has two objectives:

- an analysis of manufacturer-in-transit distribution networks
- the formation of Decision-Support System (DSS) frameworks to minimise logistics network distribution costs.

The input information of the DSS is stored in database files and includes supplier location, quantity and types of raw materials, profiles, prices, qualitative requirements, plant location and supply deadlines. The authors present a model for integrating industrial logistic activities and illustrate it with a case study. The research helps to create the target of manufacturing cost order winning.

The third paper, by A. Burinskiene, is entitled 'Order-picking process at warehouses'. The aim of this paper is to identify the opportunities for reducing the travel distance of order pickers and for increasing efficiency in Very Narrow Aisle (VNA) shelf-area warehouses. The paper considers various aspects of these problems, including size of warehouse, storage, layout, routing, and stock accuracy. For optimisation of the order-picking process, the paper suggests some novel approaches, including volume-based storage methods ('across-floor') and correlation of order-picking efficiency and stock accuracy. The paper defines the best combinations of storage, routing, and depot strategies for minimising total travel distance.

The fourth paper, by M. Rimasauskas and P. Griskevicius, is entitled 'Modelling of logistics functions to upgrade the product functionality'. This paper deals with information sharing among customers and producers with a focus on logistics functions and elements. Such information sharing can facilitate and accelerate product and process design upgrading in terms of functionality and cost. The authors present a model that can help in preparing the order winner strategy for SMEs economising the negotiation period. The model has been developed in close collaboration with academia and industry.

The fifth paper, by Maria Cristina Fogliatti de Sinay and Michelly Gonçalves Fernandes, is entitled 'Operational performance of terminal containers'. This paper presents a procedure to evaluate operational performance in terms of indices of various logistics processes in terminals. This process makes a valuable contribution in support of the decision-making process.

The sixth contribution is by Olli-Pekka Hilmola, Sandor Ujvari, Marko Torkkeli, Harri Lorentz and Thomas Andersson. The paper, which is entitled 'From Northern Europe to Russia and Asia, and vice versa: traffic flow analysis – current situation and development trends', analyses survey data from the largest manufacturers and retailers in Finland and Sweden. On the basis of the analysis, the authors estimate how transportation models incorporating road, sea, railways, and air will evolve in the future, and how traffic flows will develop between Europe, Russia, South Korea, India, China, and Japan.

The seventh paper, by Franco Robledo-Amoza, Héctor Cancela and Gerardo Rubino, is entitled 'Solving the Steiner Two-Node-Survivable Network Problem'. In the design of metropolitan optical fibre networks, a common requirement is to ensure the existence of at least two-node-disjoint-paths between pairs of distinguished nodes of the network. In this way, when a failure occurs in some component (link or node), the network will remain connected, which is a basic prerequisite for maintaining an operational state. The problem of finding a topology verifying this restriction is known as the 'Steiner Two-Node-Survivable Network Problem' (STNSNP), which is an NP-hard problem. In this study, the authors introduce a heuristic based on the so-called 'Greedy Randomised Adaptive Search Procedure' (GRASP) methodology for designing low-cost topologies for the STNSNP model. The heuristic is tested over a large problem set containing heterogeneous topologies with different characteristics, including instances with hundreds of nodes. The numerical results are highly satisfactory, accomplishing in all cases good quality local-optimal solutions.

The final contribution, by Maqsood Sandhu and Petri Helo, is entitled 'Supply process development with an inter-organisational and intra-organisational perspective'. In this paper, the authors empirically demonstrate the synergistic implications of the supply process in project-based organisations. Using established project management theory as a foundation, the paper analyses the supply process and its impact on gains from business process development methods. Discussion of the challenges faced by the

project-based organisation and suggestions to improve supply performance are presented. The findings reveal that the extent to which firms witness optimisations through such procurement is dependent not only on the intra-organisational process of corporate systems, but also on the inter-organisational perspective. A case study of a power plant is presented and empirical findings are gathered through the Delphi method and the use of personal group interviews with the key actors involved. The emphasis is on the right place, the right actors, the right resources, and the right time.

The editors would like to thank all the authors who submitted extended papers for this special issue. Gratitude is also expressed to the anonymous reviewers who provided assistance. Special thanks are extended to the Editor-in-Chief, Professor Angappa Gunasekaran, who kindly invited us to edit this special issue of *IJLSM*.

We trust you enjoy the results of these efforts.