

Editorial

B.S. Sahay

Institute of Management Technology
Raj Nagar, Ghaziabad 201 001, India
E-mail: bssahay@imt.ac.in

Biographical notes: B.S. Sahay is Director of the Institute of Management Technology (IMT) Ghaziabad, India. Prior to joining IMT, he was Dean (Research) and Professor of Operations Management at Management Development Institute (MDI), Gurgaon, India. His teaching, research and consulting interests include supply chain management, operations management, productivity management and business modelling. He has published seven books and 130 papers in international/national journals and conferences. In token of excellence of his research work he has received six awards including three best paper awards. He is on the editorial board of seven international journals and many national journals.

Businesses the world over are struggling to sustain competitiveness in a rapidly globalising economy. The boundaries of traditional trade partners are getting dissolved and emerging markets present future opportunities as well as new rivals. In today's environment of shortening product life-cycle, complex joint ventures, tighter requirements for customer service and the development of sophisticated trade blocks, it has become necessary to consider international logistics as a means of strategically integrating global supply chain. The strategic and technological innovations in international logistics and supply chain management will impact how business is transacted in the future. The emergence of e-business has not only created new distribution channels for consumers but also revolutionised the global marketplace and created efficient markets through trading communities. The ILSC2004: International Conference on International Logistics and the Supply Chain focused on critical issues of international logistics in information age, global trade regulations, transport choice, technology and culture in order to manage the global supply chain efficiently and effectively. The conference provided an essential update on the future of international logistics.

The goal of this conference was to engage academics, researchers, government and industry in a dialogue that would examine a broad range of topics consistent with the spirit of this theme.

Objectives of the conference:

- To develop an understanding of global operations and international logistics, and share a global experience of the supply chain.
- To showcase the complexities of global supply chain, formulate strategies, and design network and distribution channels for international logistics.

- To understand global trade regulation, global sourcing and inventory strategies.
- To explore the impact of information technology on international logistics.
- To discuss the management of risk in multimodal transportation in international logistics.
- To explore ways logistics can add to the efficiency of business involved in global supply chains.

This special issue on 'Logistics and supply chain management' presents a group of diverse papers chosen from the large number of papers received for presentation in the ILSC2004 Conference.

The first paper, 'New perspectives on the supply-chain and consumer-driven innovation' by Mowatt, examines the use of consumer-driven innovation networks within the UK food-retailing industry using qualitative interview-based research analysed within an economic framework. This perspective revealed that, by exploiting information gathered directly from their customers at point-of-sale and by data mining, supermarkets are able to identify consumer preferences and coordinate new product development via innovation networks. This has been made possible through their information control of the supply chain established through the use of transparent inventory management systems. As a result, supermarkets' e-business systems have established new competitive processes in the UK food-processing and retailing industry and are an example of consumer-driven innovation networks. The informant-based qualitative approach also revealed that trust-based transacting relationships operated differently from those previously described in the literature.

The second paper 'A Cost Analysis Of Supply Chain Flexibility Configurations' by Domenico aprile, A.Claudio Garavelli and Ilaria Giannoccaro, some Supply Chain (SC) configurations based on different degrees of flexibility are considered. The SC flexibility here refers to both process and logistics aspects. Process flexibility concerns the number of product types that can be manufactured in each production site (supplier or assembler), logistics flexibility regards the possibility of shifting the assignment of an item (component or final product) to different sites of a SC stage. An optimization model provides the best operations planning performance (lost sales) of a given SC configuration, subject to different values of capacity uncertainty and both volume and mix demand variability. Based on these results, a cost analysis of the different SC configurations is provided, aimed at finding critical ratios among process flexibility, logistics flexibility, and lost sale costs, which may drive managers to make appropriate decisions for SC management.

In the paper, 'Synchronisation issue of supply chains: a six-sigma constrained random search approach' by Chan *et al.*, the problem of synchronisation of the business processes in a supply chain with the objective of minimisation of total involved cost is considered. The delivery performance of such a network can be optimised by pushing the workflow through the system in such a way that there is a high probability that the final products can reach the end user in a specified delivery window. This paper addresses the problem of synchronisation of the business processes in a supply chain with the objective of minimising the total cost involved. A mathematical formulation of the problem is developed to relate the costs involved and the tolerances gained. A Genetic Algorithm (GA)-based heuristic is proposed to achieve the near optimal solution of the problem.

The fourth paper, 'Development of a responsive logistics workflow system: an OLAP-based hybrid approach' by Lau *et al.*, proposes a generic roadmap for the design and implementation of a multi-agent model which integrates the data-mining technique called On-Line Analytical Processing (OLAP) and Genetic Algorithm (GA), which is incorporated to achieve optimisation of workflow, thereby providing essential supports in enterprise integration. To validate the feasibility of the generic roadmap for such a model, a system prototype has been developed for managing workflows in a company.

The fifth paper 'Assessing benefits of supply chain integration using system dynamics methodology' by Amit Sachan, B.S. Sahay, Ramneesh Mohan argues that the driving force of effective Supply Chain Management (SCM) is integration among the channel members. The paper presents a model for the total supply chain cost of grain supply chain and analyzes the effectiveness of various type of integration possible in the grain supply chain. A causal loop methodology has been used to identify dynamic interaction among key variables affecting grain supply chain cost. This was then used to formulate the System Dynamics model of Total Supply Chain Cost. The model was used to validate nine possible scenarios on the basis of three types of integration – namely cooperative model, contract farming and collaborative supply chain model – and on the basis of their likelihood of occurrence – namely, optimistic, pessimistic and most likely. The paper concludes with a set of managerial implications for increasing supply chain effectiveness.

The last paper, 'Lateral transshipment for managing excesses and shortages in a multi-location inventory system: a case study of Timex Watches Ltd.' by Bhaumik and Kataria, describes a large watch manufacturer in India and a proposed system to reduce its cost and simultaneously improve its service level by planning lateral transshipments. Many authors have studied the multi-location inventory situations, under different demand and cost characteristics, and almost all of them have developed push systems developing optimum or good replenishment/transshipment policies. Yet pull systems may offer simpler and more practical joint replenishment/transshipment policies, particularly when practical considerations as faced by real companies are studied. The process map including the inputs and the outputs for the replenishment system is described, as well as the feedback mechanism to revise the system parameters.

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