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## Editorial

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**Biographical notes:** Dr. Hokey Min is the James R. Good Chair in Global Supply Chain Strategy in the Department of Management at the Bowling Green State University, USA. He was a distinguished university scholar and Founding Director of the UPS Center for World-wide Supply Chain Management and the Center for Supply Chain Workforce Development at the University of Louisville. He earned his PhD degree in Management Sciences and Logistics from the Ohio State University. His research interests include global logistics strategy, healthcare supply chains, benchmarking and supply chain modelling. He has published more than 115 articles in various refereed journals including the *European Journal of Operational Research*, the *Journal of Business Logistics*, the *Journal of the Operational Research Society*, *Transportation Journal* and *Transportation Research*.

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Globalisation has continued to reshape the today's business landscape by presenting countless operational challenges and opportunities. Those challenges include the increased complexity and uncertainty created by varying organisational culture, socio-economic conditions, national policies, currency fluctuations, communication protocols, quality standards, technical ethical/legal practices, and business customs. For example, quality circles that worked well in Japan may not work at all in England due to differences in management styles and labour rules. Also, imposing high quality standards on the organisational setting in developing countries such as China can be a far more daunting task than doing so in developed countries such as Germany and France. On the other hand, globalisation poses numerous business opportunities by expanding the multinational firm's customer and supplier bases. For example, many US firms have actively sought to source their materials, parts and components from overseas suppliers who have a better access to cheap labour, stronger government supports, and less stringent environmental standards. Also, the company's increasing presence in the world-wide market would help it enhance its brand recognition and subsequently solidify its customer bases. In recognition of these challenges and opportunities, this special issue of the *International Journal of Services and Operations Management (IJSOM)* aims to bring together the recent advances in research tools and their applications to various aspects of international operations and supply activities including global outsourcing, contract manufacturing, foreign supplier evaluation, international technology transfer, foreign currency exchange, strategic alliances with foreign firms, and overseas supplier

development. This special issue contains a total of six selected, but diverse papers based on case studies, empirical work, or analytical framework that can add value to the global operations knowledge base.

This special issue starts with a paper by Emam and Min who propose an Artificial Neural Network (ANN) to forecast volatile foreign exchange rates that have a profound impact on global supply chain operations. After applying ANN to the actual data, they discovered that the proposed ANN turned out to be very effective in predicting daily fluctuations of foreign exchange rates. Similarly, its experiments showed favourable results for weekly forecasts, although it did not perform as well as the authors anticipated for monthly forecasts.

The second article by Hwang *et al.* develops a mathematical model and heuristics solution procedures (called particle swarm optimisation) to minimise the production and inventory costs within the closed-loop recycling system. In its proposed model, the authors introduced a concept of the minimum allowed quality level of returned items which is an important operating element in the real world recycling system but has been ignored in the literature. The return rate was expressed as a function of the minimum allowed quality level and the unit bought-back price. Through a series of computational experiments, the authors demonstrated the computational accuracy and efficiency of the proposed solution algorithm as compared to existing solution procedures such as a grid-search method.

The third article by Chung *et al.* designs an optimal service network for express courier services in such a way that service centres can be best utilised by sharing them with business partners. In particular, the authors developed a multiple objective integer programming model that aimed to maximise the total shared profits of business partners under the maxmin and maxsum criteria, while minimising logistics costs. The model experiments indicated that express couriers aligned with other companies yielded higher net profits than those generated by independent express couriers which did not participate in strategic alliance. Thus, the proposed model could help small and medium sized companies save a substantial amount of service centre operating expenses and investment costs by creating economies of scale.

The fourth article by Park *et al.* evaluates the impact of product architecture on supply chain integration using the actual case examples of Nokia and Texas Instrument. Due to sophisticated product architecture, high-tech electronic devices such as mobile phones often require the acquisition of their components, parts, and materials from many different layers of suppliers. Thus, without coordinating and harmonising these suppliers through strategic alliances, the supply chain of those devices will break down. In other words, product architecture can dictate product complexity that, in turn, can influence the depth and width of the supplier network and the subsequent resilience of the supply chain. Under such a premise, the authors investigated the impact of two distinctive types of architecture: integral and modular on the evolving pattern of supply chain partnership. Based on the actual case study, they observed that product architecture influenced the pattern (either vertical or horizontal) of strategic alliances among supply chain partners.

The fifth article by Hirofumi analyses the effects of technological platforms on global supply chains of modular architecture products using a case example of the Personal Computer (PC) industry in Taiwan. The technological platform can dictate technology diffusion speed of finished products, and thus can change the manufacturing site of finished products from developed countries to developing countries. In other words, growing technological platforms may destroy traditional firms' advantages in developed

countries and then induce the market entries of new firms in developing countries. Also, the author discovered that an architectural change in product could stimulate the developing country's PC industry and reshape supply chain collaboration.

In the last article, Zhu *et al.* examine the two global sourcing strategies: Risk Sharing (RS) and Early Commitment (EC) and compares the strengths and weaknesses of these two strategies in the automobile industry setting. In so doing, the authors present a stochastic dynamic programming model that helps evaluate the pros and cons of such strategies under volatile foreign exchange fluctuations. Through simulated experiments and sensitivity analyses, the authors found that risk sharing strategy usually worked better than early commitment strategy when the foreign exchange rate fluctuates widely.

To summarise, I sincerely hope that these articles selected for the special issue of *International Journal of Services and Operations and Management* can be valuable resources and guidelines for both academicians and practitioners alike who are interested in improving global supply chain operations. The Guest Editor gratefully acknowledged the continued support, encouragement, and guidance provided by Editor-in-chief, Dr. Angappa Gunasekaran, Ms. Barbara Curran of Inderscience Publishers, and the valuable suggestions made by anonymous referees who make this special issue 'really special'. In closing, I would be remiss if I forget to acknowledge the valuable contributions made by the participants of the Global Supply Chain Forum held in Busan, Korea who enthusiastically responded to the call for papers for this special issue.