Editorial

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First of all, we would like to thank the chief editor of *IJBSR*, Professor Jason C.H. Chen, for accepting the idea to organise this special issue after a careful selection of some papers presented at the International Conference on Advanced Materials, Manufacturing, Management and Thermal Sciences (AMMT 2010). His professional assistance was very helpful to achieve this issue in the best conditions. According to the journal standards, a new review process has been organised and applied to all the submitted papers to this special issue. At this occasion, we would like to express our gratitude to all the reviewers for their professional help and their contribution to the success of this special issue.

The main aim of this issue was to disseminate some new advances in the area of computer simulation and manufacturing management. This choice is motivated by the fact that these tools play an important role in the manufacturing and operations management. This special issue is organised in nine articles related to the mentioned scopes. In the remainder of this editorial note, we describe the main contribution of each of them.

In the first paper, 'Constrained optimisation of distribution network using new hybrid PSO optimiser' by B. Latha Shankar, S. Basavarajappa, Rajeshwar S. Kadadevaramath and Jason C.H. Chen, addresses design of network model for facility location and capacity allocation where in a set of customer locations with demands and a set of candidate facility locations will be known in advance. If a facility is located at a candidate site, a known fixed location cost is incurred. There is a known unit shipment cost between each candidate site and each customer location. The problem is to find the locations of the facilities and the shipment pattern between the facilities and the customers to minimise the combined facility location and shipment costs subject to a requirement that all customer demands be met. To optimise this, the distribution network model is mathematically represented and solved using hybrid PSO algorithm.

The second paper, 'Effective product efficiency using advanced manufacturing techniques' by K.R. Dushyanth Kumar, Rajeshwar S. Kadadevaramath and Edinbarough A. Immanuel, presents detection and control method for non-uninformed threads of automotive tyre tube valve component of thread rolling process. Here, the rejection samples and route cause for the same are obtained on the basis of experimental studies. Then threads rejections are controlled by means of engineering/technical adjustments of thread rolling machine by implementing advanced manufacturing techniques like DOE. This method is reliable and it is easy to control the rejections of non-uninformed threads on tube valve, which leads to increases the productivity and reduces lead time in the whole process is the great motive in this work.

The third paper, 'An empirical investigation of factors that hinder the adoption of electronic procurement by SMEs in India' by Sunil R. Yalamalle and A.V. Suresh, conducted an empirical investigation conducted to identify the major factors that hinder the adoption of e-procurement in small and medium scaled enterprises (SMEs) in India. The results indicate that scarce use of electronic business by suppliers is the major cause that hinders the adoption of e-procurement by SMEs and also majority of the firms are aware of the development in the field of e-procurement but they do not want to commit major resources in adopting e-procurement.

The fourth paper, 'Implementation of poka-yoke to achieve zero defects in an assembly line of a limited company by G. Rajendra, R. Suprabha and C.R. Mahesha, aims at achieving zero defects in a starter assembly line by the implementation of poka-yoke technique. The study of the operations of starter assembly line with the help of cause and effect diagram revealed that there was problem in stop ring and retainer assembly station. Then poka-yoke is implemented for correct sequence and complete pressing operation of stop ring and retainer assembly. With the implementation of poka-yoke, no defects were produced in the starter assembly line. No manual intervention was needed in the assembly. Good process quality was achieved. Check for effectiveness done for sample of 500 pieces and in all the samples complete pressing of retainer and stop ring assembly was achieved. All the components were found to be good in performance test. Finally, after implementation manpower was saved of 50% and cost was saved up-to 25%.

The fifth paper, 'Industrial cluster and technological dynamism: study of Bangalore machine tool cluster' by S.S. Prabhakara and N.V. Raghavendra, explores the influence of these three channels on the acquisition of technological capability of firms in the Bangalore machine tool cluster in south India. Development of technological capability index and suitable proxies to measure learning variables provide the methodological rigor. The information extracted from the survey and subsequent analysis reveal that

vertical collaboration and external linkages significantly influence technological capability, whereas the horizontal collaboration is rather weak. This result offers interesting insights into the dynamics of this cluster, which has important implications for policy maker.

The sixth paper, 'Numerical simulation-based investigation on vendor managed inventory model' by T. Narendiranath Babu, D. Sujatha and D. Rama Prabha, investigates the implementations of vendor managed in inventory systems in a consumer goods industry. Once the data were setup in spread sheet, two axis graphs were used for policy comparison. The planning horizon for system was one calendar year. The case that is described in this paper is that of a fruit juice manufacturing firm located in India. The firm purchases over 100 items, such as packaging materials. The contribution of the packaging materials in the total inventory value is 83%, out of which 20% have a higher unit cost and a longer lead time. The companies that supply the locally purchasable items are struggling with the frequent rush of orders. The unavailability of packaging materials affects the production line and the fruits go to waste. Therefore, a proper policy to manage the inventory of the packaging items is required. Under the present situation, the firm manager has decided to find a fast, reliable and safe method of ordering the correct quantity for each item, with minimum total inventory costs and maximum service levels.

The seventh paper, 'Application of the Six Sigma methodologies to enterprise resource planning implementation' by M.N. Vijaya Kumar and A.V. Suresh, explores the application of Six Sigma in the service sector. The DMAIC cycle is one of the most frequently used techniques in establishing Six Sigma standards and are applied service industry. The improvement process in any industry directly reflects in the satisfaction of the customer. Customer satisfaction is one of the most primary reasons for an industry looking at establishing Six Sigma standards. Using the above concepts of DMAIC technique and rating scale measures of customer satisfaction, in this highlights the sigma levels of the ERP package with customer satisfaction being the critical-to-quality characteristic.

The eight paper, 'Integration between neuro-fuzzy system and Monte Carlo simulation for duration estimation of the bored piles' by Thoedtida Thipparate, investigates that the traditional methods of duration prediction of the bored pile projects are far from accurate and consistent. This can be attributed to the fact that the problem in estimating the construction duration is very complex and not yet precisely understood. Neuro-fuzzy system (NFS) has been proposed to deal with several problems associated with cognitive uncertainty caused by human subjectivity. An alternative stochastic approach is necessary for providing more rational estimation of activity duration. In this paper, the probability distribution of activity duration is obtained by integrating the NFS with Monte Carlo simulation. The estimators can make a decision regarding risk factors and their impacts on the estimated duration by employing the proposed method. As a result, a more realistic estimation of the actual duration can be provided.

The last paper, 'An assessment of the Holt-Winters model in making effective forecast for supply chain system' by professors Taiyelolu Victor Oladiran Fabson and Emmanuel Olateju Oyatoye, identifies that the importance of supply chain management in manufacturing sector of any economy cannot be over-emphasised. Demand forecasting and ordering policies has been recognised as two key causes of bullwhip effect. Instability in supply chain harms firms, consumers, and the economy at large, through excessive inventories, poor customer service, and unnecessary capital investment; while instability in employment erodes skill and worsens labour-management relationship,

diverts leadership attention from the design of new products and strategies to firefighting and crisis management. It also causes volatility in revenue and profit; increases risk and raises the cost of capital. This article describes the effectiveness of the Holt-Winters time series model in making forecasts and also in quantifying the bullwhip and net-stock amplification in supply chain.

We hope that these nine papers will highlight research challenges and future research directions and add their values and contributions to the fields of business and systems research.

Acknowledgements

In closing, we would like to express my sincere gratitude to the contributing authors. Also, we would like to express our gratitude to the contribution of the referees who reviewed our papers, of guest editors, and remain anonymous to us for their very valuable and constructive feedback and critiques. We take this opportunity to thank the chief editor of *IJBSR*, Professor Jason C.H. Chen and Inderscience Publishers for their support throughout the launching of this journal. Finally, to our readers around the world, we thank you very much for using this journal as your source of information and hope you will find it helpful in your research endeavours.