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## Editorial

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**Biographical notes:** Jairo R. Montoya-Torres is an Associate Professor, Director of the Master in Operations Management program and Director of the Research group in Logistics and International Business at Universidad de La Sabana, Colombia. He holds a PhD from École Nationale Supérieure des Mines de Saint-Étienne, France. He has been Guest Editor for *Annals of Operations Research*, *Journal of Intelligent Manufacturing*, *Int. J. Information Systems and Supply Chain Management* and *Revista Internacional de Investigación de Operaciones*, Editor of the book *Hybrid Algorithms for Service, Computing and Manufacturing Systems: Scheduling and Routing Solutions* (published by IGI Global) and Co-Editor of the *Proceedings of the 2010 Winter Simulation Conference*. His research interests include applied combinatorial optimisation, modelling and simulation of production and logistics systems, scheduling, and supply chain management and design under collaborative and sustainable environments.

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### Special Issue presentation

The Fifth International Conference on Production Research ICPR – Americas 2010 held on 21–23 July 2010 in Bogotá was organised by the Department of Industrial Engineering of Universidad de los Andes, Bogotá, Colombia. ICPR is endorsed by the International Foundation for Production Research (IFPR). The theme of the 2010 version conference was *Technologies in Logistics and Manufacturing for Small and Medium Enterprises*, which is perfectly aligned with the realities of the Latin-American countries. One of the goals of the conference was to create awareness on the needs of small and medium companies to be competitive in a global world.

The conference brought together important personalities in the area of production, logistics and manufacturing, creating an important forum for discussion and to provide networking opportunities for researchers throughout Latin-America. In addition, conference attendees were practitioners working in the areas of project and operations management, industrial and production engineering, economics and business administration, as well as undergraduate and postgraduate students. The conference also included workshops designed for active professionals in the areas of project/operations management, industrial production engineering, economics and business administration.

### **Overview of papers in this Special Issue**

The numerous research papers presented at the ICPR-10 Americas version include a significant amount of research that addressed both manufacturing-oriented and service-oriented problems. The submission process for this Special Issue was also open to authors presenting works related to the topic of this volume not necessarily presented at the conference venue (however, conference no shows were not accepted for this Special Issue). After a first selection based on the quality of both paper and presentation at the conference, the editorial team received 16 papers to participate on the evaluation process for this Special Issue. After a preliminary review by the editorial team and then the double-blind review process by external referees, only seven papers were selected following the rigorous traditional peer-review process of the journal for scientific merit. These papers present interesting advances on production research. An important issue of selected papers, following the aim of the 2010 ICPR – Americas conference, is that the problems under study must contribute to scientific knowledge by identifying novel problems and having a significant impact on improving production management practices for small and medium enterprises in Latin-Ibero-American region. Following is a short presentation of papers appearing in this Special Issue. The papers appeared in this Special Issue are authored by researchers from Mexico, Colombia, Chile, Portugal, Australia and Japan.

The paper of Gomez-Padilla and Mishina considers the problem of supply contracts in a dyadic supply chain formed by one retailer and one supplier. Local (both agents) and global supply chain performance metrics are compared. Two types of contracts are studied: option and capacity reservation. Under the former alternative, the retailer orders a quantity of units and has a right to modify his order in any sense (bigger or smaller than the initial order) without restrictions by buying the option premium in advance from the supplier. Under the latter alternative, a capacity reservation contract, the retailer reserves a number of units from the supplier and, after receiving more information about demand, the final order can be passed. After introduction of some theoretical bases, both models are compared using simulation. Interesting insights about both types of contracts are obtained and may help decision-making in collaborative supply chain management.

The paper of Solano-Charris and Paternina-Arboleda presents a discrete-event simulation model of a naval shipyard supply chain. The aim is to aid both operations and decision-making processes related to capacity planning. Experiments are performed using real-life data from a naval shipyard located in the north of Colombia.

The paper of Torres, Quezada, Córdova and Soto discusses a methodology seeking to prioritise strategic objectives identified in a generic balanced scorecard perspective. The work initially carried out by the authors was afterwards reviewed by a group of experts with fully knowledge of electronic commerce. The analytic network process approach was employed for such analysis.

The paper of Pérez-Salazar, Rivera and Cristóbal-Vázquez conducts a review of the recent scientific literature on enterprise resource planning (ERP) selection. Since organisations implement ERP systems in order to better manage their data and their resources, the stage of ERP selection is of great importance: an appropriate selection increases the chances of project success. The paper focuses on small and medium enterprises and the review classifies scientific literature in four major groups: methodological proposals, case studies, micro-sociological studies and critical success factors.

The paper of Requeijo and Cordeiro considers the implementation of statistical techniques to process control in automotive industry. The paper presents a methodology for the application of traditional univariate control charts, when data exhibit significant autocorrelation. Their approach aims to enable the automotive industry to produce vehicles with greater quality assurance and lower costs.

The paper of Mejía, González-Vargas and González considers the problem of buffer management in production systems. Their paper proposes a methodology to reduce the buffer requirements in job shop production systems. An iterative scheduling method is employed, in which the initial solution is generated using simulated annealing. The schedule is then improved by changing start and/or finish execution times without any change in their position in the production sequence. Considerable improvements in buffer reduction are achieved.

Finally, the environmental dimension of logistics operations is considered in the paper of Halabi, Montoya-Torres, Pirachicán and Mejía. These authors develop a conceptual framework for the analysis of reverse logistics practices in the Colombian plastic sector, in order to efficiently and effectively manage product recycling.

### **Acknowledgements**

The completion of this Special Issue has involved hard work and contributions by several people in addition to the authors of the papers. First of all, I would like to thank Professor Angappa Gunasekaran, Editor-in-Chief of the *Int. J. Industrial and Systems Engineering*, who fully supported the idea of guest-editing this Special Issue. I want also to acknowledge Professor Gonzalo Mejía, General Chair of the ICPR – Americas 2010 conference, for his support to the idea of editing a post-conference journal Special Issue.

The large number of submissions for this issue resulted in the calling on the services of many referees from many countries. I therefore thank these anonymous individuals for helping with the review process. They each spent many hours in reviewing, critiquing and re-reviewing the papers considered for this issue. Without their efforts, this issue could not have been completed. I am also grateful to those authors whose papers could not be included in this issue for a variety of reasons. I hope that the feedback from the review process will allow them to improve their manuscripts so that their work will eventually be ready for publication elsewhere in the literature.