



Risk issues in operations: methods and tools

Desheng Dash Wu & David L. Olson

To cite this article: Desheng Dash Wu & David L. Olson (2009) Risk issues in operations: methods and tools, , 20:4, 293-294, DOI: [10.1080/09537280902843615](https://doi.org/10.1080/09537280902843615)

To link to this article: <https://doi.org/10.1080/09537280902843615>



Published online: 11 Oct 2010.



Submit your article to this journal [↗](#)



Article views: 1737



View related articles [↗](#)



Citing articles: 2 View citing articles [↗](#)

EDITORIAL

Risk issues in operations: methods and tools

Risk management is an expanding field, growing beyond the rich work done in finance and insurance to include accounting, especially in the form of COSO (Committee of Sponsoring Organizations process for auditing control) and Basel II (European counterpart to COSO) – regulations and procedures designed to enhance top executive responsibility to stockholders. In addition to these initiatives, there has been a growing concern with aspects of risk in information systems, emergency management and supply chain management. We discuss various risk issues from the perspective of operations in this special issue of *Production Planning & Control*.

Keywords: risk; operations management; supply chain; model

We are very pleased to see this special issue of *Production Planning & Control* on ‘Risk issues in operations: methods and tools’. Over the past decade, risk issues in operations such as supply chain and banking operations have attracted a great deal of attention from both researchers and practitioners. Risk refers to the uncertain change of the future value of an entity of interests (Wu and Koenig 2008). Traditionally, risks are tied to the loss resulted from the change of a risky event (Baranoff 2004, Drew 2007).

Risk management is an expanding field, growing beyond the rich work done in finance and insurance to include accounting, especially in the form of COSO (Committee of Sponsoring Organizations process for auditing control) and Basel II (European counterpart to COSO) – regulations and procedures designed to enhance top executive responsibility to stockholders. In addition to these initiatives, there has been a growing concern with aspects of risk in information systems, emergency management and supply chain management (Olson and Wu 2007, Wu and Olson 2008a). Risk management can be used as a tool for greater rewards, and not just to control against loss (Wu and Olson 2008b).

Complexity and uncertainty in many practical problems require new methods and tools. This special issue called for papers in the areas of risk management models and tools to aid in performance analysis, operations management and other aspects of risk management in the broad perspective. We have collected seven very useful papers addressing various aspects of these important issues.

Liu, Tian, Sun and Wu model competitive aspects of competing distribution channels, focusing on retailer motivation to provide high service. The model was used

to show external competition and information symmetry as important factors within supply chains. The results have been used by a large Chinese consumer electronics corporation.

Xie, Liu, Peng, Chen and Chen consider the potential of developing technology to aid in risk control within supply chain participants. Label-card management is proposed as a means for small business enterprises to control risk. The approach is defined, and a risk-evaluation process presented and justified. The approach was demonstrated using an empirical study of an automotive parts manufacturer in China. Label-card management offers a promising approach for smaller firms to apply risk management.

Yang, Xiao and Shen present a theoretical supply chain model based on economic order quantity equilibrium. The effect of risk sensitivity is examined, and managerial insights are offered.

Stefansson, Jensson and Shah present a heuristical procedure involving optimisation models for a make-to-order production system. Risk factors in that environment are developed, and a systematic approach described to aid planning and scheduling in this environment involving high levels of uncertainty. The procedure has been applied in real environments with positive results.

Oehmen and co-workers in their article ‘System-oriented supply chain risk management’ consider the many risks involved in contemporary global supply chains. A risk structure model provides a means to analyse supply chain risk causes and effects. A supply chain risk dynamics model allows more detailed analysis. These two models are demonstrated in a case study involving three companies.

Wu and Olson present the concept of business risk scorecards as a means for risk management.

The approach is demonstrated with data from a bank loan application process based upon real data. This article has also expanded the traditional credit risk management issues to the framework of enterprise risk management.

Yang and Wu assess advanced image interactivity technology in the domain of electronic retail. The analysis is based on behavioural intentions model, considering perceived risk impact on shoppers. The model was verified through survey.

Thus this special issue includes a variety of modelling approaches to the common theme of supply chain risk management, an area that has become one of major importance in twenty-first-century business.

Desheng Dash Wu
School of Science and Engineering
Reykjavik University
Kringlunni 1, IS-103 Reykjavik, Iceland, and
RiskLab, University of Toronto
105 St George Street, Toronto
ON, M5S 3G3, Canada
Email: dash@ru.is; dash@risklab.ca

David L. Olson
Department of Management
University of Nebraska
Lincoln, NE 68588-0491, USA

Acknowledgements

We thank all the referees for their valuable time and effort. We thank the Editor, Dr Stephen J. Childe, for many valuable suggestions, his energy and effort in bringing out this special issue.

Notes on contributors



Dash Wu is a tenured Assistant Professor at Reykjavik University and Affiliated Professor at RiskLab of University of Toronto and director of RiskChina Research Center at University of Toronto. His research interests focus on enterprise risk management, performance evaluation in financial industry and credit risk.

His work has appeared in such journals as *International Journal of Production Research*, *Journal of the Operational Research Society*, *European Journal of Operational Research*, *Annals of Operations Research*, *Expert Systems with Applications*, *Socio-Economic Planning Sciences*, *Computers and Operations Research*, *International Journal of Production Economics*, *International Journal of System Science*, et al. He has two books and more than 25 journal publications. He has served as editor/guest editor/chair for several journals/conferences. He is a member of PRMIA (the Professional Risk Managers' International Association) Academic Advisory Committee and steering committee member.



David L. Olson is the James & H.K. Stuart Professor in MIS Chancellor's Professor at the University of Nebraska. He has published research in over 100 refereed journal articles, primarily on the topic of multiple objective decision-making. He teaches in the management information systems, management science and operations management areas. He has authored or co-authored 21 books, including *Decision Aids for Selection Problems*, *Managerial Issues of Enterprise Resource Planning Systems* and *Introduction to Business Data Mining*. He is a Fellow of the Decision Sciences Institute.

References

- Baranoff, E.G., 2004. Risk management: a focus on a more holistic approach three years after September 11. *Journal of Insurance Regulation*, 22 (4), 71–81.
- Drew, M., 2007. Information risk management and compliance – expect the unexpected. *BT Technology Journal*, 25 (1), 19–29.
- Olson, D.L. and Wu, D., 2007. *Enterprise risk management*. Singapore: World Scientific Publishing Company.
- Wu, D. and Koenig, D.R., 2008. Recent development in risk management. *China Insights Today*, 1 (1). Available from: <http://www.chinainsightstoday.com/>.
- Wu, D. and Olson, D.L., 2008a. Supply chain risk, simulation and vendor selection. *International Journal of Production Economics*, 114 (2), 646–655.
- Wu, D. and Olson, D.L., 2008b. Enterprise risk management: coping with model risk in a large bank. *Journal of the Operational Research Society*, in press.