Editorial

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This special issue of the *International Journal of Business Continuity and Risk Management* entitled 'Modelling and simulation in business continuity and risk management' presents extended versions of selected papers at the International Conference on Modelling and Simulation in Engineering, Economics and Management (MS'12, New York). The conference was hosted by the Department of Information Systems at the Hagan School of Business, at the Iona College in New Rochelle, New York. Many participants from 17 different countries attended the conference. Presentations in different areas of modelling and simulation were delivered.

This special issue aims to present recent advances in the field of modelling and simulation with a special focus on business continuity and risk management. Business continuity and risk management are becoming very relevant in our modern times where the environment is affected by many complexities and critical events. The main reason is because many times unexpected environments may bring significant costs such as an earthquake or a terrorist attack. Therefore, it is necessary to have efficient studies that provide with the optimal strategy for the company when dealing with these situations.

Business continuity represents the strategies taken in order to continue with activities affected by a crisis. Implicitly, it also includes the concept of recovery because it is the first step to be considered after a critical event. It is a fundamental methodology for enterprises that want to be well prepared against unexpected negative events in order to

recover and continue with their normal activities. Its main advantage is that it prepares the companies for extreme situations in a more practical way so it is possible to minimise the costs as much as possible. It has some connection with insurance management because an insurance company covers individual consumers against critical situations. The main difference between them is that in insurance the costs are totally quantified while business continuity is focussed on a general strategy that usually targets huge events that affects many individuals and a lot of money at the same time. Insurance companies also try to cover enterprises but in extreme scenarios they do not have the capacity to fully cover them. Risk management is also included in this global perspective but it deals with the processes of risk assessment, communication and treatment. It tends to be preventive whereas business continuity tends to assess the consequences.

In this special issue, four papers present different perspectives of this general framework. The first paper, by Lluís Bermúdez, Antoni Ferri and Montserrat Guillén, studies the use of risk measures in capital solvency estimation. This is important because a correct analysis of the minimum capital that a financial institution or an insurance company should have may change its financial strategy. Depending on the risk measures used, the results may vary significantly. It is shown that using Monte Carlo simulation; risk measures can substantially underestimate risk.

The second paper, written by Heechang Shin, Robert Richardson and Oredola Soluade, analyses sales loss from automobile recalls. They focus on the Toyota company and the Japanese automobile industry in order to find important variations between major and minor recalls. It is shown that major recalls have a negative impact on the market share with a three-month lag, while minor recalls have a positive impact after four months.

The next paper, by José M. Merigó, Anna M. Gil-Lafuente and Daniel Palacios-Marqués, introduces a new methodology for dealing with decision making problems under risk and uncertain environments. It deals with imprecise information that cannot be assessed with classical exact numbers but can be represented with fuzzy numbers. Many new aggregation operators are presented with a special focus on a unified framework that integrates the probability, the weighted average and the ordered weighted average in the same formulation. Its main advantage is that it can assess the uncertain information taking into account the attitudinal character of the decision maker.

The last paper, written by Holmes E. Miller and Kurt J. Engemann, studies the use of reliability and simulation models in business continuity planning. They focus on risk analysis. More specifically, they analyse different methods for estimating probabilities. The main reason is because the probabilistic information of a specific problem is one of the cornerstones of making a good forecast against unexpected events. Several examples are shown in order to understand the importance of this approach.

As guest editors, we would like to thank all the authors of accepted and rejected papers of this special issue for their contributions. We also want to express our gratitude to the reviewers for taking the time to review these papers and make suggestions in order to improve their quality. Acknowledgements also go to the organising committee of the conference for their hard work in the preparation of a very nice conference that will end with this publication. Finally, we would also like to thank Inderscience and the editors of the *International Journal of Business Continuity and Risk Management* for their support in the preparation of this special issue.

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