



ENTERPRISE RISK MANAGEMENT

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Agenda

- About me
- Enterprise risk management (ERM)
 - Why
 - what
 - how
- Conclusion

- Dash WU
- **Editors in Chief** of [International Journal of Services Sciences](#) , [Int. J. of Financial Services Management](#) , [Int. J. of Environment and Sustainable development](#).
- Associate Editor: Human and Ecological Risk Assessment, Expert Systems
- **Editor of Springer Book Series** on “Enterprise Risk Management Models”
- a [member](#) of [PRMIA](#) (the Professional Risk Managers' International Association) Academic Advisory Committee and steering committee member
- **More than 70 journal publications**
 - Risk Analysis, Decision Support Systems, Journal of the Operational Research Society, European Journal of Operational Research, Annals of Operations Research, International Journal of Production Research, Human and Ecological Risk Assessment, Computers and Operations Research et al.

Olson · Wu



David L. Olson
Desheng Wu

David L. Olson
Desheng Wu

Enterprise Risk Management Models

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Enterprise Risk Management Models

Enterprise risk management has always been important. However, the events of the 21st Century have made it even more critical. The top level of business management became suspect after scandals at ENRON, WorldCom, and other business entities. Financially, many firms experienced difficulties from bubbles. The problems of interacting cultures demonstrated risk from terrorism as well, with numerous terrorist attacks, to include 9/11 in the U.S. Risks can arise in many facets of business. Businesses in fact exist to cope with risk in their area of specialization. Financial risk management has focused on banking, accounting, and finance. We have discussed several aspects of risk, to include information systems, disaster management, and supply chain perspectives. The bulk of this book is devoted to presenting a number of operations research models that have been (or could be) applied to enterprise supply risk management, especially from the supply chain perspective.

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Olson · Wu (Eds.)

David L. Olson
Desheng Wu (Eds.)

New Frontiers in Enterprise Risk Management



David L. Olson
Desheng Wu (Eds.)

This book provides introductory material about enterprise risk management, and the role of risk in decision making. It presents enterprise risk management from perspectives of finance, accounting, insurance, supply chain operations, and project management. Technology tools are addressed, to include financial models of risk as well as accounting aspects using data envelopment analysis, neural network tools for credit risk evaluation, and real option analysis applied to information technology outsourcing. Three chapters present enterprise risk management experience in China, to include banking, chemical plant operations, and information technology.


New Frontiers in Enterprise Risk Management

New Frontiers in Enterprise Risk Management

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ENTERPRISE RISK MANAGEMENT



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 World Scientific

Enterprise risk management (ERM)

Why

- A Risky World to be getting riskier!
- We live in a world of a great deal of risks, e.g.:
 - Current events: financial crisis, recession
 - Chemicals
 - Climate change
 - Disease
 - Catastrophic events: Natural Disasters, earthquake, Tsunamis
 - Food
 - Terrorism

Risks in Enterprise Operations

- Professional organization, Consultant, Rating agency, Academics
- 31% adopted ERM in Canadian risk & insurance [Kleffner 2003]
- Why ERM? Toyota outsourcing problem

Enterprise risk management (ERM)

What

- Systematic, integrated approach
 - Manage all risks facing organization
 - Concerned with a ***broad financial and operating perspective***
 - ***Recognizes interdependencies***
corporate, financial, and environmental factors

Enterprise risk management (ERM)

how

Wu & Olson, HERA 2010

– Uncertainty of risks

- Developed Since 1700s
- Bernoulli, de Moivre, Laplace, Poisson, Gauss, Pareto
- Extreme Value Theory, Thick-Tailed, Sub-Exponential, Distributions

– Dynamics of risks

- Developed Intensively Since 1930s
- Lévy, Khintchine, Kolmogorov, Doob,
- Brownian Motion, Markov Processes, Inter-temporal model

– Clustering/Dependence of risks

Newer Area of Research Since 1950s

Fréchet, Sklar

– Complexity of risks

Complexity science Since 1960s

Conclusions

- Risk management of growing importance
- ERM new philosophy of RM
- Models useful in RM

Thank You

Dash WU

**Editor of Springer Book Series on “Enterprise
Risk Management Models”**

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Managers' International Association) Academic
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