Modeling the Interconnectivity of Risks in ERM

Neil Allan, School of Management, University of Bath
Yun Yin, School of Management, University of Bath
Neil Cantle, Milliman, ASA, FIA

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Abstract

The Strategic Risk Register System (SRRS) is proposed by the authors as a new approach to modeling and visualizing the interconnectivity of risks in an ERM context. SRRS has been successfully applied in practice, and a case study is deployed to demonstrate the methodology. The process provides a rich understanding of real risk exposure by considering the connectivity and hence the potency of individual risks within the overall ERM system. This then allows for effective monitoring and interventions to be managed more effectively. Our approach differs from contempory risk modelling techniques in that we use linear algebra and graphic theory techniques within a holistic, complex system framework. The approach builds on a three-year research program called STRATrisk, at the University of Bath, which was funded by the U.K. Department of Industry and now Milliman.