

Cambridge Judge Business School

Centre for Risk Studies 7<sup>th</sup> Annual Risk Summit

# 2016 Research Showcase: Special Topics Seminar

Monday 20 June 2016, 09:00 – 14:15

**Risk Culture: Challenging Individual  
Agency**

Centre for  
**Risk Studies**



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# 09:00-14:15 - 2016 Risk Summit Research Showcase

- 09:00 – 09:30**      **Registration and tea/coffee**
- 09:30 – 09:50**      ***Session 1: Cambridge Risk Framework***  
**CRS Research Activities in 2016**  
**Dr Andrew Coburn**, Director of Advisory Board,  
Cambridge Centre for Risk Studies and Senior  
Vice President, RMS, Inc.
- 09:50 – 10:10**      **Recovery and Resilience after Catastrophes**  
**Kristen MacAskill**, Risk Researcher, Cambridge  
Centre for Risk Studies
- 10:10 – 10:30**      ***Session 2: Emerging Risks***  
**Developing Scenarios for Managing Cyber  
Catastrophe Risk**  
**Éireann Leverett**, Senior Risk Researcher,  
Cambridge Centre for Risk Studies
- 10:30 - 10:50**      **Helios: Understanding the Economic Risk of  
Solar Storms**  
**Jennifer Copic**, Research Assistant, Cambridge  
Centre for Risk Studies
- 10:50 - 11:20**      **Coffee Break**
- 11:20 - 11:40**      **Critical National Infrastructure and Technology  
Catastrophe Risk**  
**Dr Edward Oughton**, Research Associate,  
Cambridge Centre for Risk Studies

- 11:40 – 12:00**      ***Session 3: Modelling and Communicating Risk***  
**Financial Catastrophe Research and Stress  
Tests Scenarios**  
**Dr Andy Skelton**, Research Associate,  
Cambridge Centre for Risk Studies
- 12:00 – 12:20**      **Financial Risk and Network Analysis**  
**Dr Ali Shaghaghi**, Research Assistant,  
Cambridge Centre for Risk Studies
- 12:20 - 12:40**      **Putting It All Together: Cambridge Risk  
Framework**  
**Simon Ruffle**, Director of Research and  
Innovation, Cambridge Centre for Risk Studies
- 12:40 - 13:30**      **Lunch at the Judge Business School**
- 13:30 -13:45**      ***Session 4: Risk Culture and Governance***  
**Setting a Risk Culture Research Agenda**  
**Professor Daniel Ralph**, Academic Director,  
Cambridge Centre for Risk Studies
- 13:45 -14:00**      **Modelling the Interplay between Personal and  
Collective Agencies**  
**Dr Michelle Tuveson**, Executive Director,  
Cambridge Centre for Risk Studies
- 14:00 -14:15**      **Regulating Risk Culture in the Financial  
Services**  
**Professor Kern Alexander**, Chair for Banking  
and Financial Market Regulation, University of  
Zurich and Risk Fellow, Centre for Risk Studies,  
University of Cambridge

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# Setting a Risk Culture Research Agenda

Professor Daniel Ralph  
Academic Director, Cambridge Centre for Risk Studies  
& Professor of Operations Research, CJBS

20 June 2016  
Cambridge, UK

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# Connectivity I: Partially Understood Relationships

## GDP@Risk for China-Japan War

- China+Japan \$ 6B
- RoWorld \$11B



Image Source: Cambridge Centre for Risk Studies

# Connectivity II: Partially Understood Relationships

What is the cyber geography of the world?

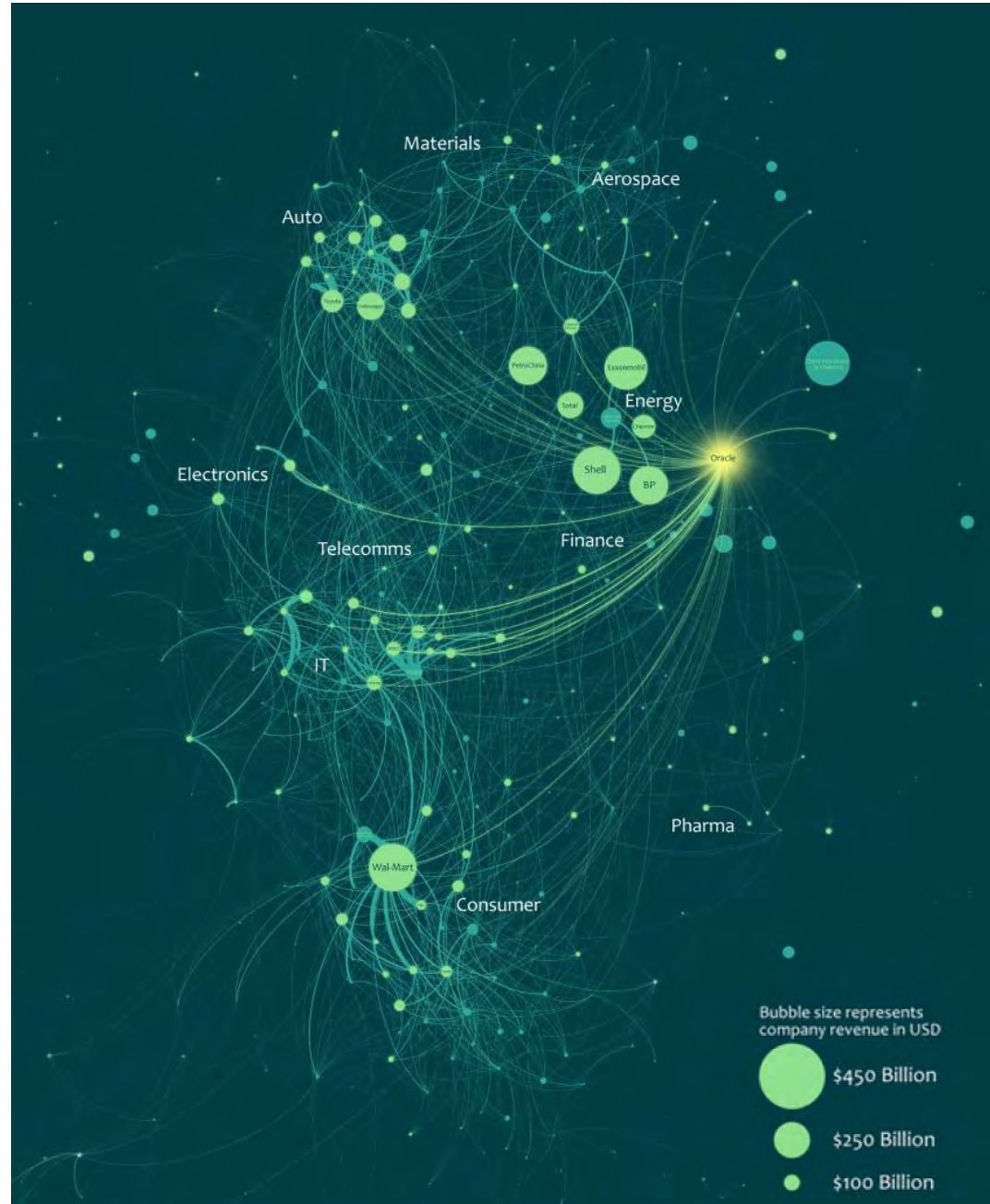


Image Source: Cambridge Centre for Risk Studies

# Links to Existing Research Pillars

- Governance is missing in enterprise-wide risk models
  - Enterprise Risk Management: A myth? Or an unsatisfactory reality?
- Governance again
  - Eg, of cyber: who is responsible within a firm? E.g. Chief Counsel, IT, Board, COO
- Project Pandora
  - Offers framework for consideration of enterprise-wide risk
  - Impact will rely on recognition at the most senior level of governance

# Background

- Advisory board recommendation to explore the application of Cambridge Risk Framework and banking model for risk culture research
- Recognised gap in scholarship on applying quantitative models to org study, and more specifically to risk org
  - INFORMS Management Science
  - INFORMS Strategy Science
- Financial and banking industries provide a rich research base for risk governance and strategy research
  - “New role” of the Chief Risk Officer
  - Imposition of regulatory mandates

# Risk Centre's Deep Engagement with Business



**Cambridge Centre for Risk Studies  
Executive Sessions**

- Senior Managers Regime: Implications for Incentives, Administrative and Civil Structures
- Aligning Risk Culture with Organisational Culture: Implications to Innovation, Adaptation, and Institutional Value
- Through the Financial Crime Lens: Impacts & Risks to the Global Economy
- Risk Management Versus Incentive Structures
- Unintended Consequences for Over-regulation
- The Chief Risk Officer's Role in Reinstating Institutional Trust



# Ideas from Academic Literature

- Understanding how organisations work and change through organizational structure
  - Sociology: Institutions seen as engines of rationalization with paradoxes arising between identity and change [DiMaggio & Powell 1992]
  - Psychology: Aversion in new or risky situations [Kahneman & Tversky 1979]
  - Economics: Combining Incentives, preferences and (informal) markets to describe and explain behaviour [Becker 1976]
- Formal v informal organizational structures
  - Link between formal structures & social networks and the design and effective functioning of organizations [McEvily, et al 2014]
- Structural formations important for realization of innovation and transitions
  - Lines of communication during ideation phase, network analysis [Lovejoy and Sinha 2010]
  - Excessive dyadic networks detrimental to creative idea generation [Sosa 2011]
  - Formal methods [Hanneman & Riddle 2005]
- Structural formations important for performance
  - Modularity versus integration in complex systems [Ethiraj & Levinthal 2004]
  - Economics of communication in centralized or decentralized networks [Alonso et al 2008]

# References

- R. Alonso, W. Dessein and N. Matouschek, When Does Coordination Require Centralization? *The American Economic Review* 98:1, 2008.
- A. Bandura, Exercise of Human Agency Through Collective Efficacy. *Current Directions in Psychological Science*, 9(3): 75 – 78, 2000.
- V.D. Blondel, Jean-Loup Guillaume, Renaud Lambiotte, Etienne Lefebvre. Fast unfolding of communities in large networks. *Journal of Statistical Mechanics*, 2008. G.S. Becker. *The Economic Approach to Human Behavior*. University of Chicago Press, Illinois, 1976. S. K. Ethiraj and D. Levinthal. Modularity and innovation in complex systems. *Management Science* 50:2, 2004
- R.A. Hanneman and M. Riddle. *Introduction to Social Network Methods*. University of California, 2005.
- D. Kahneman and A. Tversky. Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2):263-292, 1979.
- W.S. Lovejoy and A. Sinha. Efficient structures for innovative social networks. *Management Science*, 56(7):1127-1145, 2010.
- B. McEvily, G. Soda, M. Tortoriello. More Formally: Rediscovering the Missing Link between Formal Organization and Informal Social Structure. *Academy of Management Annals*, 8(1): 299-345, 2014.
- J. Mihm, C.H. Loch, D. Wilkinson, and B.A. Huberman. Hierarchical structure and search in complex organizations. *Management Science*, 56(5):831-848, 2010.
- W.W. Powell and P.J. DiMaggio. The iron cage revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48:147, 1983.
- M.E. Sosa. Where do creative interactions come from? the role of tie content and social networks. *Organization Science*, 22(1):1-21, 2011.

# Setting an Agenda for Risk Culture Research

## 1. Influence

- Connectivity within organisation impacting delivery of information
- Influence factors

## 2. Risk & innovation

- Innovation: Taking risk in an undiscovered area.
- Where does innovation fit into risk culture

## 3. Globalisation issues and the modern institution

- Global governance
- Relationship with society
- Inter-cultural issues
- The new multi-national corporation

## 4. Assessing risk culture through new “lenses”

- Financial crime
- Cyber-security
- Sanctions
- Compliance

Contributions of the risk function to better functioning organisations

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