

Wharton Risk Management and Decision Processes Center Advisory Committee Meeting

Theme: Extreme Risks, Interdependency and Global Risk Management

**Location: Room F55 Jon M. Huntsman Hall
The University of Pennsylvania
April 29, 2003, 8:30AM -3:30PM**

MINUTES

Attendees: See last page with names, affiliations and e-mail addresses of all AC members and those that attended.

The meeting was opened by Phil Lewis and reports on Center activities were provided as per the attached agenda at the end of this summary. The morning discussion began with an Overview of Recent Center Activities:

- Michael Elliott provided a status report on the accident epidemiology project and discussed the March 4th Roundtable on “The RMP Rule: Past and Future” at Wharton.
- Ulku Oktem provided a status report on the near miss (NM) project. The Partnering corporations are evaluating previously developed NM tools. A near-miss based project proposal, to develop a business case for safety, has been submitted to OSHA. Elizabeth Miles commented on the importance of NM project and practices in J&J.
- Howard Kunreuther provided a summary of the Extreme Risks Project and summarized the Roundtable on April 28th on *Assessing and Managing Extreme Events*.

Following the morning break New Industry Initiatives were discussed:

- Peter Schmeidler introduced Larry Yuspeh and the Louisiana Workman’s Compensation Corporation (LWCC). Larry, LWCC’s Director of Research and Development, commented on the opportunities to use third party inspections in conjunction with OSHA to enhance the safety of facilities in Louisiana.
- Howard Kunreuther discussed current research activities on interdependent security. Norm Willox from LexisNexis then discussed the application of this approach to airline security
- Paul Kleindorfer discussed the Center’s planned research on Global Supply Chain Risk. Michael Deak of Dupont provided a perspective on these issues from the point of view of industry and their dealings with suppliers.
- Ulku Oktem discussed Post-Market Monitoring and a new Center project with Johnson & Johnson. Carolyn Green presented Sunoco’s views and practices on risk management for manufacturing and distribution related issues. Liz Miles provided a perspective on these issues as they relate to health and safety questions.

The morning discussion concluded with an introduction of the small group sessions by Paul Kleindorfer and Howard Kunreuther.

Following lunch, Phil Lewis turned over the chairmanship of the Advisory Committee to Elizabeth Miles, who moderated the rest of the afternoon. Representatives from each of the small groups gave brief presentations on their deliberations. (see Attached Summaries). The meeting concluded with a discussion of future meetings of the Risk Center Advisory Committee, led by Ms. Miles thoughts on the challenges and opportunities facing the Center going forward (see her attached presentation).

AGENDA – April 29, 2003

Extreme Risks, Interdependency and Global Risk Management

8:30-9:00 Continental Breakfast

9:00-9:15 Introductions and Opening Remarks
Philip Lewis, Rohm & Haas Company

9:15-10:15 Overview of Recent Center Activities
Paul Kleindorfer, Risk Center

Accident Epidemiology	Michael Elliott, Penn Medical School
Near-Miss Project	Ulku Oktem, Risk Center
Extreme Events Project	Howard Kunreuther, Risk Center

Discussion on Recent Center Activities, including comments by James Belke, CEPPO

10:15-10:30 Break

10:30 – 12:00 New Industry Initiatives

3 rd Party Inspections & Workers Comp	Peter Schmeidler, Risk Center
Airline Security	Howard Kunreuther, Risk Center
Global Supply Chain Risk	Paul Kleindorfer, Risk Center
Post-Market Monitoring	Ulku Oktem, Risk Center

Discussion and Perspectives by Michael Deak (DuPont), Carolyn Green (Sunoco), Dennis Groseclose (Lockheed Martin), Norm Willox (LexisNexis), and Larry Yuspeh, (Louisiana Workers Compensation Corporation)

12:00 --12:15 Introduction to Small Group Discussions:
Paul Kleindorfer, Risk Center
Howard Kunreuther, Risk Center

Process Safety: Making the Business Case
Security and Interdependent Risks: Business and Regulatory Challenges
Security and Interdependent Risks: Challenges for Insurers & Reinsurers

To explore the theme of the day, and as a prelude to the Small Group Discussions, this introductory discussion will briefly focus on Advisory Committee Member views on the challenges associated with developing effective programs companies, for regulators and for insurers/reinsurers in assessing and responding to new interdependent risks, from terrorism to SARS to natural hazard disruptions of global supply chains.

12:15 -- 2:15 Lunch and Small Group Meetings

2:15 -- 3:00 Reports of Small Groups and discussion of research targets suggested by these reports:
Elizabeth Miles, Johnson & Johnson

3:00 -- 3:30 Future Plans of Center
Elizabeth Miles, Johnson & Johnson

3:30 Adjourn

Small Group Discussion Summaries

Group 1: Making the Business Case for Process Safety.

Participants: Scott Berger, Michael Deak, Carolyn Green, Paul Kleindorfer, Kiwan Lee, Elizabeth Miles, Ulku Oktem, Irv Rosenthal, Germaine Saad

The group began its deliberations with a presentation summarizing the recently completed study at CCPS on the very issue of the business case for Process Safety. The CCPS study and the ensuing group discussion highlighted the fact that there are many anecdotes supporting the business case for process safety, and some hard data on the cost of lost worker days and related worker compensation issues, but there is still not a convincing case in the form of hard statistics that link specific areas of excellence in process safety to solid business results. This thought led to a discussion of two possible projects that might be undertaken by the Risk Center.

Process Safety and RMP Data: The first proposed study was to use the CCPS Process Safety Audit Tool together with RMP data, and possibly OII data, to determine what patterns might exist between excellence in Process Safety and other drivers of operational and profit performance, including those reflected in the RMP data. Data from a representative sample of companies who can be scored by the CCPS Process Safety Audit Tool could be associated with RMP data for the same companies and facilities. The underlying hypothesis would be that excellence in process safety would be a driver for excellence in the frequency and severity of accidents as measured by the RMP data.

RMP Data and OII Reportables: A second avenue for exploring the business case for process safety was focused on relating RMP performance with OII performance. It could be, for example, that excellence in the environmental area, as reflected in the RMP accident history data, would be positively associated with excellence in the OII data, either contemporaneously or with a lag. By focusing on the parent company level, one could also determine whether there is a relationship between financial performance of parent companies and the accident history and OII history of facilities owned by the company. The key impediment to this research is the difficulty of linking OII data with RMP data. The easiest way of doing so would be to simply require that the OII numbers for a facility be filed simultaneously with its accident history data. Alternatively, if OSHA facilities were to be identified by their unique EPA facility ID, this linking could also be accomplished.

A number of recommendations flowed from the above two project outlines, including the recommendation to flesh out the first of these projects with CCPS and to work with EPA and the OMB to see if the data problems related to the second project could be ameliorated.

Group 2: Interdependent Security: Business and Regulatory Challenges

Participants: Jim Belke, Stan Laskowski, Phil Lewis, Breeda Reilly, Peter Schmeidler, Larry Yuspeh

Issues –

- There is no quantified estimate of effect of disruption of critical infrastructure for use in prioritizing the need for and level of preventive security
- Find a level risk that is acceptable to the society; find a standard of security against which to judge sufficiency of effort
- What are the levels of privacy invasion and speed of process acceptable to society to deal with potential inaccuracies of identification systems
- Define Site, Transportation and Infrastructure vulnerabilities
- Need to determine the likelihood of terrorist attack
 - (Is there a correlation between the current threat level system [blue, yellow, orange, etc] and risk of attack)
- Need to know how to integrate perception of risk in determining the consequence of a terrorist attack
- Balance need for the security measure with the economic and societal consequence of implementation
- Look at the critical interdependencies (e.g. any infrastructure system)

Risk Management Strategies to Deal with Contagion and Contamination –

- Eliminate contact (quarantine) from other systems
- Immunize, strengthen the system, yet maintain function (e.g. security of flight passengers, vaccines)
- Develop a standard (e.g. ISO 9000) to determine acceptable level security from supply chain partners (+/- audits)
- Improve mechanism for information sharing
 - (eliminate legal downsides to doing so)
- Case-control study (terrorist vs. normal population) to determine important contributing factors to unwanted outcome and eliminate them

Public – Private Partnership

- Homeland Security (FBI, INS, FEMA, Coastguard)
- EPA
- States
- Trade Organizations (API, ACC)
- NGOs (ED, NRDC)
- Insurance Industry
- Airlines & GDS (e.g. Sabre)
- Third Party Inspectors/Consultants

Areas of Research

- Risk analyses for utilities (e.g. water supplies-AWWA)
- Generate a Security Management System like currently available Environmental/Health and Safety Management Systems

- Based on previous work on extreme events do a quantified estimate of effect of disruption of critical infrastructure systems for use in prioritizing the need for and level of preventive security
- Generate a standard on best practices for protecting financial and supply chain systems before and re-establishing them after attack

Group 3: Interdependent Security: Challenges for Insurers and Reinsurers

Participants: David Durbin, Richard Franklin, Howard Kunreuther, Erwann Michel-Kerjan, Geoff Shaw and Norm Willox.

In order to launch a concrete and feasible joint project, the group discussed the opportunity to conduct specific case studies on a common point of interest. The group agreed on the challenges associated with the impact of Terrorism Risk Insurance Act (TRIA) of 2002 on insurer behavior and demand for coverage by firms at risk. In particular, the group felt that it would be important to undertake studies now on what type of program would be most appropriate for replacing TRIA when it is scheduled to expire in 2005. The following issues were discussed in this regard:

- Under TRIA insurers are obliged to offer coverage against certified acts of terrorism to their clients but most of them currently refuse to purchase coverage. We need to understand what factors influence their decisions not to protect themselves.
- Differences in risk perception among different firms faced with a terrorist risk. In particular one should understand how trophy targets view the risk relative to other firms. Do firms who consider themselves to be most vulnerable purchase more insurance? What price do they pay for coverage?
- What are the decision processes utilized by insurers in determining what type of coverage to offer and what price to charge? Similarly what decision processes do firms use in determining whether or not to buy protection?
- What is the effectiveness of different strategies regarding risk assessment, information sharing and public-private initiatives associated with the security of critical infrastructures.

The group recognized the need for a better understanding of how TRIA currently operates as well as investigating the positive and negative features of future arrangements between the private and public sectors such as the Pool Re arrangement in England.

The group also felt there was an opportunity for Wharton/Columbia to discuss with the Treasury Department a role they could play in a study on factors influencing buyer behavior which will be undertaken in the near future. This study complements one which is already underway by Treasury on insurer behavior. By launching such a study soon the Wharton Risk Center could be in a position to present some concrete elements of a proposed program to replace TRIA when it expires at the end of 2004. One could contrast the perception of risk by different firms with the risk assessments undertaken by the leading modeling firms, Applied Insurance Research (AIR), EQECAT and Risk Management Solutions (RMS) using their terrorism models.

There was also agreement that it would be interesting to consider an airport or a group of airports (possibly some hubs) for a case study to determine the types of protective measures that could be undertaken and their impact on the pricing and availability of insurance. (see Figure 1). Such a project would be of interest to Lockheed Martin and LexisNexis as part of the Radiant Trust effort as

well as insurers and reinsurers concerned with providing coverage to the airlines against losses from terrorism. It would be a case study for providing recommendations for a post-TRIA type program.

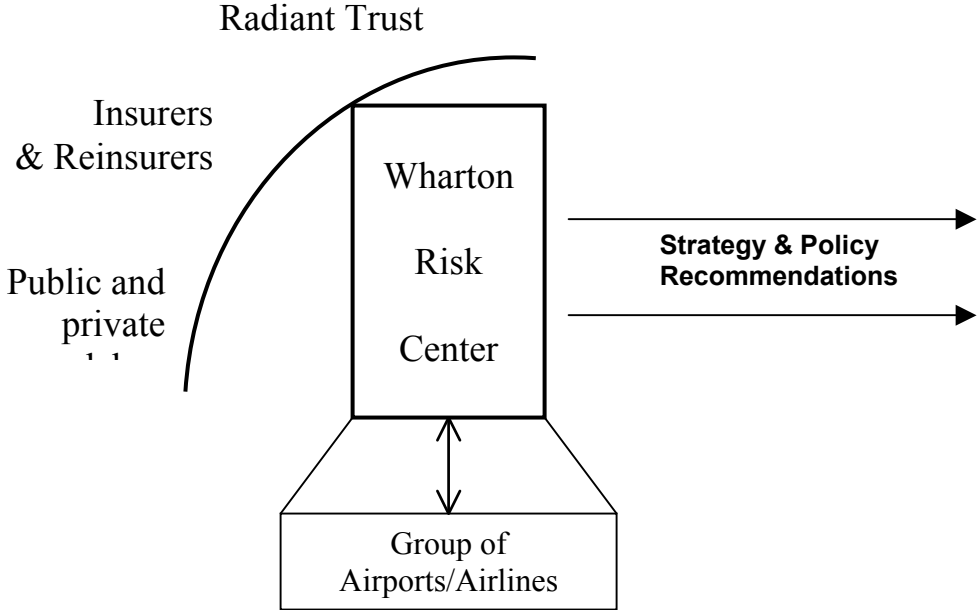


Figure 1. Joint target-study to provide post TRIA recommendations.

Wharton Risk Management & Decision Processes Center
April 29, 2003 – Advisory Committee Meeting
“Extreme Risks, Interdependency and Global Risk Management”
Attendee List

Name:	Company:	Email:
Lane Beebe	Lockheed Martin	
James C. Belke	US EPA CEPPO	belke.jim@epamail.epa.gov
Scott A. Berger	American Institute of Chemical Engineers	scotb@aiche.org
David E. Cummings	DuPont SHE Excellence Center	David.E.Cummings-1@usa.dupont.com
Michael S. Deak	DuPont Safety, Health, Environment	Michael.s.deak-1@usa.dupont.com
David Durbin	Swiss Reinsurance Company	David_Durbin@swissre.com
Michael Elliott	University of Pennsylvania	melliott@cceb.upenn.edu
Richard C. Franklin	ACE INA	rich.franklin@ace-ina.com
Tom Gallagher	Wachovia Securities	tom.gallagher@wachovia.com
Carolyn L. Green	Sunoco, Inc.	clgreen@sunocoinc.com
Dennis Groseclose	Lockheed Martin	dennis.groseclose@lmco.com
Marc Halpern	ECS Risk Control Inc.	halpernm@ecsinc.com
Paul Kleindorfer	Wharton Risk Management and Decision Processes Center	kleindorfer@wharton.upenn.edu
Howard Kunreuther	Wharton Risk Management and Decision Processes Center	kunreuth@wharton.upenn.edu
Stanley L. Laskowski	Institute for Environmental Studies	slaskows@sas.upenn.edu
Philip G. Lewis	Rohm and Haas	plewis@rohmmaas.com
Erwann Michel-Kerjan	Wharton School, Univ. of Penn	erwannmk@wharton.upenn.edu
Elizabeth N. Miles	Johnson & Johnson Safety & Industrial Hygiene	Lmiles@corus.jnj.com
Ulku Oktem	Wharton Risk Management & Decision Processes Center	oktem@nesima.com
Breeda Reilly	US EPA CEPPO	reilly.breeda@epamail.epa.gov
Isadore (Irv) Rosenthal	US Chemical Safety & Hazard Invest. Board	rosenthal@csb.gov
Germaaine Saad	Widener University	germaine.h.saad@widener.edu
Peter Schmeidler	Risk Management & Decision Processes Center	pschmeid@wharton.upenn.edu
Geoff Shaw	Lockheed Martin ISR	geoffshaw@attbi.com
Barry G. Silverman	University of Pennsylvania	barryg@seas.upenn.edu
Norm Willox	LexisNexis	norman.willox@lexisnexis.com
Elaine B. Wright	University of Pennsylvania	elwright@sas.upenn.edu
Larry Yuspeh	Louisiana Workers Compensation Corporation	LYuspeh@LWCC.com