

# Wharton Risk Management and Decision Processes Center Advisory Committee Meeting

## *Theme: Information, Integration, and Interdependency in Assessing and Managing Risks*

**Location: Room F55 Jon M. Huntsman Hall  
The University of Pennsylvania  
April 23, 2004, 8:30AM -3:30PM**

### MINUTES

Attendees: See attached page with names, affiliations and e-mail addresses of all AC members and those that were invited to the meeting.

The meeting was opened by Liz Miles, 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:

- Howard Kunreuther gave a brief summary and introduced the other Center members.
- Irv Rosenthal summarized the prior day's roundtable on Designing and Auditing Management Systems for Safety, Health, and Environmental Risks Related to Chemical Processing." The forum was well-attended by industry, regulators, and academics.
- Paul Kleindorfer gave an update on the Accident Epidemiology Project.
- Ulku Oktem delivered updates on the status of the Near Miss Project and the Pharmaceutical Benefit/Risk Assessment Project and gave a brief description of the upcoming Global Compact Conference ([www.wsconference.org](http://www.wsconference.org)).
- Howard Kunreuther gave a progress report on the Extreme Events Project. The Snapshot for that project, as well as the EPA Cooperative Agreement, were made available in the meeting's handouts and are available online at <http://grace.wharton.upenn.edu/risk/conf0304.html>.

Following the morning break, Third Parties and Reinsurance for Workers' Compensation were discussed:

- Peter Schmeidler introduced the three speakers, who each delivered a different perspective on the issues surrounding workers' compensation.
- William Bozzo, of Dyn McDermott Petroleum Operations Company, delivered a presentation on his company's view on the importance of Third Party Inspections, and the impact it has had on their policy and procedures.
- Larry Yuspeh, of Louisiana Workers Compensation Corporation, spoke about the services his company can offer to employers.
- William Spataro, of American-Re, addressed the issue of the workers' compensation reinsurance market pre- and post- 9/11.

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

Following lunch and the small group sessions, Liz Miles led a group brainstorming session in which a "SIPOC" (Suppliers, Inputs, Process, Outputs, Customers) model for the Risk Center was developed. The resulting chart is attached.

# SIPOC

## SUPPLIERS

- Industry
- Academia
- Government
- Students
- Modelers
- Trade
- NGO(s)

## INPUTS

- Data
- Cash
- Technical expertise
- Champion
- Strategies
- Criteria
- Methodologie
- Values
- Students
- Accountabilit

## PROCESS

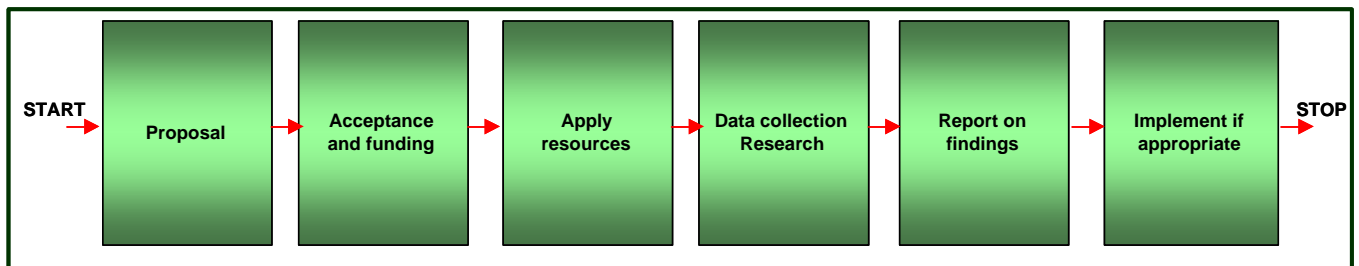
Conducting research in the area of low probability-high consequence events

## OUTPUTS

- Technical papers
- Policy proposals
- Savings
- Student projects
- New Business
- Revenue for the center
- Recommendations
- Consensus
- Trust
- New Questions
- Research
- Metrics
- Standards
- Data
- Knowledge

## CUSTOMERS

- Penn
- Advisory committee
- Trade groups
- NGO(s)
- Public/private leaders
- General public
- Students
- Academics



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# Summary of Group Discussions

## Group 1: Enterprise Risk Management

Present: William Bozzo, Yong Kang, Shelley Metzenbaum, Liz Miles, Richard Morgenstern, Ulku Oktem, Irv Rosenthal, Peter Schmeidler, Bill Spataro, Larry Yuspeh

The group started a productive discussion concerning industry self-assessment. OSHA or other regulatory agencies may consider providing a checklist or a series of recommendations for firms to use self-assessment. Without such guidance, industry self-assessment may fail to be credible and the results may not be comparable across firms. This kind of self assessment highlights the importance of the cooperation between the public and private sector. The roles and responsibilities of each sector have to be defined clearly. One of the greatest concerns for regulatory agencies is that they don't have enough resources to inspect a great number of firms. The advantage of industry self-assessment or other industry self-regulations is that it can cover a lot of companies.

The group discussed possible ways to study the effectiveness of self-assessment. An agency can design and administrate a survey to all firms under regulation. In the survey, firms are asked what process safety management practices they are using. To make all firms respond to the survey and eliminate the problem of selection bias, the agency should make the survey mandatory. Firms that never may be seen via a random inspection by the agency would be touched by the self-assessment and possibly create an awareness at that firm of items that lead to risk reduction. If we can also collect data on firms' performance, we can correlate these two data sets and study whether good PSMs will actually lead to performance excellence. The role for the Center is not to design the guidance, but to test whether such guidance can work.

The group also had discussion on workers compensation. It was proposed that worker's compensation may act as a surrogate for overall enterprise risk management. Workers compensation insurance "books" usually consist of small-size business. These small businesses are often rejected by commercial insurers for a variety of reasons, but they eventually must be covered for workers comp. Since small businesses are very important to the society, a risk pool of workers' compensation for these firms is necessary. Even in the absence of a risk pool, for a given commercial sector if one plots the number of firms versus claims, rather than a bell shaped normal curve, one may find three nodes. One node is the firms that manage safety well with small claims, the second node is the average firm and the last node is the poorly performing firms. One of the biggest problems of risk pooling is that participating firms at the high claim end often don't have proper incentives to reduce risks. The premium of risk pooling is not based on individual members' past experience. Instead, it is an average rate evaluated on the pool. The risk reduction efforts by some members will be taken advantage of and diluted by other high-risk members. There is 100% transfer of risk with workers comp, i.e. no deductibles or caps on claims, which can lead to moral hazard; the lowest performers determine that by paying their premiums and not investing in safety they can maximize cash flow while still being insured. Voluntary inspection may not be able to solve this free-riding problem. Structural changes are needed but the political will to bring this about is lacking.

The group also discussed the possibility of studying the impact of ISO 14001. Most of the previous research on ISO 14001 was based on survey data and lacked objective performance measurements.

ANSI-RAB is currently considering a project to study the impact of ISO 14001 with sound performance indicators. Wharton may be able to contribute to this study.

The group also discussed factors that form corporate risk strategies. Different companies may have very different approaches to risks. They may value risks differently. What studies can be done to learn what firms' acceptable risks are and what are not?

The three potential areas for research that were identified are:

1. Propose that an agency disseminate a self-assessment vehicle that is mandatory to complete. There is a performance database available that tracks results in the area of the self-assessment. What is the correlation between the self-assessment and performance? (An example would be workers comp and the data could be OII's or experience modifiers). Potential funders could be OSHA, State Dept.s of Labor, Insurance consortia.
2. How do commercial enterprises determine the risks that are acceptable to their enterprises? Would expect we would focus on our traditional EHS area for this question. Potential funders would be US or state government agencies or international groups like the UN or the EEC.
3. Does ISO 14001 certification lead to better environmental performance? A few studies already performed in this area indicate no correlation or a negative one. The funding for this could come from ANSI-RAB which is actively developing a project on this topic.

## **Group 2: Chemical Process Safety**

Present: Deborah Dietrich, Ted Emmett, Paul Kleindorfer, Dinah Koehler, Kiwan Lee, Philip Lewis, Eric Orts, Gerald Poje, Breeda Reilly

Introduction:

**Gerald Poje:** There are several questions we are interested in.

- 1) During investigations, how can we get information as much as possible and as direct as possible?
- 2) How can information be managed to reduce risk? What can we learn from the past history to reduce risk? What are the causal factors that contribute to the occurrence of accidents and its offsite consequences?
- 3) What can we learn to reduce the offsite health consequences? For example, develop disease identification and prevention procedure etc.

We, as an organization, are developing a dataset of historical accidents (already includes 160 accidents) that might be more accurate than RMP, at least with respect to the information on injuries.

**Paul Kleindorfer:**

We would like to focus our discussions on informational regulations and how to continue the works on RMP info\*data in the next period (say, next 2 years).

- 1) After 2004 RMP data is ready, we will repeat Accident Epidemiology Analyses (how community characteristics and firm's financial/nonfinancial situations affect the frequency and severity of accidents) and compare the findings with those in the analyses of previous round of data. Beside the questions we already visit, what else question we should pursue?
- 2) How to better integrate TRI and RMP for our research?
- 3) Event Response Issue.
- 4) In the second round data, we expect to see that the facilities' level of hazard significantly decreases. We have no doubt that facilities might have changed their production process, or changed the amount and location of chemicals. But we are also interested in knowing how (to what extent) the reduction can be contributed to RMP (information regulation).

## Discussion:

### *Information Sharing: to what extent RMP data can be publicly available?*

- ❑ Some pressures have been put to EPA to publicize at least part of RMP info\*data. [One environmental group has brought a lawsuit against EPA]
- ❑ Toxic Release Inventory has been viewed as a successful story in informing the public.
- ❑ How to balance the need to informing and preparing the public and the concerns on homeland security?

### *Interesting Questions:*

- ❑ What aspects of RMP data can help the public to prepare for some events (win-win situation)?
- ❑ Besides preventing the accidents in the first place, how to better prepare the first responders. (Department of Homeland Security has many grants. These grants are usually awarded to local communities...)
- ❑ Communication is very important. Communication problems may dominate the performance for actual events.
- ❑ Do we have data to study this?
  - DHS might have some data on emergency responses such as how many police are available, how many hospitals are in nearby area? (These information might be classified.)
  - There may be a state that has done some data collection (date acquisition could be part of the "project").
  - ACC might be another source for information.

### *Future Work on 2004 Data*

- ❑ Trends description and statistical analysis of the data;
- ❑ Repeat and expand community, financial, process and regulatory studies;
- ❑ We are interested in knowing whether RMP has a significant impact on Chemical management
  - Pre 9/11 vs. Post 9/11
- ❑ GPRRA Results: value of RMP data to EPA and other stakeholders;
- ❑ Cost of this program vs. benefits;
- ❑ TCPA Example in NJ: explain the results. We must be very cautious in interpreting the results;
- ❑ Case studies and sector studies are needed to understand causal mechanism underling these results;

*Some points:*

- ❑ IST: need to focus on specific sectors, company types, and community types...
- ❑ A few case studies focusing on certain types of sectors, certain types of chemicals would be very valuable..
- ❑ Confluence of OSHA PSM and EPA RMP
  - How has PSM helped to reduce risks [Does this influence differ for small business vs. big firms]
- ❑ Water utilities might be a good sector to do case studies. 1) They are essential; 2) many have been viewed as terrorist targets.
- ❑ Benchmarking opportunities: locating individual companies/sectors for specific metrics [in terms of accidents, injuries, TRI etc.]. This might create competition among firms, especially among publicly traded firms.
- ❑ Develop a template to promote dialogue: knowing what we don't have is an aggressive approach to learning from others.

### Group 3. Extreme Events Including Terrorism

Present: Richard Franklin, Carl Hedde, Howard Kunreuther, Donald Mango, Erwann Michel-Kerjan, Alex Muermann, Geoff Shaw, Kent Smetters and Craig Tillman.

This small group discussed the challenges facing industry, insurers, reinsurers and federal government in dealing with extreme events, primarily terrorism-related risks. The group discussed the near-term challenges associated with TRIA (Terrorism Risk Insurance Act of 2002) and the alternative arrangements that should be considered for dealing with terrorism and other extreme events.

The group recognized the need for a better understanding of how the market would react if TRIA was not renewed in 2005. In particular, if the private sector were held responsible for covering terrorism risks then both the insurance industry and the reinsurance industry would be on the front line.

The following issues related to providing insurance and its relationship to protection were discussed:

- public and private responsibilities in strengthening possible targets (government protection zone versus private firms' headquarters)
- preventing possible attacks and providing adequate financing should a new large-scale terrorist attack occur on the US soil
- private market securitization of the risks of terrorism;
- what one can learn from research on other extreme events such as natural disasters?

#### **Public-private information sharing**

While some progress has been made in modeling potential losses associated with a wide range of scenarios of attack, there are real challenges in better understanding the frequency of such attacks. This requires more systematic information sharing. Approximately 85% of U.S. critical infrastructure is owned or operated by private firms who have developed large data sets on their operations and where there are significant interdependencies. (e.g., between airlines). These organizations may not want to share such sensitive data with government agencies for fear of compromising business

competition or privacy issues. This was illustrated recently with the airlines being sued for sharing large-scale data sets on passengers with the federal government. The group debated the question as to the possibility of developing an insurance market for covering risks associated with information sharing between private data owners and USG agencies as well as inter-industries for the purpose of shoring up homeland security. Further work and research partnership would be needed to study the feasibility of such a market.

### **Providing Protection Against Extreme Events**

During the past year the Wharton Risk Center has launched several studies on terrorism and other extreme events and examined the need for public-private partnerships for dealing with protection and insurance against extreme events. The group suggested building on this research and other ongoing Risk Center activities on extreme events by launching the following joint projects with industry in the coming weeks:

- How risk information is processed by those demanding and supplying protection and the impact it has on the market for insurance against terrorism and other extreme events
- Market reactions to the TRIA sunset provisions; alternative or complementary private mechanisms and possible public-private partnerships;
- Challenges associated with analyzing both interdependent security (IDS) *and* terrorism risk insurance coverage issues as linked components;
- Impact of risk perception on investment strategies in critical infrastructure protection and loss reduction, including the role of insurance and reinsurance