

Wharton Risk Management and Decision Processes Center Advisory Committee Meeting

Theme: Effective Public-Private Partnerships for Dealing with Extreme Events

Location: Room G55 Jon M. Huntsman Hall
The University of Pennsylvania
December 10, 2002, 8:30AM -3:30PM

MINUTES

The meeting was opened by Phil Lewis, Chair, 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:

- Ulku Oktem providing a status report on the near miss project
- Paul Kleindorfer summarized the key finding from the Systems Approach to Terrorism Conference in Washington, DC in July and provided an overview of the forthcoming Workshop on January 29-30th at Wharton on *Environmental Management Systems and Financial Incentives in the Public Sector* jointly sponsored by the Institute for Environmental Studies at Penn and the Wharton Risk Center.
- Howard Kunreuther provided a summary of the Oct. 11th meeting on extreme events and discussed plans for a future Roundtable in the spring focusing on the challenges and opportunities of insurance and reinsurance in managing extreme events.
- Mike Elliott provided a status report on the accident epidemiology project and discussed the future Roundtable on Risk Management Plans on March 4th at Wharton.
- Peter Schmeidler gave an update on the third party inspection project and noted that the Risk Center may be planning a Roundtable on the topic in the winter.

Following the morning break, there were brief presentations on how Center Sponsors viewed Private-Public Partnerships in the context of the research projects currently being undertaken between their organizations and the Wharton Risk Center:

- Breeda Reilly provided an overview of the US EPA/CEPPO Cooperative Agreement on the implementation of Section 112(r) of the Clean Air Act Amendments of 1990.
- Robert Chapman provided a perspective on the National Institute of Standards and Technology project on "Implementation Challenges for Building Safer Communities"
- Geoff Shaw gave a status report on the Radiant Trust project on "Managing Interdependent Security Risks"

The morning discussion concluded with an open discussion with the Advisory Committee led by Paul Kleindorfer and Howard Kunreuther on the Challenges in Managing Extreme Events. Building on this initial discussion, three small groups met over lunch to discuss the following questions in the context of specific problem areas:

- What project would be appropriate for the Risk Center to undertake that would require public and private sector involvement?
- What type of data will be needed for conducting this study and where can it be obtained?
- In what ways would this research be of interest to key interested parties in your organization?

Following lunch, 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 and whether we should have one or two AC meetings per year. The next meeting will be on April 29, 2003 at which time there would be a discussion as to whether another meeting should be held in the late fall of 2003 or we should wait until the spring of 2004.

AGENDA – December 10, 2002

Effective Private- Public Partnerships for Dealing with Extreme Events

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	Howard Kunreuther, Wharton
	Near Miss Project Review	Ulku Oktem
	Systems Approach to Terrorism Conference	Paul Kleindorfer
	Environmental Management Systems and Financial Incentives in the Public Sector Workshop	Paul Kleindorfer
	Managing and Financing Extreme Events Meeting	Howard Kunreuther
	RMP Roundtable (March 4, 2003)	Mike Elliott
	Third Party Roundtable	Peter Schmeidler
10:15-10:30	Break	
10:30 – 11:15	View of Private-Public Partnerships from Risk Center Sponsors	
	EPA Cooperative Agreement	Breeda Reilly
	NIST Project	Robert Chapman
	Radiant Trust Project	Geoff Shaw
11:15-12:15	Introduction to Small Group Discussions:	Paul Kleindorfer Howard Kunreuther
<p>Since September 11th there has been considerable discussion as to how to address extreme events by combining private- public partnerships. We will discuss the appropriate roles of both sectors in the context of specific problems that the Risk Center is now currently engaged in. To explore the theme of the day, and as a prelude to the Small Group Discussions, this introductory discussion will focus on Advisory Committee members' views on the challenges associated with developing effective programs for addressing extreme events.</p>		
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.	
3:00-3:30	Future Plans of Center	Philip Lewis
3:30	Adjourn	

Small Group Discussion Summaries

Group 1: Interdependencies and Extreme Events.

Participants: Robert Chapman, Michael Dunn, Richard Franklin, Carl Hedde, Thomas Hiltmann, Howard Kunreuther, Joanne Linnerooth-Bayer, Erwann Michel-Kerjan, Geoff Shaw, Michael Steele

The group discussed several points before focusing on possible short-term projects for the next semester. Main discussion points are highlighted below.

- The group expressed the need for data to gain a better understanding of the likelihood and consequences of extreme events. Both governmental agencies and private sector face a lack of organized data collection so there is a need for an organized data base on extreme events for research projects, decision-making, policy evaluation, and pricing of insurance and reinsurance contracts. Institutions at Wharton, like the WRDS, may be able to provide the infrastructure to create such a data set as soon as relevant data for ongoing projects may be available.
- It would be useful to explore mechanisms for sharing private information among several partners and defining effective information exchange processes. The idea of developing a *market for extreme risk information* was introduced.
- Another point of discussion was the impact on insurers and reinsurers of the recent Terrorism Insurance Act signed in November by the President. The reinsurers cannot exclude terrorism from the umbrella treaties they sell to insurers. However, the risk of terrorism appears as a specific line on their treaties. Hence, there is likely to be competition among reinsurers who may then under price their coverage against terrorism. As there is limited data on which to price terrorism insurance, the Act creates real difficulties for both insurers and reinsurers.
- The interdependencies of risks and possible contagion problems from a single event play a crucial role and have to be considered as a key aspect for future research projects. Those projects should focus not only on terrorist or malevolent threats but also on other extreme events. The Wharton Risk Center has expertise in the areas of natural disasters and chemical hazards that will be useful in this regard.
- Participants addressed the need for not only focusing on a US perspective but also conducting international studies which relate to public-private partnerships in other developed and developing countries. The comparison between different terrorist insurance programs introduced in European countries and the U.S. Terrorism Insurance Act would be of some interest. International studies on critical infrastructure protection was also discussed.

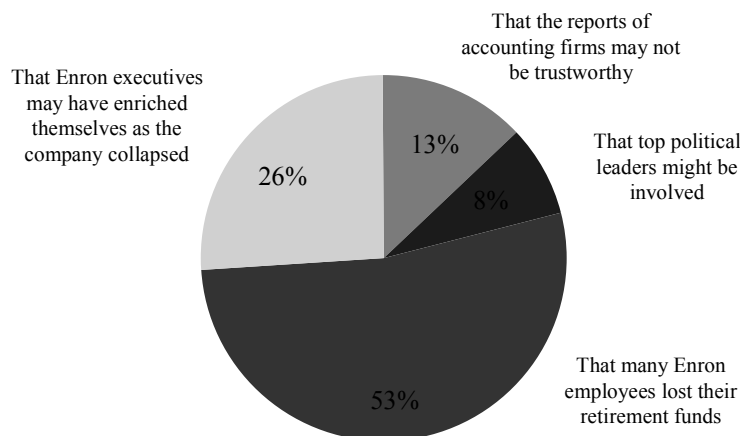
Howard Kunreuther expressed the need for concentrating on possible prototype research projects that were limited in scope that could set the tone for more ambitious projects that the Risk Center could focus on. Four possible projects were discussed in this regard:

- **Infrastructure:** Consider In the spirit of the recently completed project on mitigating a single-apartment in Istanbul against future earthquakes, one could study the vulnerability and economic impacts of a bridge susceptible to collapse and the cost-effectiveness of possible risk mitigations program against malicious or terrorist acts and/or natural hazards.
- **Ports:** Consider an airport that faces multiple hazards with extreme consequences. It constitutes a *hub among numerous interdependent networks* that assure the business and social continuity of an area or even a country. Focusing on one specific airport (airline security) may include be appealing to several interested partners such as like Lockheed Martin, insurers and reinsurers, commercial aviation and governmental agencies in the US and abroad.
- **Chemical accidents:** Building on the current research activities under the EPA Cooperative Agreement as it relates to the chemical accident database and the role of third party inspections and insurance in dealing with catastrophic risk.

Group 2 (ER): Paul R. Kleindorfer, Chrysoula Komis, Ulku Oktem, James Schoonover, Greg Travis, and Thomas Weber

The small-group discussion began with a discussion of the erosion of trust not only in the public sector, but first and foremost in the corporate governance of private enterprise. This general trend is compounded by recent accounting scandals, such as Enron or Worldcom, as illustrated by the following pie chart from the Pew Research Center.

The Single Worst Thing about Enron is...



Source: Pew Research Center for the People & the Press, February 2002.

The discussion then proceeded to the issue of building a business case for effective enterprise risk (ER) management systems is the building. Existing management standards such as ISO 14000 could be reexamined with respect to their associated costs and benefits. A systematic analysis based on existing data, and perhaps some new data related to programs like OSHA’s VPP program, could yield

important insights on how to make a more compelling case for the introduction of process safety standards.

For instance, there is ample industry data available from OSHA such as for instance injury rates, which can be tracked over the membership lifetime of participating companies. Declining incidence rates and workers' compensation resulting from work-related injuries can be related to the implementation of safety standards. A closer examination of this data and its business implications relating to a medium-term economic justification for introducing standards that restrict current practices in companies seems promising. As a concrete example one participating OSHA firm was able to reduce its safety cost from \$2 million per annum to about \$300,000 p.a. Thus, despite significant initial investments upon joining the OSHA program, companies may expect to realize substantial benefits over time.

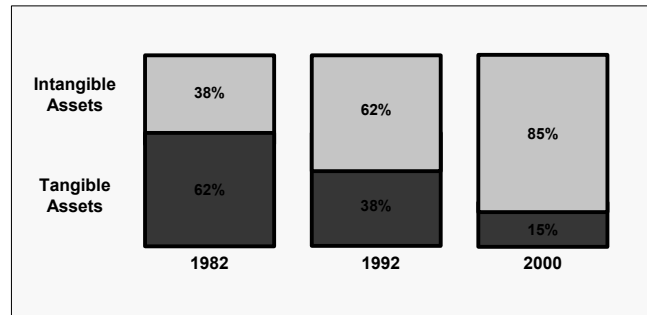
The rest of the group-2 discussion is summarized in the form of the slides that follow that summarize the group's discussion and recommendations to the plenary.

The shift from tangible to intangible assets shown below underlines the importance of capabilities such as process safety excellence. These may not show up as tangible assets, but they could have significant market and social value.

The second slide below shows one aspect of this debate in the form of the difference in the value of shares of publicly traded firms in the petroleum sector between those firms in the upper quartile of performance on environmental measures and the lowest quartile. Clearly, excellence in the environmental area is at least strongly, positively correlated with stock performance.

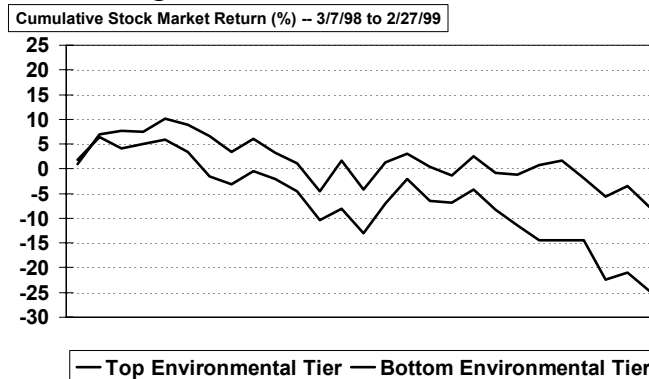
Value Shift from Tangible to Intangible ...

Percentage of Market Value Related to:



Source: Summary of multiple academic studies

Trading Results -- Petroleum Firms ...



SOURCE: Innovest Strategic Value Advisors, 1999

The group also discussed the key notion of integrating various systems (quality, safety, risk, etc.) to avoid duplication and to achieve efficiency. This idea, integration, has to be one of the central drivers of the business case of process safety and process excellence.

Finally, the group discussed some characteristics of old versus new industry challenges, whereby the chemical and process industries were mostly thought of as belonging to the “old industry” group.

Integration

- Environmental, Safety & Health Systems, Risk Measurement/Mgmt, Site Security, RMP Process Standards, Quality, etc.
- Management doesn't have a choice about whether or not to be efficient; Economize on Cost and Value Drivers (Fixed Costs); ?? IT/ERP
- Management Systems Standards are proliferating; what is best practice for integration?
- Leverage Points: Destroy the Business? Go to Jail? Become Efficient?

Old Industry versus New Industry

- Can be more transparent without losing your shirt in the Old Industry than in the new industry.
- Transparency as a basic value?
- Sharing was not common in the 1950s, even in the Old Industry. How do we communicate the value of sharing, e.g. among VPP sites or in expanding the RMP*Info Data?
- Continuing dialog in appropriate forums can be important in promoting this sharing, in a way that does not compromise sensitive information.

Group 3: Third Party RMP Audit Future Directions

Participants: Ted Emmett, Ira Feldman, Paul Freeman, Yong Kang, Phil Lewis, Irv Rosenthal, Peter Schmeidler

Peter Schmeidler presented a brief description of the current status of the project to revise Section 112(r) of the Clean Air Act to facilitate third party inspections in lieu of EPA audits. Two major areas of discussion followed and the highlights are found below.

- Although nothing official has been proposed that would link security audits with Risk Management Plan (RMP) inspections, this combination appears to be a logical extension to the work that the Center has undertaken on chemical accidents prior to Sept. 11th. It would deliver audit efficiency and allow facilities to better internalize the costs of these inspections.
- Unlike some countries in Western Europe, where inspection costs are covered by the government, the USA has not been willing, as a society, to totally fund inspections. Lack of funds leads to resource limitations at EPA so only a small fraction of the 15,000 RMP sites are likely to be inspected. The Office of Homeland Security will probably face the same limitations. Thus, there is an opportunity to leverage third party inspections as a concept to cover both needs.
- At this juncture, society is uncertain about the criteria that will provide the perception of adequate safety. The Risk Center could facilitate the discussion of the setting of a standard against which security performance is measured. This would provide an objective and a framework for the *security inspection*.
- There appears to be a significant effort to privatize federal jobs. If this plan moves ahead, it should provide added opportunities for the concept of third party inspections. A note of caution was voiced about the potential difficulty of adding Security to the current rule.
- Can Environmental Management Systems (EMS) be used as a vehicle to further third party inspections? Can EMS be woven into the 112 (r) revision so that the third party auditing that is associated with EMS will be conferred to third party RMP auditing? EPA has programs in place that recognize the use of EMS, so the selling of the concept should be simpler than starting from scratch. A possible approach would be to create a set of sector specific metrics (ammonia and chlorine come to mind). Performance measures and data to be reported would be developed.

Summary Proposals

- Use Security as an opener to reenergize the RMP third party audit project through discussions at Round Tables.
- The Risk Center facilitates the development of objective criteria to measure practices that will provide adequate Security.
- Using the above criteria, develop loss models for policy and insurance purposes.
- Build on the EMS (or equivalent) experience with third party audits and consider a linkage to the revision of 112 (r).