

ERM Case Studies

Timur Gök

Audit Committees:

Improving Performance Through Compliance

CAACM

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Case Studies

- Seminole Electric Cooperative Inc.
 - Not-for-profit electrical generation and transmission coop
- Peabody Energy
 - Producer and distributor of coal
- Agricore United
 - Canadian agri-business firm (acquired United Grain Growers)

R. Banham, "Fear Factor," *CFO*, June 2003.

Seminole Electric Cooperative

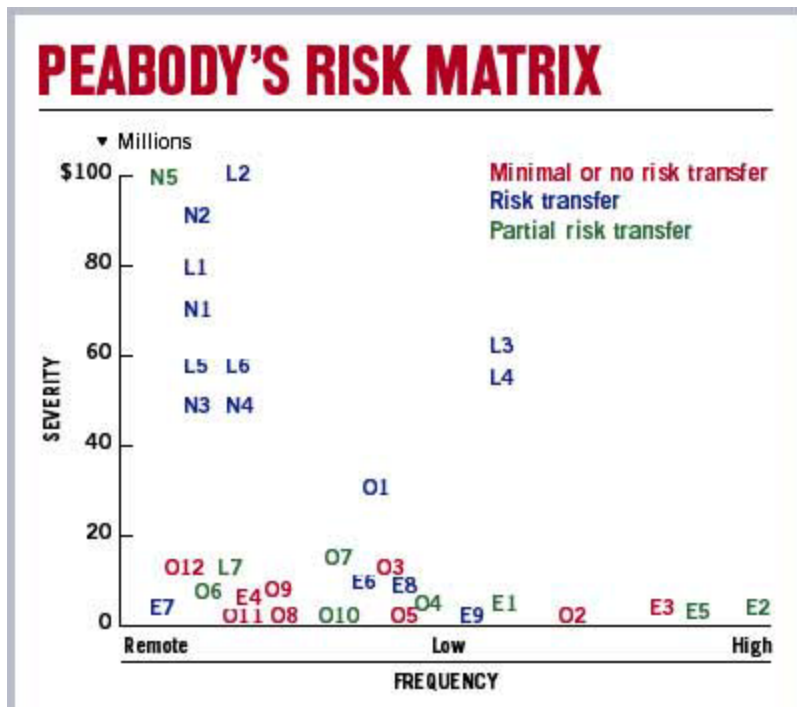
- Worked with outside consultants
- Multi-departmental committee of eight
- Questionnaire to 110 people to identify and list risks in their areas
- Identified 60 risks
- Boiled down to top 25
- Held workshops to determine whether they were being mitigated and monitored

Seminole Electric Cooperative

Five top risks

1. Loss of electrical-generation capacity due to an unplanned or forced outage (such as tornadoes and terrorist incidents)
 2. Loss of market
 3. Optimum mix of power resources
 4. Fuel price volatility
 5. Regulatory risks (such as stricter environmental standards)
- Assigned probability, frequency, and severity
 - Assigned a dollar number to each
 - Final step – risk-mitigation options

Peabody Energy



- OPERATIONAL—EMPLOYMENT**
 - E1 Employers' liability
 - E2 Workers' compensation (State)
 - E3 Federal black lung
 - E4 Employment-practices liability
 - E5 Employee benefits
 - E6 Fiduciary liability
 - E7 Kidnap & ransom
 - E8 Employee dishonesty (Crime)
 - E9 Employee conduct
- OPERATIONAL—LIABILITY**
 - L1 Directors' & officers' liability
 - L2 Aviation
 - L3 General liability
 - L4 Auto liability
 - L5 Products liability
 - L6 Marine
 - L7 Vendor & contractor liability
- OPERATIONAL—NATURAL**
 - N1 Underground property
 - N2 Surface property
 - N3 Business income
 - N4 Contingent business income
 - N5 Business continuity
- OPERATIONAL—OPERATIONS**
 - O1 Joint-venture operations
 - O2 Inventory obsolescence
 - O3 Key supplier
 - O4 Contractor
 - O5 Equipment availability
 - O6 Explosive-material safety
 - O7 Power interruption
 - O8 Labor interruption
 - O9 Geological conditions
 - O10 Safety
 - O11 Hazardous material & environmental issues
 - O12 Technology

Agricore United

- Formed by merger of Agricore and United Grain Growers
- Seminal application – UGG
- Identified 30 areas of risk
 - Top risk – grain volume (weather)
- Explored hedging
- Settled on insurance program combining all risks subject to a total dollar threshold

Case Study

Wal-Mart

ERM at Wal-Mart

- Formulated a corporate ERM plan in the 1990s
- Five-step process
 - Risk identification (probability and impact)
 - Risk mitigation
 - Action planning
 - Performance metrics
 - Shareholder value/return on investment

ERM at Wal-Mart

- Risk identification
 - Framework of business objectives
 - Sales growth; higher profitability; number of new stores; ...
 - Seven risk categories
 - External: legal/regulatory; political and business environment
 - Internal: financial; strategic; operational; integrity
 - Four to five hour risk identification workshops

ERM at Wal-Mart

- Risk identification (continued)
 - Leadership team identifies top five risks that may prevent them from meeting their business objectives in the next 18 to 24 months
 - Compile list of 20 to 30 risks
 - Vote and rank risks until some agreement

ERM at Wal-Mart

- Risk mitigation
 - Another facilitated workshop
 - Further define three to five most important risks
 - E.g., Operations, HR, training and legal departments participate in scrutinizing employee risks
 - Workshop cognizant of reducing workload by identifying unnecessary activities

ERM at Wal-Mart

- Action planning
 - Project teams create plans that identify responsibilities and timelines
 - Teams implement plans over several months
- Performance metrics
 - Goal is to automate capture and reporting
- Demonstrate shareholder value
 - “When you really have a good understanding of risk, it opens up a whole new field of opportunity for the organization”

Case Study

DuPont

E.I. du Pont de Nemours & Co.

- Founded in 1802
- Three major transformations
- Started to improve its RM processes in 1995
- Initial focus was derivatives (COSO)
- Benchmarked against other major corporations

Framework

After benchmarking, DuPont established

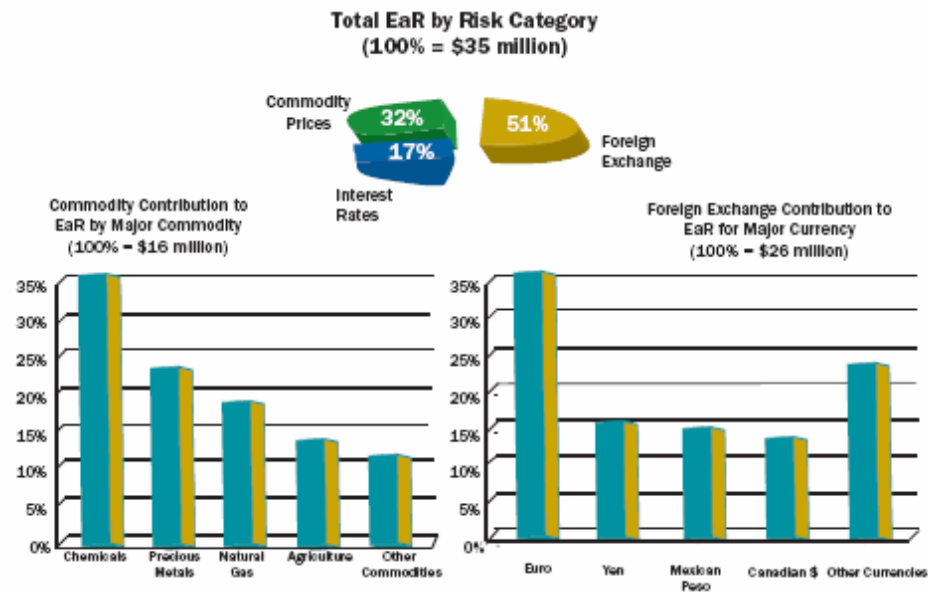
- Corporate-wide policy
 - Philosophy; risk objectives; authorizations; risk committee (headed by SVP and CFO)
- Corporate-wide guidelines
 - Hedging; controls; valuation; monitoring
- Line management strategies and procedures
 - Risk Management Network as consultants

Integrated View of Risk

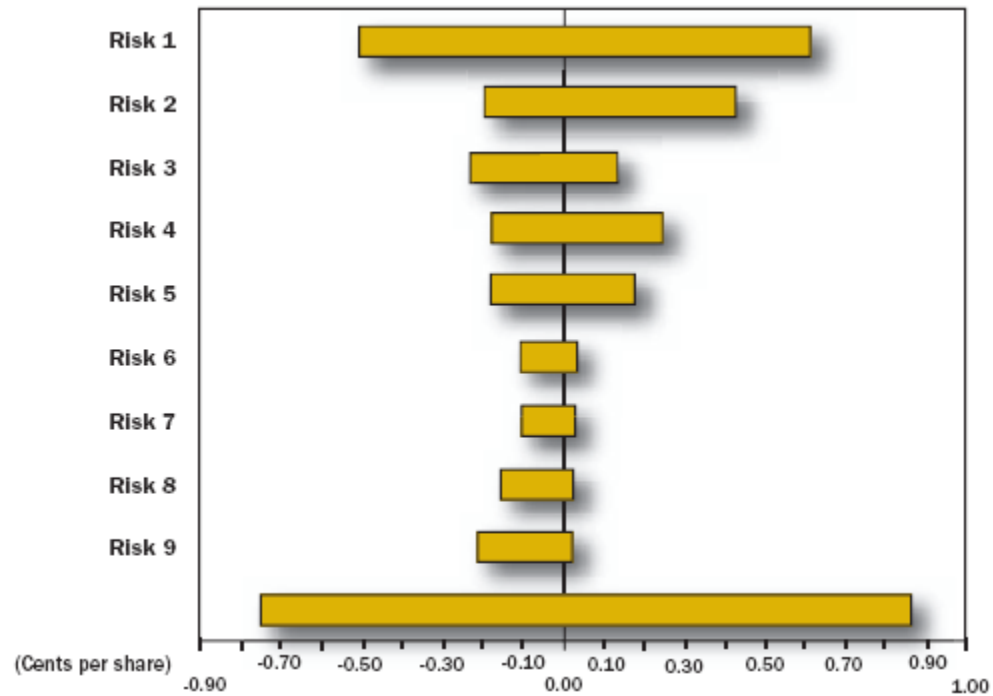
“Robust quantitative approach”

- Target
 - Sustainable earnings growth
- Strategy
 - Set up a value creation process, not just a control process
- Instrument
 - Earnings at risk

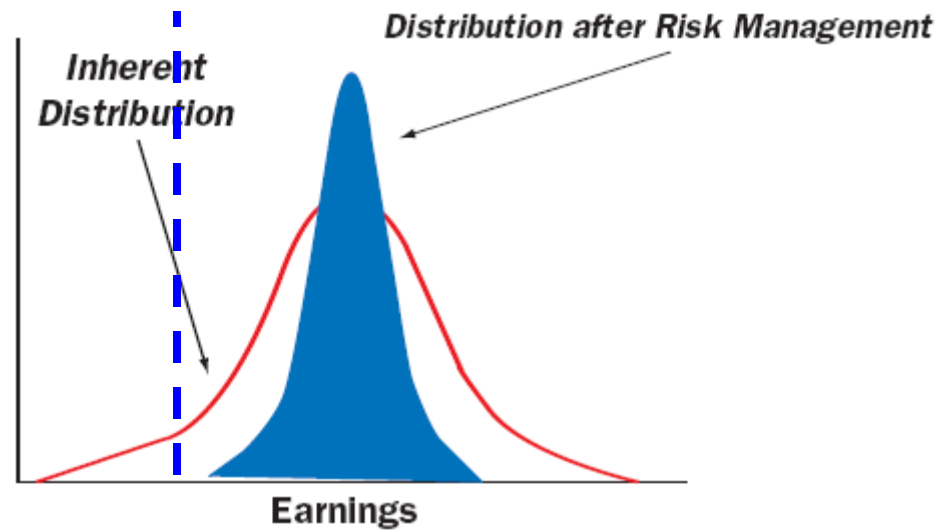
Earnings at Risk by Risk factor



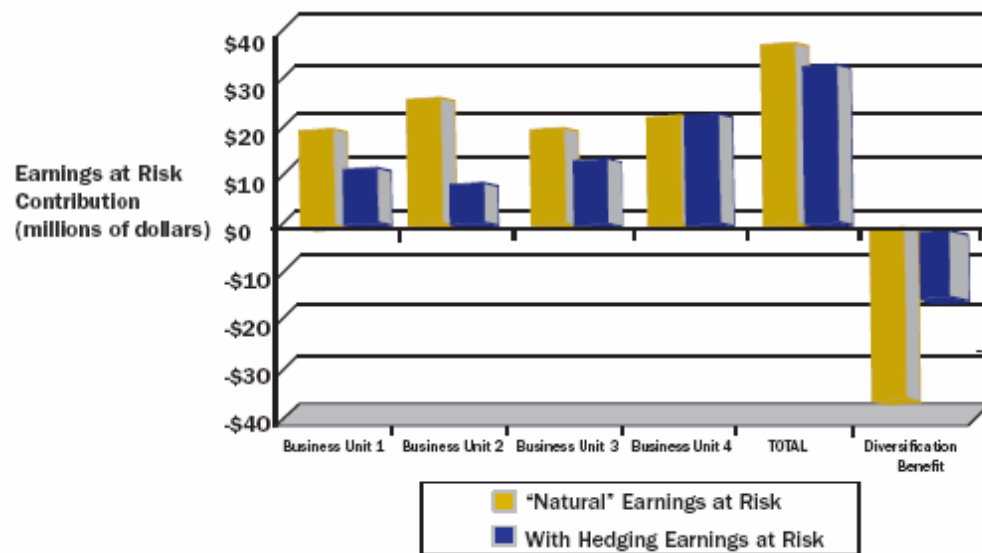
Tornado Chart



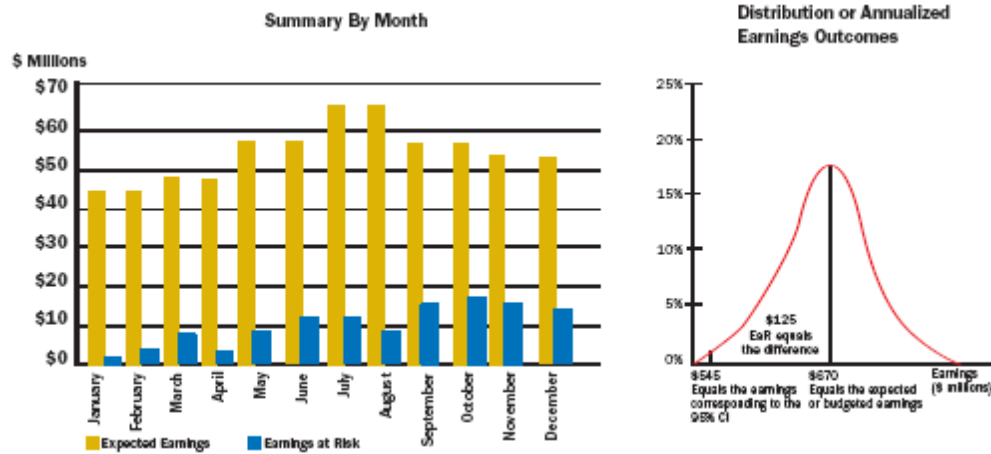
Goals of Risk Management



EaR Hedge Effectiveness



Expected Earnings and EaR



Case Study

Financial Risk in the U.K.

Tail Risk

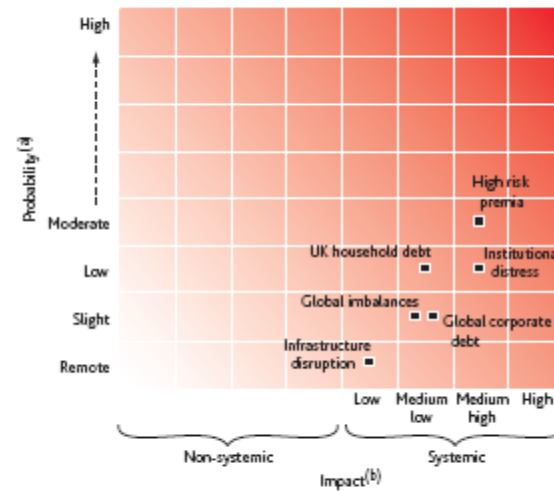
Table B Sources of tail risk in the period ahead: change in assessment since October 2007

Vulnerability	Change in assessment since October 2007	
	Probability ^(a)	Impact ^(b)
High risk premia	A slight increase	A significant increase
Global corporate debt	A slight increase	A slight increase
Institutional distress	A slight increase	A significant increase
Infrastructure disruption	Broadly unchanged	A slight increase
Global imbalances	Broadly unchanged	A slight increase
UK household debt	A slight increase	A slight increase

Source: Bank of England assessment.

- (a) Assessed change in the probability of a severe crystallisation of a vulnerability at some point over the next three years.
 (b) Assessed change in the expected impact on financial stability if a vulnerability is triggered in a severe scenario.

Chart 14 Judgement on levels of likelihood and impact of key sources of tail risk



Source: Bank assessment.

- (a) Probability of a severe crystallisation of a vulnerability at some point over the next three years.
 (b) Expected impact on financial stability if a vulnerability is triggered in a severe scenario.

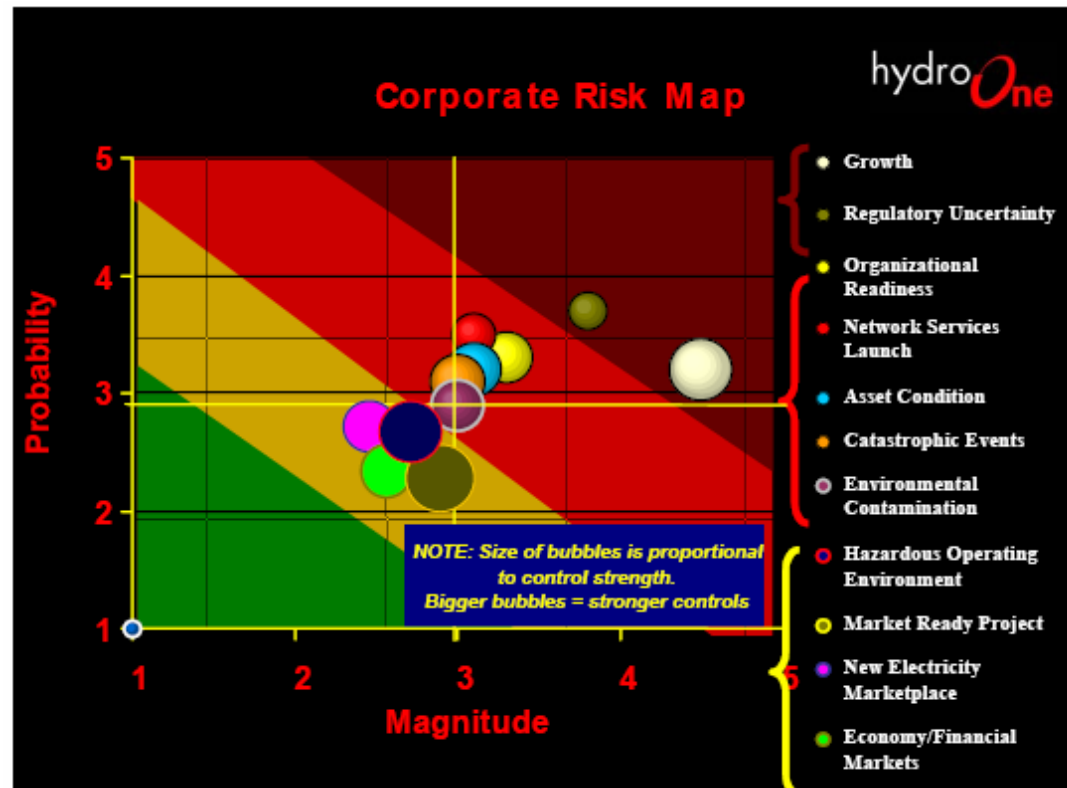
Case Study

Hydro One

ERM at Hydro One

Score	Rating	Description
5	<i>Virtually Certain</i>	95% probability that the event will occur in the next 5 years
4	Very Likely	75% probability that the event will occur in the next 5 years
3	Even Odds	50% probability that the event will occur in the next 5 years
2	Unlikely	25% probability that the event will occur in the next 5 years
1	Remote	5% probability that the event will occur in the next 5 years

ERM at Hydro One



Timur Gök
Regional Director, PRMIA Chicago
Department of Finance
Northern Illinois University
DeKalb, IL 60115
815/753-6395
tgok@niu.edu