



SOCIETY OF ACTUARIES

**ERM Symposium  
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**D4-ERM: Is There Anything Beyond the Hype?**

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ENTERPRISE RISK MANAGEMENT  
**ERM**  
Symposium  
Where Cutting Edge Theory Meets Some of the Art Practice

*Is There Anything  
Beyond the Hype?*

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# Introductions

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## Overview



- Potential Causes of First Generation ERM Failures
- Designing a Hype-free ERM System
- Questions and Answers

## Potential Causes of First Generation Failures



- Not discussing specific companies
- Few publicly published critiques of ERM Systems
- Any connection to actual companies is purely coincidental

## Compliance as Sole Focus



- To satisfy regulators or supervisors only
- Not using your ERM system, there is no connection between its existence and success or failure
- Shimpi – “far from being a compliance exercise, risk management is a strategic imperative and should be treated as such.”

## Voice in the Wilderness



- CRO identified problem, but no one listened
- ERM does not have sufficient credibility in the company
- Ingram – “be concerned if .. Attitude is ... nobody believes those stress tests anyway, so we don’t put much time into them.”
- Ingram – good ERM has “Open communication between business units, risk management staff and top management.”

## Dismissal of Tail Events



- “That will never happen”
- Never say never
- Either determine probability is too low, or stop analysis at VAR point
- Nocera references anecdote about Goldman Sachs getting beyond their VAR and deciding to reduce exposure on mortgage business in summer of 2007.

## Final Result – No Analytics



- Final result of required economic capital
- Don't identify scenarios or risks driving adverse results
- Unable to take any actions to reduce or hedge
- Need multiple metrics, not just a single measure
- Nocera – “VAR ... was worse than useless – it was downright harmful” because it doesn't measure the tail.

## Failure to Include Significant Risk



- What you don't model can hurt you
- Fail to identify a risk, or leave out as too difficult to model – incomplete model
- Unknown unknowns (risks that you are not aware of) – need to make provision since you cannot reflect explicitly
- Many current models don't deal with liquidity risk; and liquidity is one of main causes of the current crisis

## Stochastic Death Star



- Be all, end all model with everything
- Get stuck and never get passed design phase
- Spend all your effort modeling, with no analysis
- Or if you get the model built, you end up with “analysis paralysis”

## Missed Aggregation



- Model event A & event B, but not A&B
- If events are correlated, combined probability may be higher than you think
- Key aspect of ERM modeling is to reflect correlation and simultaneous occurrence of events
- Ingram – “be concerned if contingent risks are not usually identified.”

## Assumed Fungibility Of Capital



- Total Enterprise view
- Overlook legal entities or regulatory/political boundaries on capital
- The enterprise has enough money, but can't get it where it is needed

## Sole Focus on Economics



- Real world accounting does matter
- Basic modeling and analysis may be purely economic, but need to evaluate when accounting rules can exacerbate, or create, issues
- Technical insolvency can stop the game before you are allowed to recover

## Is ERM Dead?



- A case for ERM's demise:
  - 2008: Large companies destroyed by financial market risk events
  - Some may have had "advanced" ERM programs with large resource commitments
  - "Toxic" mortgage credit risk is a mainstream risk
    - Expected to be in ERM program, controlled
  - Is ERM all hype? If it doesn't work, why bother?

## Should we pursue ERM?



- A case for ERM going forward:
  - Some financial companies made it through
    - Are they better at ERM in practice? Maybe
  - The concepts remain sound
    - Understanding the company's risks is vital
    - Some risks are enterprise-wide
    - Disciplined control of risk and expected return
      - ➔ better chances of continuity and success

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## ERM 2009: Hype-free



- Each company is different and needs an appropriate program tailored to it
- Some general principles should apply across contexts
  
- These opinions and ideas are meant as “food for thought” to stimulate discussion
  - Not recommendations for implementation

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## Identify Major Risks



- Specifically identify what to protect. Examples:
  - Liquidity, Operating Continuity, Relationships
  - Consider both Corp and Operating Unit levels
    - Fungibility can vanish in a crisis
    - High-level, big impact (not micro)
  - Look for how the key variables are vulnerable (Events), and where (Operating Units)

## Identify Potential Events



- Event-focused – “What-if” brainstorming
  - Use framework of Risk Category x Operating Unit for discovering potential events
- Large-single-impact events
  - Physical catastrophe, loss of large customer
- Cross-enterprise-impact events
  - Counterparty credit risk, financial market risks

## Simple → Understandable



- Keep the view as simple and high-level as possible
  - Beware of over-complication (may be hype)
  - Complication may be necessary at detail levels, but impedes action if carried to results level
  
- “Everything should be made as simple as possible, but not simpler.” – A. Einstein

## Simple → Understandable



- Enable the Executive Management Team to:
  - Know the main risk events and impacts, and
  - Respond to potentially critical events as they emerge
    - If morning headline reads “Rates up 3%” CEO knows implications and good response choices
- Summary information enables decisions, actions

## Measure Risk



- Measure possible impact – expect to be surprised
  - History is a guide
  - Include tail for more years than observed – take worst observation and extrapolate further
  
- Assess likelihood, both short-term and long-term
  - Some ventures are more vulnerable to one than the other – “profitable-but-volatile”, “slow-bleed”

## Measure Consistently



- Operating units:
  - should use application-specific implementations of one enterprise model of risk,
  - should not develop general risk/return models
- At better banks, risk practices and models are consistent across businesses (Ingram, paraphrased)
- Ingram - “...be concerned if...business units all have their own risk models.”

## Risk Measures



- Good risk measures:
  - Capture all the risk (including extreme events)
  - Are as simple as possible
    - Complex risk measures → hype & confusion
  - Are rich in meaning, explainable
  - Are understood and believed in by management
  - Some examples: Probability of net loss, average net loss beyond critical points (frequency, Tail-VaR)

## Risk Controls



- Good risk controls:
  - Are set by senior management and/or Board
  - Are applied consistently across the enterprise
  - Accurately reflect the company's / operating unit's capacity to endure risk and then continue operating
  
- Key point: Account for fungibility constraints
  - Local risk controls are necessary

## Look For Low-Hanging Fruit



- “Where can we lower our risk profile at low cost?”
  - When you look, you may find some
- Examples of places to look:
  - Insurance, reinsurance: Alternative structures
  - Centrally coordinated cash flow management & planning (see Ingram)
  - Incentives to create risk, especially liquidity risk (see Ingram)

## Allocate Capital with Risk



- Risk is potential loss of value
  - Risk can be expressed in terms of capital
  - Return / risk can be tied to corporate cost of capital
  - Much literature already exists on this area

## Adequate Return / Risk



- Adequate return per risk-unit is necessary (but not sufficient) for long-term business health
  - Ruin theory: Inadequate returns → long-term risk
- Incentives based on adequate return / risk can help keep risk-taking volume under control
- Within each defined operating unit:
  - Risk / return thresholds consistently met
  - Risk concentrations controlled

## Screen New Ventures



- New ventures can add risk under the radar
- Should meet same criteria as existing ventures
  - Less experience → more uncertainty → more compelling case needed to meet risk/return hurdle
- Growth in a “profitable” area is a major cause of death
  - Ingram – Risk attention proportionate to activity in fastest-growing segments – difficult, valuable

## Care Like an Owner



- Regulatory-driven motivation, bureaucracy and box-checking work against ERM effectiveness
- Reason to have ERM is to know your company's major risks well, and control them
  - Take care of actual risks and regulators may recognize it
- Adopting perspective of owner can be useful
  - Think in terms of simple, complete pictures

## Questions and Answers



## Quoted Articles



- Ingram, David – *The Banks Invented ERM and They Blew Up, So Why Should We Bother?* – Actuarial Review, February, 2009
- Nocera, Joe – *Risk Mismanagement* – The New York Times, January 4, 2009
- Shimpi, Prakash – *Financial Crises: Time to Improve ERM* – Towers Perrin, Emphasis, 2009/1