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...March 1-4, 2009, Four Seasons, Las Vegas, NV

A Global Gathering for Senior Life Insurance and Reinsurance Executives

ReFocus 2009

March 1-4, 2009

Las Vegas, NV

**A1 - Enterprise Risk Management for Life
Insurers and Reinsurers**

Michael Angelina, Carl Groth, Sim Segal

**John Nigh
Moderator**



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A Global Gathering of Senior Life Insurance and Reinsurance Executives

ERM: The Next Step in the Evolution of Business Management

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March 2, 2009
Las Vegas



Definition of Enterprise Risk Management

ERM is the **process** by which companies identify, **measure, manage,** and **disclose all key risks** to increase **value** to **stakeholders**.

process:	Not just a one-time task but continuous process cycle
measure:	Not just silo, but integrated
manage:	Not just reporting, but decision-making (including upside)
disclose:	Not standard disclosures, but robust risk information
all:	Not just financial risks, but strategic and operational risks
key risks:	Not hundreds of risks, but top risks to the company
Value:	Not just short-term indicators, but holistic value metrics
Stakeholders:	Not just constraints-focused, but driven by maximizing primary stakeholder (e.g., shareholder) value



Were lending institutions doing ERM?

ERM is the **process** by which companies identify, **measure, manage,** and **disclose all key risks** to increase **value** to **stakeholders**.

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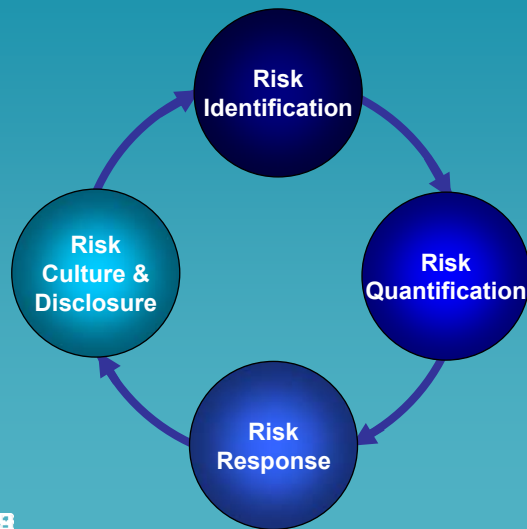
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Many other flaws as well

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ERM process cycle



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ERM Capability-Maturity Quiz

To how many of these can you answer "Yes" ?

1. We do qualitative frequency-severity risk assessments periodically
2. We include all types of risk (financial, operational, strategic, etc.)
3. We quantify the impact of risks on key metrics, including value
4. We quantify the portfolio effect of risks
5. We quantify our enterprise risk exposure
6. We defined our risk appetite and express it quantitatively
7. We use ERM for deciding between risk mitigation alternatives
8. We use ERM in strategic planning
9. We embed ERM metrics into incentive compensation
10. We disclose ERM information to investors and rating agencies

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Obstacles to successfully implementing ERM

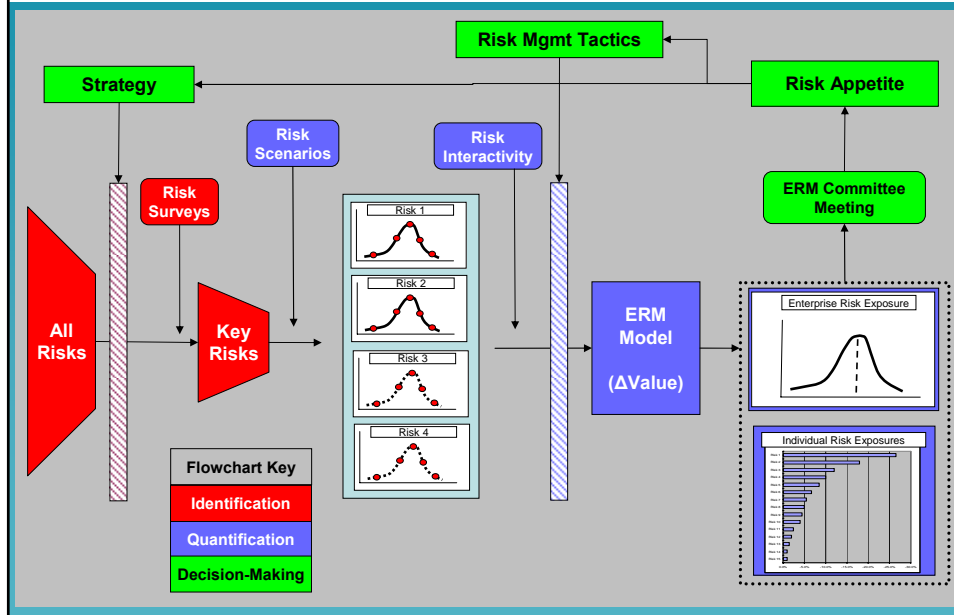
- 1) Inability to quantify non-financial risks
- 2) Unclear definition of risk appetite
- 3) Lack of integration into decision-making

A value-driven ERM approach resolves these issues

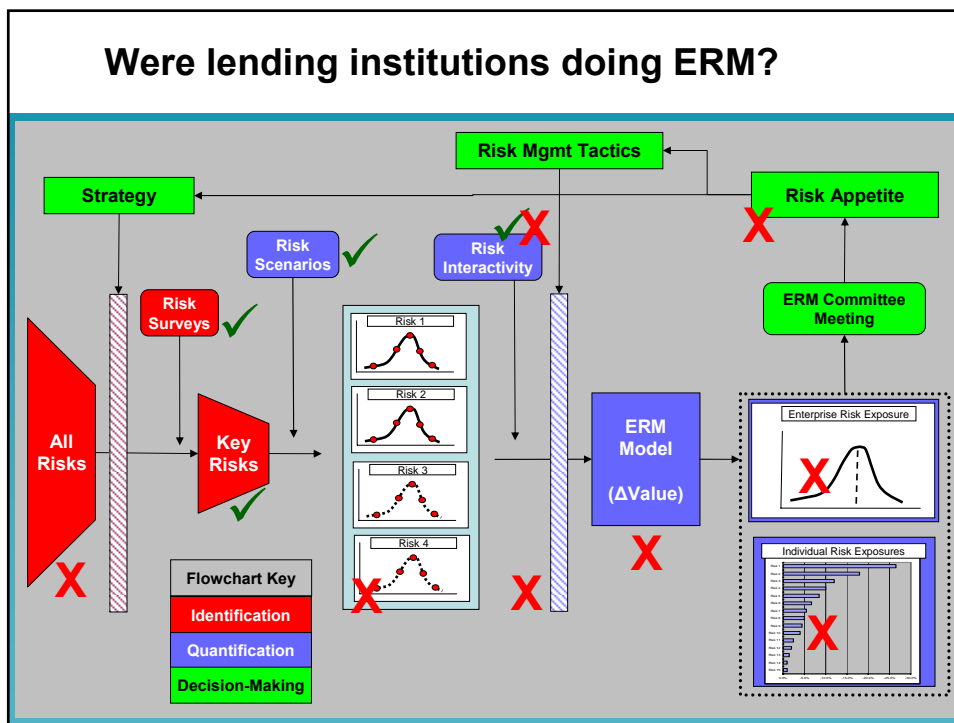
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Value-driven ERM framework



Were lending institutions doing ERM?



Obstacles to successfully implementing ERM

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- 2) Unclear definition of risk appetite
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A value-driven ERM approach resolves these issues

Quantifying non-financial risks

Traditional Approach

- | | |
|------------------------------------|---|
| Method 1:
Qualitative | <ul style="list-style-type: none">• Can't make decisions |
| Method 2:
External Data | <ul style="list-style-type: none">• Scarce• Often inappropriate |
| Method 3:
Risk Capital | <ul style="list-style-type: none">• Cannot fully capture impact• Not risk-based• Even directionally incorrect |

Value-driven Approach

- | |
|--|
| <ul style="list-style-type: none">✓ Quantitative impact to value; supports decision-making |
| <ul style="list-style-type: none">✓ Company/culture-specific |
| <ul style="list-style-type: none">✓ Fully captures impacts✓ Risk-based |

Value-driven approach: Develop risk scenarios

FMEA INTERVIEW

- Identify risk experts
- Construct scenarios
 - Event details
 - Pre/Post-event mitigation
- Quantify financial impacts

Risk: Loss of Key Employees **MODIFIED CASE STUDY**

Attendees: XXXXXX
Reviewers: XXXXXX

Scenario 1: Plane crash on the way home from a leadership counsel meeting. Seven company executives onboard: XXXXXX, XXXXXX, XXXXXX, XXXXXX and three of their direct reports and their spouses.

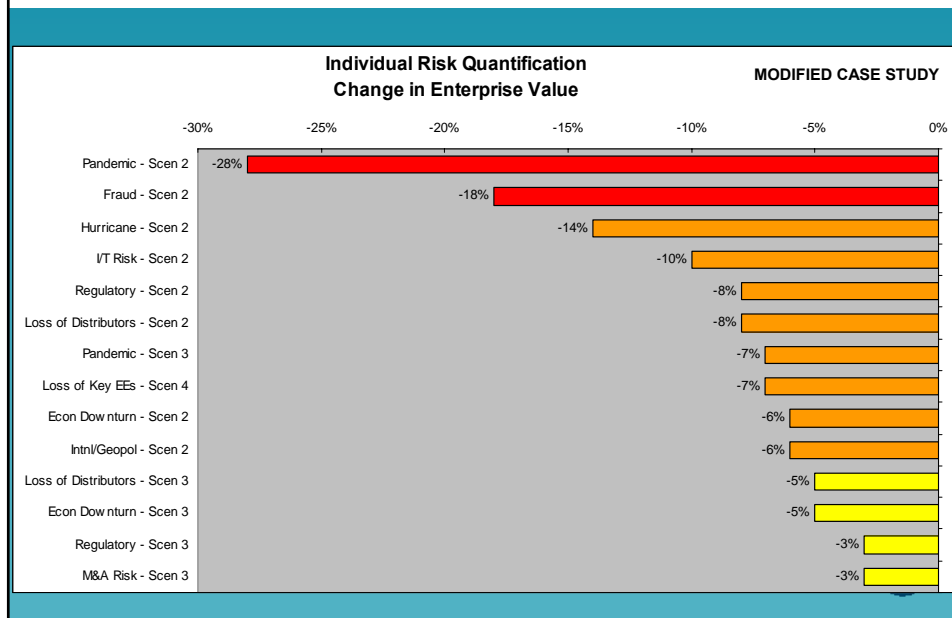
Probability: 1 in 100 years

Results:

- Company rules limit number of officers on one plane (executive risk exposure policy)
 - Exposure in this scenario exceeds the formal policy, but is assumed here since limited flight availability and internal cost-cutting have created situations where multiple executives do take the same flight
- Pull people from other groups as stop-gaps (assume no harm to these other groups due to loss of leadership)
- Revenue impact
 - New business: impacted by loss of knowledge and contacts
 - Year 1: -25%
 - Year 2: -50%
 - Year 3: -30%
 - Year 4: -15%
 - Year 5: Back at Plan growth rates
 - Inforce: no impact expected
- Expense impact
 - Hire 5 executives externally: \$2M
- Claims impact
 - Life insurance payments covered by Company = \$28M
 - Base
 - Supplemental
 - Supplemental AD&D
 - Business travel insurance
 - Spouse and child coverage
 - There is no key man insurance

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Value-driven approach: Quantifying impacts



Case studies: Quantifying non-financial risks

Value-driven ERM model fully quantifies non-financial risks, which impact future revenues and expenses:

Case studies:

- IT: Destruction of systems and theft of customer data
- Fraud: Anti-money laundering violation
- Disaster: Loss of key sales managers/agents
- Disaster: Severe global pandemic
- Supply chain: Loss of sole-source supplier
- Strategy: Unrealistic strategic planning process/goals

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ERM is more than risk management

ERM is not
the next step in evolution of risk management...

ERM is
the next step in evolution of business management.

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Risk Management Opportunities for the Insurance Industry

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Risk management areas

Opportunities for improvement

1. Opportunities for insurers to improve enterprise risk management (ERM) capabilities primarily lay within the following four areas:
 - Oversight and governance
 - Risk identification, measurement, monitoring and control
 - Communication, transparency and disclosure
 - Embedding risk and return into decision-making
2. Although leading practices will continue to evolve, these areas represent basic components of any ERM program
3. Because ERM is not a “one size fits all” proposition, the key actions to consider within these four basic categories should be applied based on a company’s individual characteristics

Risk management areas

Oversight and governance

Key actions to consider

1. Establish the Board and management level risk committees to provide oversight and guidance to the risk management function
2. Establish or modify management level committees and risk policies to address the major risk areas of the company
3. Establish Board access for the CRO
4. Establish or modify the overall responsibility for risk management so that it resides with the CEO, with a direct CRO report
5. Develop the authority for the CRO to have certain veto powers over transactions, subject to an appropriate escalation process
6. Establish or modify the CRO function so that it is independent of the business units and key business functions

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Risk management areas

Risk identification, measurement, monitoring and control

Key actions to consider

1. Conduct a continuous emerging risk management process on a formal basis
2. Develop and implement a consistent approach for risk identification and measurement, data management, models and processes such as stress testing, back-testing and incorporating scenario analysis
3. Include liquidity risk management as a core risk management function along with underwriting, market, credit and operational risk to address the growing contribution to companies' risk profiles
4. Incorporate product risk assessment policies and procedures, led by risk management, into the product approval process, particularly for complex products
5. Develop and implement a scalable enterprise risk management technology platform

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Risk management areas

Communication, transparency and disclosure

Key actions to consider

1. Communicate risk information related to strategy and key decisions to stakeholders (the Board, senior management employees, shareholders, rating agencies, regulators, analysts, policyholders) on a regular basis
2. Align key risk functions associated with ERM, compliance and internal audit
3. Create clear communication channels to risk owners regarding risk policies and expectations for compliance
4. Create and make available to personnel: CRO sponsored workshops and web-based training related to risk management
5. Be prepared to comply with information requirements from external stakeholders such as shareholders, policyholders, regulators, rating agencies and key counterparties that may seek in the near future enhanced disclosures of key risk issues and risk management strategy

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Risk management areas

Embedding risk and return into decision-making

Key actions to consider

1. Create clear information and guidance from senior management to business units and key corporate business functions such as investment management and reinsurance regarding risk tolerance and risk limits and how they relate to the firm's risk appetite
2. Establish the process of how returns and risk will be balanced and specifically stated by senior management with input and approval from the board
3. Link compensation for all personnel to risk-adjusted performance metrics
4. Develop and implement policies and procedures with senior management and the board to incorporate analysis of risk adjusted results against plan

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ReFocus 2009 Conference

ERM for (Re)Insurance Industry

March, 2009

Michael E. Angelina, ACAS, MAAA
Chief Risk Officer
Endurance Specialty Holdings Ltd



Agenda

- **Initial Thoughts**
 - ERM
 - Company Statements
- **Corporate Objectives and Risk Appetite**
 - ERM Guiding Principles
 - Risk Appetite and Tolerances
- **Drivers used to implement risk appetite**
 - Corporately and business unit level
- **Identification of key risk areas**
 - Monitoring of limits
- **Execution**
 - Getting beyond the discussions
 - Taking actions to implement the plan

Initial Thoughts on ERM

- **Enterprise Risk Management**
 - New fad or a step into a new frontier
 - Competitive advantage – ERM Matters
- **ERM due to its name is thought to be defensive**
 - Manage risks to protect downside
 - Link ERM to strategic planning process
- **ERM is strategic weapon**
 - Process of understanding the drivers of risk and the impact to corporate decisions can be a powerful weapon in your organization.
 - Think portfolio theory and risk levels
 - Avoid too much focus on individual cells at the ERM level
- **Technology is our friend**
 - Analytical insights can takes us to the next level
- **ERM is all about culture**
 - Transparency, communication, organizational involvement
 - Consistent messaging from the top followed by actions
- **ERM utilizes both top down and bottom up approaches**
 - Need to understand micro and macro level drivers
 - Somewhat circular but in reality a feedback mechanism is created

Hierarchy of Company Statements*

David Collis and Michael Rukstad (HBR - April 2008)

4

- **Mission**
 - why we exist
- **Values**
 - what we believe in and how we will behave
- **Vision**
 - what we want to be
- **Strategy**
 - what our competitive game plan will be
 - Objective
 - Scope
 - Advantage
- **Balanced Scorecard**
 - how we will monitor and implement that plan
 - Metrics, measures for success, tolerance levels
 - Manage to what can be measured



* **Can You Say What your Strategy Is?** Collis & Rukstad –Harvard Business Review April 2008

Corporate Objectives

ERM Guiding Principles

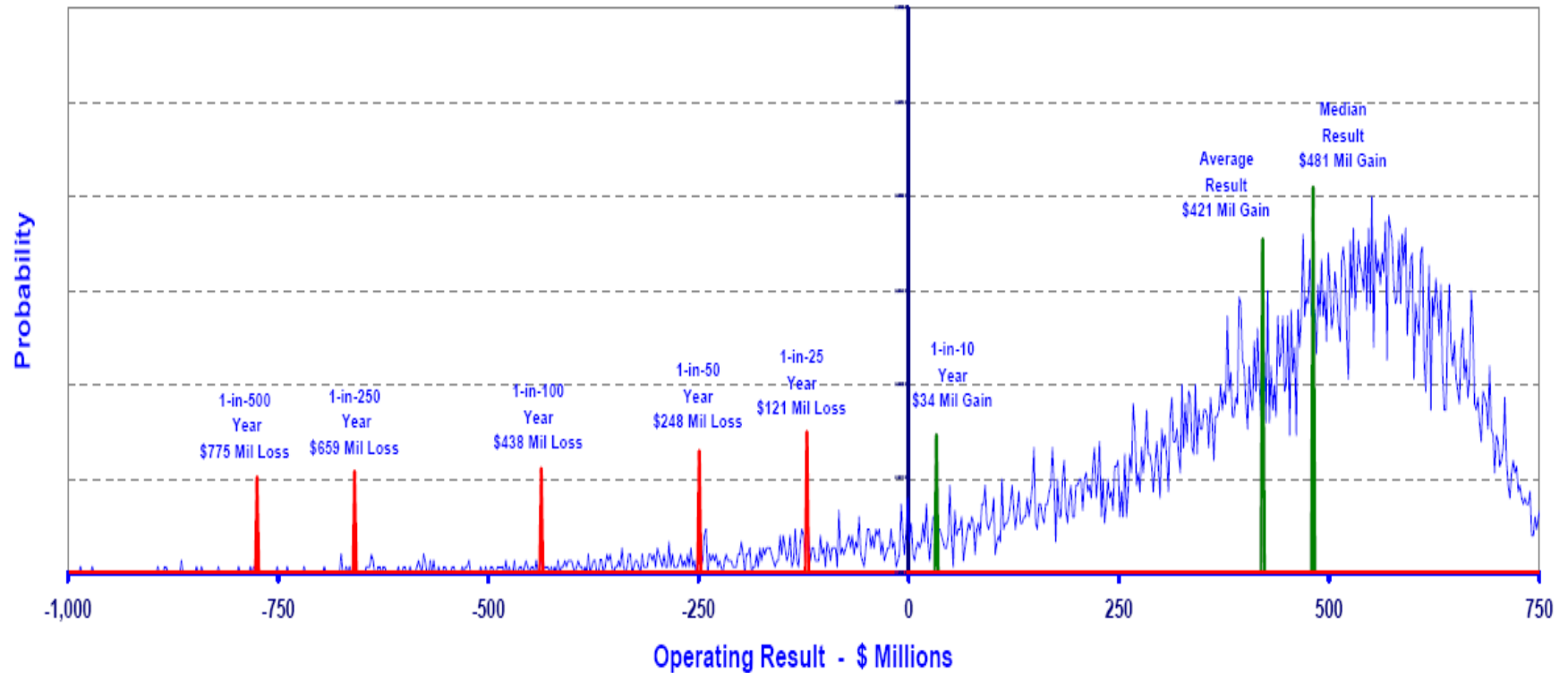
- **Optimally manage the company's capital**
 - Required return on capital
- **Eliminate risks that threaten solvency / viability**
 - Target maximum aggregate level of risk given range of opportunities
- **Manage volatility – Expected Value Curve**
 - Understand, manage, mitigate
- **Shape business by taking risk we can quantify**
 - Risk mix, diversification, hedging
 - Strategic plan
- **Create behaviors that reinforce ERM culture**
 - Internally and externally
 - Balanced scorecard
 - Transparency and communication

Corporate Objectives

Endurance Value at Risk Curve

Endurance Operating Income Profile

as of January 1, 2008



Drivers of Risk Appetite Lessons from Other Industries

➤ Toyota

- Pursue perfection relentlessly (Kaizen)
 - A3 thinking – more than a report format
 - State of mind
 - PDCA – Plan, Do, Check, Act
- Commit to what matters most
 - Once you buy in to the system, you have to live the life
 - Culture and ethics
 - Maintain a historical perspective; but everything is for the future
 - Favor long-term strategies over short-term fixes
- Be willing to improve
 - Improve quality by exposing the truth
 - Get to the root cause as opposed to the symptom
 - Ask why 5 times

Drivers of Risk Appetite Process – Begin with the End in Mind

- **Overall Risk Tolerances** derived at organizational level and tied to plan
 - Percent of equity limits
 - Rating agency trigger – capital adequacy levels
 - Liquidity
- **Separate Risks into General Categories**
 - Primary
 - Broad categories
 - Consequential (downward spiral)
 - Based on primary risk or event
 - Liquidity, Reputation (client/investor), Rating agency / Regulatory, etc
- **Additional tolerances should be established for all primary risk categories**
 - Levels of investments, peak exposure zones, casualty premium, etc
- **Controls**
 - Processes, guidelines, compliance function

Identification of Key Risk Categories Measurement

- **Select risk owners / gatekeepers of the broad risk categories**
 - Functional level or business unit level
- **Identify various types of events/risks associated with each of the primary categories**
 - Change in asset value, movement in interest rates, large property/casualty event (hurricane, earthquake, Enron), adverse claims trends, etc
- **Measure financial and operational impact to organization**
 - Balance sheet, liquidity, capital requirements
 - Contingency planning (think operational risk)
- **Define tolerances for such events/risks**
 - Percent of capital, cash-flow, change in rating agency capital
- **Establish controls to monitor risk exposure within established tolerance levels**
 - Timely reporting procedures – dashboards can be helpful
 - Enhances risk profile
- **Manage business around such thresholds**
 - Optimally at the point of sale
 - Enables real time decisions based on risk & return trade-offs
 - Solicits discussions around strategy and forward-planning

Execution

Risk Management Culture

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- **Senior Management Understands and Values ERM**
 - Risk management viewed as core competency and competitive advantage
 - Risk management philosophy is well understood, and is consistent among business units and operating platforms and drives corporate strategy
 - Decisions guided by enterprise portfolio risk management and impact on expected risk adjusted returns
 - Strong alignment of operations and compliance

- **Risk Management Responsibility Well Defined**
 - Ultimate responsible for risk management

- **Strong and Active Board of Directors**
 - Underwriting Committee
 - Audit Committee
 - Investment Committee

Execution Issues and Solutions

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- **Lack of full transparency**
 - Black box stigma attached
 - Much noise when revisions were made that changed results
- **Willingness for many to embrace technology**
 - Resistance to models and ability to forecast (predictive value)
- **Non-traditional way of thinking**
 - People are generally open to change ?
- **Too focused on defensive uses initially**
 - Desire to seek opportunistic risks
 - Understand outcomes outside the norm
 - Returns too good to be true, probably are
- **Over – Communication**
 - Understanding of calculations, capital requirements and return thresholds which ties to compensation system
- **Differentiation of like risks vs. perfect answer**
 - Full commitment from executive level
 - Exercise of optimization and trade-offs
- **Better use of capital maximizes s/h value**
 - Real time examples made this easy to grasp
- **Forces discussions around strategy**
 - Desire to plan the portfolio in advance
 - Who is taking up a space

Income Scenario Analysis – December 31, 2007

