



ERM Mini-Seminar

James Lam
President, James Lam & Associates

Sponsored by Society of Actuaries
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James Lam's biography

Professional

- President, James Lam & Associates
- Founder and President, ERisk
- Partner, Oliver, Wyman & Company
- CRO, Fidelity Investments
- CRO, Capital Markets Services Inc., a GE Capital company

Industry Activities

- PRMIA Blue Ribbon Panel Member
- GARP 1997 Financial Risk Manager of the Year
- Published over 50 articles and book chapters
- Quoted in Wall Street Journal, Financial Times, and CFO Magazine

Academic

- Adjunct Professor of Finance, Babson College
- Lectured at Harvard Business School as the subject of a HBS case study
- MBA, UCLA School of Business
- BBA, Baruch College

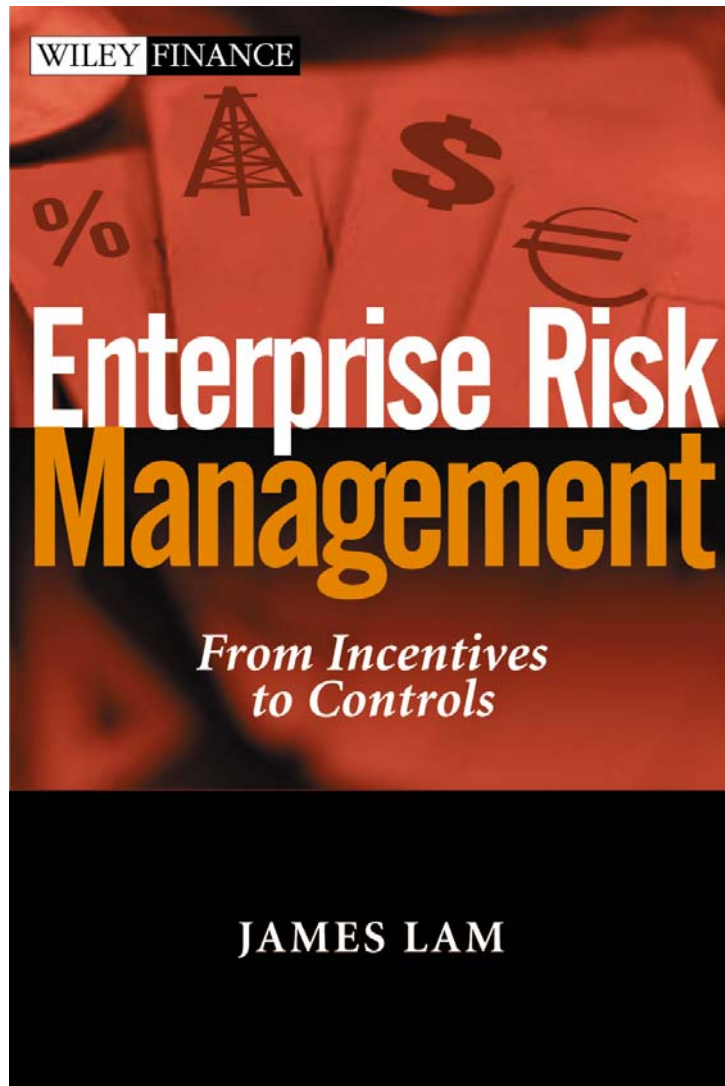
Consulting projects

- ERM vision and strategy
- Credit risk management
- Market risk management
- Operational risk management
- Business/product strategies
- Board-sponsored investigations
- Training/education programs

Consulting clients



Top-10 selling book



Definition of ERM:

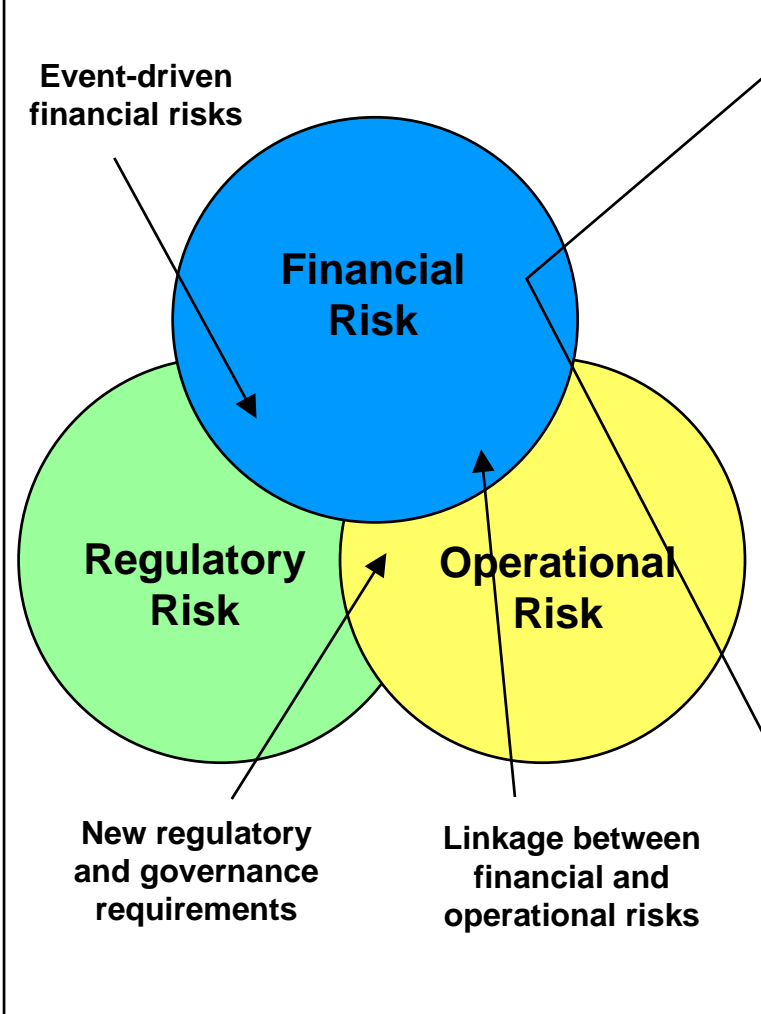
“An integrated framework for managing credit risk, market risk, operational risk, economic capital, and risk transfer in order to maximize firm value.”

Discussion outline

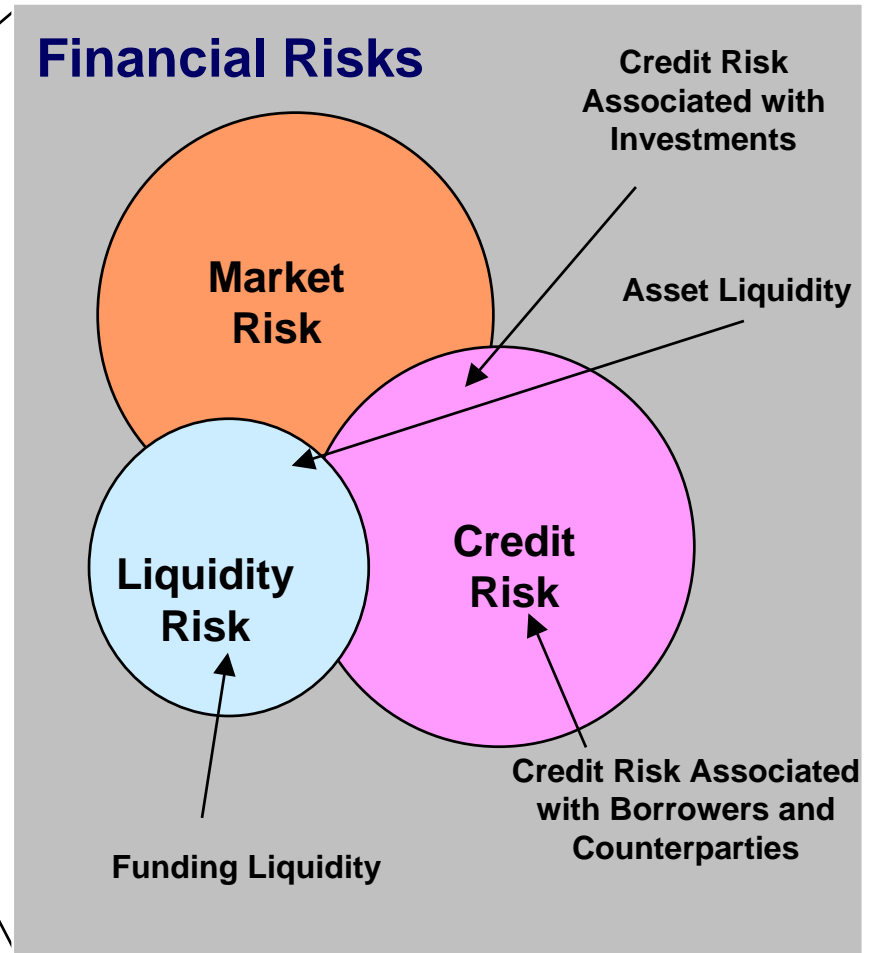
- The business case for ERM
- Lessons learned and best practices
- ERM going forward – 10 Predictions

Risk linkages

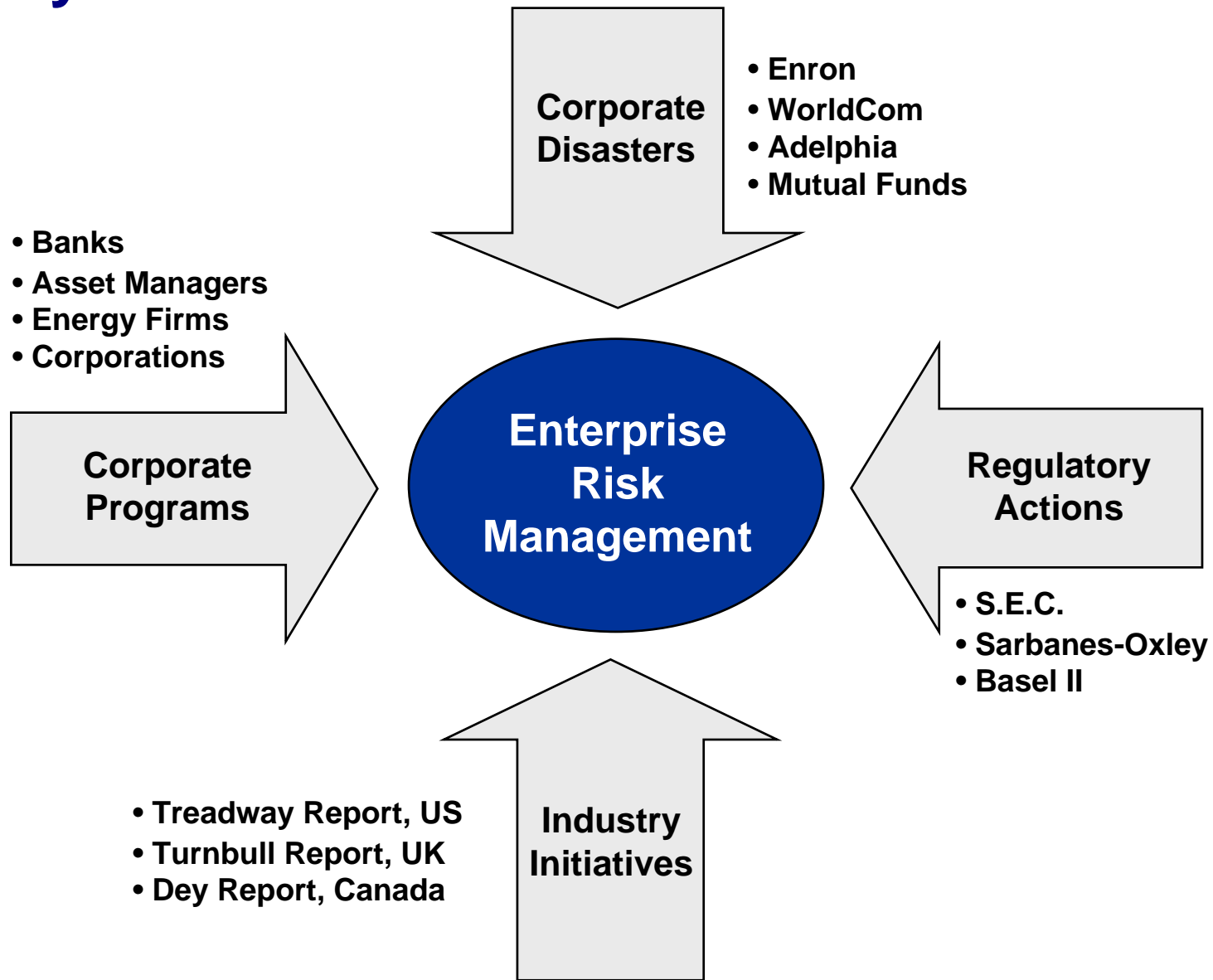
Enterprise-Wide Risks



Financial Risks

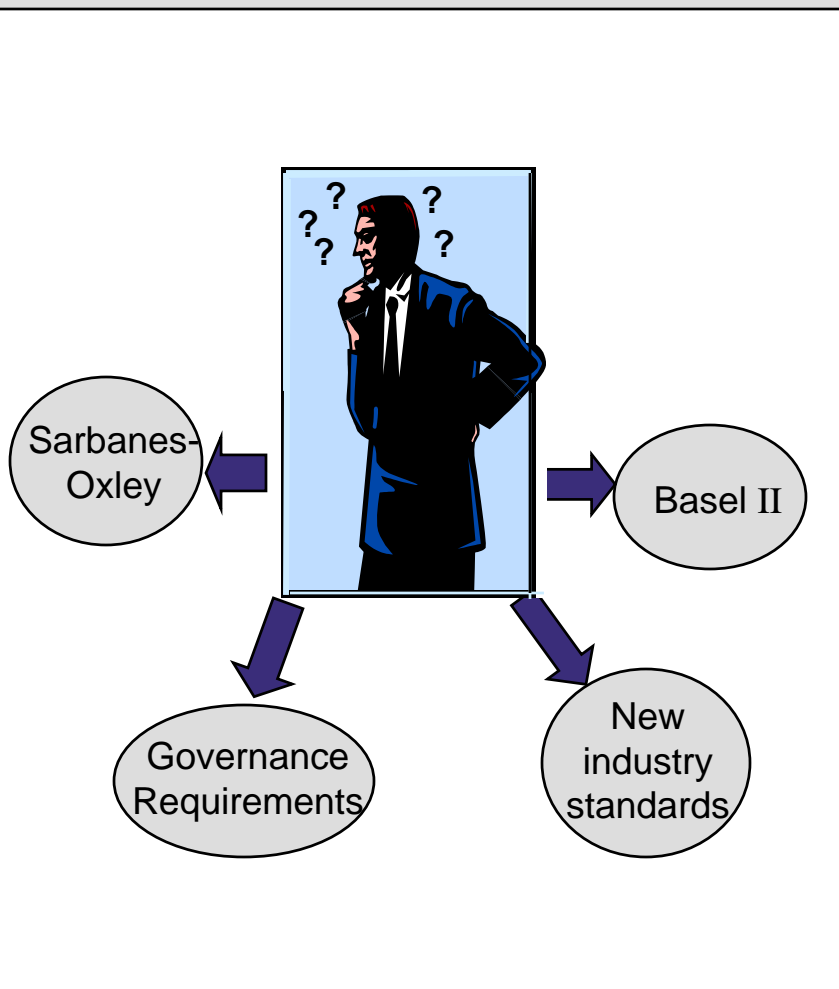


Key risk trends

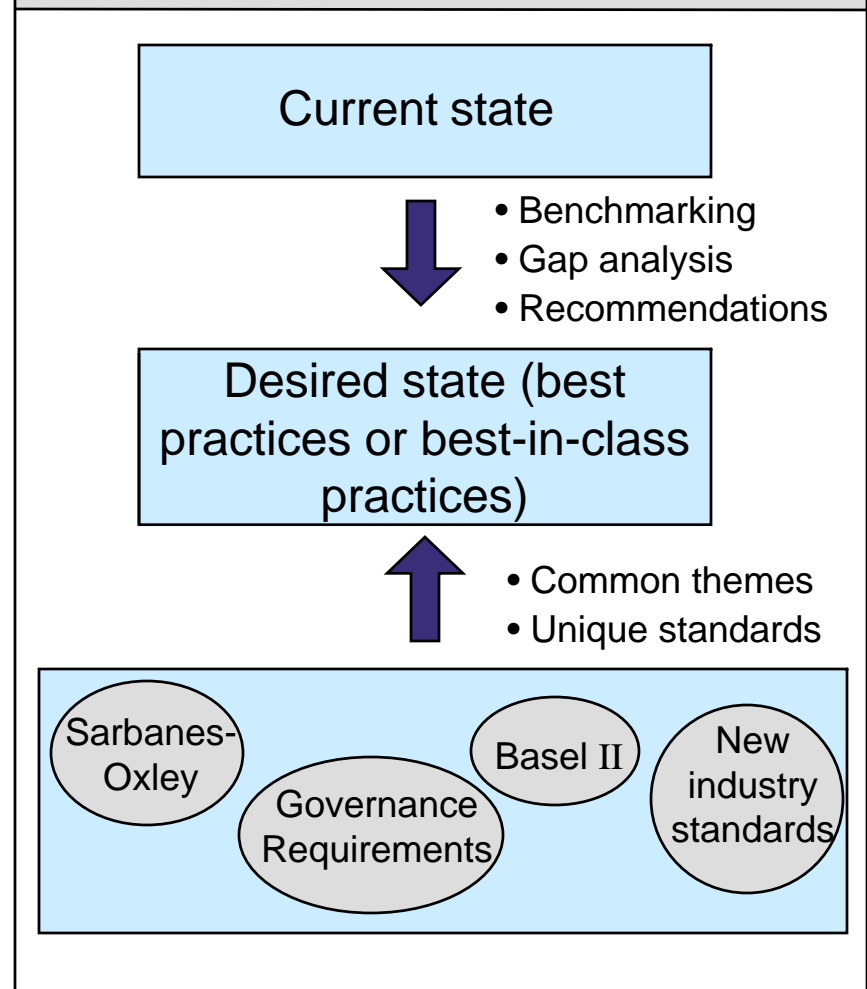


Practical approach to ERM

Reactive Approach



Proactive Approach



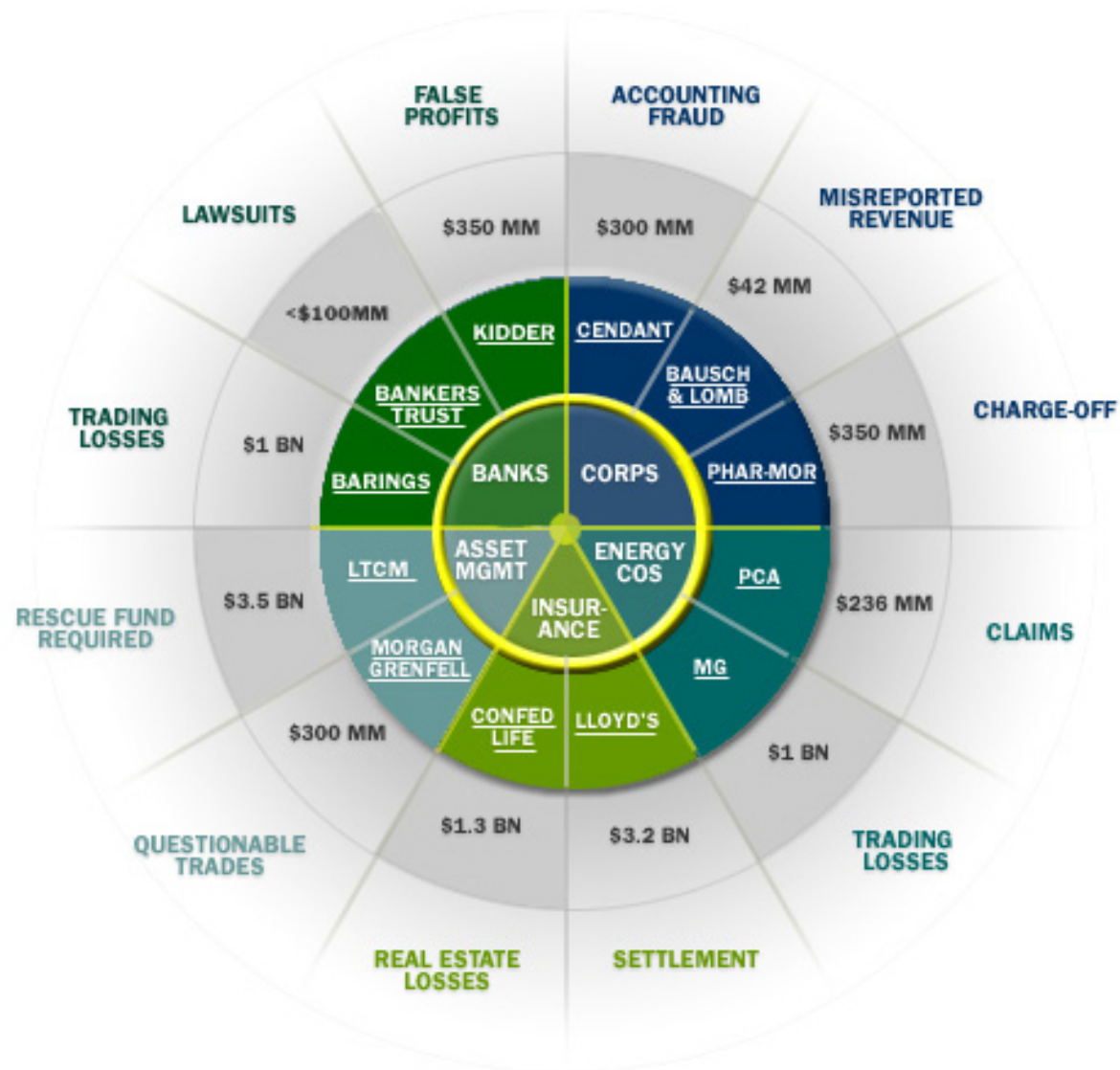
Benefits of risk management

<u>Benefit</u>	<u>Company</u>	<u>Actual Results</u>
Market value improvement	Top money center bank	Outperformed S&P 500 banks by 58%
Early warning of risks	Large investment bank	Identified over 80% of future losses; risk limits cut by 1/3 prior to Russian crisis
Loss reduction	Top asset management company	30% reduction in the overall loss ratio; up to 80% loss reduction at business units
Regulatory capital relief	Large commercial bank	\$1 billion regulatory capital relief, or about 8-10%
Insurance cost reduction	Large manufacturing company	20-25% reduction in annual insurance premium

Discussion outline

- The business case for ERM
- Lessons learned and best practices
- ERM going forward – 10 Predictions

The Wheel of Misfortune



Key lessons learned

- Lesson #1 **Know Your Business**
- Lesson #2 **Establish Checks and Balances**
- Lesson #3 **Set Limits and Boundaries**
- Lesson #4 **Keep Your Eye on the Cash**
- Lesson #5 **Use the Right Yardstick**
- Lesson #6 **Pay for the Performance You Want**
- Lesson #7 **Balance the Yin and the Yang**

Establishing an ERM framework

ERM Framework

1. Corporate Governance

Establish top-down risk management

2. Line Management

Business strategy alignment

3. Portfolio Management

Think and act like a “fund manager”

4. Risk Transfer

Transfer out concentrated or inefficient risks

5. Risk Analytics

Develop advanced analytical tools

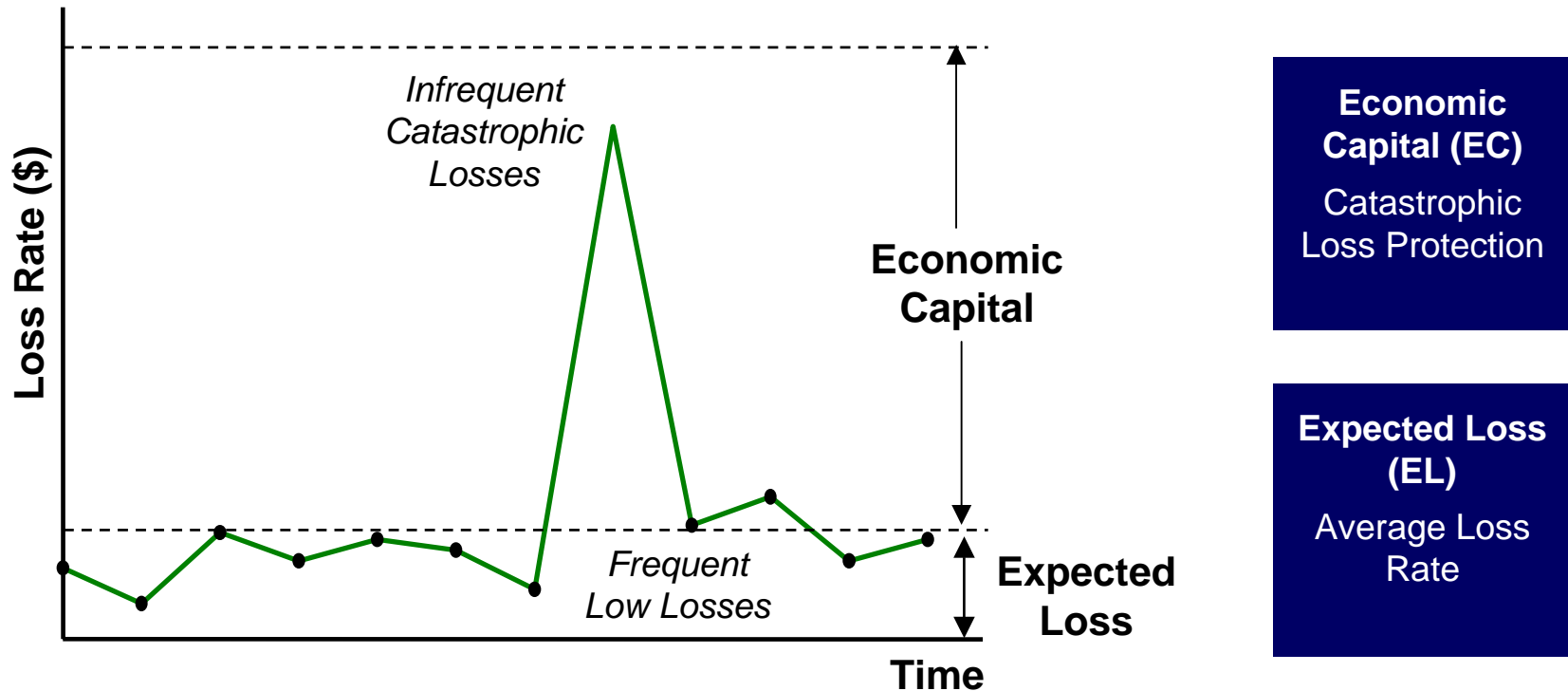
6. Data and Technology Resources

Integrate data and system capabilities

7. Stakeholders Management

Improve risk transparency for key stakeholders

Credit Risk Management



Expected Loss

- Anticipated average loss rate
- Cost of doing business, cover through pricing and provisioning
- $EL = f(\text{probability of default, exposure at default, severity})$

Economic Capital

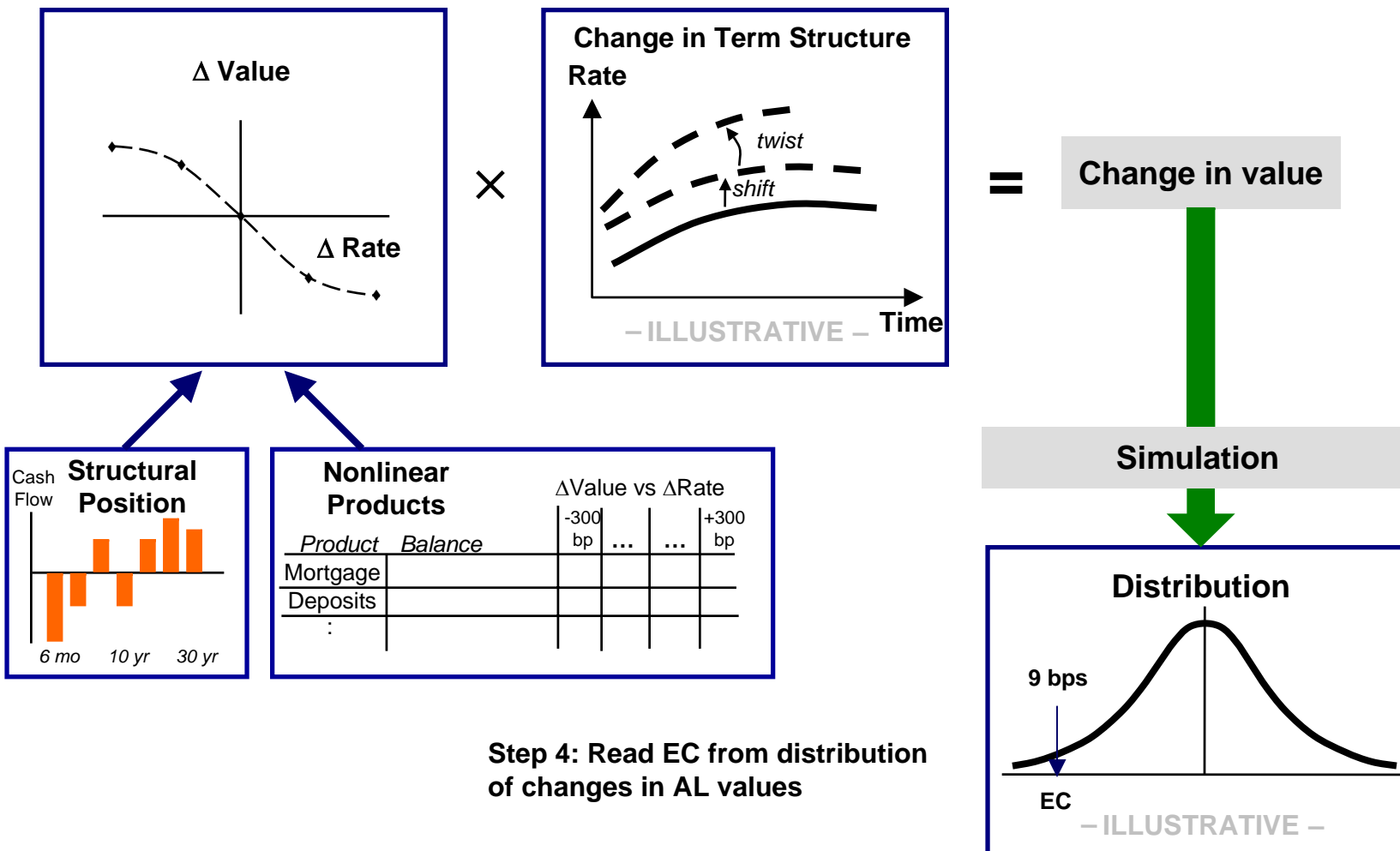
- Covers catastrophic losses
- Risk inherent in business, cover through capital allocation and adequacy
- $EC = f(\text{probability of default, exposure at default, severity, default correlation})$

Market Risk Management

Step 1: Analyze sensitivity of asset and liability value to changes in interest rates

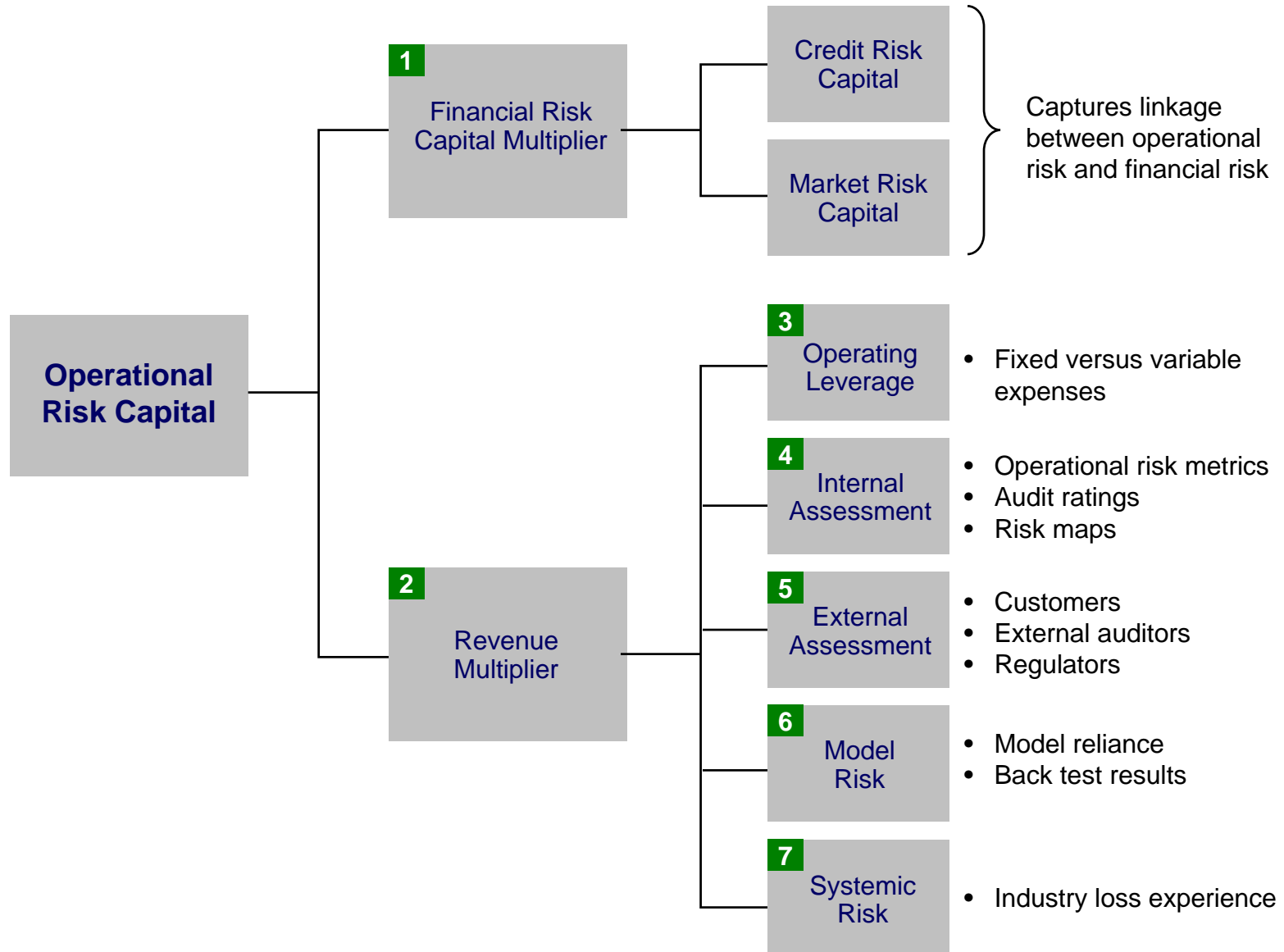
Step 2: Simulate changes in term structure of interest rates

Step 3: Recalculate value of assets and liabilities (repeatedly)



Step 4: Read EC from distribution of changes in AL values

Unified Operational Risk Framework



Operational Risk Management

Education

- New associates
- Management
- Business/Operational processes
- Best practices
- Lessons learned

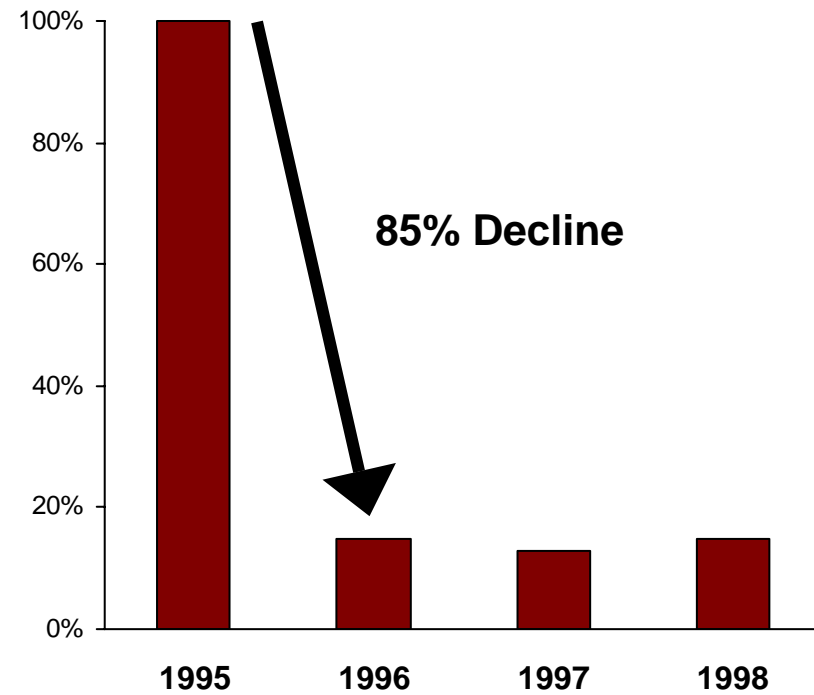
Risk Event Log

Event	Loss	Root Causes	Controls Needed

Risk Metrics



Actual Loss Experience



Economic capital as common currency

Credit Risk

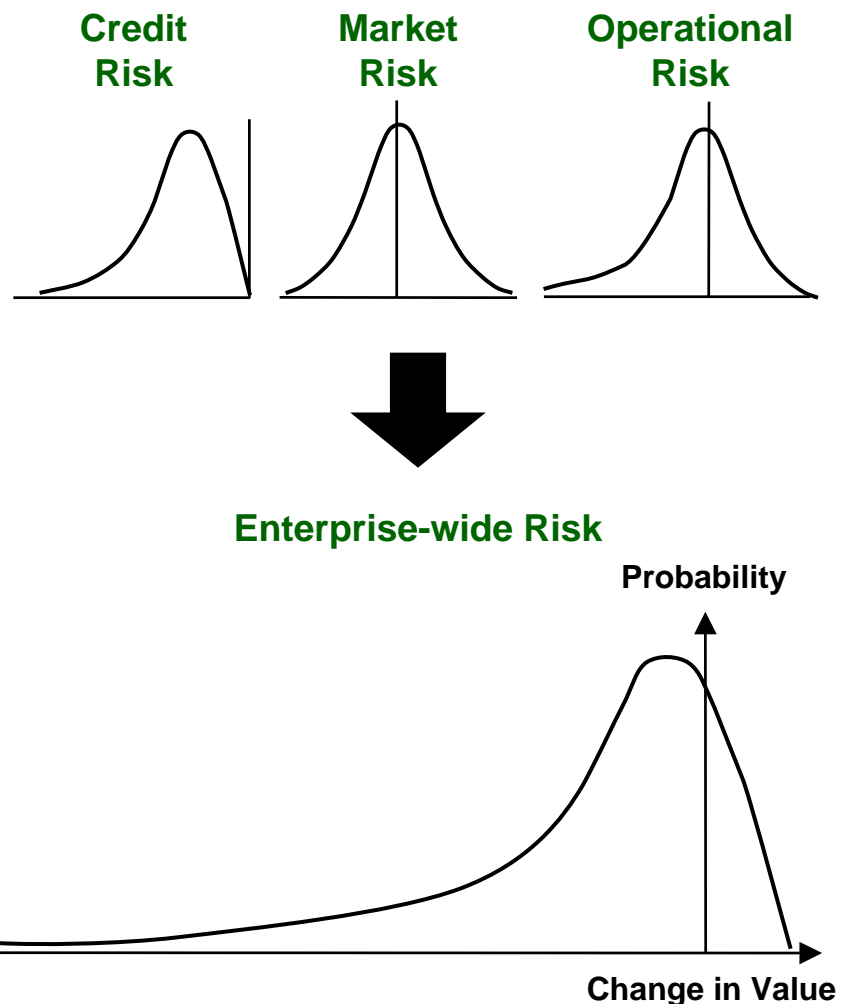
Earnings volatility due to variation in credit losses

Market Risk

Earnings volatility due to market price movements

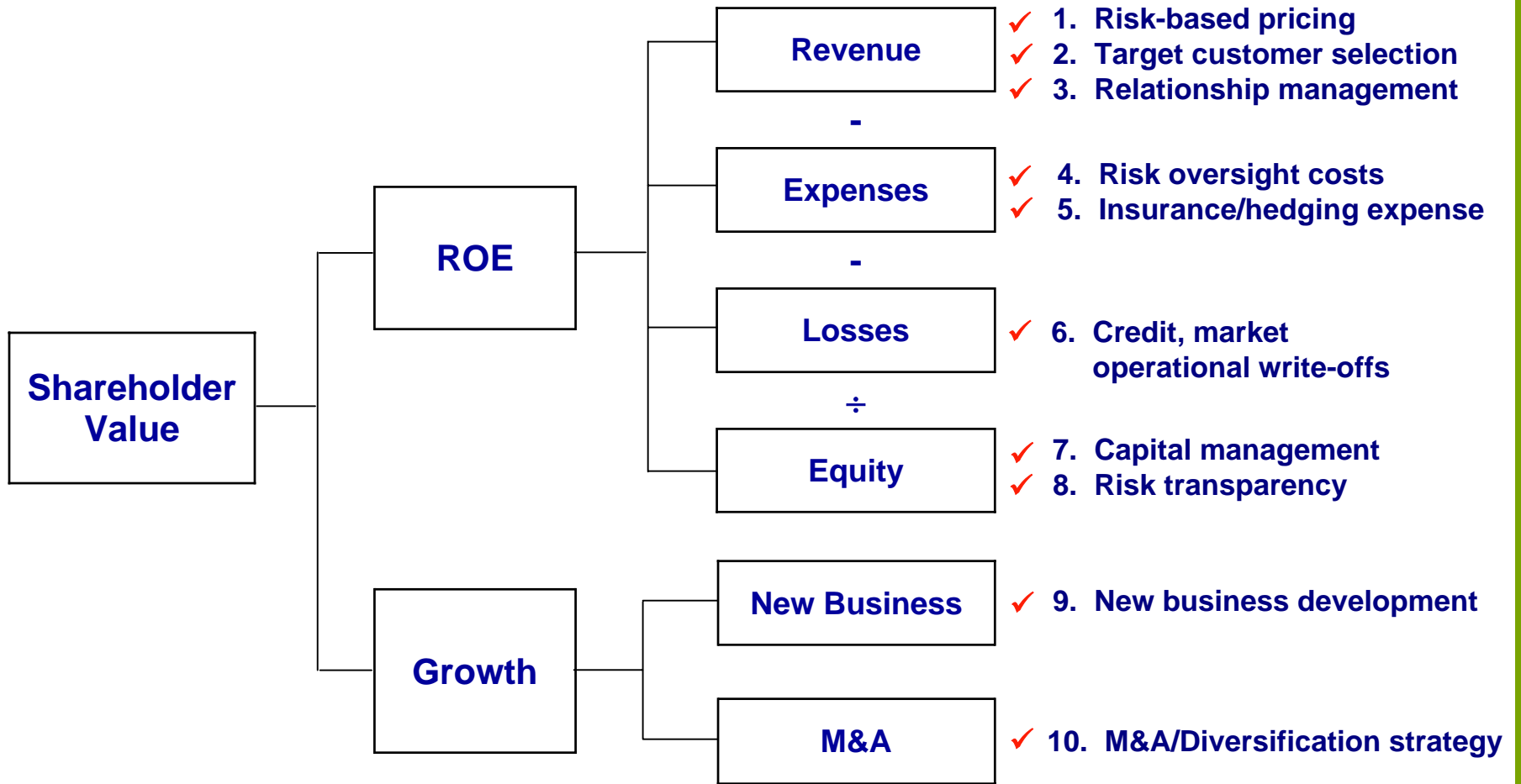
Operational Risk

Earnings volatility due to changes in operating economics (e.g. volume, margins or costs) or one-off events



Value creation through ERM

Risk Management Impact



✓ Risk Management by Silos (5, 6)



✓ Integrated risk management (4-7)



✓ Enterprise risk management (1-10)

Measuring profitability and pricing

Exposure
Margin
Revenue
Risk Losses
Expense
 Pre-Tax Net Income
Tax
 Net Income
 Economic Capital
 RAROC

Calculate ROE

\$100 mm

2.50%

\$2.5 mm

<0.5 mm>

<1.0 mm>

\$1.0 mm

<0.4 mm>

\$0.6 mm

\$2.0 mm

30%

Calculate Pricing

\$100 mm

2.20%

\$2.2 mm

<0.5 mm>

<1.0 mm>

\$0.7 mm

<0.3 mm>

\$0.4 mm

\$2.0 mm

20%

Rationalized risk transfer

Different Structures

Derivatives

Structured Finance

Insurance

Common Cost/Benefit Framework

$$\text{Ceded RAROC} = \frac{\Delta \text{ Return}}{\Delta \text{ Economic Capital}}$$

- Δ Return
 - Pay cashflows or insurance premium
 - Include transaction and ongoing management costs
 - Reduce Economic Capital 'benefit'
- Δ Economic Capital
 - Reduce Economic Capital held for risk
 - Increase Economic Capital counterparty exposure
 - Increase operating risk Economic Capital

Monthly risk report

Gross Losses

Current

YTD

Operational Losses

Credit Losses

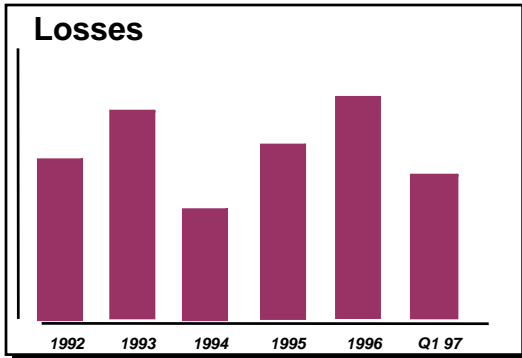
Market Losses

Other Losses

Sub-Total:

Loss/Revenue Ratio:

Accounting for
actual losses
incurred



Risk Incidents

Incident

Exposure

Response

- 1.
- 2.
- 3.
- 4.

Reporting of risk
incidents, exposures,
and near misses

Management Assessment

1. _____
- _____
- _____
- _____

2.

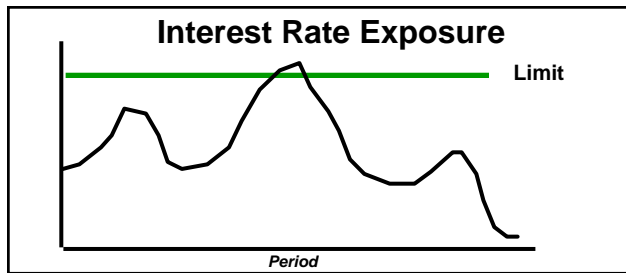
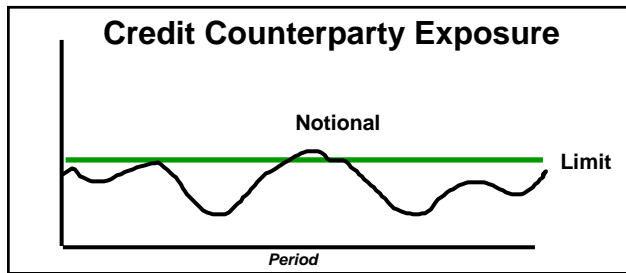
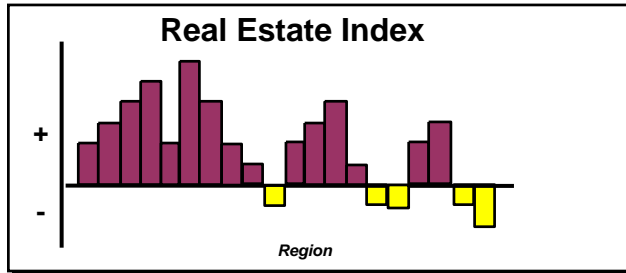
3.

4.

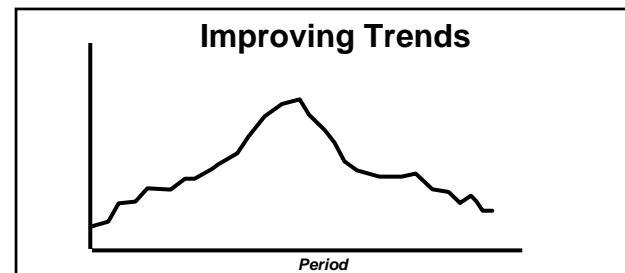
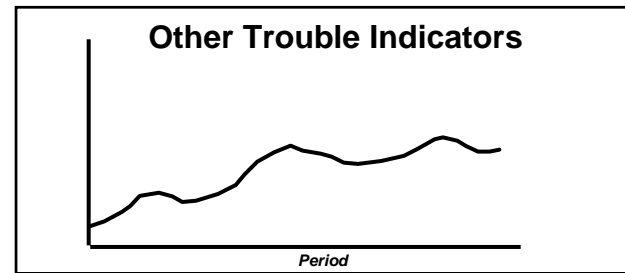
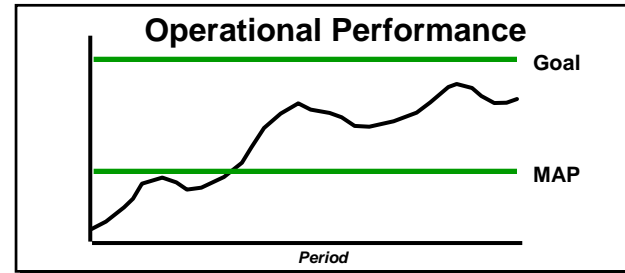
Management
discussion of major
risk issues ("what
keeps me up at
night")

Monthly risk report (cont'd)

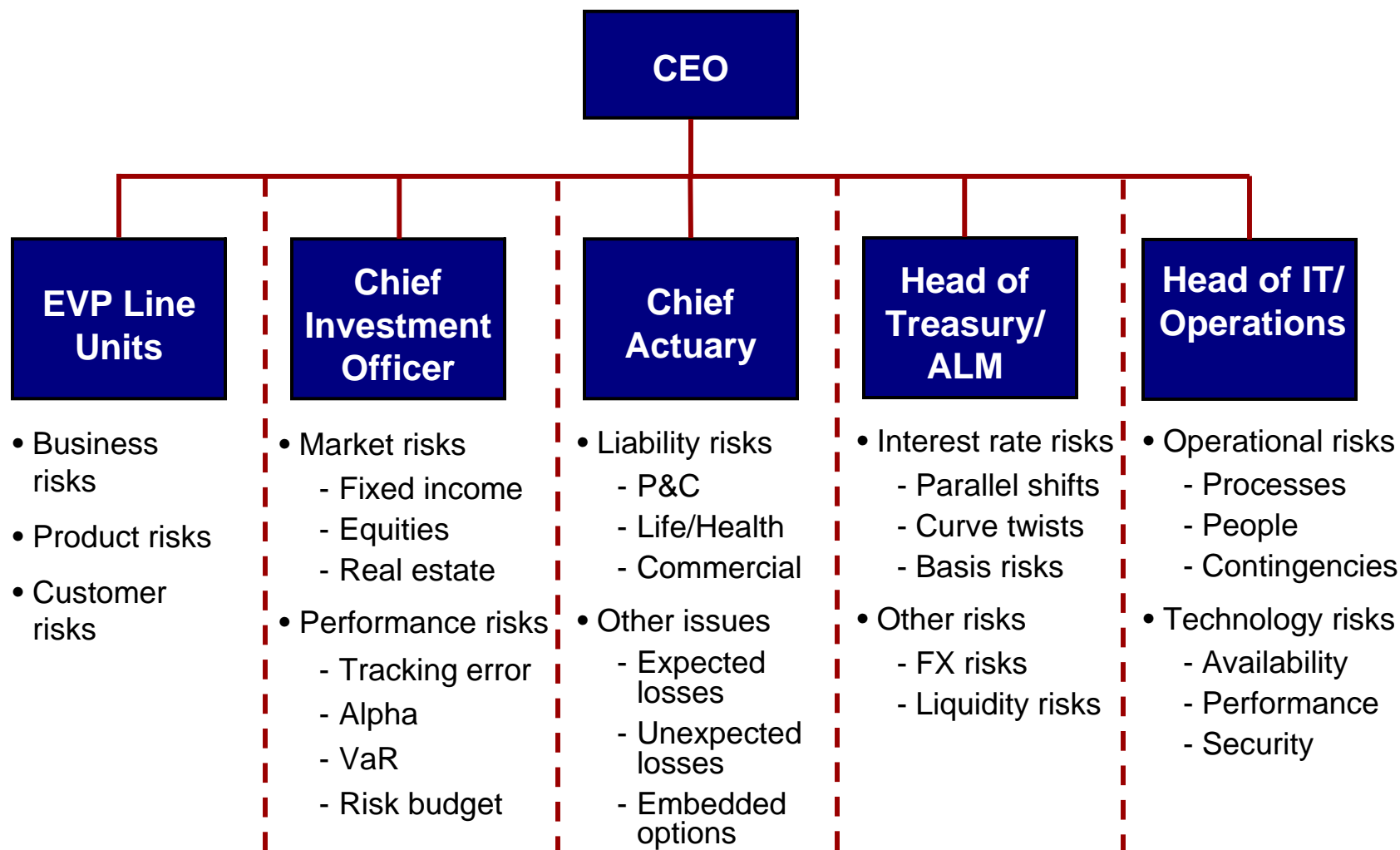
Core Risk Measures



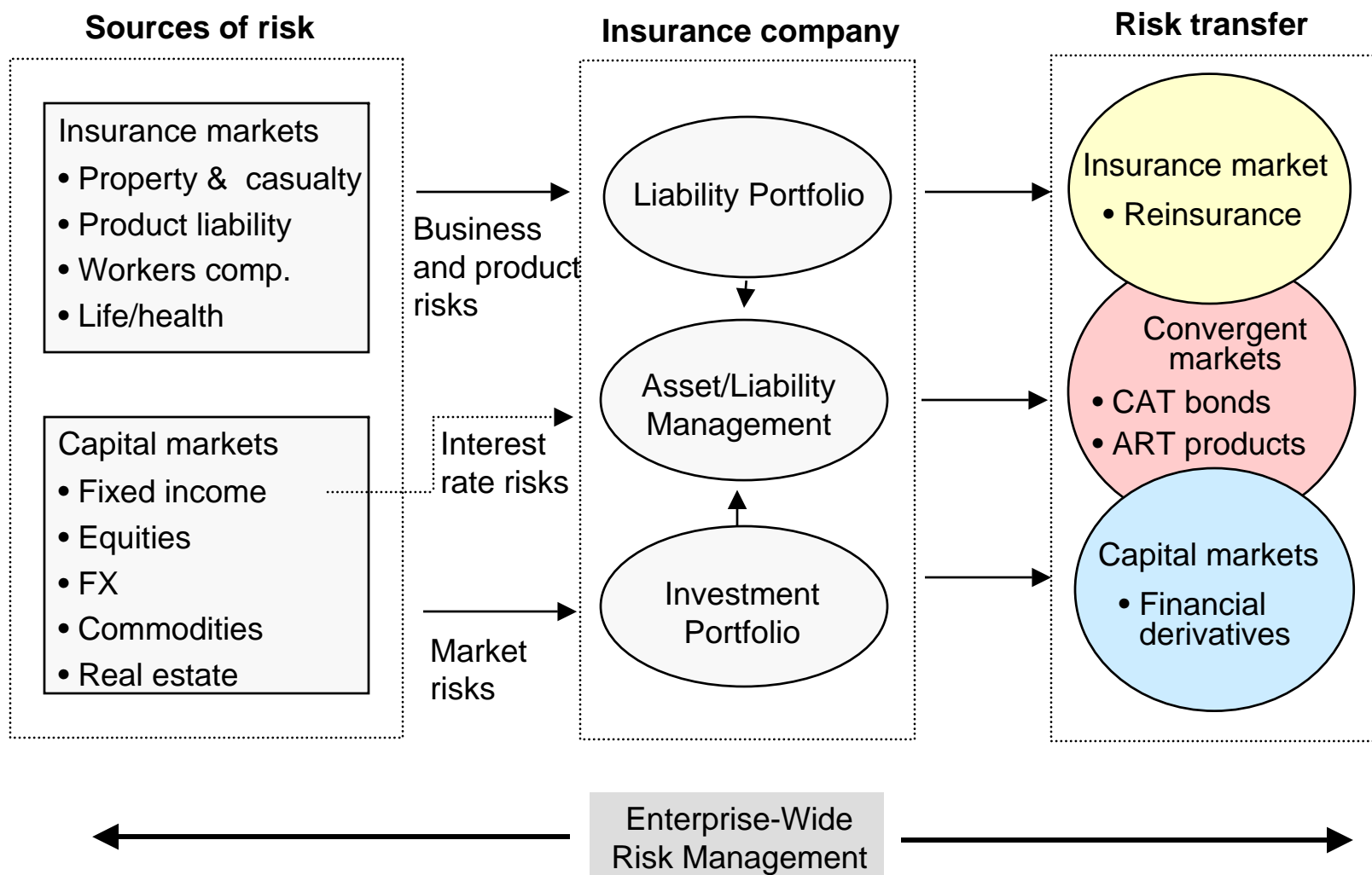
Key Risk Trends



Insurance company risk silos



Insurance company ERM



Balance the hard and soft side of risk

Hard Side

- Measures and reporting
- Risk oversight committees
- Policies & procedures
- Risk assessments
- Risk limits
- Audit processes
- Systems

Soft Side

- Risk awareness
- People
- Skills
- Integrity
- Incentives
- Culture & values
- Trust & communication

Case study:

GE Capital

Background

- New capital markets business
- Traders hired from foreign bank
- Aggressive business and growth targets

2-Year ERM Program

- Established risk policies and systems
- Instilled risk culture
- Survived “Kidder” disaster
- Captured 25% market share with zero policy violations
- Recognized as best practice

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Ten predictions

1. ERM will become the industry standard
2. CROs prevalent in risk-intensive companies
3. Audit committees will evolve into risk committees
4. Economic capital in; VaR out
5. Risk transfer executed at enterprise level
6. Advanced technologies key to advancement
7. A measurement standard will emerge for operational risk
8. Economic accounting becomes standard
9. Risk becomes part of corporate and college programs
10. Salary gap among risk professionals continues to widen

Q&A

1. ERM opportunities for actuaries

- Business requirements
- Skills requirements

2. ERM educational standards

- Undergraduate
- MBA
- Corporate (board, PRMIA PRM)

Thank you

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