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Enterprise Risk Management for Health Actuaries

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Presentation Contents

What is Enterprise Risk Management (ERM)?

Why ERM?

Status of ERM in the Insurance Industry

View of a Health Economic Capital Analysis

Implementation Issues

The ERM Value Proposition

Definitions

ERM is:

- ❑ A coordinated approach to assessing and responding to all risks that affect the achievement of strategic and financial objectives
- ❑ According to COSO,* ERM is a process:
 - effected by an entity's board of directors, management and other personnel
 - applied in strategy setting and across the enterprise
 - designed to identify potential events that may affect the entity, and manage risk to be within its risk appetite
 - to provide reasonable assurance regarding the achievement of entity objectives
- ❑ The discipline by which an organization assesses, controls, exploits, finances, and monitors risks from all sources for the purpose of increasing the organization's short- and long-term value to its stakeholders

*Committee of Sponsoring Organizations

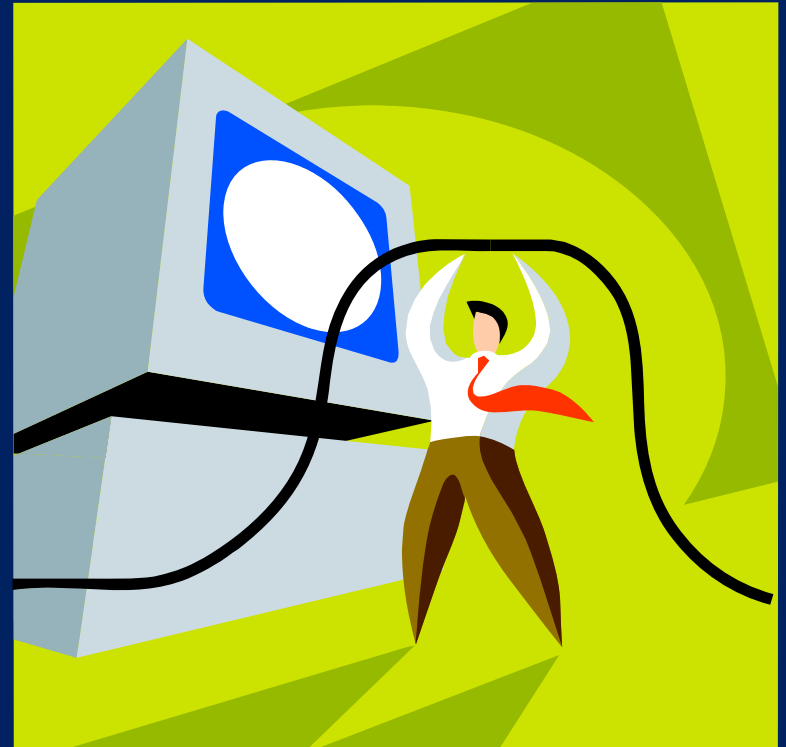
Common Themes

- ❑ Governance and policies
- ❑ Broad based
- ❑ Focused on action
 - Assessing
 - Monitoring
 - Managing
- ❑ Means to an end – achieving organizational objectives

What is Special About Financial Services?

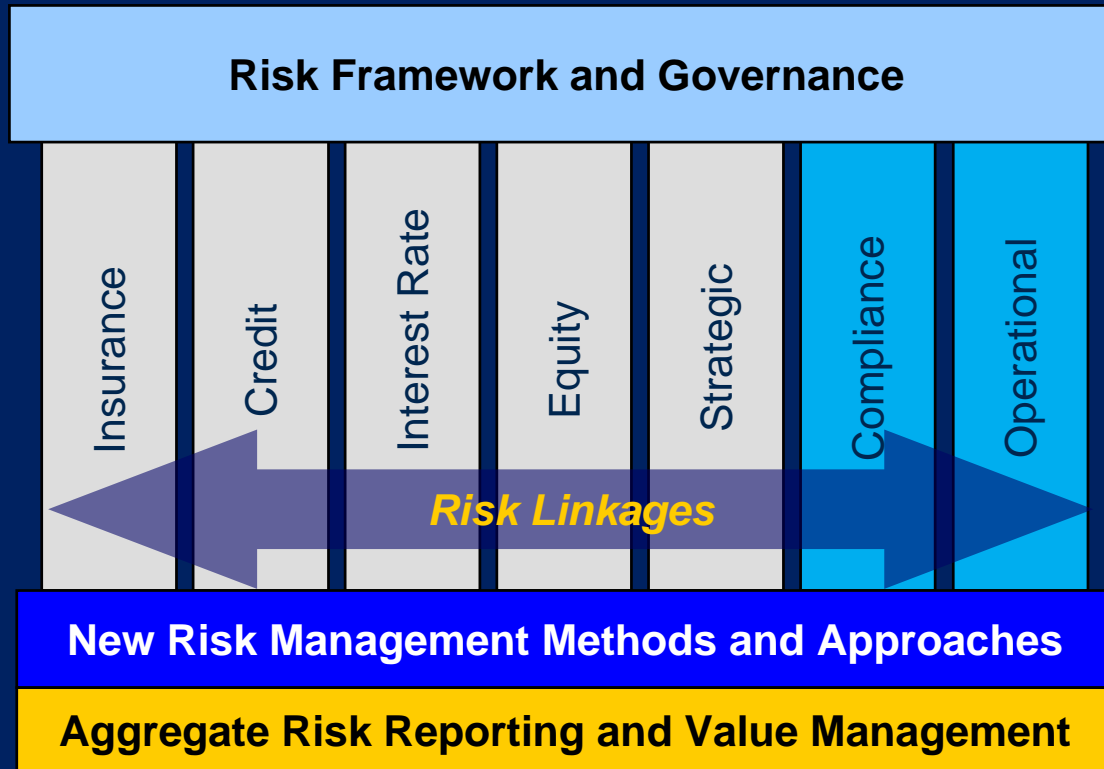
Risk
is Our
Business!

The primary value a bank or insurance company provides is the acceptance of risk.



Key Elements of an ERM Program

Risk Management impacts the design, implementation, and/or enhancement of these elements



Risks are typically managed on a silo basis

There is a high level of interest in ERM

- ❑ Some not-so-surprising lessons learned from corporate scandals
 - Managers sometimes act in their own interest, and *against* their shareholders' interests
 - Loss of confidence due to “surprises” can *quickly* destroy franchise value
 - Shareholders increasingly demand evidence that management actions are *value enhancing* and that their value will not be recklessly destroyed

- ❑ Risk needs to be a focus in organizational decision making
 - Katrina losses relative to catastrophe model damage estimates
 - Value of hedging and other initiatives needs to be reflected in management decisions
 - Organizations need to develop a culture focused on risk

- ❑ Organizations are becoming increasingly complex
 - Conglomerates
 - Convergence of financial products and markets, globalization
 - Senior management needs, and stakeholders demand, a comprehensive view of enterprise risks and a consistent approach to managing these risks

There is a high level of interest in ERM

- Sarbanes-Oxley
 - Focus on “Controls” – intended to prevent financial fraud
 - Increased responsibility of CEO/CFO/Board
 - Senior management wants to be fully informed about risk-taking at all levels of the organization.
- Regulatory
 - Solvency II
 - New European framework for financial reporting and capital standards
 - FSA Prudential Sourcebook
 - New emphasis on governance and process
 - New standards for internal capital modeling, including operation risk considerations
 - Swiss Solvency Test
 - New capital standards
 - Encourages development of internal capital models
- Rating agency
 - S&P – Has issued a formal ERM framework and assessment criteria
 - A.M. Best – Reflects common themes risk analysis
 - Moody’s – Emphasizes governance, risk infrastructure and quantification
 - Fitch – Focus is currently on firm-wide capital models

ERM Committees Are Being Established

- ❑ 66% have ERM committees
 - Half formed within the last 3 years
- ❑ C-Suite involvement
 - President/COO
 - Chief Financial Officer
 - Chief Risk Officer
 - Chief Actuary
 - Investment Officer
 - General Counsel



Source: 2005 Insurance Risk Leadership Survey, Ernst & Young LLP

Emergence of Chief Risk Officers

- ❑ 67% Have CROs
- ❑ Nearly half appointed within the last 3 years
- ❑ Report to CEO or CFO
- ❑ CRO's focus:
 - Addressing specific issues (fighting fires)
 - Working on building and developing a CRO function
 - Will eventually address maintaining and managing risk reporting



Source: 2005 Insurance Risk Leadership Survey, Ernst & Young LLP

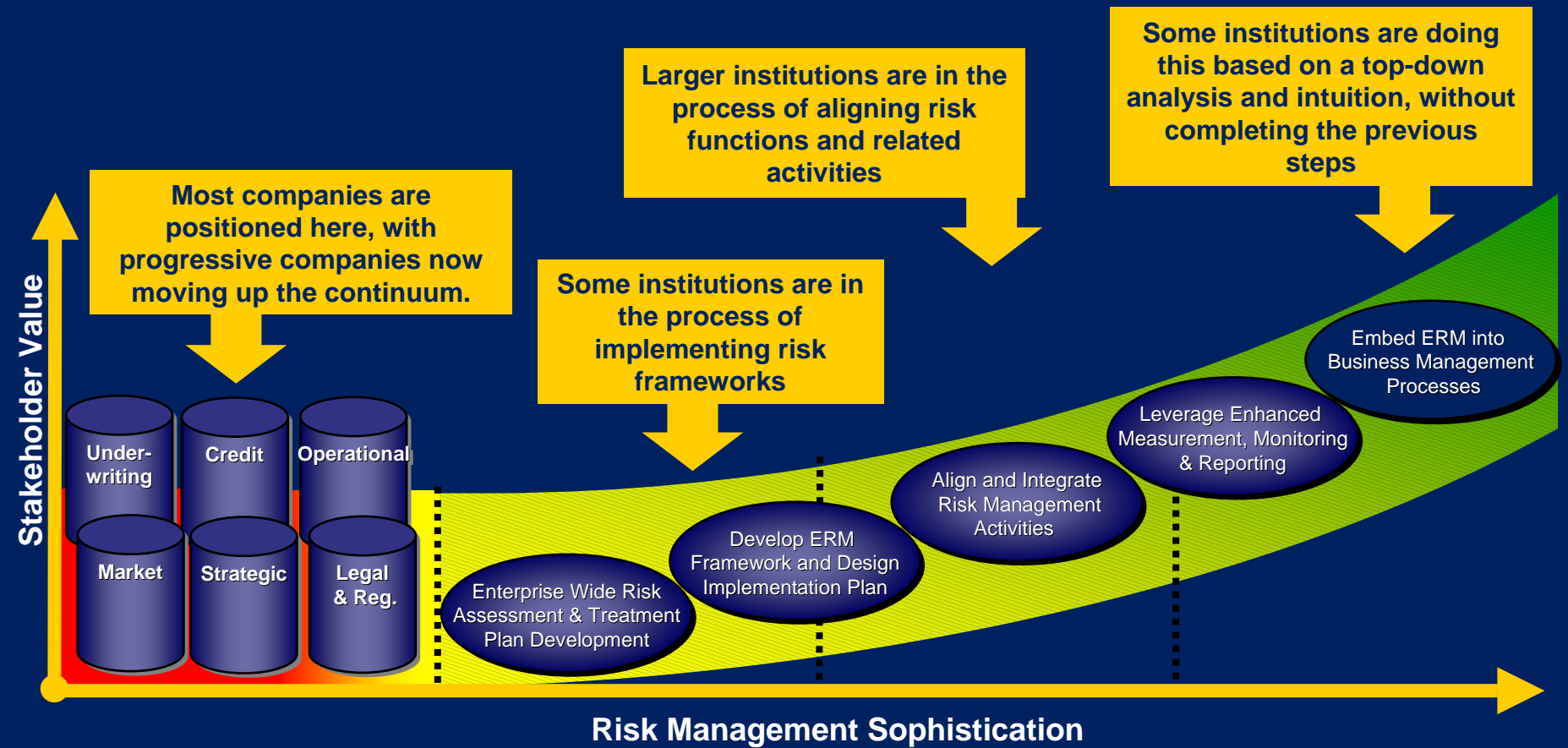
Risk Governance – Critical Issues

- ❑ Risk management framework
- ❑ Risk policy
- ❑ Risk appetite
- ❑ Business unit ownership
- ❑ Awareness and culture
- ❑ Consistent risk monitoring and reporting

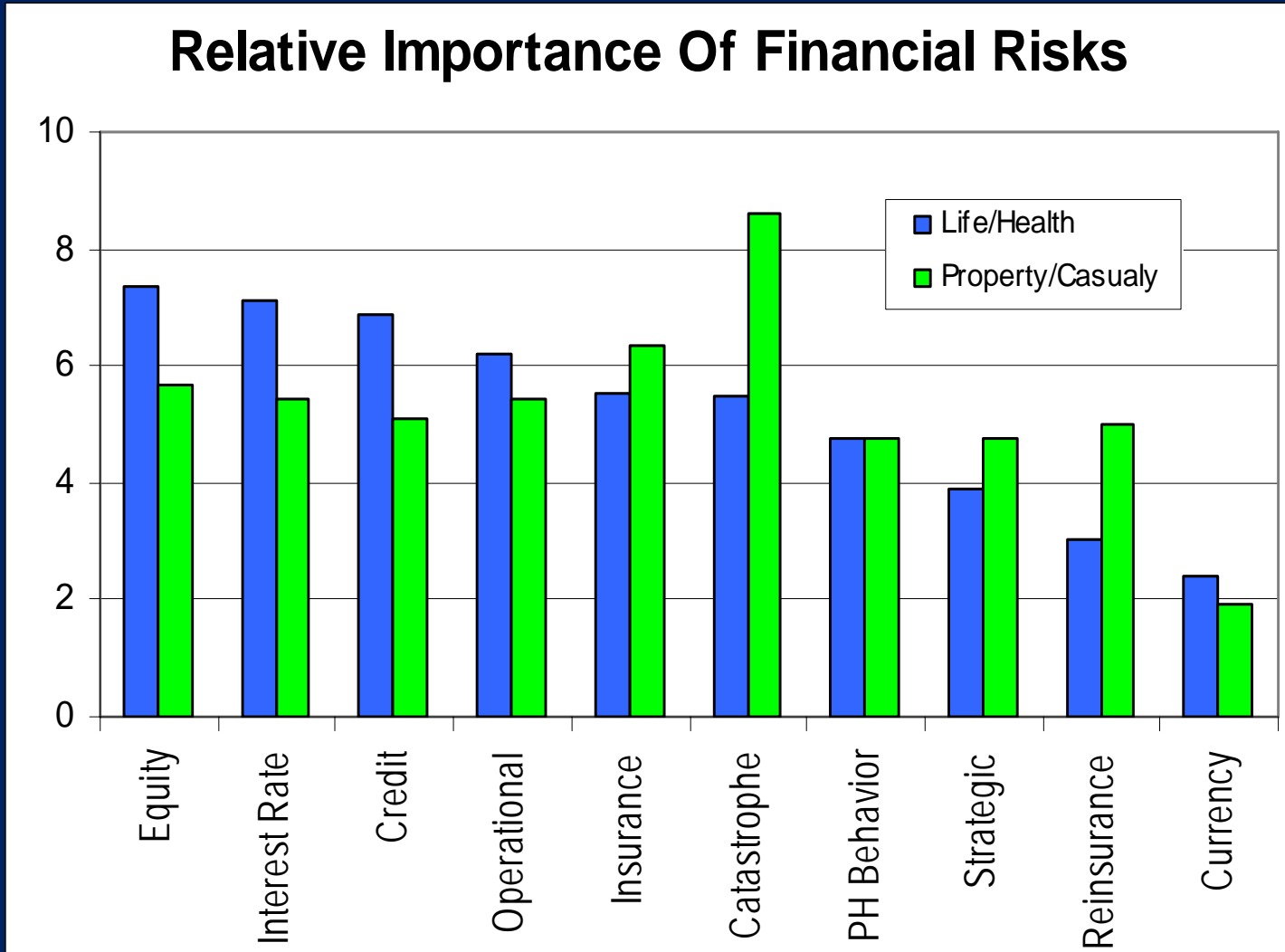
Eighty-one percent (81%) of companies are using an internally developed risk management framework

Source: 2005 Insurance Risk Leadership Survey, Ernst & Young LLP

ERM Continuum

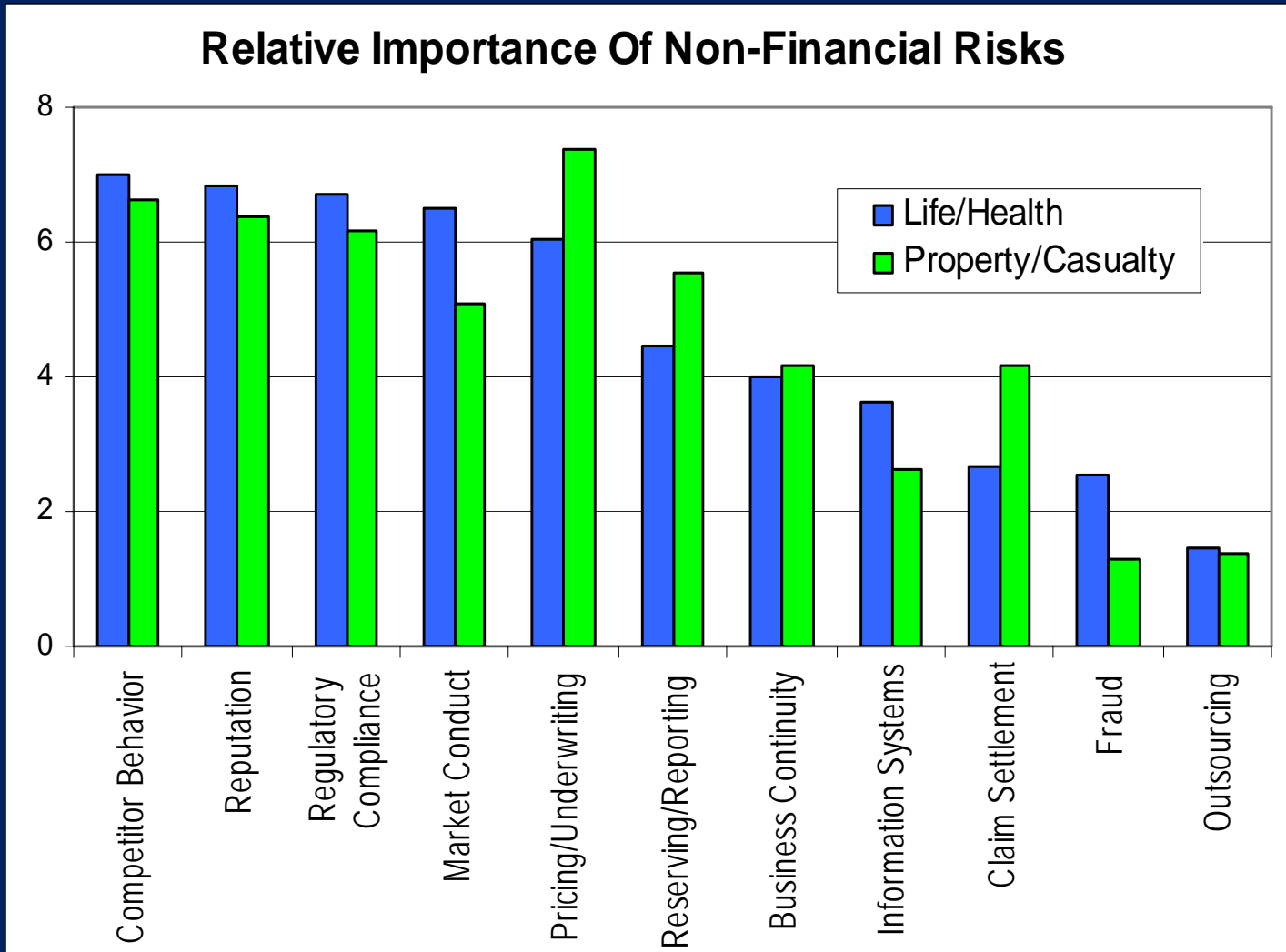


Risk Measurement – Financial Risks



Source: 2005 Insurance Risk Leadership Survey, Ernst & Young LLP

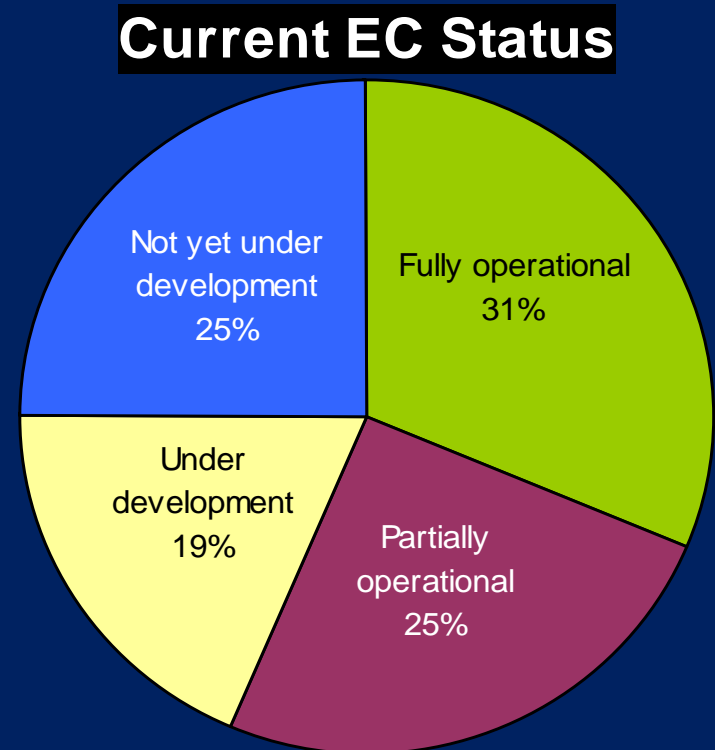
Risk Management – Non-Financial Risks



Source: 2005 Insurance Risk Leadership Survey, Ernst & Young LLP

Risk Measurement – Economic Capital

- ❑ Economic capital (EC) is becoming an industry leading practice
- ❑ 75% of respondents have or are developing EC capabilities
- ❑ 89% of these companies expect to be partially or fully operational in 2007
- ❑ Methodologies vary
- ❑ Risk of ruin varies



Health Carriers

□ Governance

- Fewer have CROs or Risk Committees
- Many CROs more focused on traditional ERM issues rather than integrating risk

□ Measurement

- Fewer have active economic capital models
- Often less diverse companies but changing

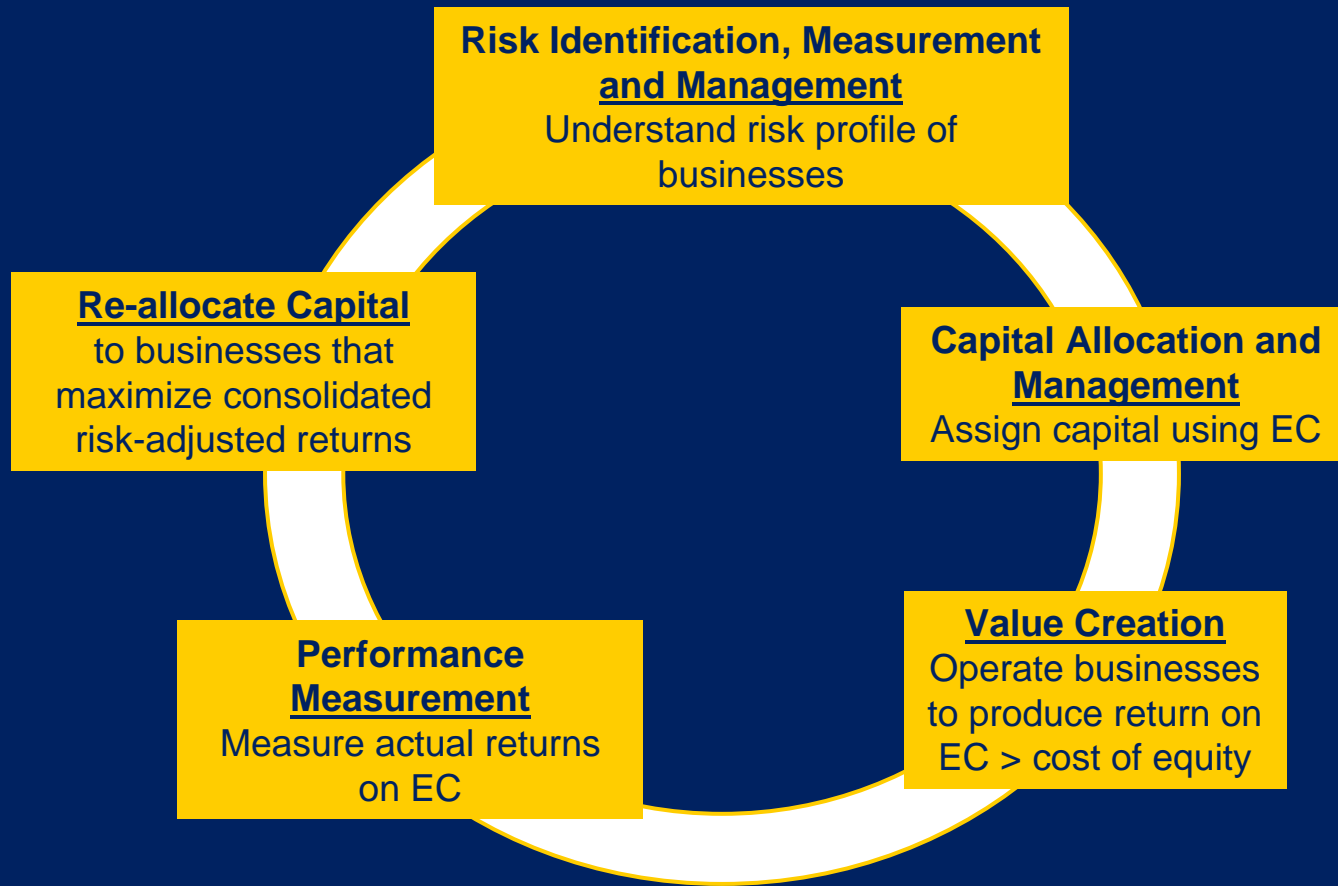
□ Culture

- Focus more on return on premium than on capital or risk



Economic Capital Cycle

A comprehensive EC framework allows a company to explicitly link creation of shareholder value with financial risk management, capital management, and performance measurement.



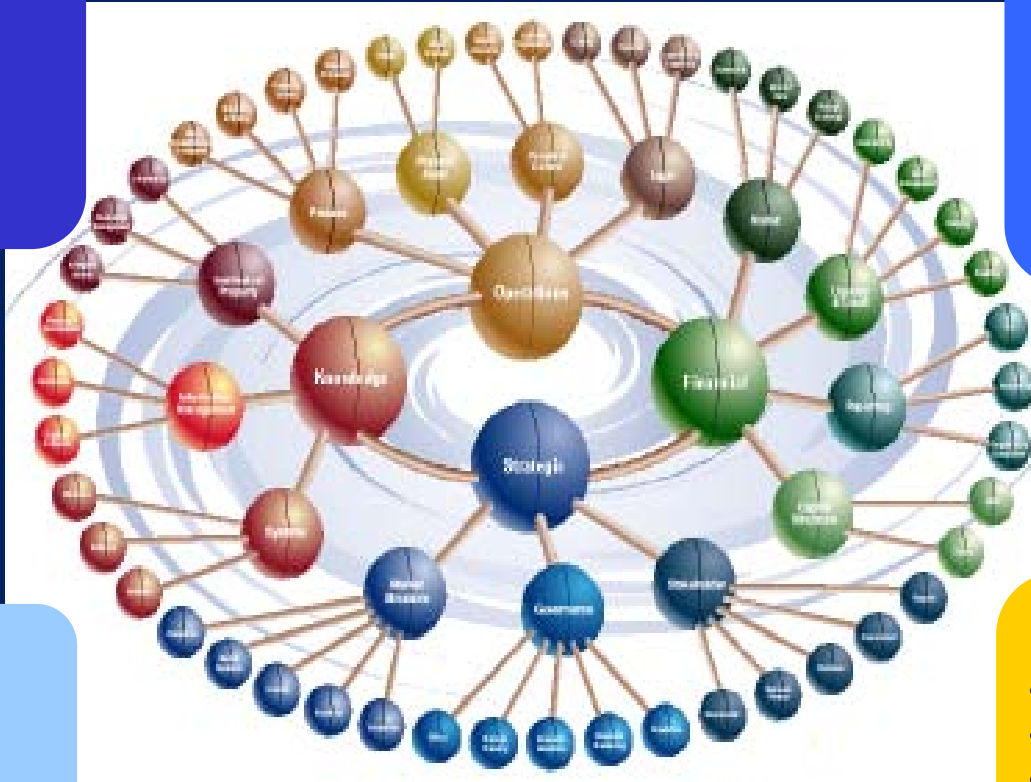
Insurer's Risk Universe

Underwriting Risk

- *Underwriting*
- *Rate Regulation*
- *Pricing Errors*
- *Catastrophes*
- *Adverse Selection*

Operational Risk

- *Litigation*
- *Customer Service*
- *Provider Networks*
- *Computer Failure*
- *Project Completion*
- *Distribution*



Credit Risk

- *Investment quality*
- *Reinsurers*
- *Access to Capital*

Business Risk

- *Acquisition Integration*
- *New Products*
- *New Markets*
- *Regulatory*
- *Divestitures*

Investment Risk

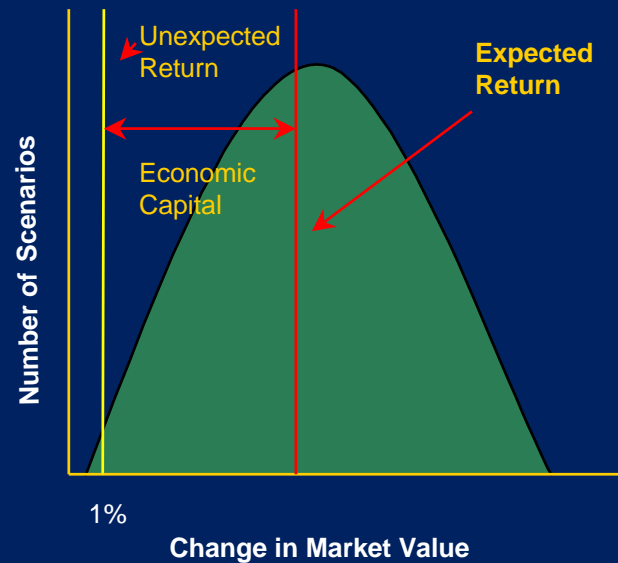
- *Asset/Liability Mgt*
- *Market Volatility*
- *Concentration*
- *Liquidity*

Modeling of Individual Risks

- ❑ Determine measurement approaches to be used for each risk in each business, considering:
 - Materiality of business
 - Perceived magnitude of risk, including economic/regulatory differences
 - Availability of appropriate data
 - The relative value of stochastic and deterministic methods
- ❑ Select from among several modeling platforms that are available, considering:
 - Functionality of platform
 - Compatibility of data availability and model requirements
 - Ease of model development and modification processes
 - Company's desire to internalize the processes at this time
 - Costs

Example – Medical Underwriting Risk

- ❑ Underwriting risk can be modeled via the volatility of surplus equity
- ❑ Surplus equity scenarios are generated for a defined horizon and a probability distribution formed
- ❑ Economic capital is measured as the difference between the selected confidence level (e.g., 99%) and 50th percentile



Developing an Enterprise-wide Model

- ❑ Aggregate separate risk analysis into enterprise-wide model
 - Determine correlation between risks
 - Run aggregate model to determine diversification benefits
- ❑ Test and review with key stakeholders

Methodology Challenges and Choices

- ❑ Parameterization of risks
 - Organization specific or industry data
- ❑ Confidence level / survival rate
 - Liquidity considerations
 - Desired security level
- ❑ Risk measurement time horizon
 - Multi-period view and associated growth rates
 - Discount rates
- ❑ Attribution of investment risks
 - Crediting rate or allocating assets
- ❑ Cross-risk and cross-business correlations
 - Allocation of diversification benefits
- ❑ Hurdle rate determination for performance measurement
 - Reconcile economic capital usage to hurdle rates
- ❑ Treatment of stranded capital

Challenges to Implementation

- ❑ Management acceptance
- ❑ Creating a culture of risk
- ❑ Maintaining the model



The Value Proposition is Significant

- ❑ Improve ability to utilize risk taking capacity
- ❑ Align risk appetite and strategies
- ❑ Improve linkage of business decision making and risk to ensure returns are adequate for risks taken
- ❑ Increase transparency and accountability about risks
- ❑ Ensure there is a process to identify, understand and manage all risks that matter to the organization, and to protect enterprise value
- ❑ Potential to reduce the number and impact of surprises, avoid catastrophic failure of organization
- ❑ Improve credibility with investors and other stakeholders