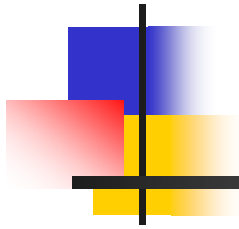


An Overview of the Enterprise Risk Management Process



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What is Enterprise Risk Management?

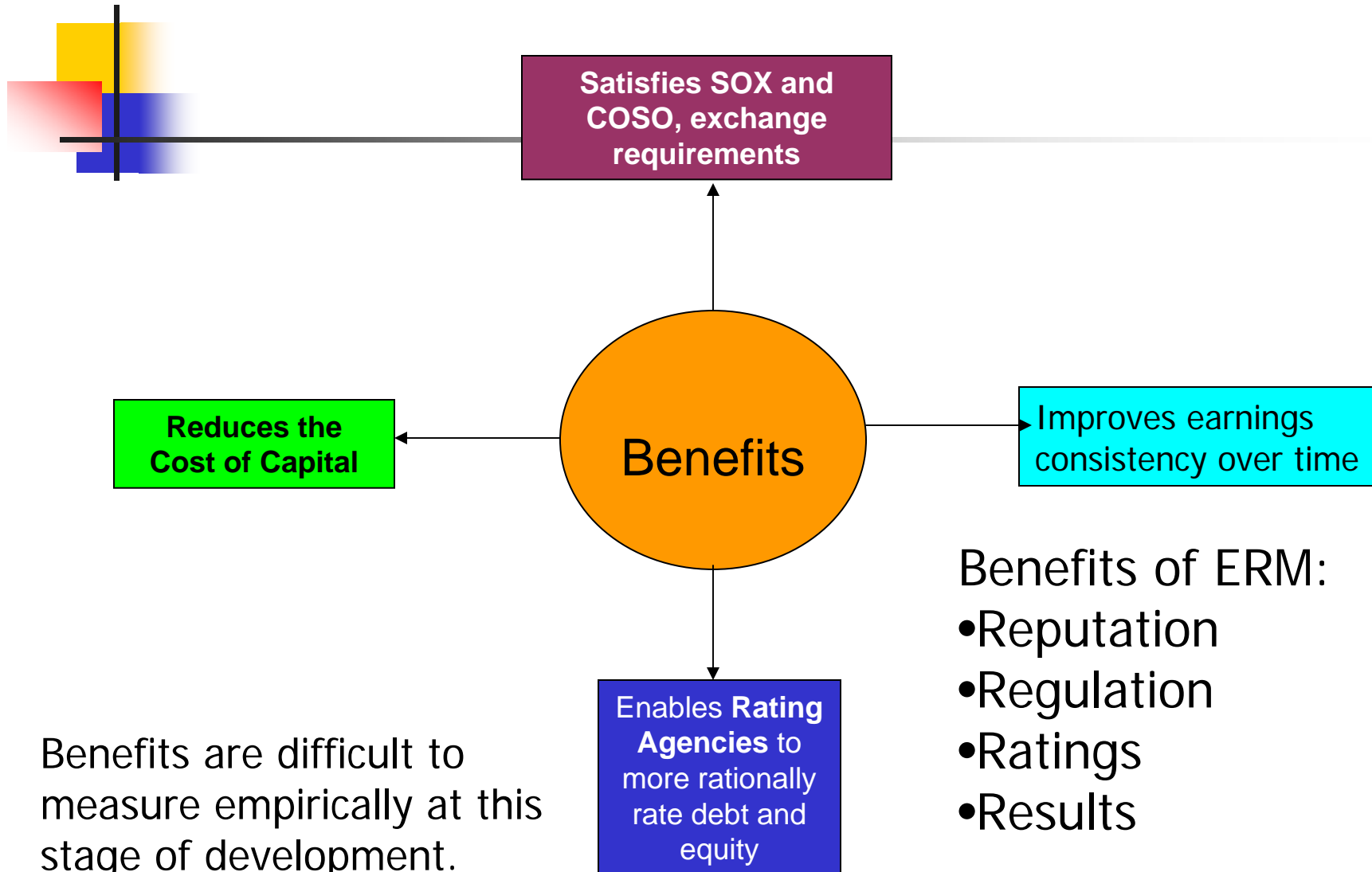
- Risk Management is "the culture, processes and structures which are directed towards the effective management of potential opportunities and adverse effects." (AN/NZS 4360)
- Risk Management enables decision-making under uncertainty.



Highest level goals of ERM

- Encourage rational risk taking
- Increase firm value
- Protect interests of stakeholders
- Drivers of ERM investment?
 - Credit rating agencies
 - Demands from shareholders
 - Regulatory compliance
 - SOX, NAIC
 - Competitive Advantage

ERM Benefits





ERM standards

- Australia/New Zealand: AS/NZS 4360
 - Initial 1999, Revised 2004
- COSO ERM Framework
 - Initial September, 2004
- UK: Turnbull Report (Internal Control Guidance)
 - initial 1999, revised Oct 2005
- Canada: Toronto Stock Exchange Report (Corporate Governance)
 - initial 1995
- ISO 31000: Risk Management Standard
 - Initial draft September, 2007, Target release June 30, 2009
- NAIC Solvency Modernization (Pending)



The ERM Process

- 1. Set Goals
- 2. Identify Exposure
- 3. Analyze exposure
 - measure and evaluate
- 4. Treatment
 - mitigate and finance
- 5. Monitor and Communicate



The Development Stage of Enterprise Risk Management

- The stage of ERM development:
 - 3% = Optimized
 - 10% = Embedded
 - 25% = Established
 - 32% = Formalized
 - 23% = Undeveloped
 - 7% = Not stated/applicable

Source: Aon's *Enterprise Risk Management-- The Full Picture*, November 2007.

Laureen Regan, Ph.D. Temple University, June, 2009



The ERM Process Step1: Set the Goals and Context

- Strategic context: there should be a close relationship between strategic objectives and management of risks.
 - Determine the firm's risk appetite
 - How much risk are we willing to accept and at what level of return?
 - Determine risk tolerance
 - Acceptable level of variation relative to achievement of objectives
- Set up the ERM structure
 - ERM policy and role of Board



The ERM Process Step 2: Identify Exposures

- Must be systematic: Exposures missed here are dropped from further consideration.
- Focus on risks whose consequences seriously impair the firm's ability to achieve its goals.
- Must identify all material risks whether they are under control of the firm or not.
 - Examples: regulation, systemic exposures
- Multi-disciplinary team



Survey: Top Ten Risks, 2007

- Damage to reputation
- Business interruption
- Third party liability
- Distribution or supply chain failure
- Market environment
- Regulatory/legislative change
- Failure to attract or retain staff
- Market risk (financial)
- Physical damage
- Merger/acquisition/restructuring



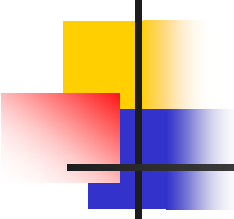
Survey: Top Ten Risks, 2009

- Economic slowdown
- Regulatory/legislative changes
- Business interruption
- Increasing competition
- Commodity price risk
- Damage to reputation
- Cash flow/liquidity risk
- Distribution or supply chain failure
- Third-party liability
- Failure to attract or retain top talent



The ERM Process Step 3: Assessment

- Identification results in a master list
 - Most serious risks should be addressed first
 - Stress and Scenario Testing, Stochastic Modeling
 - Data availability and credibility requirements affect quantitative analysis.
 - Examples: New exposures, rare occurrences
 - Model risk must be acknowledged and managed
- Qualitative methods may be used for initial screening
 - Use scales to rank exposures on a relative basis
 - Must have uniform definitions of frequency and severity → what is “serious”, “likely”, “rare”



The ERM Process Step 4: Treatment → Loss Control

- Definition: Investment to reduce exposure to risk
- Implementation tends to be industry specific
- Examples
 - Six Sigma
 - Business continuity planning and crisis management
 - Insurance / Reinsurance / Hedging



Link to Corporate Governance

- Board has oversight function
- Key Role of Internal Audit
 - Assurance regarding the ERM process
 - Evaluation of the ERM Process
 - Assurance regarding handling of key risks
- ERM targets should be based on economic capital, regulatory capital requirements, and financial resources.



Wrap-up: The ERM Process

- Link RM to strategy
- Identify exposures
- Assess: qualitative and quantitative methods
- Mitigate: Prevention and Response
- Finance: Hedges / Insurance / Capital Markets
- Review and Revise

Thank You

