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Enterprise Risk Management – Implementation in Practice

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First things first…
some ground rules for ERM…

ERM Rule 1:

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- Enterprise risk management deals with risks ***("downside risks" -- 危)*** and opportunities ***("upside risks" -- 机)*** affecting value creation or value preservation



- Value is maximized when management sets strategy and objectives to strike an optimal balance between growth and return goals and related risks ***(i.e., maximizing risk-adjusted returns)***, and efficiently and effectively deploys resources in pursuit of the entity's objectives

ERM = Risk Management + Return Maximization

(value preservation) (value creation)

ERM Rule 2:

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- In business, everything we do involves some form of Risk Management but not everything is Enterprise Risk Management

- ERM is an oversight function – *"second line"* of defense – but is also a business partner for senior management to provide value adding solutions



The very essence of Enterprise Risk Management is in its "management"

ERM Rule 3:

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What is NOT ERM?

1. ERM is not another (or additional) form of compliance

2. ERM does not aim to *solve* or *eliminate* all risks

3. Risk Management is not *solely* the responsibilities of the ERM function

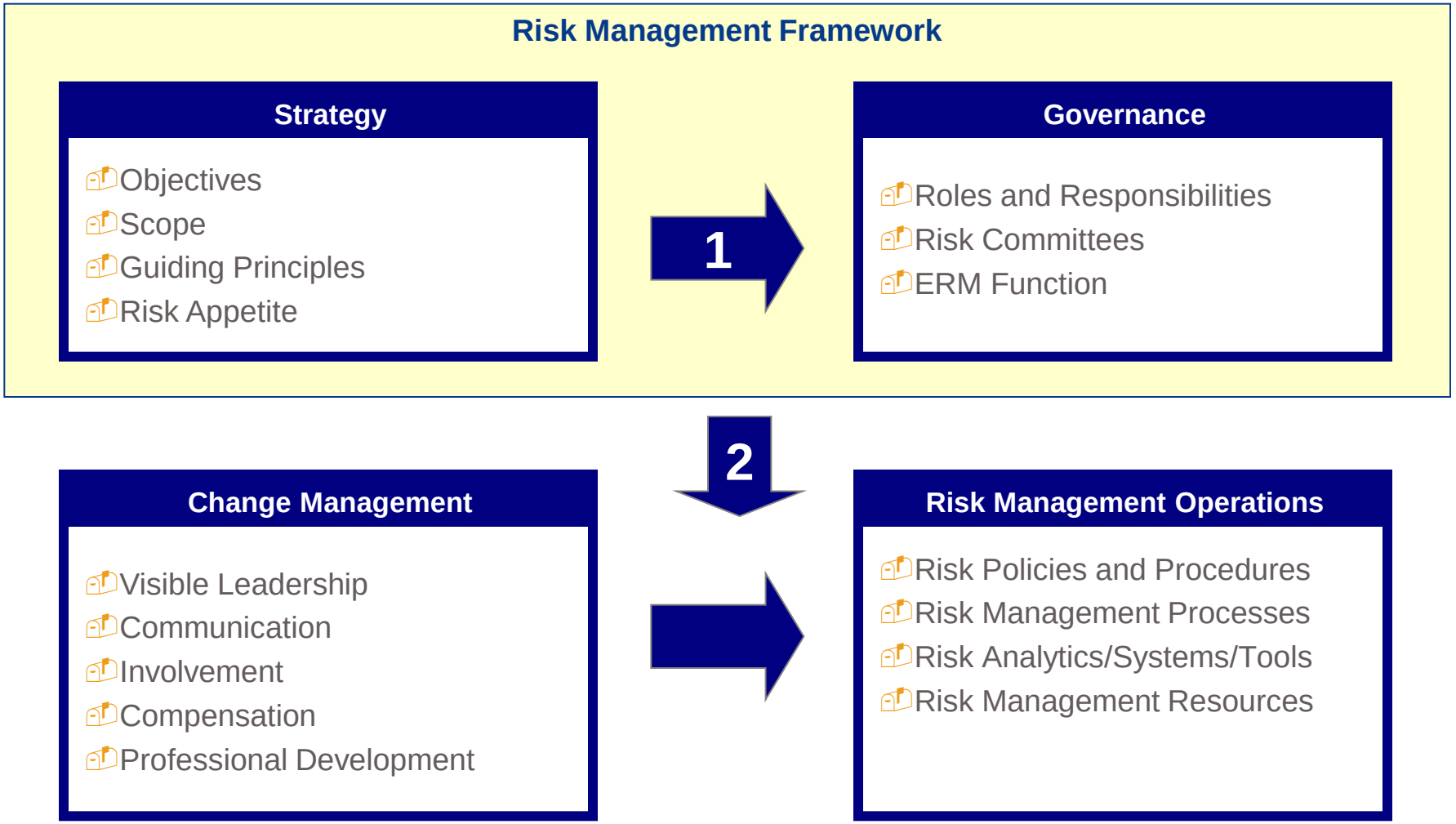


"In a risk business, risk is everyone's business…"

Chartis APAC ERM Framework

Risk Management Framework – Overall

1. The Risk Strategy drives the Risk Governance Structure.
2. Together Risk Strategy and Risk Governance provide the basis for risk management operations including risk policies and procedures, business processes, risk analytics/methods/tools and resources supporting risk management.



Risk Strategy: Chartis APAC ERM Scope

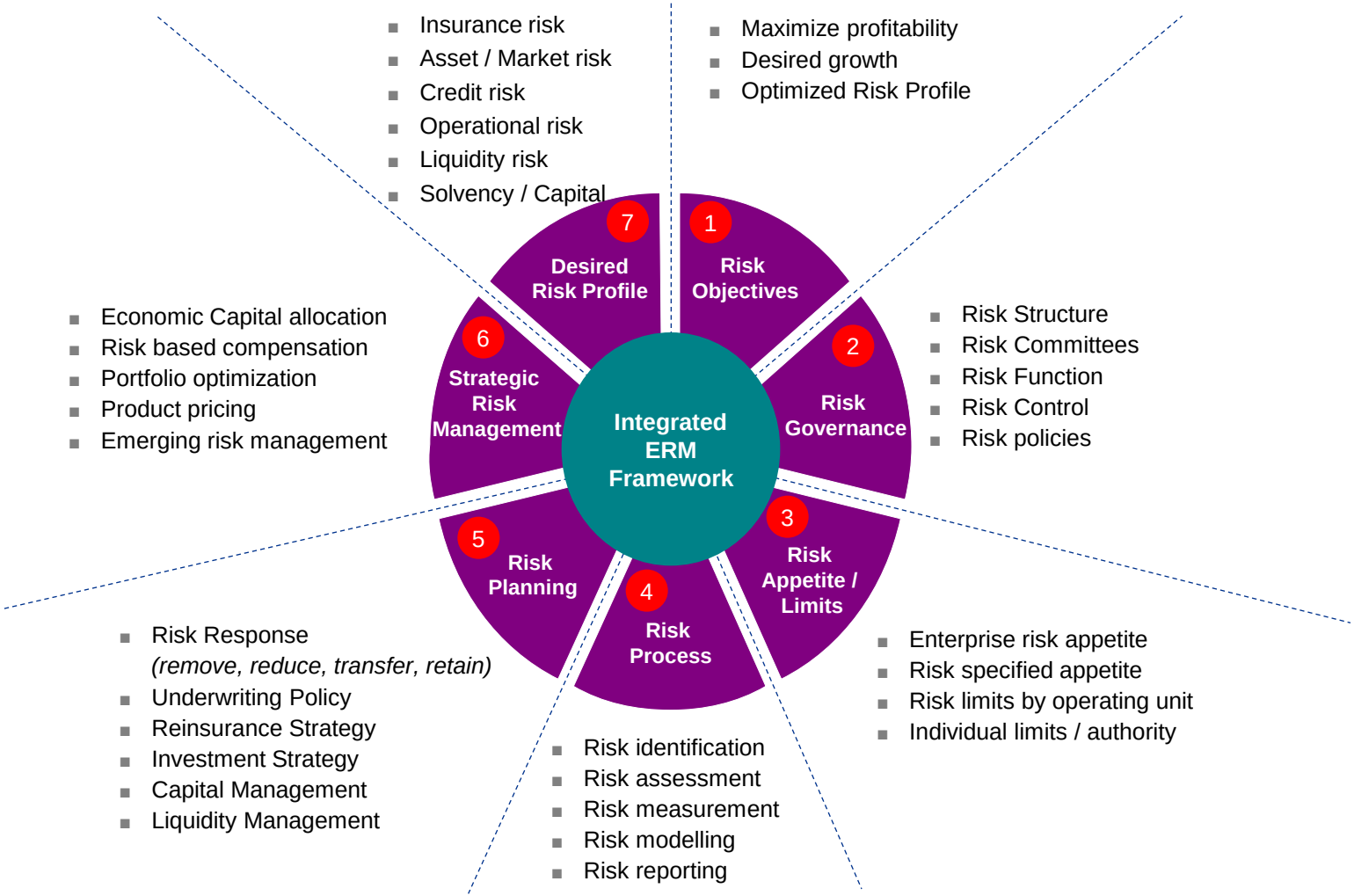
The scope covers the ***whole risk profile***…

Scope Across:

- All business segments
- All locations
- Risks to future income, not just current monetary losses
- Risks from external events, even if out of our control
- Risks due to third parties, such as competitors, suppliers / vendors, regulators, etc.



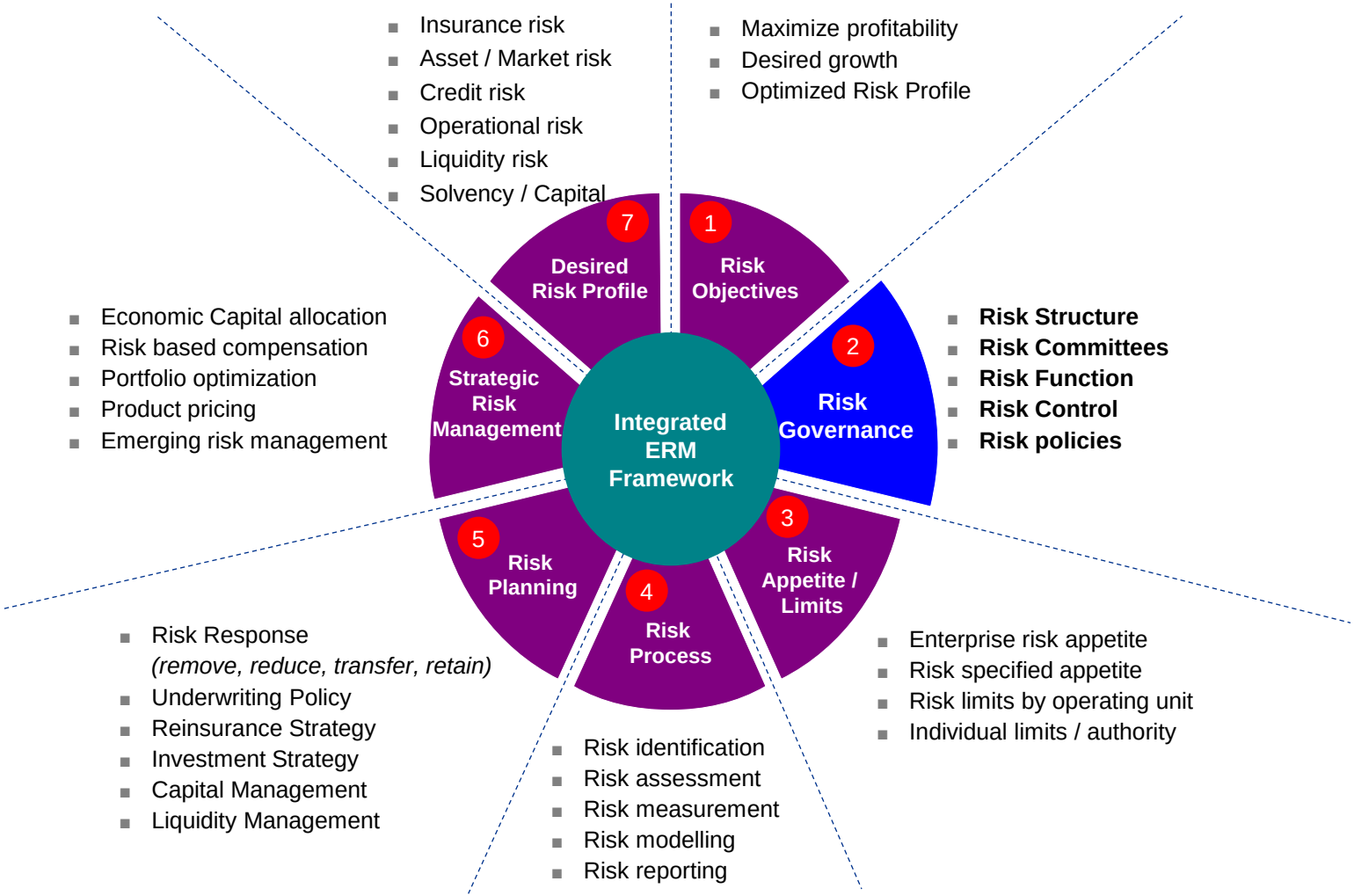
Risk Strategy: ERM Control Cycle



Risk Management Implementation in APAC

Part 1 – Getting the Form in shape…

Risk Strategy: ERM Control Cycle



ERM Rule 4:

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- In order for ERM to work, we need the Board (and Senior Management) Buy-in
  - ✓ A successful ERM program can help the Board to discharge its responsibilities
  - ✓ A supportive Board can help ERM through setting the right culture, direction and allocation of resources in the company

A successful Board relies on ERM, and a successful ERM relies on the Board…

The ERM journey begins…

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1. Set up the whole APAC Risk Governance structure
   - ✓ Board Committees, Risk Committees and Control Committees (Audit, Compliance)
   - ✓ Appropriate suite of charters for accountability and scope of work

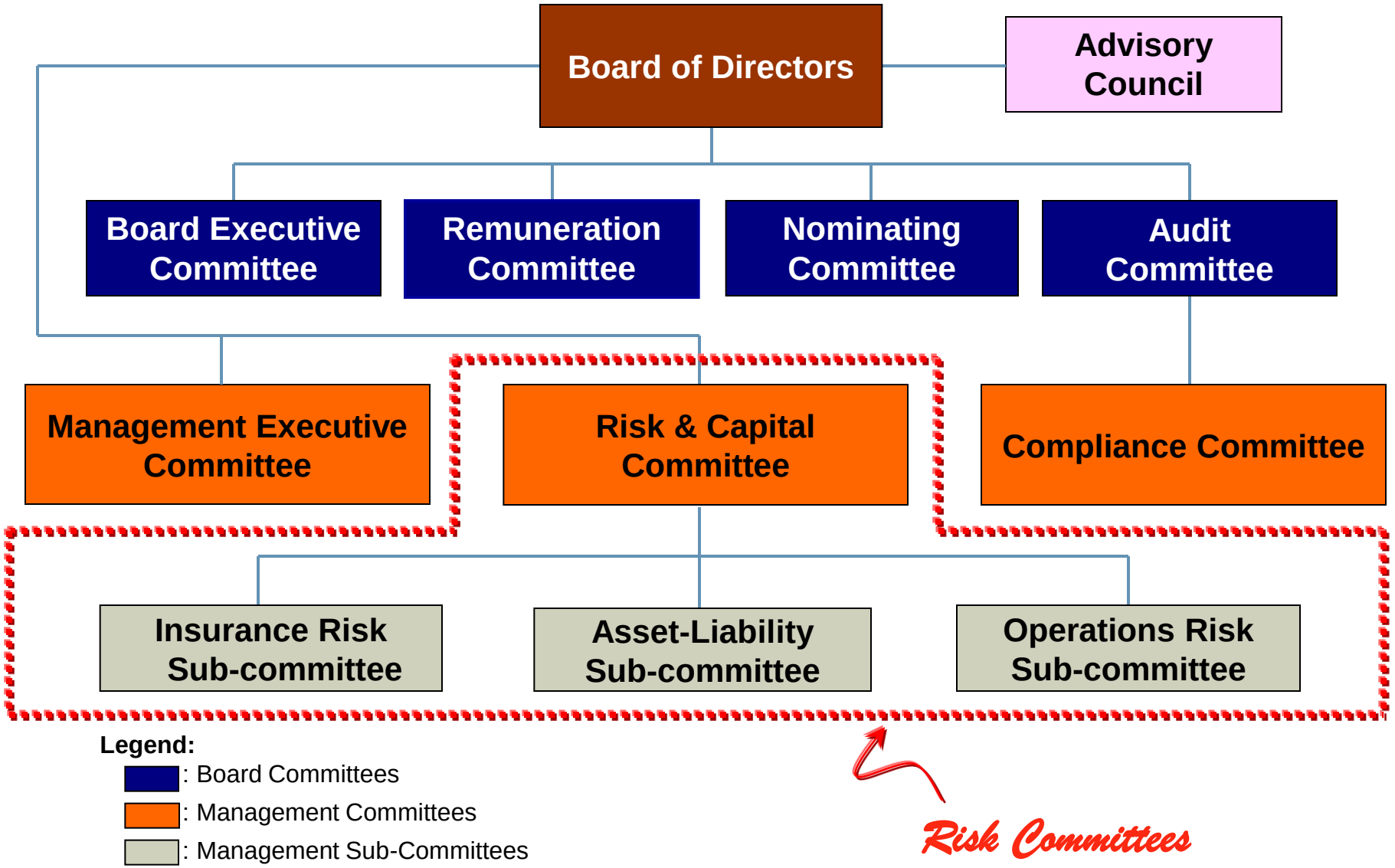
2. To kick-start all the Risk Sub-committees
   - ✓ Includes 3 sub-committees (Insurance, Asset-Liability, Operational Risks)

3. To set up ERM functions within APAC countries
   - ✓ Generalists – In-country risk officers and risk champions → with mentor/buddy system of support
   - ✓ Specialists – Insurance Risk & Portfolio Specialist, Operational Risk Specialist, Asset-Liability Specialist, CAT Modeler

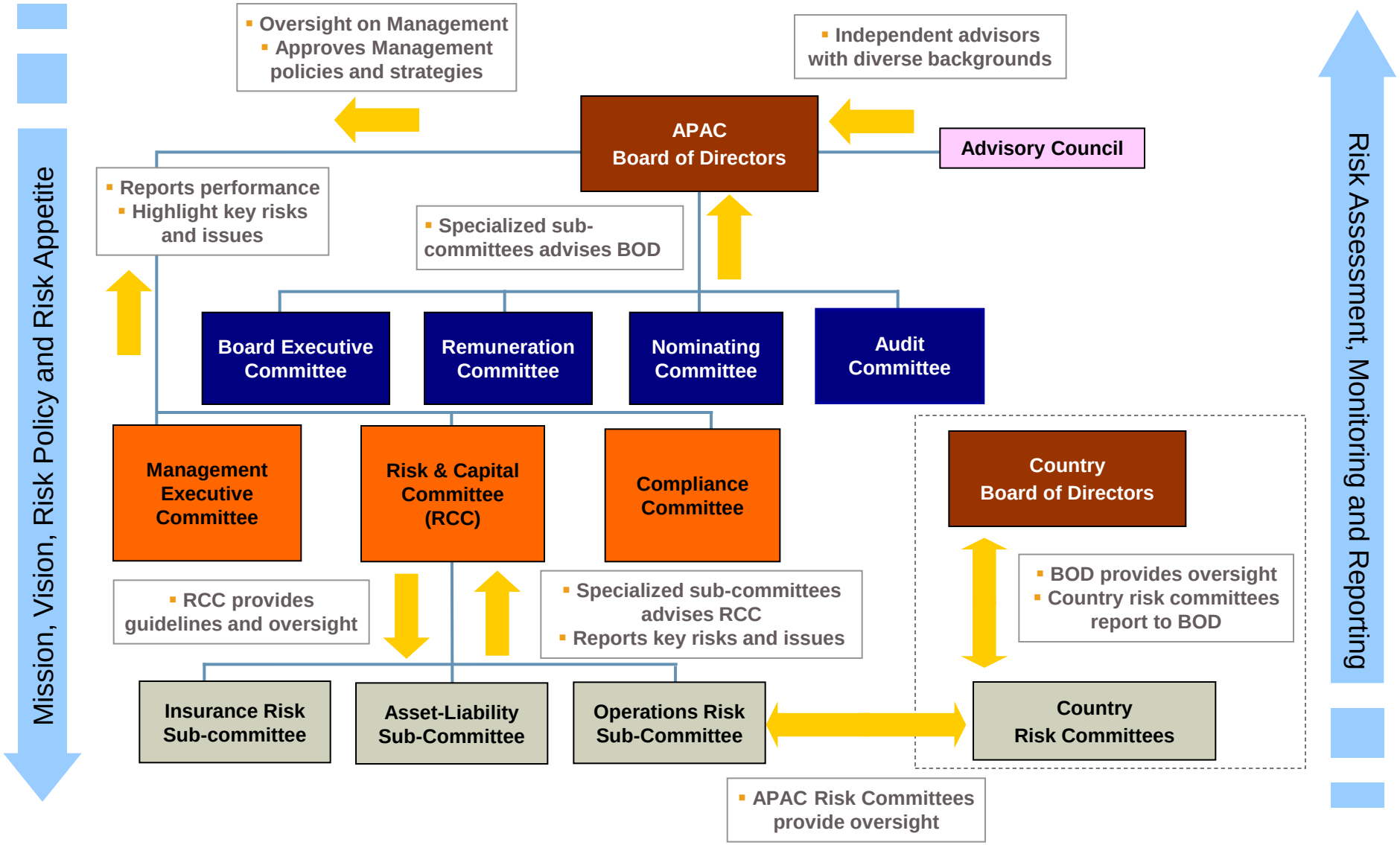
The Form needs Substance to be effective.
The Substance needs Form to be efficient.

Setting up of Governance Structure

Board of Directors | Board Committees | Management Committees and Risk Committees



The Dynamic of Governance Structure



Purpose of ERM Function

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1. Monitor overall *risk profile* against Board/RCC approved *risk appetite*
2. Implement a comprehensive set of *risk management policy*
3. Document a consistent *risk "language"* with standardized definition
4. Develop *risk management culture*, include conducting trainings to staff
5. Drive *risk management processes*, include assessment of methodology
6. Design tools for management information and other *risk reporting*
7. Work as *business partner* to senior management and other key stakeholders to define value adding solutions
8. Work with *internal audit* and *compliance* function as "second line of defence"
9. *Communicate* with internal / external stakeholders on ERM matters

Risk Strategy: ERM Control Cycle



Chartis Risk Appetite Framework

A risk appetite statement is a clear articulation of the risk profile Chartis is willing to accept in the pursuit of its strategic goals. It builds the foundation to meet strategic objectives, to carry out day-to-day business management and to develop and execute appropriate courses of action during times of stress and crises.

The Framework provides:

- A structure for cascading overall risk appetite articulated at the Chartis Inc. level down to various risk categories, to individual businesses and ultimately to limits and authorities for various risk-taking activities and individuals

- A consistent set of criteria that should be considered when setting risk appetite across risk categories and businesses

- Guidance on the use of risk metrics in setting risk appetite to ensure clear understanding and management of underlying model risks

Risk Appetite Concepts

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Risk Appetite	▪ **A framework that establishes the risks that the insurer wishes to acquire, avoid, retain and/or remove. *(S&P definition)***
Risk Preference	▪ **The *qualitative* risk appetite statements that guide the insurer in the selection of risks. *(S&P definition)***
Risk Tolerance	▪ **The *quantitative* risk appetite statements that guide the insurer in the selection of risks. *(S&P definition)***
Risk Limits	▪ **The *quantitative* boundary that serves to constrain specific risk taking activities at the operational level within the business. *(S&P definition)***
Risk Target	▪ **The optimal level of risk that an organization wants to take in pursuit of a specific business goal, considering the risk-return trade-off and company's capacity to manage those risks**
Risk Capacity	▪ **The volume of risk that an organization can take as measured by some consistent measure, such as Economic Capital**

Illustration of Risk Appetite Concepts

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Conversation overheard at home…



Son: I want to eat bread. ***(Risk Preference)***

Wife: How many do you want? ***(Risk Target)***

Son: I want two bread…***(Risk Tolerance)***

Wife: No, you can only eat one bread. ***(Risk Limit)***

Wife: You have just drank milk, and you are going to eat lunch later. If you eat two bread you will be too full for lunch later. ***(Risk Capacity)***

Chartis Risk Appetite Structure

The risk appetite statement is constructed in a top-down manner in four stages, starting at the Chartis, Inc. level

Level 1

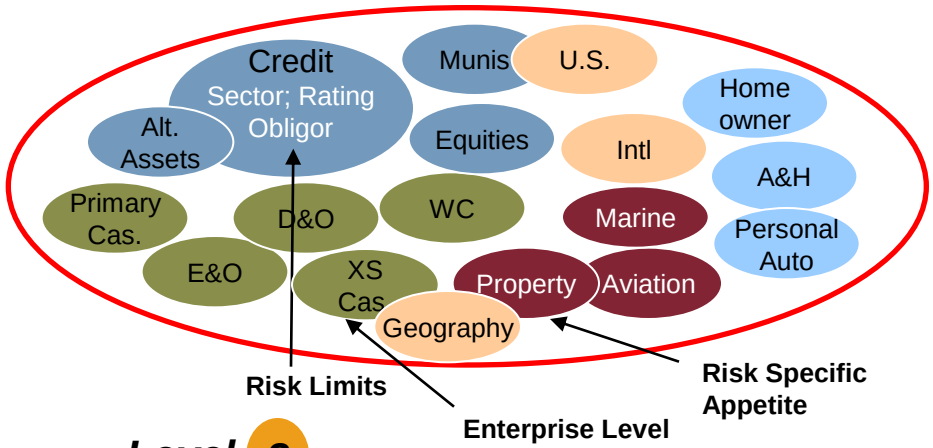
Enterprise Level

- The overall risk profile Chartis is willing to accept
- Derives from strategic objectives for growth, profit and risk to support long-term viability and value creation
- Reflects competing objectives for
  - Solvency/capital adequacy
  - Earnings volatility
  - Profitability
- Long term view and only adjusted to reflect major changes in the external or internal business environment

Level 2

Risk Specific Appetite

- Translation of overall risk profile into numerical limits on exposure to specific risk classes and events
- Organized along dimensions that typically do not aggregate
- Reviewed and updated annually



Level 3

Risk Limits by Operating Unit

- Allocation of appetite is based on capacity and constraints
- Reviewed regularly to reflect local changes in regulatory constraints, capacity of legal entities, local market fluctuations and financial performance

Level 4

Individual Limits / Authorities

- Limits & authorities applicable at point of risk-taking activity
- Developed at operating unit level
- Enable management of risks within overall risk limits of the unit
- Continuous monitoring of appropriateness

Articulating a Risk Appetite

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There exists a spectrum from pure qualitative statements to most quantitative aspects

Qualitative



Quantitative

"conservative"
"aggressively pursue opportunities…"
"low appetite for risk except if directly related to core skills"
"we have no appetite for systematic operational risk"
"not tolerate damage to reputation"

"considerable appetite for ventures"
"we have a war chest for…"
"guaranteed"
"backed by first mortgages"
"low risks"
"speculative"
"aggressive"

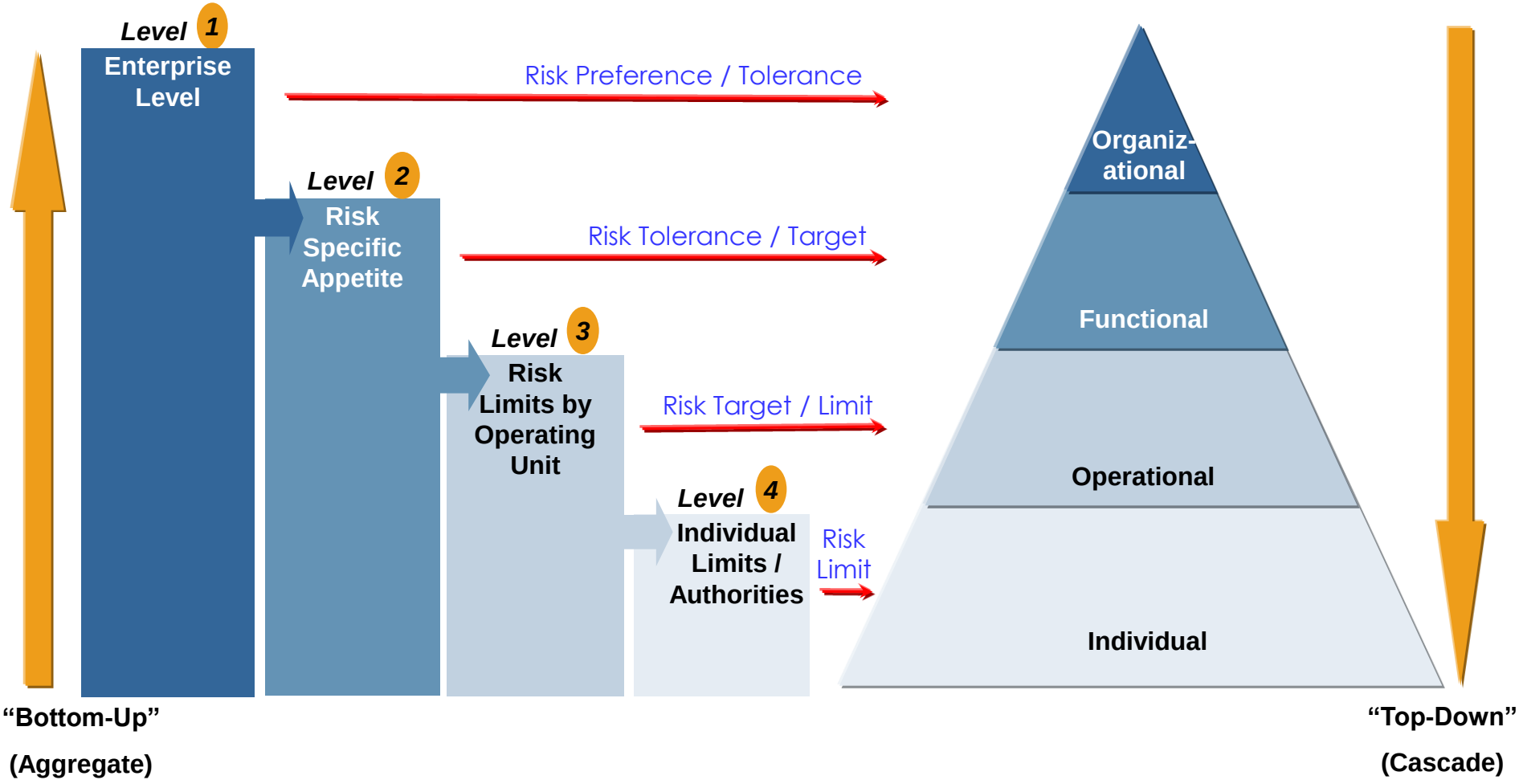
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"less than a 10% chance of a loss each year"
"less than x% chance of a breach of MCR in next 10 years"
"maintain S&P rating of AA…"
"no more than y% decline in economic capital with 95% probability"
"Cost of rectification for operational issues no more than…"
"a negative return once in about every 7 years"

Source: Institute of Actuaries of Australia

Developing Risk Appetite in an organization

Risk Appetite can be developed using “bottom-up” or “top-down” approach, or a combination of the two.



Criteria for Cascading Risk Appetite

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There are four criteria considered when cascading enterprise level risk appetite to specific limits and individual business units.

Capital adequacy vs. profitability – The relative risk/return profile of the risk is a key consideration in setting appetite. It ensures consistency between risk appetite and methods used to optimize portfolio mix and assessing risk-adjusted performance

Organizational capabilities – In addition to financial considerations, risk appetite should consider the capabilities of managing the risk. These include, for example:

- Knowledge, experience and size of the underwriting team responsible for risk selection and pricing
- Completeness and accuracy of data needed to reliably assess the risk
- Availability of methods and tools to reliably assess the risk
- Knowledge and experience of management team with respect to the risk

Time – Consideration should be given to how quickly exposure can be reduced in adverse circumstances in needed. It includes:

- Duration of the policy
- Ability to cost effectively reinsure or hedge risk
- Time required to reliably assess the true cost of the underlying risk

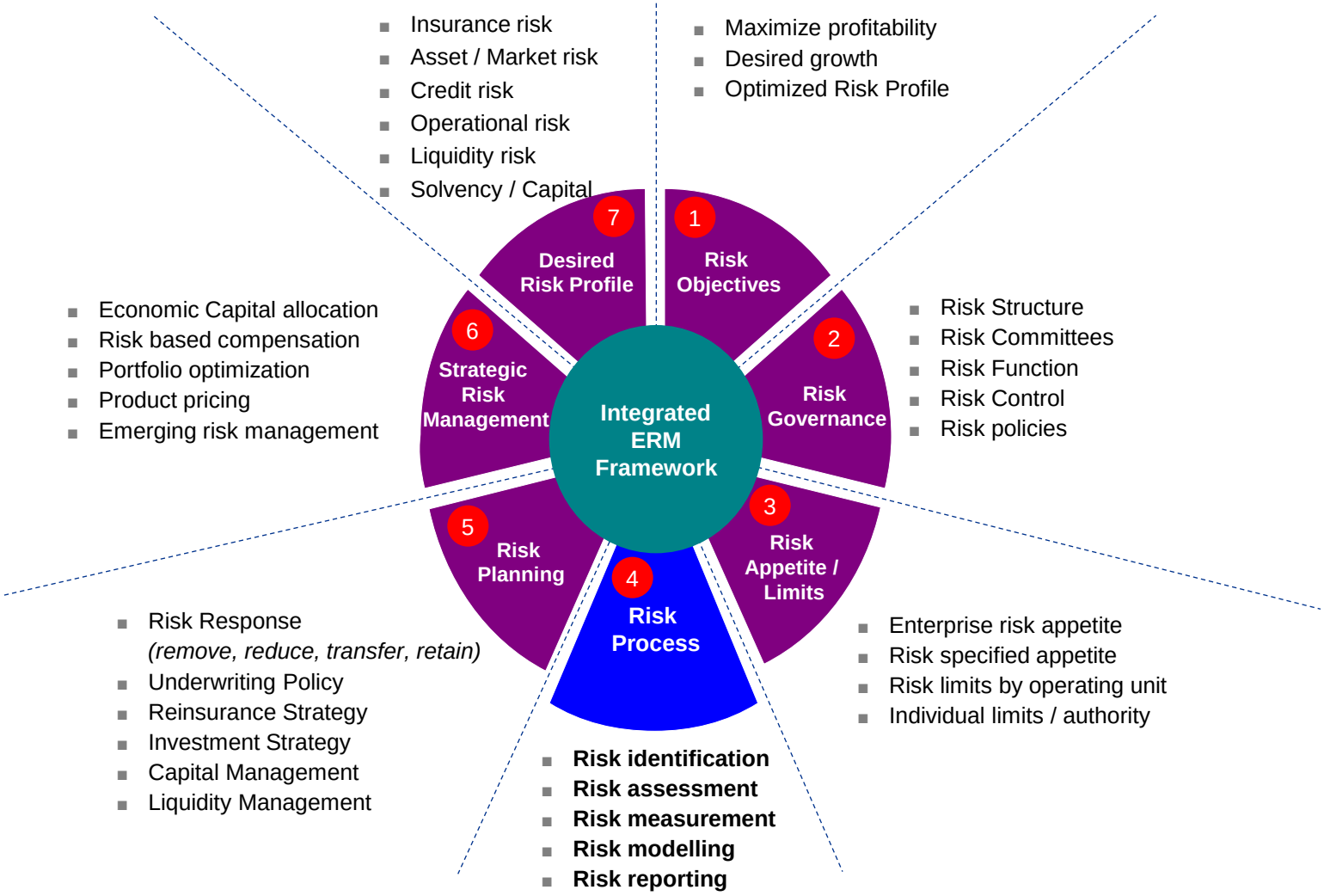
Relative exposure vs. peers – This criteria relates to impact on reputation as a result of being an outlier among peers or industry

These are often competing considerations and will require assessing the extent to which negative considerations related to one or more criteria are offset by positive impacts due to other criteria.

Risk Management Implementation in APAC

Part 2 – Getting the Substance in place…

Risk Strategy: ERM Control Cycle



The ERM processes are interconnected…

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The ERM Function will work closely with the senior management and other functions on risk management related activities.

Functional Department	Scope of Risks				
	Insurance	Market	Credit	Liquidity	Other
ERM	▲	▲▲▲	▲	▲	▲▲▲
Actuarial	▲▲ ▲▲▲	▲▲▲		▲▲▲	
Investments		▲▲ ▲▲▲	▲▲	▲▲	
Credit	▲▲		▲▲▲		
Treasury		▲		▲▲▲	
Reinsurance	▲▲▲		▲▲	▲▲	
Underwriting	▲▲▲		▲▲▲	▲▲	
Senior Management	▲	▲	▲	▲	▲
CAT Modeling	▲▲▲				
Capital Management				▲▲	▲▲▲

▲▲▲ analysis
▲▲ data
▲ review

ERM Rule 5:

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- ERM is like the police. If someone tries to rob you and we are there, you love us. But if you are speeding and we catch you, you hate us

- If ERM managers can persuade Business Units that they want them to make money – but safely – they gain credibility

The two 4-letter "F" words to deal with Business Units are "FIRM" and "FAIR"!

ERM Process

Example 1: Insurance Risk

Risk Measurement – Risk-Adjusted Profitability (RAP)

ERM Rule 6:

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- ERM should focus on things that add value. Things that add value, people will value. Things that don't add value, people will not value

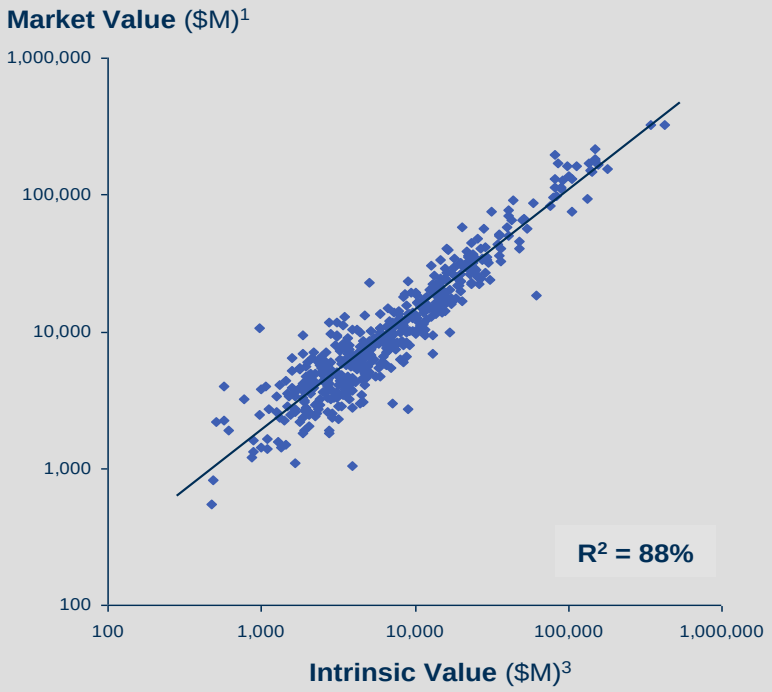
People don't care how much you know, until they know how much you "add value"

Linking Intrinsic Value and Market Value

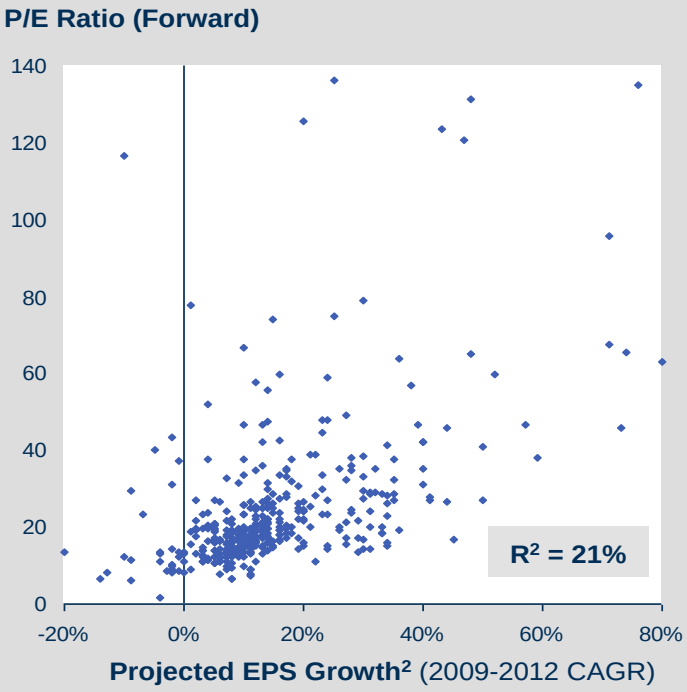
Senior Management's ultimate responsibility is shareholder value creation and enhancement, as evidenced by total shareholder return: market value appreciation and dividends

Market Value (MV) follows Intrinsic Value (IV) over time more closely than with other metrics such as earnings per share (EPS) growth[1]

S&P 500 Market Value and Intrinsic Value



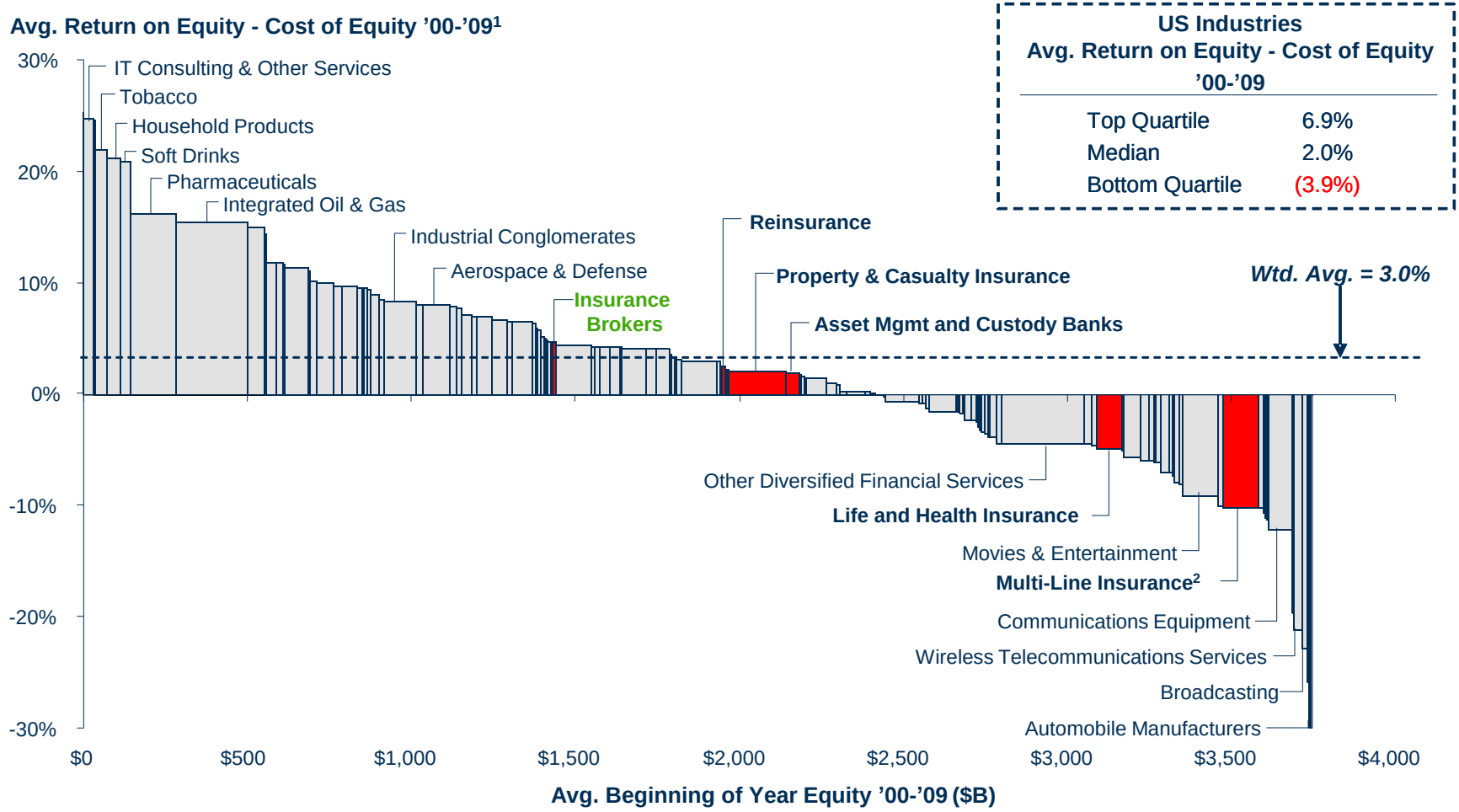
S&P 500 P/E Ratio and EPS Growth



1. Marakon

Insurance Industry Has Unperformed

The US insurance sector on average have underperformed vs. other industries and returns are on average below the cost of capital



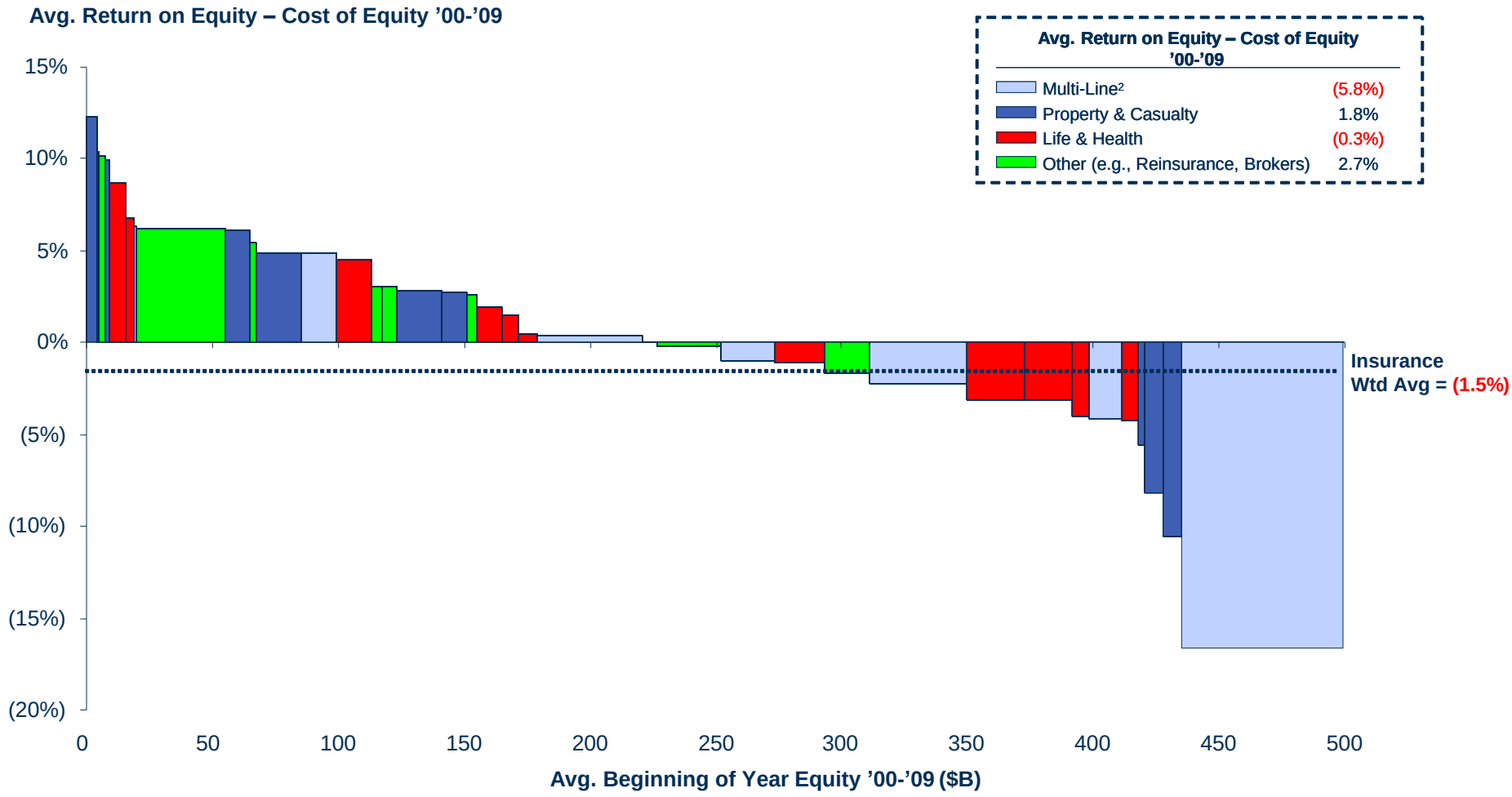
US Industries Avg. Return on Equity - Cost of Equity '00-'09	
Top Quartile	6.9%
Median	2.0%
Bottom Quartile	(3.9%)

Avg. Return on Equity - Cost of Equity calculated as the weighted average of 2000-2009 Risk-Adjusted Profit / BoY Equity for all companies currently classified within a given industry; 2. Includes AIG; Excluding AIG increases Multi-Line Insurance Spread from (10.2%) to (2.6%); Note: Universe of companies is S&P 1500

Source: Capital IQ, Marakon analysis

A Wide Dispersion within the Insurance Sector

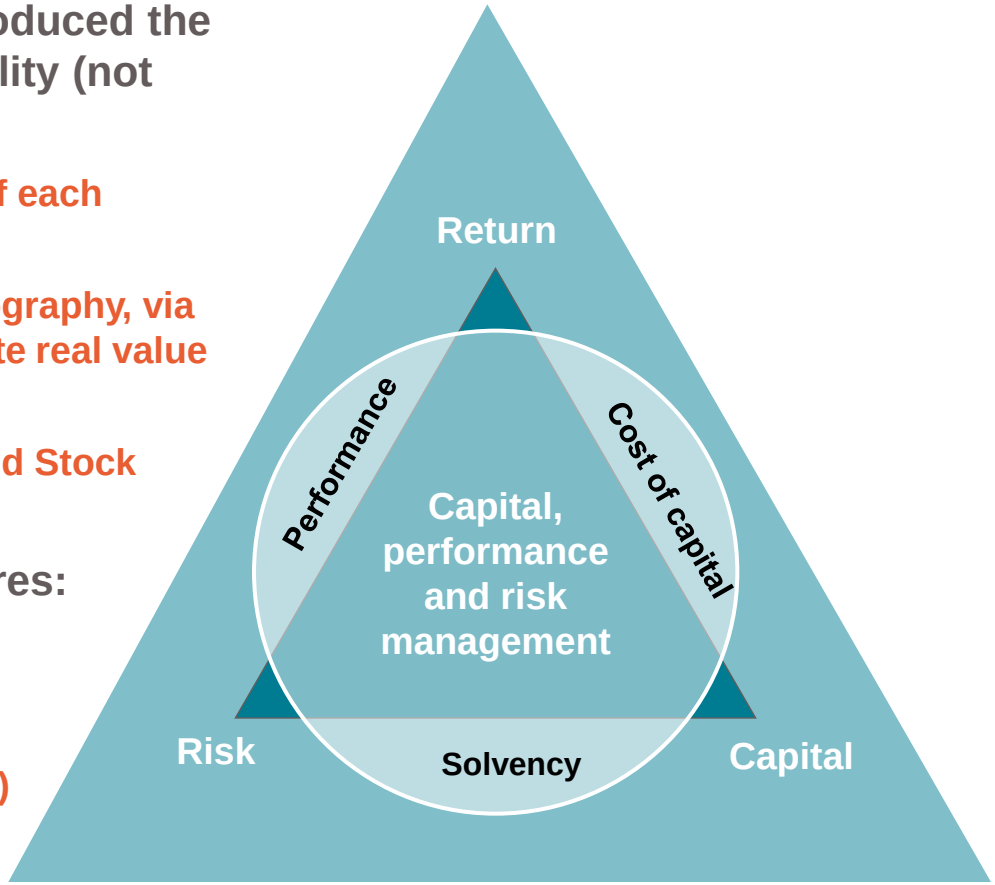
Within the insurance sector there is a wide dispersion in terms of risk adjusted performance.



Return on Equity less the Cost of Equity computed as the weig hted average over a ten-year period (2000-2009) for sample of S&P 500 insurance companies plus selected AIG peers; excludes companies without 10 years of data (Assurant and Genworth – 8, Axis – 7, Ameriprise – 6, Allied World Assurance – 5); 2. Multi-Line average excluding AIG = (0.5%); 3. Only includes 9 years of data for Travelers. Source: Capital IQ, Marakon analysis

Risk Adjusted Profitability (RAP)

- **The objective of ERM is to optimize (not minimize) risk-return**
- **Risk Adjusted Profitability (RAP) introduced the concept of "Intrinsic Value" – i.e. quality (not quantity) of earnings is key**
  - ✓ **Can track riskiness and capital load of each transaction**
  - ✓ **Can determine which lines, which geography, via which distribution channel we generate real value from**
  - ✓ **Clear correlation with Market Value and Stock prices**
- **Move away from traditional measures:**
  - ✓ **Loss Ratio / Combined Ratio**
  - ✓ **Underwriting results**
  - ✓ **Net Operating Profit After Tax (NOPAT)**
  - ✓ **Return on Equity (ROE)**



Value Preservation = Risk Optimization

ROE & RAP Are Key Measures of Performance

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> ROE = Net Income / Allocated Equity

- Comparability across countries and regions to consider differences in operating environment

$$\text{ROE} = \frac{\text{Net Income}}{\text{Equity}}$$

- Value Creation => (Focus on “returns”…)
- Link between Capital and Returns…

> RAP = ROE minus the cost of capital

- RAP needs to be greater than 0
- RAP can be expressed in either % or $

- Value Preservation => (Focus on “risk-adjusted returns”…)
- Reflect the *time value of money* & the *cost of risk*…
- Link between Risk, Capital and Returns…

ROE and RAP Definitions

ROE (%) =
Net Income / Capital

RAP ($) =
Net Income – Cost of Capital
= Net Income – (Cost of Capital Rate) x Capital
=(ROE – Cost of Capital Rate) x Capital

RAP Spread (%)
= ROE – Cost of Capital Rate

OR

= RAP / Capital

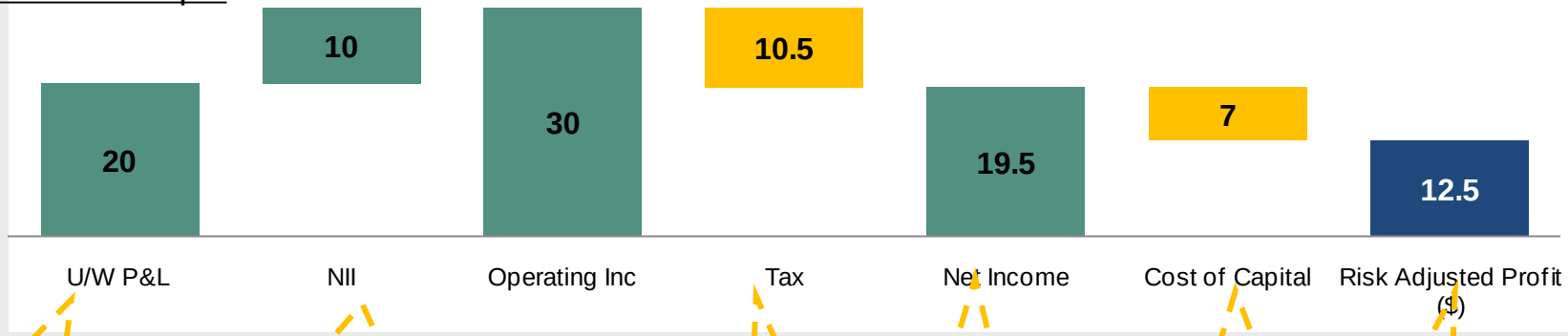
RAP Ratio (%)
= RAP / NPE

Net Income =
NPE – Loss Incurred – Commissions – GOE + NII – Tax
= (NPE – Loss Incurred – Commission – GOE + NII) x (1 – ETR)

Marginal RAP
= (NPE – Loss Incurred – Commission – **GOE x 60%** + NII) x (1 – ETR) – Cost of Capital

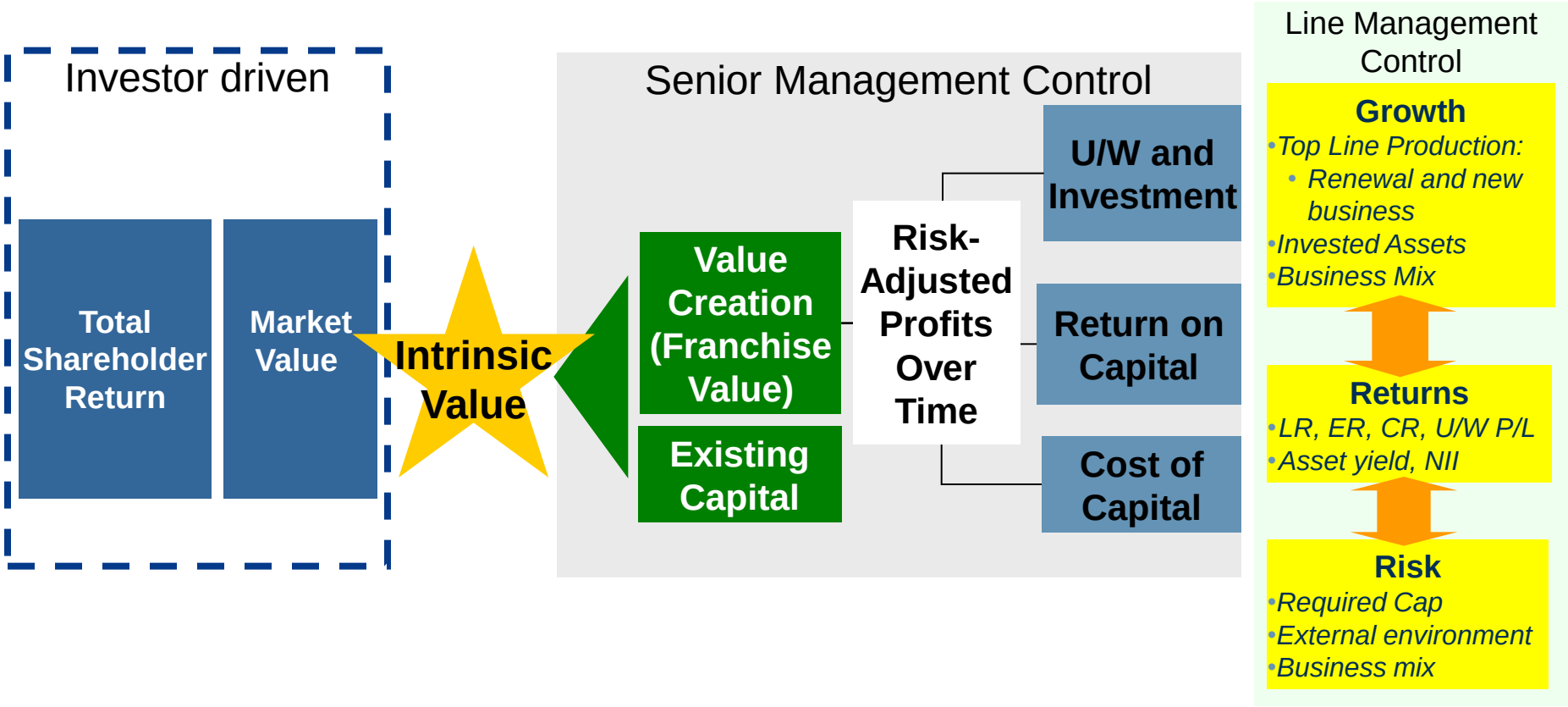
(Assumption: GOE are 60/40 variable/fixed)

Illustrative Example



1. Assume NPE of $100MM
   - LR: 50%
   - ER: 30%
   - CR: 80%
2. Assume interest Rate of 5%, Payout Period of 2, and Required Capital of 100 (Solvency Ratio of 1x)
3. Tax Rate 35%
4. ROE is 19.5% = Net Income/ Required Capital
5. Cost of Equity Rate of 7% multiplied by Required Capital of 100
6. RAP ($) is Net Income - $ Cost of Capital

RAP linked to Key Performance Indicator (KPI)



RAP linked to Business Decisions / Strategic RM

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Risk-adjusted profitability and intrinsic value are key inputs to business decisions

Business Mix	Capital Management	Growth Strategies	M&A and Divestiture	Technical Pricing
▪ Reduce production in lines with significantly negative RAP ▪ Increase production in RAP positive lines	▪ Restructuring loss sensitive business, reducing capital requirements and thus cost of capital and improving RAP, while placing less emphasis on top line numbers (NPW) ▪ Optimizing reinsurance purchase with a combination of capital markets and traditional reinsurance, reducing future year catastrophe protection spending relative to current year spending	▪ Strategic business expansion in the growth countries informed by a historical and projected RAP assessment of the markets and strategies ▪ Direct marketing strategies include an assessment of value of new business through RAP measures as well as the reported financials	• RAP and intrinsic value analysis played a key role in decisions regarding various M&A and divestiture transactions	▪ Technical pricing includes an explicit profit margin informed by capital utilization, ROE hurdle rate, and RAP ▪ Break-even or maximum allowable combined ratio concept introduced to businesses

ERM Process

Example 2: Operational Risk

Risk Identification –
Risk & Control Self-Assessment (RCSA)

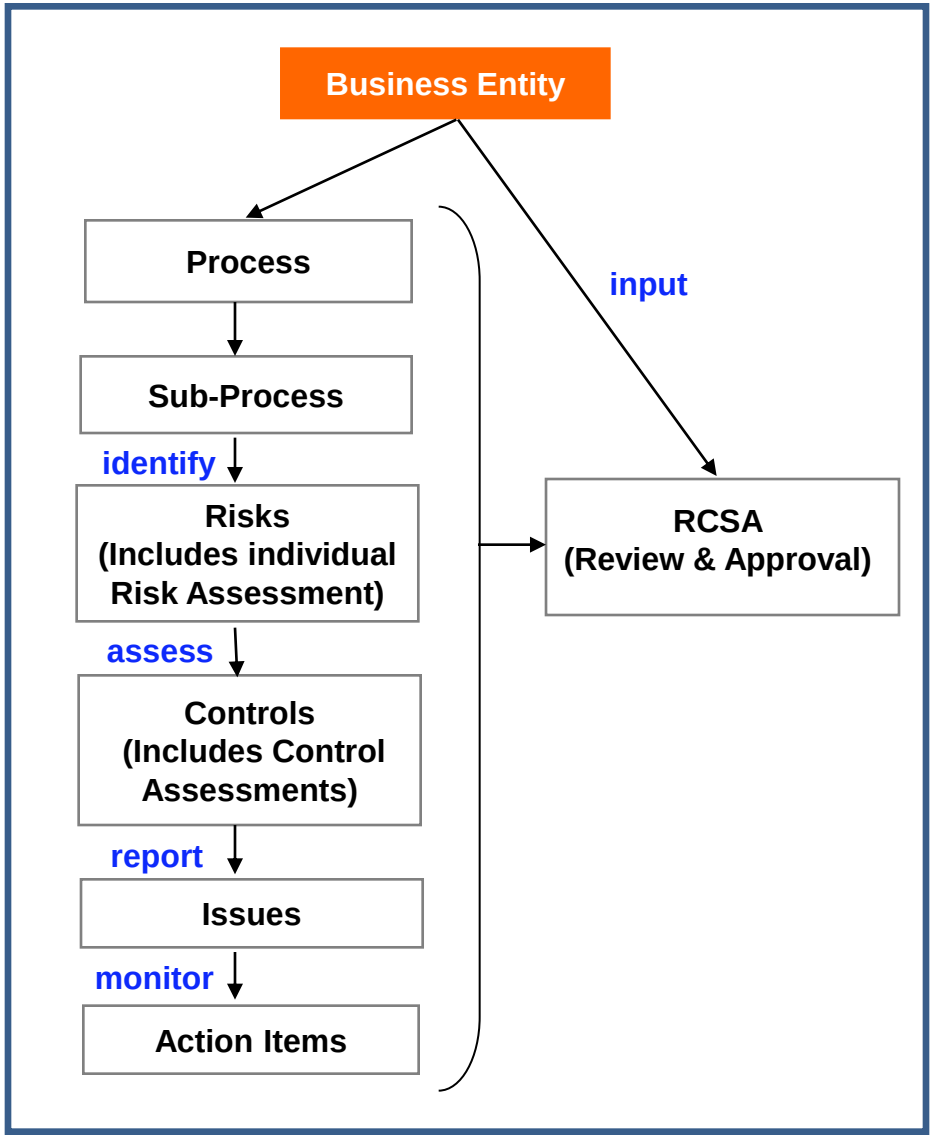
Risk & Control Self-Assessment (RCSA)

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RSCA is a process to assess risks and evaluate the effectiveness of the business control environment.

- ✓ RCSA was developed to create a robust framework for operational risk management (ORM) in Chartis.
- ✓ The RCSA process supports the identification, analysis, reporting and monitoring of key processes, risk, controls and remediation plans across Chartis.
- ✓ The four data forms which include risks, controls, issues and action items are created to collect risk data from process owners in each business entity.
- ✓ With the implementation of a broad, accurate and comprehensive risk data aggregation, we are positioned to perform full scale risk analysis to minimize and mitigate operational risks.

RCSA Methodology Overview



Key Issues:

The RCSA process should really be a sub-set of a broader, strategic "total quality management" or other type of continuous process improvement program.

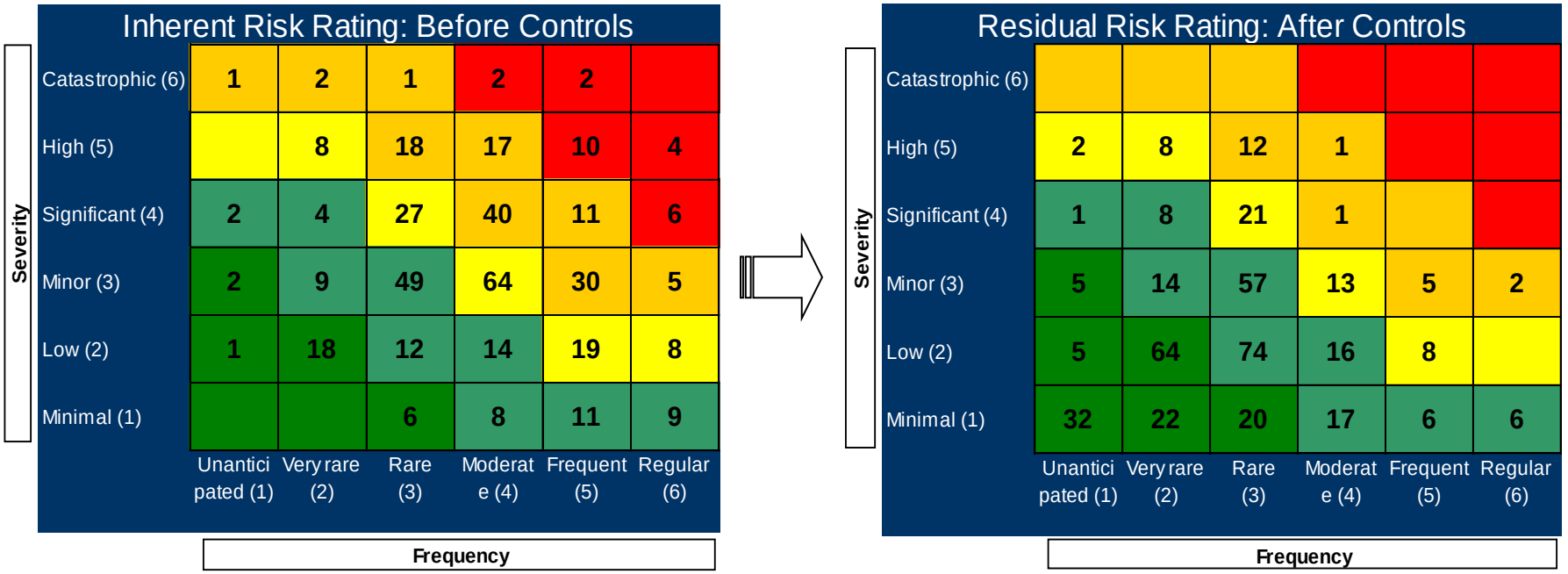
The method calls for self-identifying breakdowns in processes and controls to improve risk management.

In the absence of a broader strategic continuous process improvement program, this methodology is challenging to implement.

RCSA is a "living" tool that seeks continuous improvement of the process

Risk Assessment Heat Map Example

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Total risks assessed and rated = 420

Is this useful and adding value to business?

ERM Rule 7:

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- ERM covers all risks, but in practice should focus only on "material risks" – *i.e., risks that have major impact to the organization*

You can't eliminate every risk – and it's unwise even to try. Especially in times of crises, try to resist the temptation to remove all risks

RCSA Process Improvements

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- ✓ To implement rigorous quality control measures in the data capturing and data management processes
- ✓ To conduct RCSA process in a way that fully meet the local regulator expectations for self assessment framework
- ✓ To incorporate all compliance related risk into a single reporting software platform
- ✓ To increase focus on fewer "critical" risks but nonetheless aggregate the exposure to key risk themes
- ✓ To review risk measurement metrics
  - Heat mapping process is one dimensional (i.e. can't assess correlation & interaction between several risks)
  - Heat mapping process does not weight the risk ranking
  - Even if risk weighted, the uni-dimensional feature limits the ability to assess exposures that may present a compounding of risk

ORM Future State

- ✓ To develop a "scenario based" ORM function
- ✓ To develop usable Key Risk Indicators (KRIs)
- ✓ To develop database for Risk Event Capture & Analysis Process (RECAP)
- ✓ To analyze RCSA outputs ***(frequency)*** together with RECAP database ***(severity)*** to quantify and define risk specific appetite for Operational Risk

Risk Specific Appetite for Operational Risk

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What level should be selected?



Concluding Remarks

Top 10 things that keep the CRO awake at night?

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1. Catastrophic events
2. Risk aggregation
3. Adverse reserve development
4. Reinsurance miscoding
5. Asbestos and other emerging risks

} **Insurance / CAT Risk**

6. Legal, regulatory, compliance breach
7. Major IT/system failure

} **Operational Risk**

8. Downgrade of Group / Subsidiary ratings
9. Major reinsurer failure / disputes

} **Credit Risk**

10. Global financial crisis

} **Market / Liquidity Risk**

Top 10 things that keep the CRO busy in the day?

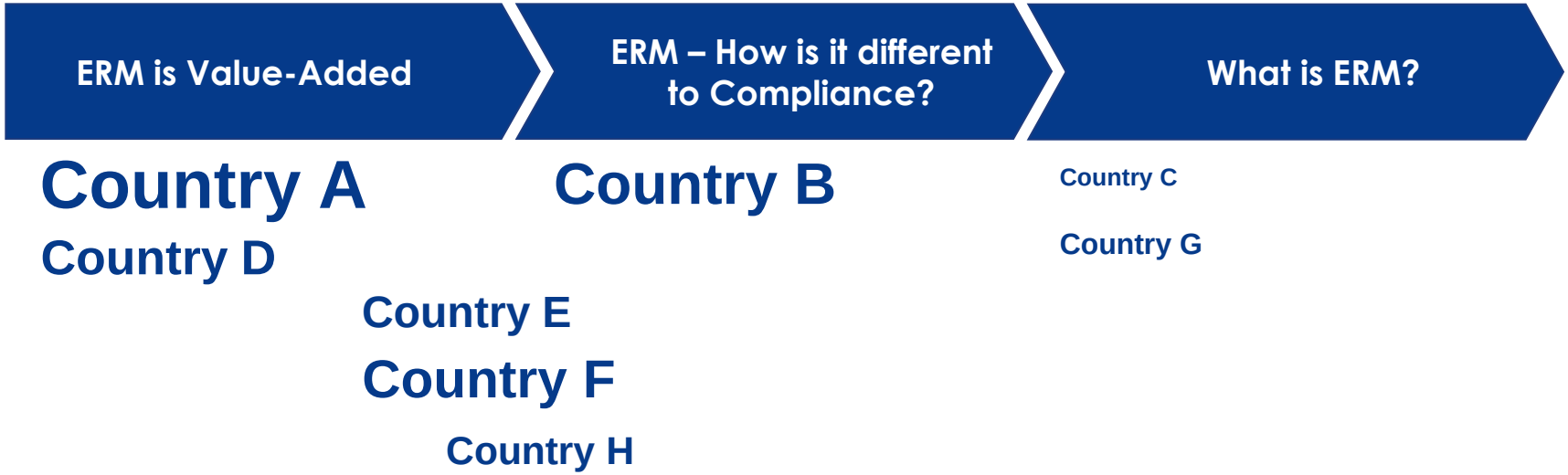
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1. Conduct ***ERM training*** and workshop to promote risk culture and awareness
2. Chair ***risk committees*** and to ensure ***action plans*** discussed are carried out promptly
3. Address ***full scope*** of risks, move beyond operational risk & compliance
4. Develop usable ***reporting dashboard*** to be used in Risk Committee / Board meetings
5. Monitor ***risk profile*** to be within stated ***risk appetite***
6. Develop usable ***KRIs / metrics / Triggers*** and monitor their trend over time
7. Monitor ***RAP / ROE*** movement, trend and development over time
8. Monitor process in ***RCSA***, ***RECAP*** and ***Scenario-based Testing*** scope of work
9. Communicate with ***regulatory bodies*** on ERM matters and Consultation Papers
10. Develop ERM framework to adapt international standard such as ***IAIS requirements***

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APAC: Each Country is Different – Training/Awareness is Needed?

Local Perception of ERM (*)



(*) Size = relative size by premium income

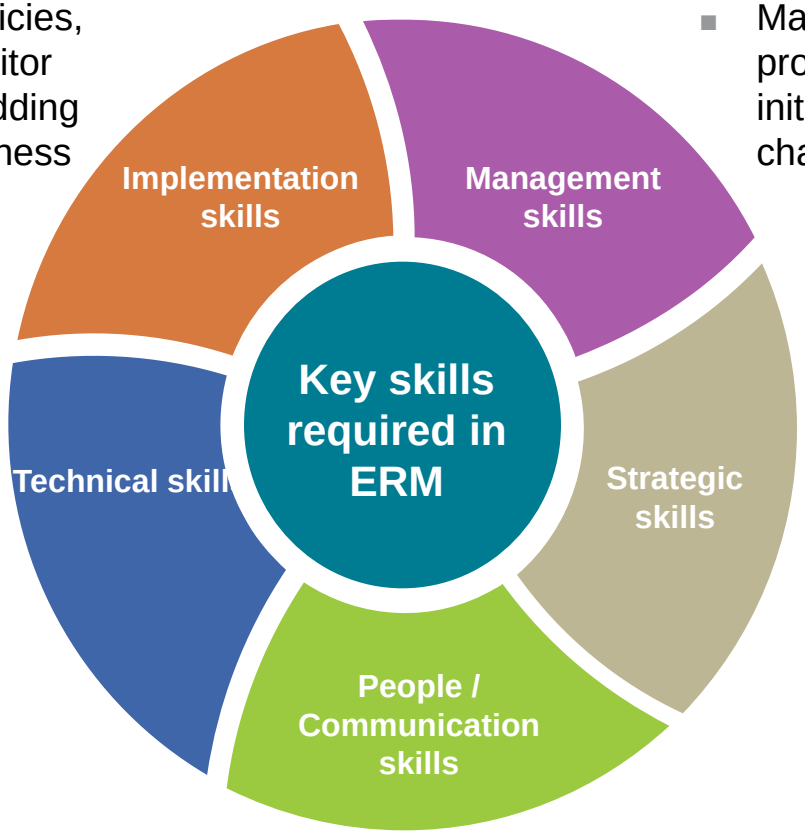
- **Important Contributors:**
  - External: Has regulator approach ERM with a compliance or consultative mindset?
    –> very influential in swaying local view of ERM and in driving ERM activities
  - Internal: Perspective of Board & Senior Management
    –> setting the expectation and deliverables of ERM activities

Key skills required in ERM

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- Implement policies, drive and monitor ERM plans, adding values to business performance

- Management of multiple projects and ERM initiatives to effect changes



- Skillset, knowledge and experience to assess and manage all scope of risks

- Vision to develop sustainable ERM goals and priorities, influencing and changing risk culture at all levels

- ERM is linked with many functions in an organization. Relationship with all levels in an organization is key

Enterprise Risk Management (ERM) Committee

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The ERM Committee is here! This is a new SAS practice committee set up in 2012.

The ERM Committee aims to:

- Discuss current ERM issues and its related developments
- Develop Guidance Notes around ERM best practices
- Encourage more actuaries to take on ERM positions

We are looking for volunteers who are currently working or aspire to be working in the ERM field to join the ERM Committee.

If interested, please email your contact details to Raymond Cheung at: raymond.cheung@chartisinsurance.com.

We need you!!

Enterprise Risk Management (ERM) Committee

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We need you!!

Thank You for your attention!

Raymond Cheung

Chief Risk Officer, Chartis Singapore &
Head of Insurance Portfolio / Aggregation Risk (ERM),
Chartis Asia Pacific

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"The journey of ERM is hard work, paved with fulfillment and satisfaction…"

-- Raymond Cheung

Appendix I –
Risk Appetite Statement Example

Level 1 Risk Appetite Statement – Qualitative Example

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Chartis Risk Appetite Statement provides the basis and framework for the business mix / portfolio optimization, annual planning, and the development of risk limits at operational level.

Chartis is a multi-line insurer that will continue to underwrite a diverse portfolio of general insurance risks for commercial and consumer clients worldwide and invest in a diversified portfolio of investments. The Company will manage its aggregate risk profile, including all risks from all sources, in consideration of interests of policyholders, debt holders, shareholders and other stakeholders, in a manner that will provide:

- Financial security to our clients
- An optimum balance of risk, profitability and growth

We will take risks that:	• Are aligned with strategic objectives, growth or opportunities in specific markets • Are well understood by underwriting/investment teams and by management, and where we have organizational capabilities to manage them well • Are properly priced to provide an adequate risk-adjusted return on capital
We will not take risks that:	• Expose us to an unacceptable level of risk to our reputation and brand • Expose us to an unacceptable level of legal, regulatory or accounting risk • Do not comply with regulatory requirements

Level 1 Risk Appetite Statement – Quantitative Example

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The level of risk that the Company is willing to accept is expressed in terms of the distribution of financial outcomes over a one-year period as modeled by the Chartis Economic Capital Model.

Specifically, the company will manage its aggregate risk profile by ensuring that:

A. The probability of meeting annual earnings target is greater than *W%*

B. The probability of a loss of *X%* of beginning of year capital during the year is less than *Y%*

C. The probability of insolvency is less than *Z%* (i.e., 1-in-*t* years)



Level 1 Enterprise Risk Tolerance example

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Level 1 risk tolerance metrics should stay relatively stable year on year. Major changes occur only if there are fundamental changes to strategic objective, financial profile, business model, and/or in the external market place.

Enterprise Risk Tolerance and Metrics	
Key Measure	**Tolerance**
1 **1) Credit Rating**	e.g., To achieve and maintain a strong AA financial strength rating on a global basis
2 **2) Earnings volatility**	e.g., The probability of zero or negative adjusted earnings in one year is no more than **5%** *(1-in-20 year event)*
3 **3) Capital at risk**	e.g., The probability of 15% loss of adjusted equity in one year is no more than **1%** *(1-in-100 year event)*

Level 2 Risk Specific Appetite example

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Level 2 risk appetite for specific risk could change from time to time and should be reviewed annually. The metrics will take into consideration risk and return tradeoff, market conditions, underwriting cycle, and competitive landscape.

Risk Specific Appetite and Metrics		
Key Types	**Descriptions/Examples**	**Risk Appetite Target**
1 **Insurance risk – CAT exposures**	Global limit at aggregate level expressed in VaR or PML	e.g., 1-in-250 year net pre-tax PML
2 **Liquidity risk**	Sufficient liquidity for gross losses for insurance operating entities with material CAT exposures	e.g., Liquid assets to cover gross pre-tax loss of 1-in-250 PML & other stressed scenario
3 **Market risk**	Global limit at aggregate level and over all financial market risks expressed in VaR or PML	e.g., 1-in-250 year pre-tax VaR is no more than x% of prior YE equity
4 **Credit risk**	Global limit at aggregate level and over all types of credit exposures expressed in VaR or PML	e.g., 1-in-250 year pre-tax VaR due to obligor default is no more than y% of prior YE equity
5 **Operational risk**	The organization strives to achieve operational efficiency, limit losses due to operational failures / errors	e.g., Strict avoidance of business practices that may lead to direct & indirect loss amount to z% of prior YE equity

Appendix II – ERM Terminologies

Some basic ERM terminologies

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ERM Terms	Definition
Risk Profile	▪ **A complete description of the risk exposures of an organization, including risks that might emerge in the future and that will affect the current business of the organization.**
Risk Appetite	▪ **It reflects the setting of targets and limits across the organization as a whole, plus the breakdown of these high level statements into more detailed risk tolerances. (generic definition)** ▪ **A framework that establishes the risks that the insurer wishes to acquire, avoid, retain and/or remove. (S&P definition)**
Risk Preference	▪ **The *qualitative* risk appetite statements that guide the insurer in the selection of risks. (S&P definition)**
Risk Tolerance	▪ **A more detailed set of statements, many quantitative or statistical in nature. The statements may apply to specific categories of risk and/or units of business. (generic definition)** ▪ **The *quantitative* risk appetite statements that guide the insurer in the selection of risks. (S&P definition)**
Risk Limits	▪ **A group of guidelines that set limits on acceptable actions that might be taken today. If risk limits are adhered to then each individual unit of the business should be deemed to be working within its permitted risk tolerances. Risk limits can be regarded as a component of risk capacity. (generic definition)** ▪ **The *quantitative* boundary that serves to constrain specific risk taking activities at the operational level within the business. (S&P definition)**
Risk Capacity	▪ **The volume of risk that an organization can take as measured by some consistent measure, such as Economic Capital. If there is spare capacity then it might be possible to take positive actions that add economic value to the organization without breaching existing risk tolerances or risk limits.**
Capital	▪ **Economic Capital – amount of capital to provide sufficient surplus to cover adverse outcomes (or financial obligations), with a given level of risk tolerance (or confidence level), over a specified time horizon.** ▪ **Other forms of capital include:** 1. Working capital – amount of capital held by business to meet day-to-day operational requirements 2. Regulatory capital – amount of capital needed to satisfy regulatory solvency requirements 3. Rating Agency capital – amount of capital needed to calibrate at certain targeted rating level
Risk Exposure	▪ **The maximum harm that would result from a single possible event.**
Probability	▪ **The likelihood that a specified harmful event will occur.**
Severity	▪ **The degree of harm that is likely to arise, should a specified event occur.**
Volatility	▪ **A measure of variability within the range of possible outcomes.**
Time Horizon	▪ **The length of time for which an organization is exposed to risk, or time required to recover from (or reverse the effects of) an event.**

Some basic ERM terminologies (con't)

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ERM Terms	Definition
Correlation	▪ **The degree to which differing risks behave similarly in response to common events. Risk concentration, the opposite of diversification, results in high risk correlations.**
Risk Metrics	• **These are pieces of information that help management to measure and understand risk exposure.**
Insurance Risk	• **Underwriting Risk: arises out of unexpected fluctuations in the timing, frequency and severity of events (including direct insurance and inward reinsurance)** • **Reserving Risk: arises out of the volatility of reserves.** • **Accumulation/ Aggregation Risk: the risk arising from concentration of exposure in a particular geographical region, market sector or sovereign territory**
Market Risk	• **The potential loss in value or earnings arising from changes in the values at which assets and liabilities may be traded as a result of external market and economic factors including:** 1. Changes in the overall level of interest rates; 2. Changes in the shape of yield curves; 3. Inflation rate changes; 4. Changes in the overall level of credit spreads; 5. Changes in the shape of the credit spread curve; 6. Property price movements; and 7. Exchange rate movements of currencies against each other and particularly against the US dollar • **Market Risk may also arise from controllable factors such as variations in sector weighting from a benchmark asset mix.**
Liquidity Risk	• **The risk that a firm, though solvent, does not have sufficient financial resources available to enable it to meet its obligations as they fall due, or can secure them only at excessive cost.**
Credit Risk	• **The risk of default by a counterparty or obligor, including the risk of default on risk mitigating contracts like reinsurance and financial derivatives.** • **Credit Risk also arises out of underwriting activity where credit risk is a material element of the contract being underwritten (e.g. trade credit).**
Operational Risk	• **The risk of loss arising from inadequate or failed internal processes, people and systems, or from external events**.
Group Risk	• **The potential impact of risks arising in other parts of a firm's group as well as those arising from its own activities. (e.g, Group Risk could arise out of the relationship between Chartis entities or between a Chartis entity and another AIG Group company.)**
Emerging Risk	• **Risks which have not previously been recognized or which are becoming increasingly likely or severe. They include large scale events or circumstances that arise from global trends which may or may not be beyond the capacity of the organization to control on its own. They may be high impact, hard to predict and rare events beyond the realm of normal expectations.**



Chartis is a world leading property-casualty and general insurance organization serving more than 40 million clients in over 160 countries and jurisdictions. With a 90-year history, one of the industry most extensive ranges of products and services, deep claims expertise and excellent financial strength, Chartis enables its commercial and personal insurance clients alike to manage virtually any risk with confidence.

Chartis is the marketing name for the worldwide property-casualty and general insurance operations of Chartis Inc. For additional information, please visit our website at www.chartisinsurance.com.