



Effective Financial Planning for Life Insurance Companies

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Topics

- Recent worldwide insolvencies
- Characteristics of healthy and failed companies
- What makes companies insolvent
- Avoiding insolvency
 - Financial planning and early warning system
 - Statutory Valuation
 - Embedded Value / Appraisal Value
 - Simple ALM
- Management, communication – focusing on ALM

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Recent worldwide insolvencies



Insolvencies Cases

	Company	Causes
Korea	<ul style="list-style-type: none"> ▪ Korea Life (1998 – 99) ▪ Kookim Life (200) ▪ Hyundai Life, Hanil Life, Samshi ▪ Allstate Life (1999) 	<ul style="list-style-type: none"> ▪ High guarantees, falling interest rates
Unites States	<ul style="list-style-type: none"> ▪ Guarantee Security Life Insurance – mutual (1991) ▪ Mutual Benefit Life Insurance – mutual (1991) ▪ Executive Life of California (1991) 	<ul style="list-style-type: none"> ▪ Junk Bonds

Insolvencies Cases

	Company	Causes
Japan	<ul style="list-style-type: none"> ▪ Nissan Mutual (1998) ▪ Toho Mutual (1999) ▪ Daihyaku Mutual (2000) ▪ Taisho Life (2000) ▪ Chiyoda Mutual (2000) ▪ Kyoei Life (2000) ▪ Tokyo Mutual (2001) 	<ul style="list-style-type: none"> ▪ High guarantees, falling interest rates
United Kingdom	<ul style="list-style-type: none"> ▪ The Equitable (current) ▪ Other UK (closures to new business) - 37 of 48 par funds 	<ul style="list-style-type: none"> ▪ Mis-selling, high guarantees, falling interest rates ▪ Mis-selling, high guarantees, falling interest rates

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Characteristics of healthy and failed companies



Key Drivers of success

Macro Environment

- Factors that affect all life insurance companies
- Life companies do not have direct control over these events
- Testing the ability and robustness of the management in adapting to these changes

Organisational Behaviour

- Good leadership and strategy
- Internal control and disclosure
- Risk management
- Performance evaluation and compensation
- Bad loans / poor investment decisions
- Competent /professional staff



**Success or
Failure??**

Key Characteristics of Successful Institutions

Macro Environment

- Strong prudential oversight
- Effective government policies
- Effective legal framework
- Satisfactory bankruptcy laws
- Healthy shareholder rights
- Best practice code

Organisational Level Indicators

- Strong collective Board of Directors
- Board has integrity and good judgment
- Strong internal control
- Proper disclosure and transparency
- Sound risk management
- Effective performance evaluation & compensation
- Team of competent /professional staff



Success

Key Characteristics of Failed Institutions

Macro Environment

- Economic recession
- Ineffectual regulatory supervision
- Opaque disclosure
- Ineffective legal framework
- Inadequate bankruptcy laws
- Weak shareholder rights

Organisational Level Indicators

- Gross mismanagement
- Poor record keeping
- Weak risk analysis
- Poor guidelines on policy lending
- Portfolio of bad loans
- Poor investment decisions
- Fraudulent activities

Failure

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What makes companies insolvent?

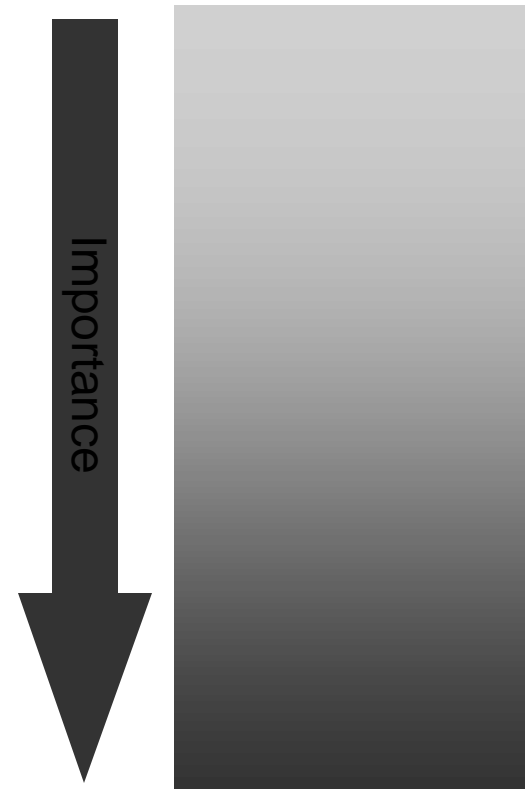


Fundamentals of Life Insurance Company

- Profit
 - High, predictable, not negative,...
- Financial strength
 - Solvent, safe, efficient,...
- Reputation
 - Perception, share price,...
- Compliance
 - Do what you have to do...

What makes life insurance companies crash?

- Lapses
- Mortality
- Expenses/commission
- Reinsurance
- New business volumes
- Premium rates and other policyholder guarantees/options
- Asset/investment strategy

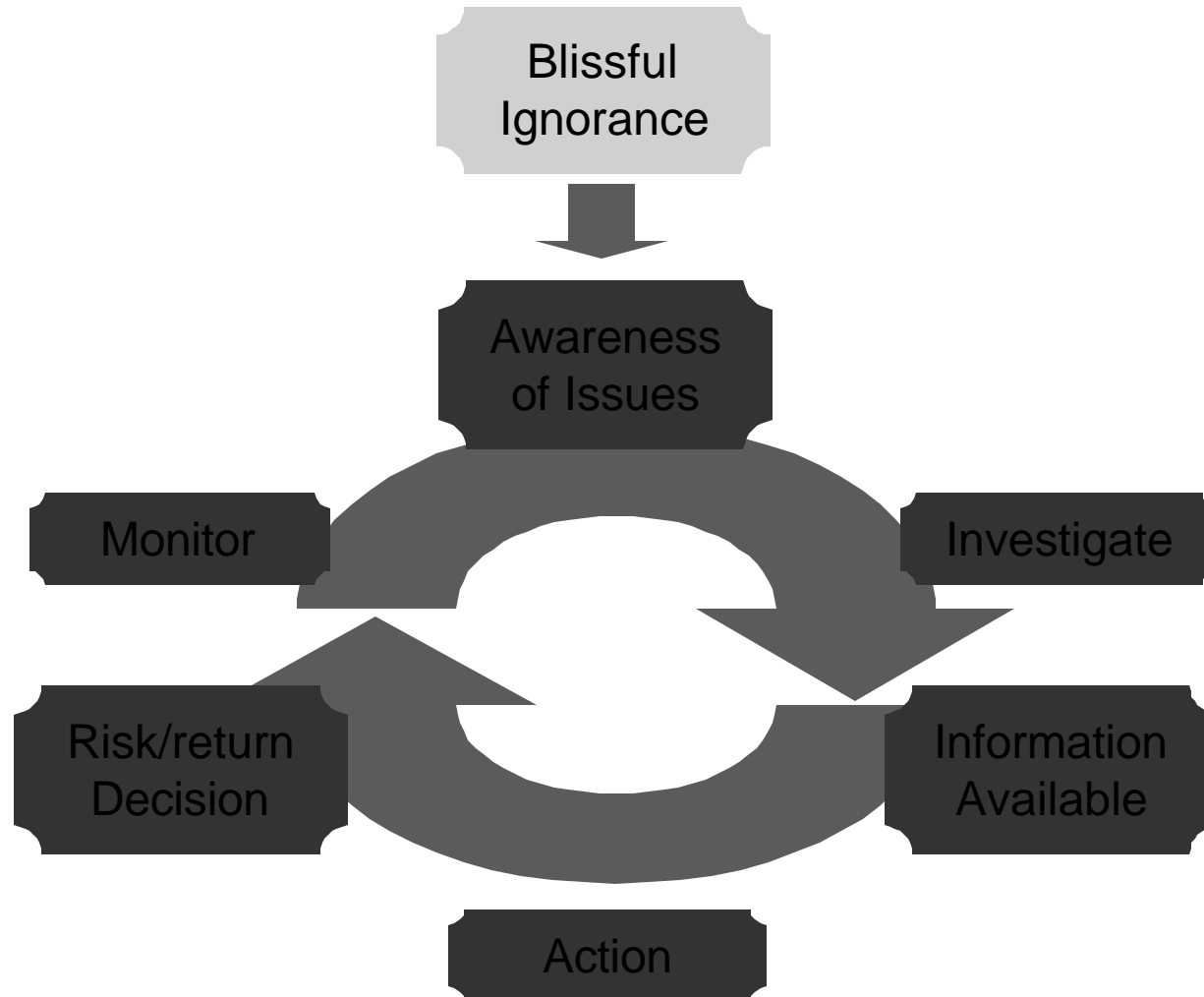


Avoiding insolvency



Financial planning and early warning system

Fighting Back: Control cycle



Tools available to actuaries

Level of sophistication

- Statutory Valuation
 - Static, prudence and limited information
- Embedded Value / Appraisal Value
 - Static, realistic and taking into account of expected future events
- Asset Liability management
 - Dynamic, realistic (both assets and liabilities) and taking account of expected future events

Statutory Valuation

- Usually performed annually as part of the regulatory requirements
- Static information: a point in time
- Valuation basis
 - May be prescribed or based on judgment
- Minimum requirement for the companies to demonstrate solvency
 - Value of assets > value of liabilities by a margin
 - The margin is usually prescribed by the regulators

Statutory Valuation

Advantages

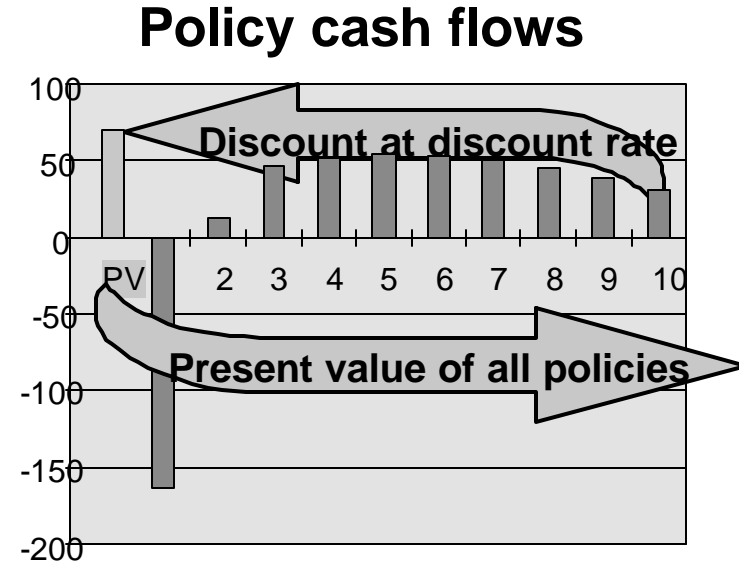
- Information readily available
- Publicly available and in standardized format
 - Able to compare against peer
- Relatively easier for management to visualise current financial situation
 - Eg. solvency ratio was x%
reduce/ increased to y%
- Commonly used indicator of financial strength

Disadvantages

- Solvent today but not necessary in future
- Insufficient information for management to assess the decision made
 - New business adding value to the company/ shareholders
 - Effect of any investment decisions.
 - Ability to support future bonus rates, dividend to shareholders etc

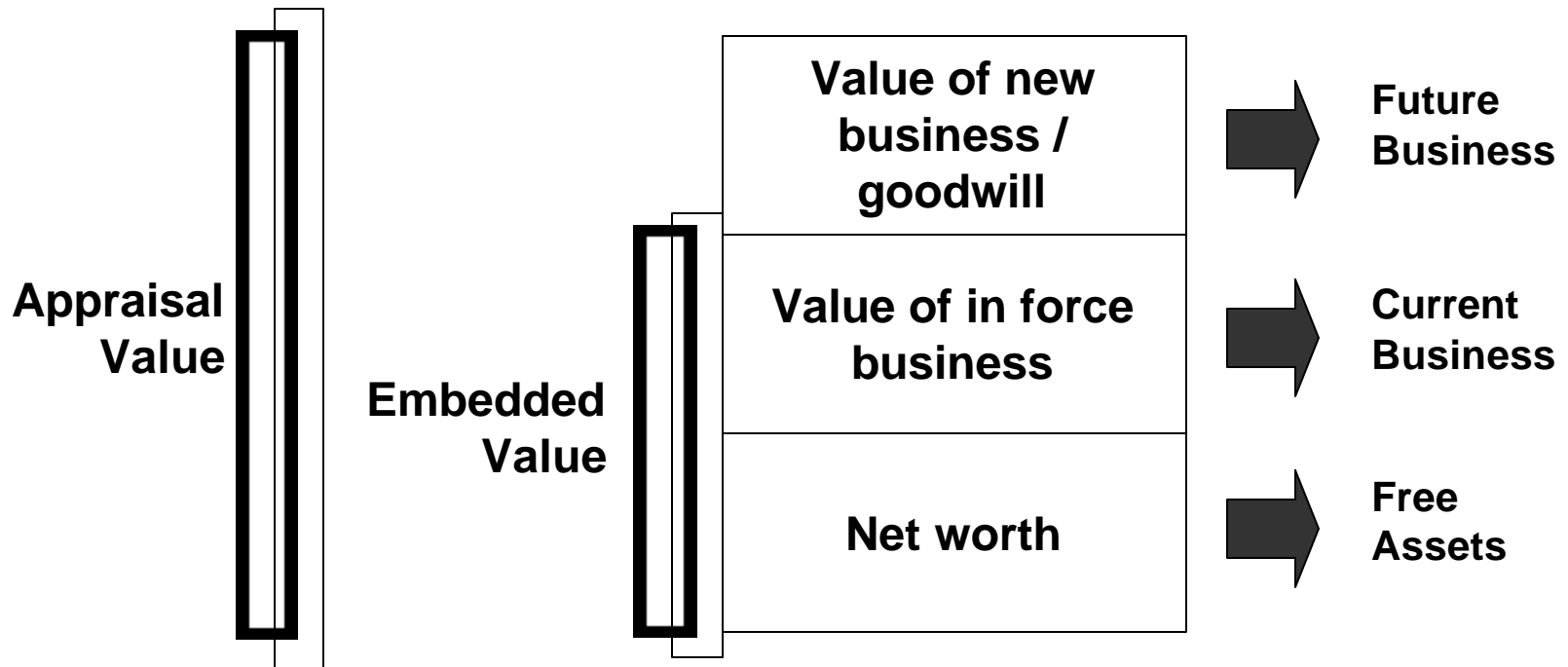
Embedded Value

- What is Embedded Value / Appraisal Value?
 - Cash flow items such as premiums, expenses & claims are explicitly projected forward and discounted back to arrive at the value of the liabilities
 - Provide a value of the company at a point in time
 - A measure of the shareholder value of the company
 - Movements of EV/AV over time indicate value added/destroyed



Embedded Value / Appraisal Value

Appraisal Value = Embedded Value + Value of Future New Business



Embedded Value / Appraisal Value

- Normally conducted as part of internal management process
 - Measure the success or failure of the management decisions (e.g. profitable new business will add value to the company)
- Static valuation but based on expected future events

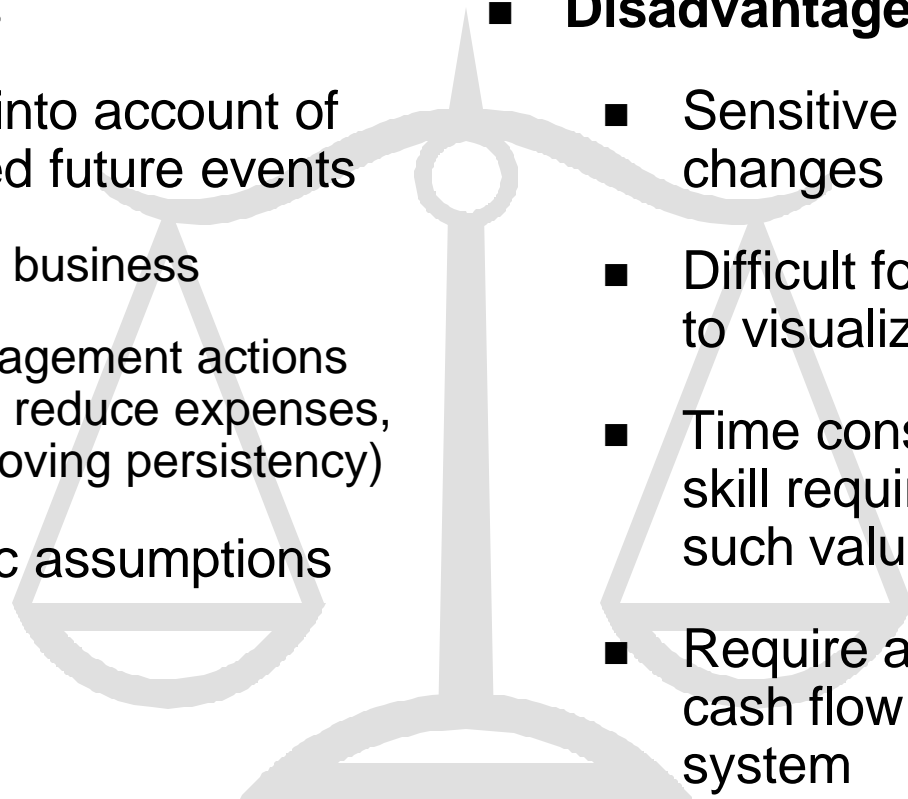
Embedded Value / Appraisal Value

■ Advantages

- Taking into account of expected future events
 - New business
 - Management actions (e.g. reduce expenses, improving persistency)
- Realistic assumptions

■ Disadvantages

- Sensitive to assumptions changes
- Difficult for management to visualize the concept
- Time consuming and skill required to carry out such valuation
- Require appropriate cash flow projection system



ALM Investigation

- ALM investigation processes
 - Develop ALM model capability
 - Run calculations
 - Develop measures for comparing strategies
 - Analyse & evaluate strategies
 - Decide strategy
- Outcomes
 - Implement strategy
 - Monitor performance

Asset Liability Management

- What is ALM?
 - Tool to help management understand and manage risk
 - Old approach:
we can't measure risk ...
... so we try to eliminate all uncertainty
 - New approach:
we try to position the company with a known acceptable level of risk
- Model both asset portfolio and liability explicitly
- Ultimate Goal
 - Maximise shareholder value through the best use of available capital
 - Provide stability to business, policyholders and shareholders

ALM Investigation: Understand Investment Risk

- Understanding the risk of future losses
 - erosion of capital base
 - maintenance of solvency
- What risk profile is associated with each investment strategy
 - how much equity vs. fixed interest
 - what duration of bonds?
 - rebalancing
 - investment and reinvestment of cash flows
 - market value or book value measurement
 - more subtle asset dimensions: convexity ...
 - more esoteric asset classes: derivatives ...

ALM investigations: Evaluate strategy

- Answer questions such as ...
 - What is the expected value of the business?
 - What is the probability distribution of the value of the business?
 - What is the probability of meeting the performance objectives?
 - What is the probability of insolvency?
 - How severe a shock can the company withstand?
 - How much capital is needed?
 - What is the probability of meeting policyholders' reasonable expectations?
 - How does this strategy affect the company's Beta (correlation between company stock price and movement in the local equity market as a whole)?
 - etc

ALM investigations: Develop strategy

- Major changes
 - New strategies to avoid risk
 - New strategies accepting greater risk along with greater expected return
 - New strategies to minimise capital requirements
- Adjustments to address risk
 - Explicit acceptance of risk
 - Reduce or transfer risk
 - Contingency plans
- Implications of strategy
 - Value
 - Uncertainty
 - Capital requirements
 - Planned responses to events

ALM investigations: Develop contingency plans

- What should management do if returns
 - Fall / are stable / rise?
- What should management do if business volumes change
 - increase / decrease in new business
 - increase / decrease in lapses
- What changes should be sought to the product?
 - repricing
 - changes to benefit structure
 - support for any necessary lobbying
- How should management seek to direct sales
 - more or less of the product?
 - repricing?
- etc...

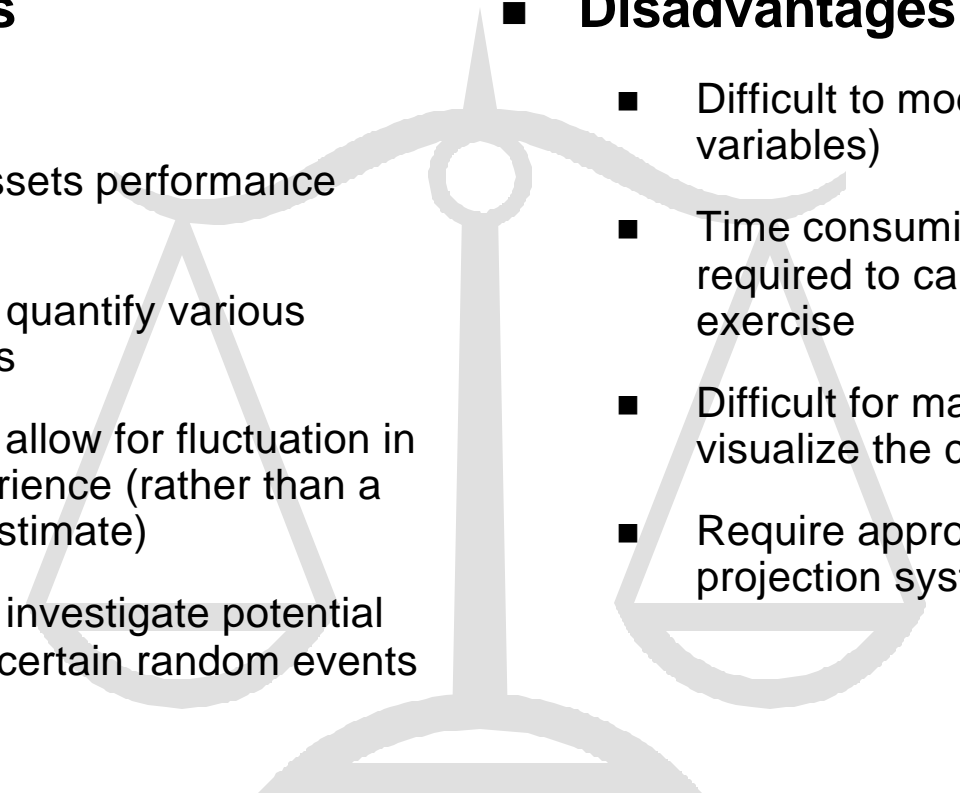
Asset Liability Management

■ Advantages

- Dynamic
- Model assets performance explicitly
- Ability to quantify various strategies
- Ability to allow for fluctuation in the experience (rather than a central estimate)
- Ability to investigate potential effect of certain random events

■ Disadvantages

- Difficult to model (a lot of variables)
- Time consuming and skill required to carry out such exercise
- Difficult for management to visualize the concept
- Require appropriate cash flow projection system

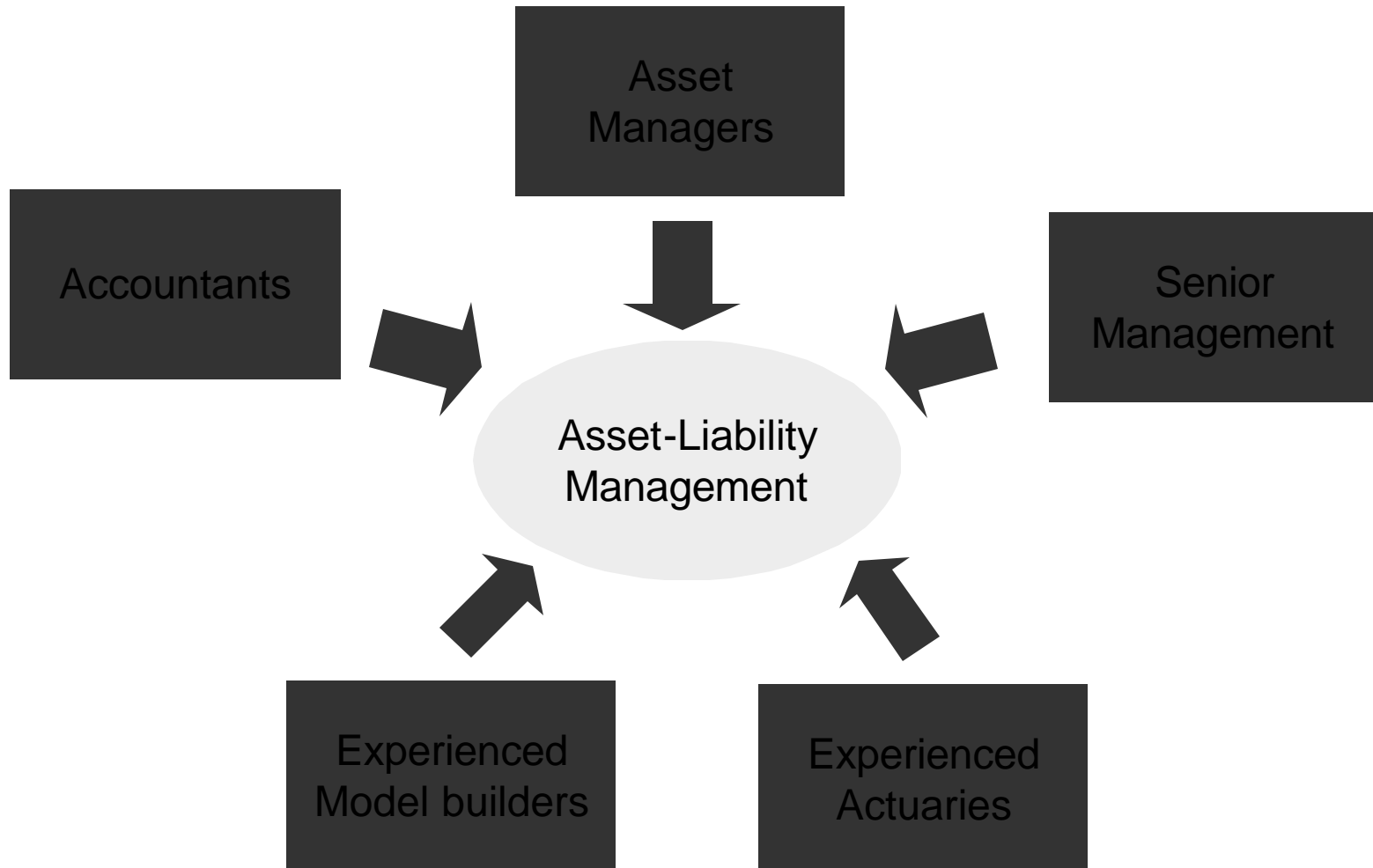


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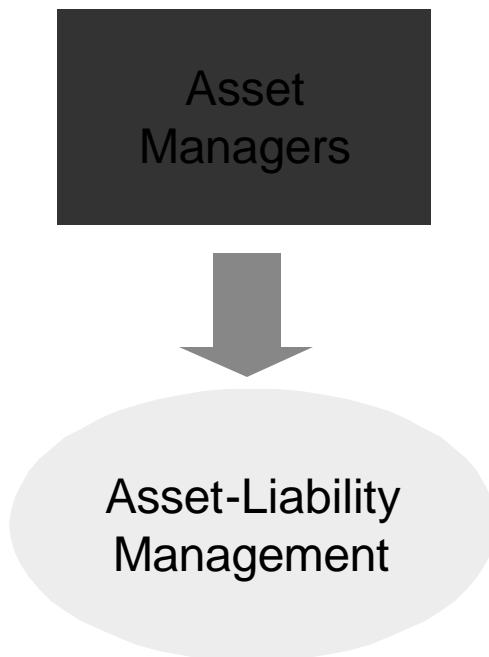
ALM Management and communication



ALM Management team members



Role of Asset Managers



- Provide data for actual initial asset holdings
 - *Actual bonds, mortgages,..*
- Provide input on future buying and selling plans, and expected future asset mix
 - *How to invest new money received*
 - *Which assets to sell if there are high benefit payments*
 - *What ongoing asset mix to hold*
- Describe limits and restrictions on asset holdings
 - *Maximum/minimum regulations*
 - *Can you sell part of a property?*
 - *How are mortgages managed?*
- Responsible for execution of asset strategy

Roles of Accountants


Accountants



Asset-Liability
Management

- Provide input in constructing a full balance sheet and profit and loss account for the company
 - *ALM is normally carried out on a full company level*
- Describe the accounting treatment of all items under all possible outcomes
 - *Some outcomes in an ALM study might not have ever been encountered in the past – eg the company being very close to insolvency*
- Advise on any tax effects

Role of Senior Management



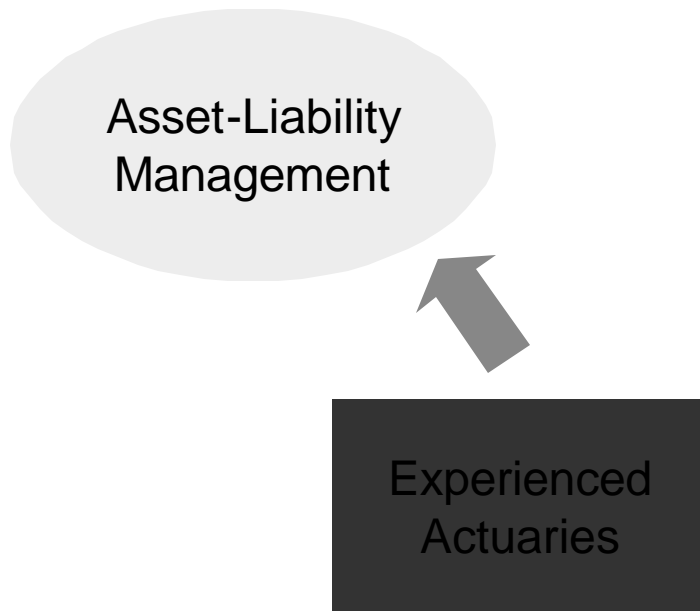
Senior
Management

Asset-Liability
Management

- Define the objectives of the ALM exercise
 - *Investigate dividend strategy?*
 - *Investigate investment strategy?*
- Provide input as to future business strategy
 - *New business sales*
 - *Dividends to follow market?*
- Define the company's required level of return and its appetite for risk
 - *EV to rise 20% over 3 years with 75% probability*
 - *Probability of insolvency in next 12 months < 1%*
- Coordinate ALM process and oversee execution

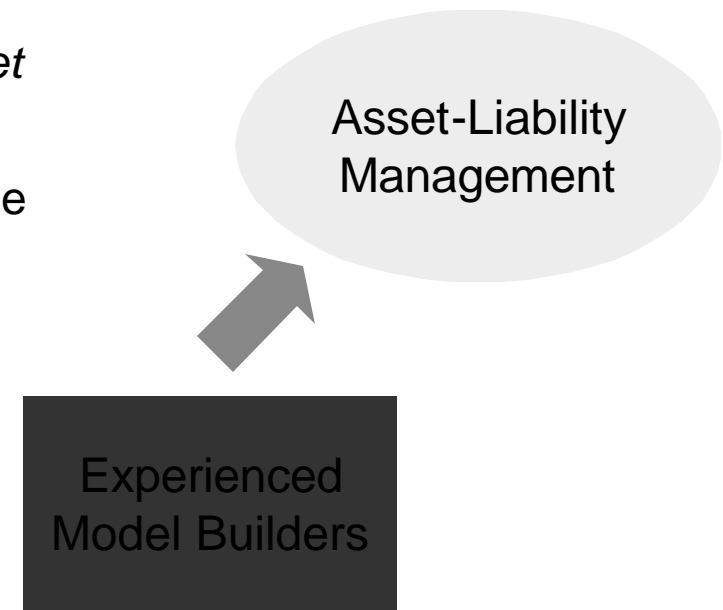
Role of Experienced Actuaries

- Advising on treatment of liabilities, including calculation of liabilities requiring judgement
 - *Setting future valuation basis*
 - *Setting future premium rates*
 - *Setting strategy to be RBC-efficient*
- Advising on assumptions
 - *Are lapse rates interest-sensitive?*
 - *Are new business volumes dividend-sensitive?*
- Review and interpretation of results
- Assessing consistency of strategies with senior management objectives
 - *Some objectives turn out to be impossible to meet...*



Role of Experienced Model Builders

- Building and maintaining the calculation model
 - *Model of entire company is very complex*
 - *Many new features, such as dynamic decisions where the model performs calculations which depend on future as yet unknown results*
- Collating data and assumptions for input into the model
 - *Many more inputs required for assets, strategy and accounting treatment*
- Performing ongoing calculations
 - *Many scenarios are often investigated*
 - *Reporting complex results to senior management so that they are clearly understood is key*

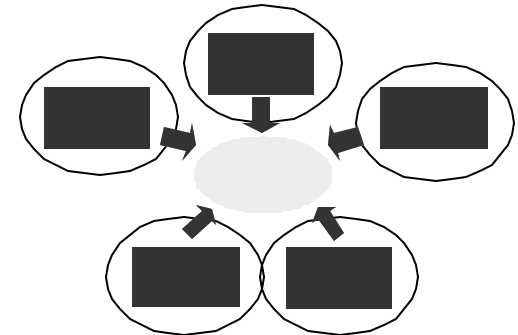


ALM Team - Skills Requirement

	Senior Management	Experienced Actuaries	Experienced Model builders	Asset Managers	Accountants
Understanding the ALM Concept	✓ ✓	✓ ✓	✓	✓ ✓	✓
Providing Input to the Process	✓	✓ ✓		✓ ✓	✓ ✓
Using the Calculation Tools			✓ ✓		
Interpreting Results	✓	✓ ✓	✓	✓	
Drawing Conclusions	✓ ✓	✓ ✓			
Implementing the Strategy	✓ ✓	✓		✓ ✓	✓

Training Requirements- all Team Members

- Fundamentals: Workshop / Meeting
 - Overview of ALM
 - Defining the objectives
 - ...and not running before you can walk*
 - Measuring the results
 - *What form will the answers be in?*
 - Choosing the right team
 - What skills are required?
 - When will their input be needed?
 - Managing expectations
 - Ensuring delivery
- Skills transfer: Review & Monitoring
 - Project management
 - Part of decision-making process
 - On the job training

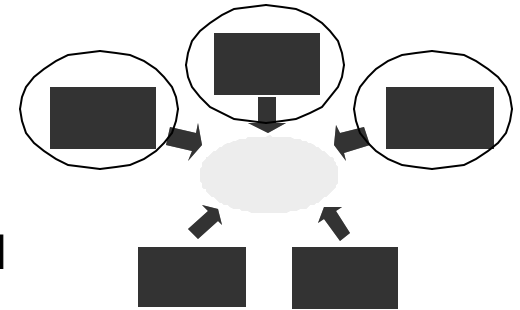


Requirements:

Overview / kick-off meeting
Ongoing project management
Steering committee
On the job training

Training Requirements: Non-Actuaries

- Guidance, Review, and Refinement
 - This is best done **on-the-job**:
 - Understand each person’s role
 - May need guidance to the type of input required
 - *What has worked well for other companies?*
 - *What will work well for your company?*
 - Clarity to what is important and what is not
 - *Concentrate energies on achieving objectives*
- A Framework for the Future
 - Set up an ongoing process for effective measurement of the possible effects of future strategy decisions
 - Put an early warning system in place
 - React early to the unexpected with:
 - *An experienced “strategy” team*
 - *The right tools to test the way forward*



Requirements:

Ongoing guidance

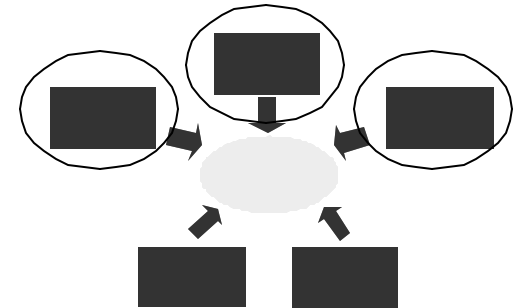
Review

Process design

Reporting mechanisms

Training Requirements: Non-Actuaries

- A Framework for the Future
 - Set up an ongoing process for effective measurement of the possible effects of future strategy decisions
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Requirements:

Ongoing guidance

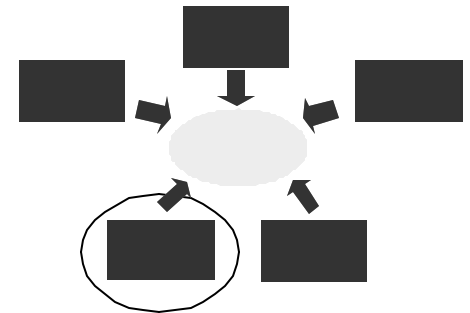
Review

Process design

Reporting mechanisms

Training Requirements: Experienced Actuaries

- Learning to be the link
 - The Actuary can be the link between the different parts members of the team
 - *In particular between the model and the strategy team*
- Driving the reporting framework
 - Return is often measured by EV, AV or earnings
 - *Calculated or influenced by the Actuary*
 - Dividend levels and new business premium rates are key
 - *Calculated or influenced by the Actuary*
 - Capital requirements depend on liabilities
 - *Calculated or influenced by the Actuary*



Requirements:

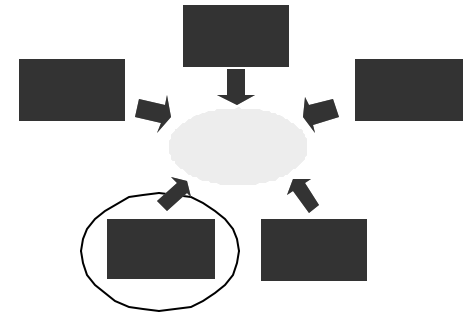
Know-how transfer

Sounding-board

Reporting mechanisms

Training Requirements: Experienced Model Builders

- Using the Calculation Tools
 - Best done by experienced model builders
 - Involves learning about
 - New software/ modules
 - Many new formulae
 - New features
 - The detailed calculations in the model



Requirements:

Intensive training
Full-time immersion
Full commitment