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Strategic Risk Management: Mapping the commanding heights and hazards

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Abstract

Strategy prepares for effective operations. It seeks in particular to develop an organization's market position and core competencies. These can also be described as intellectual capital, and can be effectively measured by actuarial appraisal values or forecasting techniques. Strategic risk is defined in this paper as a by-product of strategy, and can also be evaluated using appraisal values or the modelling of future scenarios. The paper then discusses the use of scenario planning, Delphi techniques and real option analysis to assist in the development of comprehensive strategic plans and the risks that threaten their successful implementation.

Keywords: Strategy, strategic risk, appraisal values, scenario planning

1 INTRODUCTION

Strategy is a military metaphor; we take it to be good strategy to occupy the commanding heights before the battle to come. Climbing heights however may bring different hazards to those faced by those remaining on level ground.

We follow a Deloitte sponsored study of strategic risk management at 12 international banks by Raff (2001) in a study that found that “strategic risk is a greater form of risk in which financial and operational risk are embedded”. It concluded that “the causes of most financial crises are often rooted in strategic rather than operational decisions. All strategic decisions entail risk and yet strategic risk is not measured and managed with rigor”.

We find a common view that strategic risk is the most significant form of risk. It appears an anomaly that it is also the least understood - and the least addressed in any sort of robust manner.

We should at the outset clarify our definitions. In a recent actuarial paper on the subject of strategic risk management, Mango (2007) finds four different definitions:

- Strategic risks are a by-product of the strategic process
- Strategic risks "involve venturing into the unknown, and that may result in corporate ruin"
- Strategic risk management is the process of overseeing the management of all the firm's risks
- Strategic risks management is an integral part of strategy formulation.

We define strategy as preparation or investing for success, and for our purposes define strategic risk as the risk that these preparations will fail, or - perhaps more often - that insufficient preparation will be made for optimal decisions in future. We therefore see these risks as a by-product of strategy.

In section 2 of the paper, we discuss the nature of strategy, which has to cover the important functional areas of the business:

- Marketing - especially choosing where to play (product classes/market segments)
- Distribution choices
- People – staffing and training
- Production - including technology and risk appetite

We note that strategic decisions mainly involve intangible assets. Strategic plans lay the groundwork for building relationships and developing an organization internal structures and technology. Placing a value on strategic successes and failures therefore requires valuing intangible assets and liabilities. While this process is inevitably and often uncomfortably subjective, we suggest that it has value.

Section 3 then discusses how actuarial appraisal values are proving increasingly robust and useful estimates of intangible assets. They provide a sound basis for the development of an integrated measurement of strategic value and risk.

Strategic risks are distinguished in section 4 from the financial and operational risks that are required to absorb normal business fluctuations in income. As with these risks, it is the unusual and unexpected tail risks that are of greatest concern.

The principle risk is thus that a company's strategy misses or mistakes the direction of critical future developments. A critical part of strategy development therefore includes bringing to mind possibilities that are currently not part of the company's thought processes: how to think the unthought? In section 5 to 7 we consider various techniques that can be used to develop strategy. The ongoing development of strategy has to form part of the annual business planning process. In section 8 we briefly outline how these issues can be incorporated in the development of the annual business plan.

Section 9 concludes.

2 STRATEGY IS PREPARATION

How then would we identify the commanding heights? We find in this section a wide range of agreement that they come from a company's market position and core internal competencies.

There is no widely recognised definition of strategy. We mean decisions that are made with the intention that tomorrow's decisions can be made in the most advantageous circumstances - as suggested by Webster's (1976) dictionary definition. If the military metaphor refers to the choice of the site of battle, business strategy can be described as choosing the environment in which the business operates. And, as the military metaphor includes the equipping and training of troops, so strategy also involves the development of internal competences: staffing, training and the development of technology.

Strategic decisions depend on management's view of the future, and we make the point that if making financial sense of the future is the core actuarial competence, strategic decisions will be

better with actuarial assistance. We suggest that actuaries are already leaders (almost unconsciously) in the evaluation of strategic success.

Strategic decisions are frequently characterised by sunk costs as noted by Raff (2001). Strategic decisions invariably involve investments. Obvious examples are purpose built assets that cannot be traded for anything near their cost of production. In the financial services industry, investment in computer software is probably the largest sunk cost that organizations recognise. To these we would add the investment in strategic internal and external relationships that may provide the greatest contribution to a company's value.

2.1 Market position?

Porter (1996) suggests that strategy relates to market position. As we understand him, it is the manner in which the company has structured its marketing mix to develop their brand and cement their relationships with their customers.

To remind readers, the marketing mix consists of the four P's: product, price, place and promotion. Companies should choose the mix that most effectively reaches their target market and generates the maximum profit. Porter looks at a variety of successful companies that have chosen a mix where the different elements are mutually supporting and provide a coherent strategy over a sustained period.

In the Australian financial services market, there are obvious examples. In superannuation, we have the industry funds that offer basic superannuation services at low cost through related employers and unions; life insurers that sell a higher margin product mainly through related financial advisers and others that are part of the banking groups that also sell through their branches. Each offering is more or less coherent, and all three models appear to be sustainable.

It is notable that each of these types of organizations relies on relationships that have developed their own momentum. Members are linked to their superannuation funds through their employer, union or financial adviser, and on a more mundane level by guaranteed insurability, bank accounts and standing debit orders. Each of these relationships can be threatened, and it seems clear that the organizations that will prosper in the long run will be those that are able to sustain these relationships.

Relationships are strategic: the success of each interaction lays the foundation for success in the next. They are built up incrementally by mutually beneficial interactions, and usually decay in a series of neglected opportunities or recriminations.

This market position can be considered a question of brand or reputation: for reliability, value or whatever. Remaining in the superannuation market for our examples, one can consider the importance of reputation for quality of advice and administration or an investment track record. While these can also be seen as product related questions, it needs to be remembered that there is effectively no protection for intellectual property in financial services. Competitors have little difficulty imitating innovations.

2.1.1 Granularity

Baghai et al (2007) clarify the importance of strategic marketing decisions by their analysis of the growth and profitability of 100 of the largest US companies relative to their “fine-grained” position in their respective markets. They define market segments by product and geography that they say range from \$50 million to \$200 million in size globally. Their important finding is that the rate of growth of these market segments, which they refer to as momentum, explains almost two thirds of the companies’ total growth. The rest is largely explained by mergers and acquisitions. Changes in the weighted average share of the different market segments makes almost no contribution to companies’ growth. The profitability of the companies they investigate is, in turn closely related to their rate of growth. Choosing the market segments in which to compete is therefore a critical strategic decision.

It is probably not entirely possible for companies to escape this dependence on the growth of their own markets. Guthrie and Petty (2000) show the changes in the top twenty listed Australian companies by capitalization between 1980 and 1998. They note that old style manufacturing companies have been replaced by banks and insurers, a trend that has continued. It would appear probable that companies in new markets will become more prominent in the future. One possible indicator is the presence of CSL in the current top 20. The next few decades may well belong to the medical industry.

2.1.2 Measuring market position

How might one measure the value of market position? The obvious approach is a discounted value of future revenues and costs – making allowance for the projected growth in the market segments concerned. Thus, when actuaries calculate appraisal values, they are placing a value on the company’s strategic market position.

It may not be that common to base appraisal values on growth rates that are different for different market segments. Baghai *et al* in effect suggest that it would be reasonable to attempt to do so because of the difficulty of gaining market share in new segments.

In fact, actuaries have long found that granularity can usefully be taken further. A number of financial companies have analysed the value of each customer and sales intermediary, as for instance reported in Gorst and Hickey (2003).

2.2 Core competencies?

Market position is not all. Organizations are not equally placed in being able to offer quality products at decent prices. There are a number of production related strategic competencies that have to be built up by layer on layer of consistent strategic decisions. They may be described as the development of the organization's core competencies - as envisaged by Hamel and Prahalad (1990). As with relationships, they can individually be replicated, so an organization's advantage can only derive from the whole of its processes.

2.2.1 Organizational structure

There are a variety of organizational investments that provide the structure for value:

- Formalised but not fossilised structures: delegations and authority; committees with appropriate membership and standing agendas, formal minutes and circulation lists; protocols for all communication and filing.
- Defined processes and standard costs: this goes under various names such as “lean manufacturing” and “six sigma”. Particularly successful organizations such as GE and Intel generate much of their productivity by rigorous process management.

2.2.2 People policies

If the greatest asset of any organization is ever its people, then their recruitment, training and retention are strategic investments. Strategic success requires:

- Engagement with the company’s objectives. Most importantly, engagement appears to be related to sustained and positive feedback. Performance reviews can easily slide on the one side into the perfunctory and on the other into cycles of humiliation.
- Remuneration policies must be seen to be fair, and to encourage behaviour in line with the company’s objective. Tying rewards directly to production increases productivity dramatically, but as anyone who has worked with commission arrangements can testify, this will lead to unremunerated outcomes being neglected. Developing a commission system that rewards quality of advice and persistency is one of the most important strategic decisions in the insurance industry.
- Outsourcing: obviously a strategic decision that requires an investment in the service provider rather than internal staff. Outsourcing questions apply to both internal administration function and to choice of distribution networks.

2.2.3 Information management

This has been characterised as the information age, and financial service organization are particularly dependent on information. Collecting information however requires preparation. Systems can take months at least to develop and a year or more before data reaches its potential usefulness.

- Accounts: an adequate chart of accounts is a first strategic step. We are surprised to find companies that cannot distinguish between new and renewal commissions or lump sum transfers to other superannuation accounts and benefit payouts
- Information on fixed and variable costs in order to make rational pricing and other business decisions
- Granularity of information on clients and new business channels
- Experience investigations: knowledge of insurance and lapse experience provides the only information to accurately price and focus marketing efforts.

2.2.4 Computer systems

Strategic policies involve consideration of the future consequences of current actions. You do not have to be a computer expert to know that:

- If data is worth keeping it is worth collecting and keeping accurately

- The latest information (like a client address) should be kept in one place
- If you spend time cleaning data, you should correct the original source and not just your extract
- A process like unit price error correction that will need to be done frequently should be included as part of normal processing rather than as a repeated ad hoc exercise
- If a spreadsheet is worth saving it is worth documenting - and documentation is not a spontaneous process
- Legacy systems that are unable to cope with legislative and other changes are the consequence of inadequate strategic thinking.

2.2.5 Measuring core competences

The value of core organizational competences can be seen as part of the appraisal value. It can be seen in one way as the present value of the difference between future expenses at the rate which the company is likely to experience, and the cost that would be incurred if the processes were outsourced. Alternatively it could be calculated as the abnormal profit that the organization would make if it were to provide an outsourcing service to others in the market.

If the costs of outsourcing are not available, it is possible to create benchmark times and costs for most internal processes against which to measure performance. The many thousand references to “six sigma” and “lean manufacturing” in the formal management literature suggest that measurement must be very granular. Understanding the possibilities for improving the economics and quality of internal processes means observing and measuring them in great detail.

2.3 Culture

We note that strategy has also been linked to organizational culture. Raff (2001) suggests that successful firms will have embedded the following cultural practices:

- Active discovery and assessment of new developments and trends in the market and technology
- Means of nurturing new ideas and encouraging experimentation
- Allowing for a diversity of opinion to be expressed before important decisions are made
- Being prepared to gracefully exit markets that are not offering adequate returns to effort.

Cultural norms will also impact corporate social responsibility (CSR). Porter and Kramer (2006, 88) say: “Strategic CSR moves beyond good corporate citizenship and mitigating harmful value chain impacts to mount a small number of initiatives whose social and business benefits are large and distinctive. Strategic CSR involves both inside-out and outside-in dimensions working in tandem. It is here that the opportunities for shared value truly lie.”

We do not disagree, but believe culture is as much a consequence of an organization’s market position and organizational structure as a cause.

3 APPRAISAL VALUE APPROXIMATES STRATEGIC VALUE

It therefore appears that good strategy results in higher appraisal values by enhancing market position and creating competitive core competences. Two questions arise. The first is whether appraisal values can provide a complete estimate of the market value of companies? The second is whether the difference between the appraisal value and the net asset value fully measures the company's strategic value, and thus whether its volatility fully measures the strategic risks?

The first question is easier to answer empirically -even if appraisal values are not always published. An indication can be found from Zacheis (2005), which uses informed estimates. It is confirmed that larger companies, in any event, appear to trade at small discounts or small premiums to their appraisal values.

The first four sub-sections below develop the idea that actuarial appraisal values are a powerful way of measuring strategic success.

The final sub-section addresses the more difficult second question, where we suggest that the answer is yes - but. Good strategy appears to be more than the creation of intangible assets, and may be more than is always reflected in market values. Some of the value of some really good strategies may only be manifest in crises. Poor strategy on the other hand creates unnecessary risks that can destroy value particularly in times of change.

3.1.1 Intellectual capital

Intellectual capital can be defined in much the same way that we have defined strategic value in the preceding sections. Guthrie and Petty (2000), for instance, describe intellectual capital as: "Internal structure includes the organizational structure, legal parameters, manual systems, research and development, and software of a company. External structure includes brands, and customer and supplier relationships. Employee competence includes education and training of the professional staff that are the principal generators of revenue."

The Porter view that strategy is market position, and the Hamel and Prahalad view that strategy relates to core competencies seem to be entirely captured by this definition of intellectual capital. Bontis (2006) provides the most widely cited review of the measures of intellectual capital. Even when they are quantified, however, these measures do not appear to have been related to the generation of financial value in the manner of actuarial appraisal values.

3.1.2 Intangibles and appraisal values¹

Kaplan and Norton (2001) are the originators of the “balanced score card”, one of the more popular approaches covered by Bontis. They think that the determination of valid intangible values is too difficult because intangible assets have an indirect impact on profitability and have to be put together in a coherent strategic plan before they create value. We think they may be too pessimistic. Actuaries have developed significant experience of calculating intangible assets, and presenting them to interested investors.

Embedded and appraisal value calculations, which have been made for some twenty years or more, incorporate a number of intangibles. The major criticisms of their use appears now to come from their failure to be entirely market consistent rather than that they attempt to value the impossible. Mehta et al (1996) apply the approach to unit trust and investment companies, and it could clearly have an even wider application.

Kallapur and Kwan (2004) examine the affect of the publication and otherwise of intangible assets on share prices. They find that the publication of the value of intangible assets has a significant impact on prices, but that the reported values are not particularly reliable and appear to be distorted by managers faced with temptations to bias the results. These risks can be taken as reasons to argue that intangibles should not be permitted in the accounts, or alternatively as reasons to introduce controls on bias - such as an analysis of change in appraisal value. The latter appears preferable, especially as it appears from this research that the investment markets are not entirely fooled by biased reporting.

3.1.3 The analysis of change

The actuarial analysis of the change on appraisal value provides a critical check on the assumptions used to determine appraisal values. It offers:

- A comparison of experience with the assumptions: large deviations, or series of deviations of one sign, raise questions that restrain managerial over-optimism.
- A reconciliation of the data used for the valuation model with accounting items, which allows both to be checked.
- Disclosure of changes to assumptions, and so reduces opportunities for manipulating profits.

It can be performed with varying degrees of sophistication. Assets, liabilities, income and expenditure can be segmented as necessary to analyse performance and project trends.

¹ Much of the next two sections first appeared in Asher A (2006) “Unfinished accounting issues in financial institutions: modelling fair value and prudence” *Annals of Actuarial Science* 1.2: 271-290

3.1.4 Linking value with action

The evidence suggests that the assumptions underlying appraisal values can usefully be made more granular in order to identify profitable market segments as well as potential improvements to internal competences. Actuaries could therefore have a significantly enhanced role in identifying those areas that would repay more strategic investment, and in measuring its success - not only in life insurance companies.

Extracting value from the process requires building the connection between the action and the value created. An example can be taken from Bontis's sample of the intellectual capital measures used by Skandia, which has been a leader in reporting these measures. Under customer focus one measure is the number of days visiting customers, and another is the ratio of sales contacts to sales made. These provide a relatively easy link to the value of each new sale that can be derived from the appraisal value. They also provide operational guidelines of sales management: increasing sales contacts is a motivational or time management issue; improving conversion rates is more likely to be a training question.

Making these links is one of the main functions of management consulting. Kaplan and Norton have developed a "strategy map"; Deloitte uses "value maps", an example of which is given in the appendix. Such maps are necessary if management is to make a comprehensive analysis of the strategic decisions before their organizations.

3.1.5 Strategy is more than intellectual capital

The second question raised in the introduction can be rephrased to ask whether all of the organization's strategic decisions are captured by the value of its intangible assets. Kaplan and Norton offer an important insight when they say: "intangible assets take on value only in the context of strategy". Intangible assets have no value on their own; they need to be combined into a full strategic plan. This, however, is also true of tangible assets. Even if they have a realisable value, it is their value in use that is of interest to shareholders. Good strategy sweats all the assets. Good strategy is therefore more than the creation of intangible assets, but the translation of intangible assets into tangible value provides the best measure of good strategy. On the other hand, strategic flaws that are unlikely to be priced in a company's appraisal value can lead to the destruction of value of both tangible and intangible assets. Like far-out-of-the-money options, however, they be revealed in crises.

4 STRATEGIC RISKS ARE CRUCIAL

This brings us to the mapping of the strategic hazards.

We find it to be a common view that strategic issues create the greatest source of risk. Raff (2001) and Slywotzky and Drzik (2005), amongst others, find that strategic risk is normally more important than other types of risk and often less well understood and quantified. As we have indicated above, we think that the quantification of strategic risk is more advanced than they seem to appreciate. We can equate strategic value with appraisal values and intellectual capital, and strategic risk with the volatility of this intangible asset.

If current share prices are reasonable measures of company value, then intangible assets greatly exceed the value of companies' tangible assets. The average ratio of market capitalization to net tangible assets of the largest 9 Australian companies is over 4. Woolworths, at number 10, reports a ratio of 132. Such ratios are not unique to Australia. Intangible assets are, therefore, much more important than the value of tangible assets, and so would certainly seem to create larger risks.

Guthrie and Petty (2000) refer to the changes in the top twenty listed Australian companies by capitalization between 1980 and 1998 and note that the trend has been to financial service companies, which they suggest are more reliant on intangible assets. It is notable, however, that the financial services companies currently do not enjoy the highest ratio of market capitalization to net tangible assets. The importance of intangible assets is more general.

Having established the importance of strategic value, we now compare and contrast strategic risks to financial and operational risks, and consider particularly how one might quantify strategic risks.

4.1 Financial risks

Financial risks can be measured largely by looking at a company's accounts.

- The balance sheet shows the nature and size of its assets and liabilities, and market risk arises from the volatility of their values.
- Credit risks are a type of market risk in that they have the same impact on the balance sheet.
- The income statement shows the size of premiums and claims, and their volatility over time gives an indication of insurance risk.

While the best precise measure is debatable, it is generally agreed that these financial risks can be measured by the statistical volatility of the time series. If the financial risk cannot be hedged or reinsured, then capital is required to absorb the volatility. The size of the capital can be determined - theoretically at least - once one has a determined a target level of adequacy.

Are some financial risks strategic? Merton (2005) suggests that developments in modern financial markets now mean that companies do not have to take strategic financial positions; all financial positions can be unwound at short notice by any number of derivative and insurance instruments.

This development has had a significant impact on the actuarial view of life insurance and its capital requirements. Ten years ago, risk might be defined in actuarial terms as the risk that the insurer or retirement fund did not have the wherewithal to meet its liabilities as they fell due. The assumption was that the institution had long term assets and liabilities that had to be matched over their entire term. This view is now an anachronism. Capital requirements for investment risks, for instance, are required only to the extent that management have not hedged their risks in the short term. If the company can be shown to be solvent in the short term, there are investment instruments that can be created to exactly match the long term liabilities that will allow it to maintain solvency in the long term. It is thus short term solvency that is important.

We suggest that companies still have to make strategic financial decisions: setting the level of adequacy would seem to be a decision involving preparation for a crisis, and therefore a strategic

decision. Companies' financial structure must still be able to fund their expansion plans and absorb potential losses. It does mean however that financial strategy can be changed at relatively short notice and that financial decisions have less of a long term component.

The developments in investment markets and in accounting standards also mean that the value of any financial strategy is more likely to be reflected in the company's balance sheet as a tangible asset or liability. We note again however that some risks are so remote that their value will be swamped by normal statistical noise.

Liquidity risks are somewhat different. The cash flow statement and its associated notes provide insights, but liquidity risk is not a question of capital adequacy but the availability of cash - although the two do interact. Cash flow crises that arise from a mismanaged cash flow could be termed poor strategy, and represent a failure of preparation. Crises that arise from failure of reputation may be operational or strategic. We would see liquidity risks therefore as a species of strategic risk.

4.2 Operational or expense risks

Operational risks have been defined under Basle II (2003) as "the risk of loss resulting from inadequate or failed internal processes, people and systems, or from external events". This definition could be interpreted very broadly. In practice, operational risks are limited to the causes for which banks have had to provide data:

- Internal and external fraud
- Payment of personal injury, discrimination or professional negligence claims
- Loss or damage to physical assets
- Losses arising from business disruption or process failure

This is a relatively limited range of activities, and does not cover the entire spectrum of expense risks that can be reflected in the annual accounts. It also overlaps with financial risks and can lead to fruitless discussions as to whether a credit failure relates to fraud or investment market risks.

The actuarial concept of expense risks creates a mutually exclusive and comprehensively exhaustive categorization of measurable risks. It covers all events that lead to expense ratios running higher than budgeted. The measure of expense risk is then the overall volatility of expense variances to budget over time.

Operational and expense risks also have a strategic component in that the level of risk will crucially depend on investment in systems that prevent such risks.

4.3 Strategic risks to intangibles

Strategic risks can therefore be distinguished from financial and operational risks in that they have an indirect affect on the published accounts.

Slywotzky and Drzik (2005), in a widely quoted paper, suggest that strategic risks can be categorised and more easily measured in seven major types:

- Industry risks reflected in margin squeeze
- Technology risks including loss of intellectual property rights
- Brand erosion or collapse
- Competition from new entrants perhaps foreign
- Customer risks, more acute if reliant on a few
- Project risks
- Stagnation

We would also add environmental risks, an example of which is mis-selling in the financial services industry.

It can be noted that this list covers risks to intangible rather than tangible assets, and that these risks are easily measured by adjusting the assumptions underlying the calculation of appraisal values. It is therefore relatively easy to quantify the effect of different views of the future - for companies that regularly determine appraisal values. The analysis of the surplus arising from an appraisal value thus provides a fairly robust measure of the growth of a company's intangible strategic assets in normal circumstances. The results over a number of years would provide some notion of the volatility of strategic investments and therefore of the risks to which they are exposed.

We would suspect however that, if measured in this fashion, strategic risks would be found to have fat tails - as with market and operational risks. As with these other risks, we would suggest that there is a need to consider the tails in more detail. While further statistical modelling of extreme values may add some value here, there is often more value in stress testing. This can form part of the scenario planning that we consider in the section 5 of this paper.

4.4 Strategic gambles

There is another element to strategic risk: poor strategy may lead to losses of more than intangibles. In this category, we would place the maintenance of inadequate capital to absorb losses and poor risk management processes that allow excessive operational risks to arise. We acknowledge that these are strategic risks, but suggest that they might also be categorised as strategic gambles.

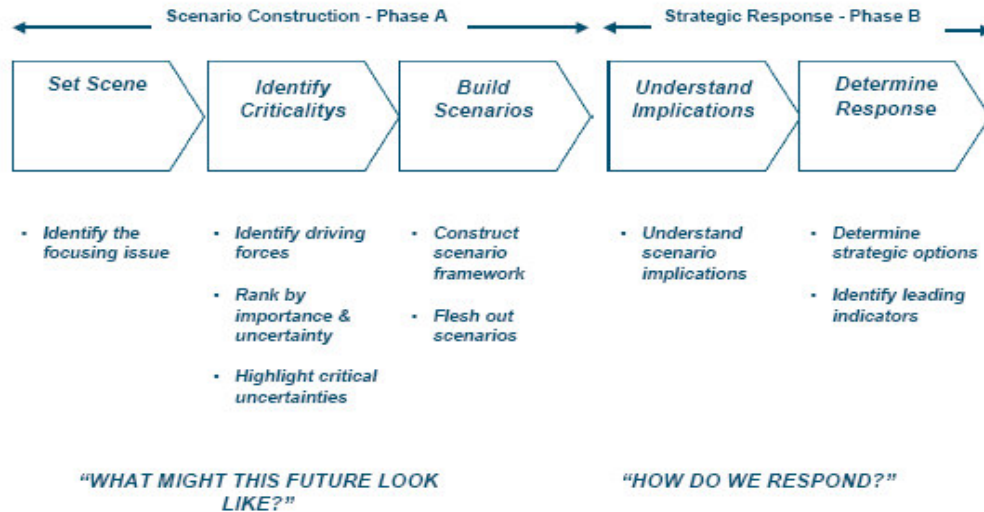
Gambling might also apply to the view that strategy should somehow be bolder and the risks greater than the relatively detailed and mundane issues that we have discussed so far. This might be linked to that definition of strategic risk that Mango (2007) traces back to the "Knightian" view that the essence of business creativity is to absorb the uncertainties of the future. This rather grand view of strategy might well apply to venture capitalists, but the managers of financial institutions do not have the right to bet the company.

Their more risk averse environment may however create the possibility of strategic risks arising from failure to make strategic decisions at all. While much less exciting than taking large bets, we might suggest that this too is to gamble. What is required is a disciplined approach to the determination of strategy that incorporates a consideration of the risks.

5 SCENARIO DEVELOPMENT

If the intention of strategy development is to prepare for success, this is quite different from preparing to avoid failure. This is why we see the management of strategic risks as a by-product of good strategy formulation rather than an integral. Strategy is about growth and the risks will include the risks of innovation, not just of carrying on with more of the same. The next three sections discuss three approaches to strategy development and the management of the consequent risks.

For Mango (2007) "effective strategic risk management begins with scenario planning". Borrowing from Rafe's (2003) presentation, the scenario planning process consists of two main phases, developing alternate 'stories' for future and understanding the implications and determining the response, as follows:



Its most successful use was within Shell to predict the oil shortage of the seventies and the glut of the early eighties. In discussing the benefits of scenario planning, the authors note that it may also assist in:

- challenging conventional thinking;
- identifying potential changes ahead of time;
- identifying and assessing real options
- encouraging cross-divisional conversations about strategic choices and options.

Shell's current scenarios give a better feel of the aim and advantages of scenario planning. Shell (2005) "These scenarios are different from forecasts in that they provide a tool that helps us to explore the many complex business environments in which we work and the factors that drive changes and developments in those environments.... The first of these "possible futures" is called Low Trust Globalisation. This is a legalistic world where the emphasis is on security and efficiency, even if at the expense of social cohesion. The second, Open Doors, is a pragmatic

world that emphasises social cohesion and efficiency, with the market providing “built-in” solutions to the crises of security and trust. The third, called Flags, is a dogmatic world where security and community values are emphasised at the expense of efficiency.” May (2006) provides details of this and other current scenarios in use.

5.1 Visioning

Baghai et al (1999) suggest that companies must simultaneously consider three "horizons" critical to growth. The first is the current bread-and-butter of the firm; the second, the fast-developing entrepreneurial ventures with which it is already busy; and the third, the ideas that will germinate into future businesses. It is the third that is the strategic horizon.

In developing its strategy, management take time to envision the position of their firm in the third horizon particularly.

5.2 Case Example – Scenario Planning

An example of the Scenario planning technique may illustrate the point. The Trowbridge Deloitte Superannuation Model is a sophisticated projection model of the total market for superannuation funds that:

- Uses projections of the labour force, salaries, other economic and retirement assumptions
- Projects superannuation funds by age, gender, superannuation fund type and salary band
- Is used to determine new business growth rates for superannuation
- Is based on current market conditions and current superannuation policy settings.

It produces detailed segment results (funds under management (FUM), margins, and margin splits across the value chain) for different fund types in the pre and post retirement markets. It can be applied for:

- Strategising and scenario planning
- The basis for valuations, including M&A assessments
- ‘What If’ assessments, including public policy

The main output from the model is a set of projections based on what is described as the ‘Base Scenario’ (best estimate assumptions based on the estimated economic environment, current industry dynamics and regulatory settings). Perhaps the model’s greater application and value is helping people better understand uncertainty, and hence strategic risk, by its application to scenario planning and strategising.

Using the framework outlined in Section 5, the key drivers for the superannuation market can be summarised to be:

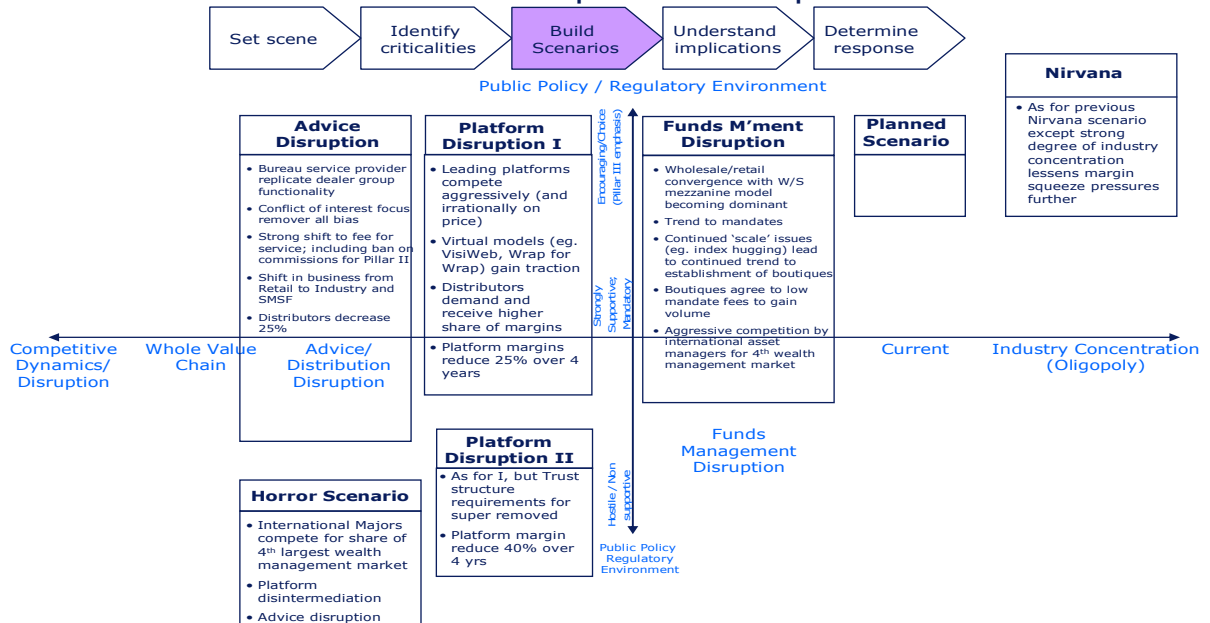
- Retirement imperative – desired future lifestyle
- Mandated and voluntary provision (Pillars II and III)

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- Ageing population
- Regulatory approach – degree of Government focus and Pillar II vs. Pillar III emphasis
- Choice of Fund and its impacts
- Competitor dynamics – especially between types of funds (and especially Retail, Industry and self-managed superannuation funds)
- Economic health
- Investment returns
- Changing workforce patterns

Following the Scenario Planning, investigation of the more uncertain drivers can provide the most useful insights.

Key uncertainties then define possible future states/Scenarios...
Scenario Basis 2 relates to competitive disruption



6 DELPHI TECHNIQUES

The Oracle at Delphi was regularly consulted in the ancient world, and renowned for its wise - and ambiguous - advice. The wisdom is understood to arise from the network of paid spies that the Oracle funded from its high charges. It is the network that the modern term attempts to replicate.

According to that authoritative source (Wikipedia), the Delphi method

"is a technique for obtaining forecast from a panel of independent experts over two or more rounds. Experts are asked to predict quantities. After each round, an administrator provides an anonymous summary of the experts' forecasts and their reasons for them. When experts'

forecasts have changed little between rounds, the process is stopped and final round forecast are combined by averaging.

The Delphi technique was developed by the RAND Corporation (Olaf Helmer, Theodore Gordon and Norman Dalkey) for a project for the US Air Force and in the context of the Cold War. The project involved optimisation of atomic industrial targeting of the US, from a Soviet perspective." The technique has had wide application, especially in Japan, and is also featured in the Society of Actuaries Futurism course. Two rounds of the technique were applied by our own Institute Futurism Committee (2005) to survey actuaries as to their view of "What will ... look like in 20 years?" Questions were asked in relation to the economy, the environment, health and mortality, and demographics and society.

The Futurism Committee paper describes the Delphi technique as working "best in the following situations:

- Where the problem does not lend itself to precise analytical techniques, but where human judgment and input from experts can be valuable;
- More individuals are needed than can efficiently and cost-effectively interact face-to face;
- Where it is important to have anonymity between experts, in order to reduce bias;
- Where the choice of experts is sufficiently heterogeneous to avoid a consensus forming too early without considering all important criteria in a situation.

The Delphi is not meant to be used in circumstances where models and prior statistics can be used to predict a particular outcome or suggest a course of action". In other words, the technique is well suited to dealing with uncertainty and where expert input is utilised. This suggests that it would be useful for both strategic planning and strategic risk assessment, and it is not surprising that some of the more common applications of the technique have involved the development of action plans to achieve future scenarios and making decisions in the course of implementing plans.

The Delphi technique has been used extensively for strategic planning and risk assessment in the public sector, in tertiary institutions, in the technology sector, and in the Asia and US regions most frequently.

7 REAL OPTIONS ANALYSIS

A very useful overview of Real Options Analysis (ROA) is provided in Robinson (2003). In the abstract, ROA is described as 'placing great emphasis on:

- The measurement of value in times of high uncertainty;
- The recognition of the value inherent in management's ability to respond to the unwinding of uncertainty over time;
- The sometimes counterintuitive way of thinking about value when the financial outcomes of uncertainty are non-linear.'

These characteristics describe well the context of strategic decisions and hence strategic risk.

'Real Options' refers to the strategic options intrinsic to a firm. All strategic decisions are investment decisions as they involve the deployment of finite capital, organisational capability, and resources and people.

Rather than elaborate on ROA in this short paper, the authors refer readers to the excellent paper by Ian Robinson, and, in the context of strategic risk assessment, especially to:

- Section 2.1 – The Basic Concept
- Tables 1 (Structural Differences between Financial and Real Options) and 2 (Valuation Differences between Financial and Real Options)
- Section 6, including the notions of public risk (factors external to the firm) and private risk, the modelling of market risk, the impact of competitive dynamics and proprietary options (i.e. exclusive options) and shared options (available to all industry players to varying degrees depending on their competitive position), and the interaction of competitive rivalry with 'exclusiveness of the right to exercise' (Figure 1 in the paper)
- Section 7.4 entitled 'Valuation framework' which describes the following steps which are closely analogous to the Scenario Planning approach described earlier:
 - Computation of a base case PV without flexibility (using DCF)
 - Modelling uncertainty using event trees;
 - Identifying and allowing for management flexibilities using event trees;
 - Calculating real option values
- Sections 8 ('When ROA makes a Difference'), Section 9, 'Actuarial problems' – including economic valuations, and strategy and project evaluation) and Section 10 ('Cautionary Notes')

The approaches outlined in this paper provide a framework for adding further quantitative rigour to the Scenario Planning approach outlined earlier.

A further useful case study is given in Sinha (2003), which reviews in particular strategic options for foreign expansion, and cites as case example MetLife's acquisition of Ahisa in Mexico in mid 2002.

8 THE BUSINESS PLAN

The annual business cycle does not have to reinvent strategy. Experience suggests that it is difficult to set the balance between adequate granularity and perpetual re-working of the minor details. Recent regulatory developments, of which we will take the Australian Prudential Regulation Authority (APRA, 2007) Life Insurance Prudential Standards as an example, may also increase focus on unnecessary documentation and details.

There are two possible sidetracks in this process. Managers can on the one hand take too narrow a view of risk that does not encompass the full extent of strategic risk. Further, management and boards may be so fixated on financial and operational risks that they give insufficient attention to strategic risk – partly because it is less understood and quantified.

Alternatively, in the post-Enron world, management or the board can also allow risk and compliance to take too great a portion of their time. It might be argued that APRA's risk

management standards will contribute to the latter problem. While it will be obvious from the above that we believe that the board and management should view risk management as an integral part of the business planning process, but as a decidedly subsidiary function to the main function of building and keeping relationships with customers and staff and developing and maintaining the institutional structures that lead to success.

8.1 Setting strategy

The first step in the process therefore is to confirm the company's objectives in the context of the current environment. In this, we would follow Drucker (1977) in suggesting that the first question is to answer: what is our business? The business of life assurance is not the “selling of policies” or the “making of profit”. It relates to the satisfaction of some human need, such as “the provision of financial security” or “peace of mind”.

Second is the formulation of the company’s strategic alignment and its policies that govern the development of its internal and external relationships. Not all businesses have written strategies, and we are not convinced of the need to generate even more paperwork. It does seem that senior management should have thought through the following and communicated it to those making operational decisions:

- The target market and the products that will be offered
- Recruiting, training, remuneration for different groups of staff
- The internal organization structure and responsibilities
- Collection and use of internal and external data
- Computer architecture

8.2 Financial projections

Strategies need to be converted into financial projections – and the latter needs to be stress tested against favourable and unfavourable scenarios. Given the uncertainty of the future, precision cannot be important. Management and board are bound however to find rough projections of future scenarios helpful in understanding and making decisions. We believe that there is considerable benefit in producing – at least annually – appraisal values that incorporate a significant degree of granularity as to market position and the different drivers of expenses. The effect of different strategic decisions can then be seen in each scenario.

A variety of scenarios might be produced for debate, but the final business plan should incorporate planned financial statements for the year ahead that are representative of a realistic scenario. It can also be helpful to quantify stretch scenarios for all areas. APRA’s Life Practice Guide (2007) suggests that the business plan incorporate 3 year projection of alternative scenarios.

8.3 Risk management strategy

We have suggested that it is inappropriate for risk management to drive the formulation of strategy, but the formulation of strategy should be followed by a consideration of the risks. APRA’s (2007) prudential standards require a risk management framework, which must include:

- A written risk management strategy that sets out the framework
- risk management policies, controls and procedures
- an annual written business plan
- managerial delegations and controls
- a review process.

The standard requires explicitly “identifying, assessing, mitigating and monitoring risks”. While this is clearly an internal audit function, it is not clear that it will always provide a useful categorization of function. Underwriting, for instance might be seen as an insurance risk management function. While underwriting may be seen as the prevention of risk of anti-selection, we would prefer the underwriting department to be set the goal of efficiently ensuring policyholders are charged a fair premium. Risk exists because they are trying to create value.

8.3.1 Risk appetite

Modern financial economics would suggest that companies are indifferent to risk, or at least to risks that do not create costs of financial distress. In practice, managers are likely to be averse to relatively small risks. Even those that might reduce the annual profit are likely to be avoided because of the impact on share price, executive options and on board and senior management incumbency.

Given that hedging and reinsurance can be obtained relatively inexpensively to cover financial risks, companies should not be exposing themselves to financial stress from this source. Possibilities of outsourcing make many other risks unnecessary.

The issue is not so much that this policy should be clearly documented (as required by APRA), but that it should allow management to make some trade offs between risk and reward. Opportunities for extraordinary profits can arise when markets place an excessive price on risk management, and management should be in a position to be able to exploit such opportunities. They may not wait for the annual planning process.

9 CONCLUSION

Actuaries could have an increasing role in strategy formulation and the management of the resulting risks both in the financial services industries and in further fields. Appraisal values have proved themselves to be a robust and increasingly sensitive measure of intangible values, which we have shown can be describes as strategic investments or as intellectual capital. These strategic assets include the company's market position and its core competencies. We suggest that a more granular approach to these can usefully relate operational management decisions directly to the creation of shareholder value.

We have defined strategic risks as arising from the implementation of strategy and suggested that it is the extreme risks in the tails that require the most thought. As ways of addressing these, we describe how organizations have used scenario and Delphi techniques, and real option analysis. Finally we reiterate that good strategy is to prepare for success, and that the focus of strategic planning should be the creation of value and not the avoidance of risk.

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Appendix

**Deloitte Life Value Map™
Condensed Version**
(Practical paths to increase shareholder value)

It's easy to say shareholder value is important. Not so easy to make it influence the decisions that are made every day: where to spend time and resources, how best to get things done, and, ultimately, how to win in the competitive marketplace.

This Map is designed to accelerate the connection between actions you can take and shareholder value. It is not rocket science and it is not complete, but it can jump-start the process of focusing on the things that matter most and then choosing practical ways to get them done.

Here are two simple ways to use it:

- > Start at the top. Working your way down, at each step ask yourself, *How will we improve this?* This will help ensure that your tactics support your objectives.
- > Start at the bottom. Working your way up, at each step ask yourself, *Why are we doing this?* This will help ensure that every tactic leads to shareholder value.

Shareholder Value

